



**Monte Cristo Mining Area  
Phase 1 Spatial Analysis  
Summary Report  
Snohomish, Washington**



**Prepared for  
Washington State  
Department of Ecology**



**April 20, 2011  
17330-33**



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# **HARTCROWSER**

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## EXECUTIVE SUMMARY

The Washington State Department of Ecology (Ecology) has enlisted Hart Crowser to prepare a Phase I Work Plan/Existing Data Spatial Analysis in preparation for a Remedial Investigation/Feasibility Study (RI/FS). This document provides spatial analysis of soil, sediment, surface water, and groundwater data from previous investigations in the Monte Cristo Mining Area (MCMA).

The MCMA comprises numerous abandoned base metal and gold mines located in the Mt. Baker-Snoqualmie National Forest near Granite Falls, Washington. The area has a number of potential contaminant sources: open and closed adits, waste rock piles, the remnants of the ore storage facility (Ore Collector) and processing facility (Concentrator), the Assay Shack, and miscellaneous debris. Several of these potential sources are adjacent to either Glacier Creek or Seventysix Creek, both of which are tributaries to the South Fork Sauk River (SFSR), see Figure 1. Historical mining practices of in-stream disposal and erosion from waste piles has introduced mining waste to surface water. Soil and aquatic samples were collected at a number of these locations within the MCMA. There are additional mines and patented and unpatented mining claims within the MCMA that have not been sampled, and may be potential contaminant sources.

Previous investigations conducted on various mines within the MCMA are listed below.

- Ecology conducted a screening investigation in 2002 of water and sediment quality of creeks in ten mining districts in Washington, including Monte Cristo.
- An Abbreviated Preliminary Assessment (APA) was conducted by the Forest Service on the Concentrator in 2002 and on Mystery Mine in 2003.
- The Washington Department of Natural Resources (DNR) investigated metal contamination in Mystery, Justice, Pride of the Mountains (POM), Pride of the Woods (POW), and New Discovery Mines in 2003.
- Snohomish Health District and Ecology conducted a Site Hazard Assessment (SHA) in 2004.
- The Forest Service conducted two additional APAs in 2006: one for Sidney Mine, and the other was a combined assessment of POW, New Discovery, and POM Mines.
- A Site Investigation (SI) was conducted in 2007 by Cascade Earth Sciences (CES) to inspect Mystery and Justice Mines, the Concentrator, Ore Collector, and the Assay Shack.

- An Engineering Evaluation/Cost Analysis (EECA) was prepared by CES in 2010 for a proposed Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Removal Action in the MCMA.
- Most recently, a Data Gap Investigation was published by CES for the MCMA in January, 2011.

The previous studies have investigated the following mine features in the MCMA:

- United Companies Concentrator
- Mystery Mine
- Ore Collector
- Assay Shack
- Justice Mine
- Golden Cord Mine
- Pride of the Mountains Mine
- Pride of the Woods Mine
- New Discovery Mine
- Haulage Ways
- Sidney Mine
- Boston-American Mine
- Sheridan Mine
- Comet Terminal Tram Bunker
- Rainy Mine

Results from these studies indicate the concentrations of several hazardous substances, particularly arsenic, exceed screening levels in one or more media at a number of locations in the MCMA. These results are presented in this report.

This report presents results of Hart Crowser's review of historic documents including correspondence, reports, and other documents obtained from the Washington Department of Natural Resources and mine claim plots obtained from the US Bureau of Land Management. This report also presents preliminary results of a Geographic Information System (GIS)-based spatial analysis of the data from previous site characterization studies to identify the presence of hazardous substances with cultural, watershed, and biologic resources. The following subsections outline the results of our analysis.

### ***Mine Features***

- Research by Hart Crowser identified 81 additional mines or prospects. In some areas, multiple mine features such as adits or tunnels may be part of a single mine, or could be separate mine workings with a common name.

Also some of the mines are associated with multiple claims. Information on 20 to 25 of these features was sufficient to establish tentative locations, as shown on Figure 2A through 2C; these features are listed in Table 1. Information on the remaining 60 features was not sufficient to establish tentative locations; these features are listed in Table 2. The potential for these features to be a source of hazardous substances should be assessed in the Remedial Investigation (RI) of the MCMA.

- The database indicated that soil exceeds human health screening criteria near specific mine features, as shown on Figures 5A and 5B. These figures also show the extent of a quarter-mile buffer around trails and campgrounds near the mine features.
- Drainage from mine features exceeds surface water protection criteria at specific locations, as shown on Figures 7A and 7B.

### ***Other Cultural Features***

- Soils exceed human health criteria within a quarter mile of specific cultural features (roads, trail and campgrounds), as shown on Figures 8A and 8B.
- Surface water quality exceeds screening criteria within a quarter-mile buffer of certain cultural features (roads, trails, and campgrounds) as shown on Figures 10A, 10B, and 10D.

### ***Property Ownership***

- Surface water quality exceeds screening criteria in streams that cross private and Forest Service property, as indicated on Figure 12B.
- Pore water samples exceed groundwater screening criteria on some private properties, as shown on Figure 13.

### ***Biological Resources***

- The database indicates that soil exceeds terrestrial ecological screening criteria near specific mine features, as shown on Figures 6A and 6B.
- Sediment quality exceeds screening criteria in specific areas of major streams and the SFSR, as shown on Figures 11A, 11B, and 11D.

- Surface water quality exceeds screening criteria in some of the biological resource AOs in major creeks and the SFSR within the buffer for priority species habitats, as shown in Table 6.
- Sediment quality exceeds screening criteria in some of the AOs in major creeks and the SFSR within the buffer for priority species habitats, as shown in Table 7.

## **ADDITIONAL MINES OR CLAIMS IDENTIFIED**

The following are mine features associated with patented or unpatented claims in the MCMA that have not been investigated for contaminants. These claims were identified from survey plats and other historical sources, and tentative locations were established in the GIS database.

- |                           |                             |
|---------------------------|-----------------------------|
| ■ American Mine           | ■ Fontenoy Mine             |
| ■ Cadet Mine              | ■ Glacier Mine              |
| ■ Galore Mine             | ■ Hopeful Mine              |
| ■ I. X. L. Mine           | ■ IBEX No. 1 Mine           |
| ■ Monte Cristo Mine       | ■ IBEX No. 2 Mine           |
| ■ Portland No. 1 Mine     | ■ Jennie D. Mine            |
| ■ Portland No. 2 Mine     | ■ 74 Mine                   |
| ■ Potomac Silver Mine     | ■ Independence of 1776 Mine |
| ■ Pusher Mine             | ■ Sauk Load (1 & 2) Mine    |
| ■ Congress Mine           | ■ Mackinaw Mine             |
| ■ Emma Moore (1 & 2) Mine |                             |

Other mines or claims were also identified, but tentative locations could not be established for them in the GIS database. These features are potential contaminant sources that should be investigated as part of an RI/FS to determine whether the presence of hazardous substances and/or releases from these features pose any risk to human health or the environment.



## **ERRATA**

The water quality parameters shown in Table 8 may have some exceedance values based on an incorrect use of groundwater parameters from WAS 173-200. During the RI/FS, groundwater quality will also need to be compared to aquatic protection criteria (WAC 173-201A) where groundwater discharges to surface water.

<b>CONTENTS</b>	<u>Page</u>
<b>EXECUTIVE SUMMARY</b>	ES-1
<i>Mine Features</i>	ES-2
<i>Other Cultural Features</i>	ES-3
<i>Property Ownership</i>	ES-3
<i>Biological Resources</i>	ES-3
<b>ADDITIONAL MINES OR CLAIMS IDENTIFIED</b>	ES-4
<b>INTRODUCTION</b>	1
<b>PURPOSE</b>	2
<b>EXISTING DATA SETS</b>	2
<i>Sources</i>	2
<i>Data Quality Issues</i>	3
<b>OVERVIEW OF THE MCMA FOR RI/FS SCOPING</b>	5
<b>SPATIAL ANALYSIS OF THE MCMA</b>	8
<i>Queries and Spatial Analysis</i>	9
<i>Results</i>	11
<b>REFERENCES</b>	17

**TABLES**

1	Additional Mines or Claims Located in GIS (Not Yet Sampled)
2	Reported Mines or Claims Not Located in GIS and Not Sampled
3	Key to Areas of Interest (AOIs) Previously Sampled
4	Soil Human Health Exceedances for Individual Areas of Interest (AOIs)
5	Soil Ecological Exceedances for Individual Areas of Interest (AOIs)
6	Surface Water Exceedances for Individual Areas of Interest (AOIs)
7	Sediment Exceedances for Individual Areas of Interest (AOIs)
8	Pore Water Exceedances for Individual Areas of Interest (AOIs)
9	Comparison of Different Buffer Distances for Soil Human Health Exceedances Around Cultural Features

**FIGURES**

1	Vicinity Map
2	Additional Mining Claims
3	Summary Conceptual Site Model
4	Mine Features Previously Sampled
5	Stream AOI Polygons
6	Soil Human Health Exceedances Near Mine Features
7	Soil Ecological Exceedances Near Mine Features
8	Mine Feature Drainage that Exceeds Surface Water Criteria
9	Soil Human Health Exceedances Near Cultural Features
10	Surface Water Exceedances Near Cultural Features
11	Sediment Exceedances in Major Streams
12	Townsite Parcel Map with Surface Water Exceedances
13	Pore Water Exceedances on Private and Forest Service Property

**APPENDIX A  
HISTORICAL SURVEY PLATS**

# **MONTE CRISTO MINING AREA DRAFT PHASE I SPATIAL ANALYSIS SUMMARY REPORT SNOHOMISH, WASHINGTON**

## **INTRODUCTION**

The Monte Cristo Mining Area (MCMA) is located in Township 29 North, Range 11 East, within the Mt. Baker-Snoqualmie National Forest in Snohomish County, Washington, near the west-center margin of the Henry M. Jackson Wilderness Area (Figure 1).

The MCMA is situated within extremely rugged terrain in the Cascade Mountains, with elevations ranging upward from approximately 2,755 feet above mean sea level (AMSL) at the historic Monte Cristo Townsite. The high-elevation portion of the MCMA is drained by Glacier Creek and Seventysix Creek, and the headwaters of both creeks exceed 6,000 feet AMSL. The confluence of these streams at the Townsite marks the beginning of the South Fork of the Sauk River (SFSR), which flows 6.8 miles northwest to Monte Cristo Lake.

A total of 54 mines and prospects, as well as ore transport, storage, and processing facilities were identified within the Monte Cristo Mining District (District) during a study conducted by the US Bureau of Mines (Johnson et al. 1983). Production records for the District are spotty, but ore production was estimated to be at least 310,000 tons (Johnson et al. 1983). Over 90 percent of the ore processed at the United Companies Concentrator was extracted from the Mystery/Pride Mine complex and Justice/Golden Cord Mine complex, but several other adits and claims contributed as well (Amann and Lambeth 2007).

Standard underground mining practices were used for all mines in the MCMA. Ore from the Glacier Creek/Basin mines was trammed to the Ore Collector for coarse crushing. It was then sent along the Haulage Way to the United Companies Concentrator (Concentrator) where it was milled. An unknown volume of tailings was discharged to the surrounding land and Glacier Creek. Materials containing hazardous substances associated with mining and milling include waste rock, ore, concentrate, tailings; impacted soils and stream sediment; seeps from mine features (e.g., adits and waste rock dumps); groundwater; and surface water.

The MCMA is a popular hiking, mountain climbing, and rock collecting destination for many tourists each year. The MCMA is currently the focus of a non-time critical Removal Action by the USDA Forest Service under CERCLA.

One of the objectives of the CERCLA Removal Action is to reduce the human and ecological exposure to hazardous substances in the mining-related tailings and waste rock, remnant ore, and contaminated soil associated with the mines. The Washington Department of Ecology (Ecology) is planning to conduct a remedial investigation and feasibility study (RI/FS) under the Model Toxics Control Act (MTCA) to assess risk to human health and the environment. The RI/FS may include a Terrestrial Ecological Evaluation and risk assessment to determine the need for additional cleanup after the Forest Service Removal Action. This report was prepared to support scoping for the RI/FS.

## **PURPOSE**

The purpose of this report is to provide a preliminary spatial analysis of the data gathered in previous investigations, and identify data gaps with respect to the requirements of an RI/FS. In addition, this task will provide the framework to incorporate additional data collected as part of the RI/FS. The GIS database will be provided as a separate deliverable for this project.

## **EXISTING DATA SETS**

### ***Sources***

Ecology provided Hart Crowser with a large data set as part of the Statement of Work. These data included reports, lab data from previous investigations, and GIS shapefiles for various features within the MCMA, including:

- 1:24K USGS topographic quad;
- Aerial photo mosaic;
- Privately owned mining claim polygons;
- Snohomish County parcel polygons;
- Various road alignments (current access roads, new access road construction);
- MCMA mine features; and
- CES sampling locations for aquatic, mine drainage, and background stations.

In addition, Ecology provided the Washington Department of Fish and Wildlife (WDFW) priority species habitat geodatabase for the entire SFSR watershed. Data includes point locations for priority species observations, some buffer zones for priority species habitat, and documented fish distribution within the watersheds.

Historical documents from the Washington Department of Natural Resources (WDNR) were copied for all mine features within the MCMA, where available.

These documents were reviewed to identify prospects and mining claims, which may have included mine workings that have not yet been sampled to determine potential as a contaminant source. Hart Crowser also obtained and reviewed additional historic records including claim survey plots from the US Bureau of Land Management.

Another data source was the US Forest Service (Forest Service) Data Library for the Mt. Baker-Snoqualmie National Forest. The Forest Service provides access to spatial data sets for a variety of information. The data sets downloaded for spatial analysis include infrastructure (roads and trails), developed recreational sites (campgrounds), water bodies (lakes), and streams.

### ***Data Quality Issues***

While conducting the spatial analysis, a few problems were encountered with respect to data quality that will need to be addressed as part of the RI/FS. First, there is a discrepancy in the township, section, and range polygons provided by the Forest Service on their mining claim survey layer and the following sources: Snohomish County parcel shapefile, WDFW database, and a separately acquired WDNR data set. It appears to Hart Crowser that the Forest Service survey is accurate, so it is used as the basis of ownership information presented later in this report. However, we recommend that these data sets be further researched and rectified as part of the RI/FS.

This report presents examples of how the spatial database can be used to assess the potential exposure of humans and ecological receptors to hazardous substances in various areas within the MCMA. The analysis is incomplete since some of the methods for comparing the concentrations of constituents of potential concern (COPC) to screening criteria are limited by the available data. For example, there are an insufficient number of background samples for determination of the 90th percentile of the upper confidence limit (90 percent UCL) for most media. A minimum of 10 samples is required for each analyte to run the data through ProUCL (EPA software) for calculating the 90 percent UCL. The only media with enough samples to calculate background was soil, but the large number of non-detects for most analytes resulted in a potentially unreliable 90 percent UCL.

The number of samples analyzed for COPCs was also limited for most areas of interest (AOIs) which prevented statistical analysis to determine exposure point concentrations as required by MTCA. Typically there were not enough samples to determine the 95th percentile of the upper confidence limit (95 percent UCL) for a given AOI. In some cases, there were a sufficient number of samples but apparent data quality problems suggested the 95 percent UCL would not be

reliable. Therefore, Hart Crowser used maximum concentrations of the COPC to compare to ecological and/or human health screening criteria for selected AOIs to illustrate how the spatial database can be used in the RI/FS.

The data quality of sampling locations varied between the existing studies completed by others. Some of the locations were provided as points in a shapefile (e.g., aquatic, background soil, and mine feature drainage samples for the EECA), while other report results were assigned the coordinates listed for the associated mine feature (e.g., mine feature soil samples for the EECA and several of the facility samples for the SI). For those sample locations where the coordinates were not available, or the report provided detailed figures with sample points, Hart Crowser digitized the locations using the aerial photo and USGS topographic map as references. The location “method” is included in the GIS database (as “Coord\_source”) to document how the sample location was determined.

Analytical data quality was reviewed as part of the Draft Monte Cristo Mining Area Remedial Investigation Phase I Data Report, Task 2.4 (Hart Crowser 2011). Several data gaps and data quality issues were also identified when we started to group and analyze the data for this report. For example, a number of the lab reports did not report whether surface water results were reported as dissolved or total recoverable. Also, some of the lab reports documented if the value was wet weight or dry weight, but the majority of reports did not. It may be possible to clarify these data through review of the Sampling and Analysis Plans prepared for the original data collection by others, but that is outside the scope of the present study. Information missing from lab reports will need to be either: verified, or omitted from final analysis in an RI/FS. Data with unknown components were not used for the analysis presented in this report.

Additional data gaps include:

- Very limited seasonal/variable flow data for surface water, sediment, and pore water samples;
- Lack of a sufficient number of background samples for any media;
- Very limited data from Weden Creek Watershed;
- Limited data collected near campgrounds or trails, where human exposure is potentially the greatest concern; and
- Could not verify pore water sampling procedures from the Sampling and Analysis Plan.

## OVERVIEW OF THE MCMA FOR RI/FS SCOPING

The Monte Cristo Mining Area (MCMA) comprises the following watersheds: Seventysix Gulch, Weden Creek, Glacier Creek, and the South Fork Sauk River Watershed. This area has been the subject of intensive mineral resource recovery operations from the 1890s to the 1920s. These activities have included surface and underground mining and extraction of gold, silver, copper, lead, zinc, arsenic, and antimony. Portions of the watersheds display exceedances of human health criteria that originate from historical mining operations (CES 2010). Although mining activity ceased in the late 1920s, water quality problems persist to this day at several locations.

Previous documents reported as many as 21 former active mines located within the MCMA (Ecology 2004). As part of this Spatial Analysis Report, Hart Crowser has researched and reviewed historical documents to identify 78 additional areas that potentially need further investigation and/or sampling and analysis.

### Previous Findings

Thirteen accessible underground workings, ranging from open to partially-caved adits, a partially caved shaft, and a large open stope, were found at eight of the ten mine sites included in the EECA (CES 2010). Waste rock piles associated with the additional mines discovered could be located and sampled. These features present potential contamination sources as well as physical hazards for aquatic life and ecosystems, as well as human visitors.

The MCMA Site Hazard Assessment (SHA), states that there are 21 named former active mine locations in the MCMA with 12 located in the Glacier Creek drainage, six located in the Seventysix Gulch Watershed, and three located above the Seventysix Gulch Watershed (Ecology 2004). Previous investigations have been conducted to determine the potential for a release of contaminants to the environment (Forest Service 2002 and CES 2011). Through research and review of historical documents, Hart Crowser has identified additional mines from those described in the SHA.

The previous data review report addresses nine mines (Pride of the Woods [POW], Pride of the Mountains [POM], Mystery, Rainy, Justice, Golden Cord, Boston-American, Comet, and Sheridan Mines) and associated facilities that have the potential to release hazardous substances into the environment (Hart Crowser 2011). However, this spatial analysis report has identified 20 to 25 additional mines or prospects located within the Glacier Creek, Seventysix Gulch, South Fork Sauk River, and Weden Creek watersheds.



Previous data gap investigations included reconnaissance of ten mines (Boston American, Golden Cord, Justice, Mystery, New Discovery, POM, POW, Rainy, Sheridan, and Sidney Mines) (CES 2010). This should be expanded to include the additional mines identified in this report as it could be useful in the RIFS. These additional locations are discussed in detail in the following sections.

## **New Findings**

Descriptions of each of the mines and processing-related facilities in the MCMA are summarized in the following sections. Figures 2A, 2B and 2C show the MCMA, including mines and processing facilities addressed in the EECA (CES 2010), the APAs (Forest Service 2003 and 2006), the DGI (CES 2011), and the aquatic and background soil sample locations. For perspective, these figures also show the MCMA watershed that are tributary to the SFSR (including Glacier Creek, Seventysix Gulch and Weden Creek) along with buffer zones along the major streams (100 feet), campgrounds (1/4 mile), and trails and roads (1/4 mile); measurements represent aerial distances.

Research for this spatial analysis report process has produced a list of additional mines that have not been previously identified or sampled. Table 1 provides a summary of additional mines or claims where sufficient information was available to locate mine features in the GIS database. Maps of the sites have been digitized into the GIS database.

Table 2 provides a summary of additional mines or claims that were identified but where there was not sufficient information to locate specific features in the GIS database.

Tables 1 and 2 were prepared using information from the Bureau of Land Management (BLM 1999) historic survey claims for select mines and claims in the MCMA obtained from the BLM's online database. Additional references include historical documents, reports, and figures provided from DNR in Olympia, *Discovering Washington's Historic Mines* by Philip Woodhouse (1997), and the Monte Cristo Mine Preservation Association. Additional patented claims were determined using a map by Jack Sauers (1960) and communications with Fritz Wolff (DNR).

Appendix A provides the historic survey plats located for the mines and claims listed in Table 1 within the watersheds of interest (BLM 1999). Survey plat claims for the Mackinaw Mining Area (Weden Creek Watershed) were not available. However, the War Minerals Report for Mackinaw Metal Mines provides a layout of the claims for the Mackinaw Mining Area (DOI 1944). The area consists of 16 claims (DMM 1941). Twelve of the claims are shown on

Figure A-21. Based on descriptions of the tunnels within the Mackinaw Mine, three of the Mackinaw Mine tunnels have been approximated in GIS. Figure A-21 also shows the location of two adits within the Mackinaw Tunnel No. 2.

Additional plats are available from BLM for most claims in the MCMA. Appendix A provides only the pertinent claims and mines identified within Figures 2A, 2B and 2C. The additional survey plats can be found at the Bureau of Land Management's web site for Land Status and Cadastral Survey Records (BLM 2011).

Based on review of these old survey claims, historical documents and reports from DNR, and other outside publications (including Woodhouse [1997] and the Monte Cristo Preservation Association [MCPA 2011]), significant locations have been identified in GIS. These approximate locations are shown on Figures 2A through 2C.

Information for metal mines in Snohomish County and specifically within MCMA, was also obtained from the Washington Division of Geology and Earth Sciences (DNR) Open file Report 90-18 (DNR 1990). This information included mine workings details and has been incorporated into Table 1.

## **Glacier Creek Watershed**

Figures 2A and 2B show the newly identified mines and claims as well as the mine previously sampled in the Glacier Creek and Seventysix Gulch Watersheds. These figures also show cultural resource AOIs that include the buffer areas located within 100 feet of the major streams and a quarter mile around campgrounds trails and roads.

Mines identified within these buffers include the Pusher, Portland No. 1 & 2, Potomac Silver, and I.X.L. While samples have previously been collected near the Potomac Silver Mine and the I.X.L. Dump of Tunnel (sic) area, additional sampling should be considered because of their proximity to Glacier Creek. Potomac Silver Mine is just outside the 100-foot stream buffer and I.X.L. Mine is within the stream buffer. There are also a number of other mines or claims within these watersheds, but outside the buffers indicated.

The Galore Mine appears to be right at the edge of the Glacier Creek Watershed boundary in the GIS. However, the Galore Mine survey plat indicates this mine is within the Glacier Creek Watershed. The Galore Mine location indicates the difficulty of assigning specific GIS locations to information from a range of data sources that will need to be further addressed in the RI/FS.

## **Seventysix Gulch Watershed**

As seen on Figures 2A and 2B, mines identified within the Seventysix Gulch Watershed include Fontenoy, Peabody, Jennie D, Emma Moore (No. 1 & 2), 74, Seventy-Six, Hopeful, Comet, Monte Cristo, and Monte Cristo – Ouida Tunnel Mines. The Fontenoy, Peabody, and Jennie D Mines are all within trail and road buffers. The Emma Moore (No. 1 & 2) and 74 Mines are outside these buffers and located along streams tributary to Seventysix Creek.

## **South Fork Sauk River Watershed**

Figure 2B shows Sauk Lodes (upper and lower) within the designated campground buffer and road and trail buffer zones.

## **Weden Creek Watershed**

As shown on Figure 2C and Figure A-21, the Mackinaw mining area incorporates a large area located within the selected trail and road buffer zones.

## **Patented vs. Unpatented Mines and Claims**

As shown on Figures 2A, 2B and 2C, mines are distinguished from patented mine claims and unpatented/unknown claims, where possible. A patented mining claim is one for which the Federal Government has passed its title to the claimant, making it private land. This differs from an unpatented claim that conveys only the mineral rights to the miner, and no ownership is conveyed (Woodhouse 1997). Evidence of exploitable mineral reserves must be demonstrated in order to patent a claim, whereas the mineral value of an unpatented claim is more speculative. Patented claims are likely to have remnants of former mining activity such as adits or other excavations, waste rock piles, and possibly even stockpiled ore. Patented claims are, therefore, more likely to have sources of hazardous substances than unpatented claims; although, mine working that are on unpatented or unknown claims cannot be ruled out as sources of hazardous substances without site observations.

## **SPATIAL ANALYSIS OF THE MCMA**

GIS provides a means for bringing spatial and informational data together to simplify prioritization of the remedial investigation process.

Ecology tasked Hart Crowser with designing a relational geodatabase to store and query spatial and analytical data from the MCMA to evaluate areas of interest (AOIs) where hazardous substances may pose a threat to human health

or the environment. This geodatabase was populated with the existing data (both spatial and analytical) mentioned in the Existing Data Sets section. It allows the user to query all analytical results for those sample locations that fall within a particular AOI. In addition, the geodatabase enables us to graphically display the various levels of exceedance for a particular media in an AOI.

In the example figures presented in this report, the exceedances are shown graphically in a grid box for selected COPCs (antimony, arsenic, barium, chromium, copper, cadmium, lead, mercury, selenium, silver, and zinc), for the AOI where the exceedance occurred. Because the values represent the maximum value for a particular analyte within the AOI, the grid box location is at the center of the AOI and not at any specific sample location.

To illustrate the exposure pathways for the various media, a Summary Conceptual Site Model (CSM; Figure 3) has been created for the MCMA. The release mechanisms and impacted media are outlined for each contaminant source. In addition, the route of exposure and resulting risk are evaluated for each “group” that may encounter impacted media. This CSM is preliminary and may change as a result of more information gathered during the RI process.

## ***Queries and Spatial Analysis***

Spatial analysis for this report involved creating a series of AOI polygons for the various feature types (mine features, cultural, ownership, and biological/environmental). These polygons were spatially joined with the sample locations (along with the analytical data) that lie within them to produce a complete list of all analytical data for that particular AOI. A key to the AOI ID numbers and their descriptions can be found in Table 3.

The majority of AOIs only included a small number of samples (N), so a 95 percent UCL was not calculated; instead, the maximum COPC concentrations value was compared to screening criteria. In addition to reporting maximum values, the minimum, average, standard deviation and N are reported for each AOI in Tables 4 through 8. A few of the AOIs did have sufficient samples to run a 95 percent UCL but we did not use these values in the sample queries for this report because of other data quality concerns mentioned in the Data Quality Issues section. The methods for determining the size and shape of the different categories of AOIs are described below:

### **Mine Features and Facilities**

Sample locations for drainage water and soil (including soil, tailings and waste rock, and excluding background) were all located on, in, or near a mine feature

(Figure 4). For this analysis, any samples taken around a mine feature were grouped into the feature AOI (with AOI ID Nos. 1001-1999). Some of the mine features have sampling locations at multiple features (i.e., multiple adits, waste rock piles), but the existing sample location data are insufficient to examine those secondary features individually. Future analyses may benefit from a larger N and better location data at the secondary features to identify sources of contamination.

## **Streams**

The stream polyline data incorporated into the geodatabase is from the Forest Service Data Library (March 6, 2011). An arbitrary buffer zone of 100 feet was created on each side of the main stem of Glacier Creek, Seventysix Creek, Weden Creek, and the SFSR for preliminary evaluation purposes. In order to determine hotspots within that 100-foot buffer zone, the AOI stream polygon was split up to correspond with individual mine features that may contribute surface runoff into the streams. For example, the upper portion of Glacier Creek has several mine features in close proximity (Figure 5). The AOI polygons are placed such that a sample taken downstream of one feature (i.e., Pride of the Mountains Mine) and upstream of the next feature (i.e., New Discovery Mine) will be analyzed separately from a sample taken downstream of that next feature. As shown in the figure, surface water samples are grouped into AOI ID Nos. 2001 and 2002. Ultimately, this allows sources of contamination to be attributed to particular mine features.

## **Cultural Features**

Cultural feature includes those areas that people frequent—trails, roads, and campgrounds. The trails and roads data are from the Forest Service Data Library (March 6, 2011) infrastructure set and the campground locations were from both the Forest Service Data Library (March 6, 2011)-developed recreational areas set and additional locations digitized from the USGS topographic quad. Because of the likelihood of people wandering from established campgrounds and trails, an arbitrary quarter-mile buffer zone was drawn around each of those features for preliminary evaluation purposes. For figures, the cultural feature AOIs (with AOI ID Nos. 3001-4000) and stream AOIs are drawn on the same map, but the ID numbers can be used to differentiate the exceedance results.

## **Property Ownership**

Property owner AOIs were evaluated from the mineral survey claims provided by the Forest Service (2011). There were no buffers set up, so each polygon represents the boundary of all the claims either in private ownership or located

on National Forest Land. For this analysis, the individual properties to evaluate potential contaminant sources and provide this information to the respective property owners as part of the RI/FS process.

## **Biological Resources**

Biological feature refers to a designated area around a priority species sighting or known habitat. Data for this analysis are exclusively from the WDFW priority species habitat database. Priority species habitat is required to be displayed only at the Section scale, but there is a discrepancy in the available Section data; therefore, exceedances for biological AOIs will be provided in Table 4 through Table 8 but not illustrated in a figure. Priority species include the ESA threatened spotted owl (with a buffer zone of 1.8 miles) and ESA threatened marbled murrelet, as well as the state-monitored Cascades frog and tailed frog. Documented harlequin duck breeding habitat was also included for this analysis. A large number of marbled murrelet sightings are in close proximity to each other with a large overlap in the buffer zone polygons. For reporting, a representative AOI that covers an area with sample locations was selected instead of reporting identical results for redundant AOIs. A number of anadromous and resident fish species (bull trout, resident cutthroat trout, pink salmon, and steelhead) are documented throughout the MCMA and are accounted for in the stream AOI analysis.

## **Results**

The AOI polygons were spatially joined with the sample locations and associated analytical data to identify hotspots that need to be investigated further. Below are the results from comparing the maximum values for each analyte within a given AOI to the screening criteria for each media. Figures displaying constituent exceedance data in this report present antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc as the COPCs. Results for all other constituents can be found in the listed tables.

- Soil samples collected near facilities and mine features have very high metals concentrations, exceeding both terrestrial ecological and human health screening criteria for the majority of COPCs; not many soil samples were collected at increasing distances from potential contaminant sources to allow delineation of contamination;
- All mine feature drainage water exceeded surface water screening criteria for arsenic;

- Surface water samples exceeded screening criteria for arsenic and mercury in both background (upper tributaries) samples and samples downstream of mine features, although concentrations were higher immediately downstream of features;
- Sediment samples were co-located with surface water samples. Nearly all samples exceeded screening criteria for antimony, arsenic, cadmium, chromium, mercury and zinc, with background samples having similar concentrations as samples located downstream of mine features; and
- Pore water samples were also co-located with surface water samples. Antimony concentrations exceeded groundwater screening criteria and were approximately the same throughout the SFSR watershed. Arsenic also exceeded groundwater screening criteria; however, concentrations increased at locations downstream, with an unusually high concentration (nearly 200 times the next highest) in Monte Cristo Lake.

## **Mine Features and Facilities**

### ***Soil***

Soil samples were compared to screening criteria for both human health (Table 4) and terrestrial ecological (Table 5) standards. Soil samples, which include waste rock, tailings, and soil, were collected at 15 mine features.

- The maximum COPC value exceeded human health screening criteria for antimony, arsenic, cadmium, and silver at nearly all of those locations, while copper, iron, lead, and mercury exceeded screening criteria for more than half of the features (Table 4, Figures 6A and 6B).
- For ecological receptors, the maximum value exceeded screening criteria for antimony, arsenic, copper, lead, mercury, selenium, and zinc (Table 5, Figures 7A and 7B). In addition, aluminum, cadmium, iron, and manganese exceeded screening criteria for nearly all locations in which they were reported.

### ***Surface Water***

Surface water samples include both samples taken in the streams (SW) and drainage water (DW) from mine features (e.g., adits and waste rock piles). Drainage from the mine features only included samples taken within a short distance of the feature. The DW sample results were compared to surface water screening criteria because the mine drainage features may be sources of

hazardous substances released into surface water. However, there are no SW (stream) samples associated with any specific mine feature AOI. Drainage water was collected at 8 of the 18 mine features and the maximum value exceeded screening criteria for arsenic, iron, and manganese at the majority of the mine features (Table 6, Figure 8A and 8B).

### ***Sediment***

Sediment samples were often co-located with stream surface water samples and not associated with specific mine features. However, Amann and Lambeth (2007) collected five closely-located sediment samples in Glacier Creek immediately downstream of the Ore Collector (1004) and the Concentrator (1005) during the Site Inspection (SI). The maximum values for both of those mine feature AOIs exceeded screening criteria for antimony, arsenic, barium, cadmium, chromium, and zinc (Table 7).

### ***Pore Water***

Pore water samples in this report are groundwater samples collected adjacent to mine drainage features or within the hyporheic zone of streams at the site. No pore water samples were previously collected near mine drainage feature AOIs.

### **Streams**

#### ***Soil***

Soil samples, which include waste rock, tailings, and soil, were previously collected within five of the 21 stream AOIs primarily in the Glacier Creek Watershed and Seventysix Gulch Watershed. The maximum value exceeded human health screening criteria for antimony, arsenic, cadmium, lead, and silver (Table 4, Figures 9A and 9B). Results also show copper and mercury human health exceedances for several of the stream AOIs.

For terrestrial ecological receptors, the maximum value exceeded screening criteria for antimony, arsenic, copper, lead, mercury, selenium, and zinc at nearly all stream AOIs where soil sample were collected, while aluminum and iron exceeded screening criteria for more than half of the features (Table 5).

#### ***Surface Water***

Surface water samples were collected in nine of the 21 stream AOIs. The maximum value exceeded screening criteria for arsenic and thallium in nearly all AOIs, and mercury for several (Table 6, Figure 10A, 10B and 10D).



## ***Sediment***

Sediment samples were collected within 10 of the 21 stream AOIs. The maximum values exceeded screening criteria for antimony, arsenic, cadmium, chromium, mercury, and zinc for almost all AOIs (Table 7, Figures 11A, 11B and 11D).

## ***Pore Water***

Pore water samples were collected within the hyporheic zone at nine of the 21 stream AOIs. The maximum values exceeded screening criteria for antimony, arsenic and thallium for almost all AOIs (Table 8).

## **Cultural Features**

To determine the appropriate buffer for cultural features (e.g., trails, roads, and campgrounds), we ran a query for a 100-foot, 500-foot, and quarter-mile buffer around those features. As an example, the query identified the soil human health exceedances for arsenic at all of the sample locations within the three different buffer distances. The results from each buffer are presented in Table 9; the query could be run for all media, but only a subset of the data has been included here. For illustrative purposes Table 4 through Table 8, as well as Figure 10 and Figure 11, includes the results from the quarter-mile buffer overlay.

## ***Soil***

Soil samples, which include waste rock, tailings, and soil, were collected at or near four of the 13 cultural feature AOIs identified. The maximum value exceeded human health screening criteria for aluminum, antimony, arsenic, cadmium, copper, lead, mercury, silver, and zinc for nearly all cultural features (Table 4, Figures 9A and 9B). The exceedances were primarily from soil and tailings samples, while a majority of the waste rock samples within cultural AOIs did not exceed screening criteria for those constituents.

For terrestrial ecological receptors, the maximum value exceeded screening criteria for aluminum, antimony, arsenic, chromium, copper, lead, manganese, mercury, selenium and zinc, but similar to the human health comparison above, waste rock samples typically did not exceed screening criteria except for arsenic, copper, mercury and selenium (Table 5).

### ***Surface Water***

Surface water samples were collected in or near nine of the 13 cultural feature AOIs. Similar to the stream results described above, the maximum value exceeded screening criteria for arsenic, mercury, and thallium (Table 6, Figures 10A, 10B and 10D).

### ***Sediment***

Sediment samples were collected within nine of the 13 cultural feature AOIs. The maximum values exceeded screening criteria for aluminum, antimony, arsenic, cadmium, chromium, lead, mercury, and zinc for almost all cultural AOIs (Table 7, Figures 11A, 11B and 11D).

### ***Pore Water***

Pore water samples were collected within eight of the 13 cultural feature AOIs. The maximum values exceeded screening criteria for antimony, arsenic and thallium for almost all AOIs (Table 8).

## **Property Ownership**

### ***Soil***

Soil samples, which include waste rock, tailings, and soil, were collected on both private and Forest Service property. Maximum values exceeded human health screening criteria for antimony, arsenic, copper, iron, lead, mercury, and silver as well as a few others (Table 4). For terrestrial ecological receptors, the maximum COPC values exceeded screening criteria for aluminum, antimony, arsenic, copper, lead, mercury, silver, and zinc in addition to several others (Table 5).

### ***Surface Water***

Surface water samples were collected on both private and Forest Service property. The maximum value exceeded screening criteria for arsenic, mercury, and thallium (Table 6, Figure 12).

### ***Sediment***

Sediment samples were collected on both private and Forest Service property. The maximum values for both of those AOIs exceeded screening criteria for antimony, arsenic, cadmium, chromium, mercury, and zinc (Table 7).

### ***Pore Water***

Pore water samples were collected on both private and Forest Service property. The maximum values exceeded screening criteria for antimony, arsenic, and thallium for both AOIs (Table 8, Figure 13).

## **Biological Resources**

### ***Soil***

Soil samples, which include waste rock, tailings, and soil, were collected within one of the 10 biological resource AOIs identified. For terrestrial ecological receptors, the maximum value for soil and tailings exceeded screening criteria for aluminum, antimony, arsenic, copper, lead, mercury, selenium, silver, and zinc in addition to several others, and the waste rock sample exceeded screening criteria for arsenic, copper, mercury, and selenium (Table 5).

### ***Surface Water***

Surface water samples were previously collected in all 10 of the biological resource AOIs. Similar to the stream and cultural results, the maximum value exceeded screening criteria for arsenic for all AOIs, and mercury and thallium for only a few AOIs (Table 6).

### ***Sediment***

Sediment samples were previously collected within all 10 of the biological resource AOIs. The maximum values exceeded screening criteria for antimony, arsenic, cadmium, chromium, lead, mercury, and zinc for almost all AOIs (Table 7).

### ***Pore Water***

Pore water samples were collected within nine of the 10 biological resource AOIs. The maximum values exceeded screening criteria for arsenic in all biological resource AOIs, as well as antimony and thallium for several of the AOIs (Table 8).

## **RECOMMENDATIONS FOR AN RI/FS**

This report provides a basis for evaluating data gaps and areas of concern with respect to the requirements of an RI/FS. Based on the findings described above, the following are recommendations for proceeding with an RI/FS:

- A number of data quality issues were outlined in the Existing Data Sets section. These issues should be resolved before data are used for a risk assessment.
- A sufficient number of background samples for each media (10 or more) should be collected within each watershed to provide a basin-specific background value.
- A sufficient number of surface water samples should be analyzed for both total and dissolved metals to distinguish between risks to human health and aquatic life protection.

A number of mines, prospects, and patented or unpatented (or unknown) mining claims were identified that have not been previously characterized. These features may have mine workings with the potential to act as a contaminant source. Those sites should be characterized to evaluate the risk to human health and the environment. Although many of the mines' approximate locations have been identified in GIS, the exact location of many other features, and the nature and extent of contamination is unknown. We recommend that the RI identify these locations by GPS and provide guidance for sample collection at these locations. This effort may need to be expanded as more information is gathered.

Hart Crowser appreciates the opportunity to present these recommendations. Please call if you have any questions.

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Table 1 - Additional Mines or Claims Located in GIS (Not Yet Sampled)

Watershed	Mine	Appendix A Figure No.	Section Location (T29, R11E)	Approx. Elev. (ft)	Area (acres)	Dates Surveyed	Surveyor	Survey (MS) No.	Mine Workings	Patented vs. Unpatented	Type of Opening (shaft, adit, pit, trench, other)	Reference Info	Additional Notes/Details	
Glacier Creek	American	Figure A2	S27/S22	-	18.9	9/20 - 9/24/1891	Richard H. Stretch	152	NA	Patented	Three adits (15', 16', 34' long).	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from Bureau of Mines (BM) Summary Report (MLA 75-83, 1983).	
	Cadet	Figure A3	S23	-	17.84	8/11 - 8/28/1892	Richard H. Stretch	259	-	Patented (26189)	Tunnel, 8 Open Cuts	BLM Survey Plat	Tunnel and open cuts (8) identified by survey plat. Approximate tunnel location shown on figure. Unknown mine workings.	
	Galore	Figure A4	S23	-	23.7	7/15 - 8/20/1893	Alex M. Reynolds	261	-	Patented	Open Cuts (2), Discovery Shaft, Tunnels (2)	BLM Survey Plat	Discovery shaft, tunnels (2), and open cuts (2) identified by survey plat. Approximate tunnel location shown on figure. Unknown mine workings.	
	I.X.L. Mine	Figure A5	S23	-	14.75	9/14 - 9/19/1891	Richard H. Stretch	157	Au, Ag	Patented	Dump of Tunnel, One 24' long adit.	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
	Monte Cristo	Figure A6	S27/S26	-	21.28	7/17 - 7/20/1892	Alex M. Reynolds	257	NA	Patented (27341)	Two tunnels, One 43' long adit.	BLM Survey Plat	Tunnels (2) and 43' long adit. Tunnels shown on figure (Includes Ouida Tunnel). Adit location and mine workings unknown. Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
	Portland No. 1	Figure A7	S22	-	-	7/15 - 8/2/1921	Frank H. Copp	1165	Au, Ag, Cu, Pb, Zn	-	-	Two adits (51' and 65'). Disc. Tunnel, Tunnel	MLA, BLM Survey Plat	Discovery tunnel, tunnel, and two adits (51' and 65') identified by survey plat. Tunnel shown on figure. Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).
	Portland No. 2	Figure A7	S23	-	-	7/15 - 8/2/1921	Frank H. Copp	1165	Au, Ag, Cu, Pb, Zn	-	-	Two adits (8' and 58'). Disc. Tunnel, Tunnel	MLA, BLM Survey Plat	Discovery tunnel, tunnel, and two adits (8' and 58') identified by survey plat. Tunnel shown on figure. Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).
	Potomac Silver	Figure A8	S22	-	5.6	8/16/1892	Alex M. Reynolds	301	Au, Ag, Cu, Pb, Zn	Patented	-	One 32' adit and one trench/cut.	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).
	Pusher	Figure A9	S22	-	-	7/15 - 8/2/1921	Frank H. Copp	1167	-	-	-	Two tunnels and a Discovery Tunnel	BLM Survey Plat	Discovery tunnel and two additional tunnels identified by survey plat and shown on figure. Unknown mine workings.
Seventysix Gulch	Congress	Figure A10	S27/S28	-	20.65	8/24 - 9/8/1891	Richard H. Stretch	161	Au, Ag, Cu, Pb, Zn, As, Sb	Patented	One 67' adit.	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
	Emma Moore No. 1	Figure A11	S27	4050	10.325	8/25 - 9/8/1891	Richard H. Stretch	171	-	Patented (22389)	-	BLM Survey Plat	Two tunnels shown on figure. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).	
	Emma Moore No. 2	Figure A11	S27	4000	10.325	8/25 - 9/8/1891	Richard H. Stretch	171	Au, Ag, Cu, Pb, Zn, As	Patented (22389)	One 41' adit.	BLM Survey Plat	One adit (41') in unknown location. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
	Fontenoy	Figure A12	S21	-	~10.11	12/30/1903 - 11/23/1904	F.H. Whitworth	755	-	Patented	Stripping and five tunnels	BLM Survey Plat	Surface stripping and tunnels (5) identified by survey plat. Area estimated on figure. Unknown mine workings. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).	
	Glacier	Figure A13	S27	-	18.76	8/10 - 8/30/1892	Richard H. Stretch	262	NA	Patented (24828)	Tunnel, Open Cut. One 57' long adit.	BLM Survey Plat	Tunnel, open cut, and adit (57'). Adit location is unknown. Tunnel shown on figure. Unknown mine workings. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
	Hopeful	Figure A14	S27	5050	-	8/22/1892	-	-	-	Patented (#31180)	-	Geology 10/18/96, BLM Survey Plat	Tunnel identified by survey plat and shown on figure. Unknown mine workings. Patent # from Fax to James Scott from Geology dated 10/18/96	
	IBEX No. 1	Figure A15	S27	-	20.14	8/27 - 9/3/1891	Richard H. Stretch	158	NA	Patented (#22657)	One 86' long adit.	Geology 10/18/96, BLM Survey Plat	One adit (86') in unknown location. Tunnel identified by survey plat and shown on figure. Unknown mine workings. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Patent Number from Fax to James Scott from Geology dated 10/18/96 (Index #1) (sic).	
	IBEX No. 2	Figure A16	S27	-	20.65	8/24 - 8/28/1891	Richard H. Stretch	159	-	Patented (23945)	-	BLM Survey Plat	No tunnels or adits identified in survey plat. Unknown mine workings. Mine not located on figure. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).	
	Jennie D	Figure A17	S28	-	12.91	9/8 - 9/11/1891	C.P. McKenzie	129	-	Patented (22513)	Open cut, tunnel	BLM Survey Plat	Discovery tunnel and open cut identified in survey plat. Tunnel shown on figure. Unknown mine workings.	
	74	Figure A18	S27/S28	-	16	8/24 - 8/8/1891	Richard H. Stretch	170	Au, Ag, Cu, Pb, Zn, As, Sb	Patented	One 118' adit.	BLM Survey Plat	Tunnel identified by survey plat and shown on figure. One adit (118') location unknown. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff). Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).	
Independence of 1776	Figure A19	S27	3900	17.53	8/27 - 9/3/1891	Richard H. Stretch	175	Au, Ag, Zn, possibly Cu	Patented	Three adits (19', 151', 681'). 681' long adit is partially caved.	J. Sauers 8/8/71, BLM Survey Plat	Tunnel identified by survey plat and shown on figure. Unknown mine workings. Patent based on Jack Sauers letter dated 8/8/71. Workings and Opening Types from BM Summary Report (MLA 75-83, 1983).		
South Fork Sauk River	Sauk Lode	Figure A20	S21	-	20.66	4/25 - 4/27/1893	Richard H. Stretch	322	-	Patented (24379)	Upper and Lower tunnels	BLM Survey Plat	Upper and lower tunnels identified by survey plat and shown on figure. Unknown mine workings.	
Weden Creek	Mackinaw Mining Area (including the three tunnels listed below)	Figure A21	S19	~ 2400 - 3000	-	1900	-	-	-	-	Tunnels, Adits	Map provided in War Minerals Report 156, Jan. 1944. Map shows 12 of 16 claims.	Consists of 16 claims: Osceola, Lenox, Lorna, Donald, Banner, Banner Extension, Albion, Blue Bell, St. Lawrence, and Mackinaw 1 to 7 (Report on Mackinaw Group of Claims, 5/26/41). Tunnel 1 is 3300 ft south of the South Fork of the Sauk River. Tunnel 2 is 500 feet above No. 1, about 2000 feet south of No. 1. No. 3 is 75 feet above No. 2. Metal Mines of Washing Preliminary Report (Derkey et.al, Nov. 1990) provides Lat = 47° 58' 53.15" N, Long = 121° 26' 31.28" W	
	Mackinaw - Tunnel No. 1	Figure A21	S19	2670	-	-	-	-	-	-	Tunnel	Report of Mackinaw Mine (Daily, 1941)	Three tunnels identified from mining reports (WMR 1944) and shown on figure. Two adits (one partially caved) are shown in cross section in Figure A21. Unknown mine workings. Tunnel #1 should be near the NE corner of Mackinaw #1. Tunnel #1 is on the NW corner of the Banner claim. Elevation 2670'.	
	Mackinaw - Tunnel No. 2	Figure A21	S19	2910	-	-	-	-	-	-	Two adits with known locations	WMR 156 and Daily (1941)	Tunnel #2 elevation is 2910' is on the end line between Mackinaw #1 and #2 claims. This opening is inaccessible and abandoned.	
	Mackinaw - Tunnel No. 3	Figure A21	S19	3040	-	-	-	-	-	-	Tunnel	Report of Mackinaw Mine (Daily, 1941)	Tunnel #3 is at elevation 3040'.	



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Table 2 - Additional Reported Mines or Claims Not Located in GIS, and Not Sampled

Mine	Section Location (T29, R11E)	Approx. Elev. (ft)	Area (acres)	Dates Surveyed	Surveyor	Survey (MS) No.	Mine Workings	Patented vs. Unpatented	Type of Opening (shaft, adit, pit, trench, other)	Reference Info	Additional Notes/Details
75 (1 & 2)	S27	-	19.7	8/25 - 8/31/1891	Richard H. Stretch	164	-	Patented (23310)	-	BLM Survey Plat	
Baltic	S22	-	11.5	9/20 - 9/21/1892	Richard H. Stretch	167	-	Patented (23183)	-	BLM Survey Plat	
Ben Butler (Silver Creek)	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	This may be in a different mining district
Blake	S21	-	20	8/25 - 8/28/1892	Alex M. Reynolds	295	-	Patented (25593)	-	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Cass Lode	S23	-	-	7/15 - 8/2/1921	Frank H. Copp	1165	-	-	Disc. Tunnel	BLM Survey Plat	
Clara Mine	S22	-	-	-	-	-	-	Patented*	-	Letter from M. Hunting to W. Megalsson (11/4/64).	*Patented based on map by Jack Sauers, 1980. Blue claims are patented according to Fritz at DNR.
Comet	S27	5400	-	7/20/1891	-	-	Au, Ag, Pb, Zn, As	Patented*	Two adits contain 1038' of drifts and cross cuts. Both partially caved.	MCPA, Woodhouse 1997	Workings and Opening Types from BM Summary Report (MLA 75-83, 1983). Located 2700 feet above the town site at 5400 feet above sea level (Woodhouse 1997, page 19). *Patented based on map by Jack Sauers, 1980. Blue claims are patented according to Fritz at DNR.
Condor Placer Claim	S21	-	16.21	6/20 - 7/1/1892	Richard H. Stretch	250	-	Patented (25285)	-	BLM Survey Plat	
Copper King Prospect	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	
Del Campo Mine	-	-	-	~ 1910	-	-	-	-	-	Woodhouse (1997)	Page 43. The lower claims are a mile farther up on Weden Creek from the NW Consolidated Mining Properties.
Eclipse Prospect	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	
Eighty-Nine	S23	-	20.63	9/15 - 9/27/1891	Richard H. Stretch	169	-	Patented (22570)	Open Cut	BLM Survey Plat	
Emerson Placer Claim	S17	-	10.03	7/9 - 7/11/1892	Richard H. Stretch	266	-	Patented (25257)	-	BLM Survey Plat	
Fortunate Mine (Monte Cristo District)	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	
Hannah Prospect	-	-	-	6/19/1890	-	-	-	-	-	Woodhouse (1997)	
Hierosolyma Lode	S21	-	~10.11	11/23/1904	F.H. Whitworth	755	-	Patented (#43906)	-	BLM Survey Plat	From Fax to James Scott from Geology dated 10/18/96. Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Hunter Prospect (Monte Cristo District)	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	
Jones Placer Claim	S17	-	20.07	6/22 - 7/3/1892	Richard H. Stretch	252	-	Patented (25285)	-	BLM Survey Plat	
Junction No. 1	S21	-	20.15	9/28 - 10/2/1891	Richard H. Stretch	176	-	Patented (21898)	-	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Junction No. 2	S21	-	17.93	9/28 - 10/2/1891	Richard H. Stretch	177	-	Patented (22129)	-	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Junction No. 3	S21	-	17.9	9/28 - 10/2/1891	Richard H. Stretch	178	-	Patented (22126)	-	BLM Survey Plat	
Junction Placer Claim	S17/18/20/21	-	20.5	6/20 - 6/29/1892	Richard H. Stretch	247	-	Patented (25285)	-	BLM Survey Plat	
Lockwood Placer Claim	S16/17	-	9.75	7/10 - 7/16/1892	Richard H. Stretch	272	-	Patented (25257)	-	BLM Survey Plat	
Meridian	S22/S23	-	-	7/15 - 8/2/1921	Frank H. Copp	1167	-	-	Disc. Tunnel	BLM Survey Plat	
Northwest Consolidated Mine	-	-	-	-	-	-	-	-	-	Woodhouse (1997)	Located up Weden Creek on the western side, almost directly across from the Mackinaw Mine (page 43).
O & B - Lower	S21	4400	-	8/11/1891	-	-	-	-	Tunnel	MCPA	
O & B - Upper	S21	4600	-	8/11/1891	-	-	-	13 Unpatented Lode Claims	Tunnel - caved	Reiser, 11/27/40	Haulage tunnel length = 3000 feet. Number of levels = 4. Workings total length = 3600 feet (Mine Power Load Survey (A.H. Reiser, 11/27/40)). Metal Mines of Washing Preliminary Report (Derkey et.al, Nov. 1990) provides Lat = 47° 59' 3.02" N, Long = 121° 24' 9.45" W. The mine is located far up on the side of Toad Mountain above the Monte Cristo town site. The mine area is now caved and resembles a trench cut through the rock (Woodhouse 1997, page 17).
Orient Placer Claim	S16	-	15.3	7/10 - 7/15/1892	Richard H. Stretch	270	-	Patented (25257)	-	BLM Survey Plat	
Pavonia Placer Claim	S16	-	13.88	7/10 - 7/15/1892	Richard H. Stretch	271	-	Patented (25257)	-	BLM Survey Plat	

Table 2 - Additional Reported Mines or Claims Not Located in GIS, and Not Sampled

Mine	Section Location (T29, R11E)	Approx. Elev. (ft)	Area (acres)	Dates Surveyed	Surveyor	Survey (MS) No.	Mine Workings	Patented vs. Unpatented	Type of Opening (shaft, adit, pit, trench, other)	Reference Info	Additional Notes/Details
Peabody	S27	3400	-	-	-	-	-	-	-	MCPA	
Pennsylvania Placer Claim	S16/17	-	15.59	7/10 - 7/14/1892	Richard H. Stretch	269	-	Patented (25257)	-	BLM Survey Plat	
Philo	S23	-	-	7/15 - 8/2/1921	Frank H. Copp	1167	-	-	Discovery Tunnel	BLM Survey Plat	
Phoenix	S22	-	20.15	9/6 - 9/7/1891	Richard H. Stretch	154	-	Patented (22306)	-	BLM Survey Plat	
Prairie Placer Claim	S17	-	18.76	6/21 - 6/30/1892	Richard H. Stretch	248	-	Patented (25285)	-	BLM Survey Plat	
Ranger	S27	-	23.03	8/13 - 8/18/1892	Richard H. Stretch	263	-	Patented (24378)	Open Cut	BLM Survey Plat	
Rattler Claim	S21	-	12.32	6/720 - 6/28/1892	Richard H. Stretch	245	-	Patented (25285)	-	BLM Survey Plat	
Remnant Placer Claim	S21	-	16	8/29 - 9/1/1892	Alex M. Reynolds	296	-	Patented (24886)	-	BLM Survey Plat	
Seattle Placer Claim	S17	-	14.36	6/22 - 7/2/1892	Richard H. Stretch	251	-	Patented (25285)	-	BLM Survey Plat	
Senate	S27	-	20.29	8/12 - 8/15/1892	Richard H. Stretch	260	-	Patented (24827)	-	BLM Survey Plat	
Sentinel	S22	-	25.3	8/12 - 8/18/1892	Richard H. Stretch	264	-	Patented (24442)	-	BLM Survey Plat	
Seventy Seven	S27	-	-	-	-	-	-	Patented	-	Fritz Wolff, DNR	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Side Line	S23/S26	-	19.37	9/14 - 9/17/1891	Richard H. Stretch	153	-	Patented (23943)	-	BLM Survey Plat	
Silver Lake Prospect	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	This may be in a different mining district
Summit Lode Claim	S27/S28	-	20.65	8/22 - 8/25/1892	Alex M. Reynolds	294	-	Patented	-	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Sylvan Placer Claim	S17/18/21	-	19.62	7/9 - 7/11/1892	Richard H. Stretch	265	-	Patented (25257)	-	BLM Survey Plat	
Thomas Moore	S21	-	-	-	-	-	-	Patented	-	Fritz Wolff, DNR	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Uncle Sam	S27	-	19.81	8/25 - 8/29/1891	Richard H. Stretch	172	-	Patented	-	BLM Survey Plat	Patented Claim involved in land swap to USFS in 1996 (map by F. Wolff).
Union Placer Claim	S21	-	15.27	6/26 - 6/29/1892	Richard H. Stretch	246	-	Patented (25289)	-	BLM Survey Plat	
Washington	S23	-	12.87	9/14 - 9/26/1891	Richard H. Stretch	163	-	Patented (24935)	-	BLM Survey Plat	
Washington Placer Claim	S17	-	16.91	6/20 - 6/30/1892	Richard H. Stretch	249	-	Patented (25285)	-	BLM Survey Plat	
West Seattle	S22	-	15.15	8/20 - 8/24/1892	Richard H. Stretch	155	-	Patented (24829)	-	BLM Survey Plat	
Wildcat Prospect (Monte Cristo District)	-	-	-	-	-	-	-	-	-	Letter from M. Hunting to W. Megalsson (11/4/64).	
Wyoming Placer Claim	S17	-	14.72	7/9 - 7/13/1892	Richard H. Stretch	268	-	Patented (25257)	-	BLM Survey Plat	
Zeta Lode	S28	-	15.231	11/3 - 11/4/1909	Albro Gardner	975	-	Patented (282186)	Discovery Tunnel	BLM Survey Plat	

**Table 3 - Key to Areas of Interest (AOIs) Previously Sampled**

AOI ID #	Description
1001	Assay Shack
1002	Boston-American Mine
1003	Comet Terminal Tram Bunker
1004	Ore Collector
1005	Concentrator
1006	Golden Cord Mine
1007	Justice Mine
1010	Mystery Mine
1011	New Discovery Mine
1012	Pride of the Mountains Mine
1013	Pride of the Woods Mine
1014	Rainy Mine
1015	Sheridan Mine
1016	Sidney Mine
1018	Haulage Ways
2001	GC 1 - Upstream of mine features
2002	GC 2 - Downstream of POM and New Discovery Mine
2003	GC 3 - Downstream of POW
2004	GC 4 - Downstream of Justice Mine
2005	GC 5 - Downstream of Rainy adit and Collector
2006	GC 6 - Downstream of Concentrator
2007	76G 1 - Upstream of mine features
2009	76G 3 - Downstream of Sidney adit
2010	76G 4 - Downstream of Lincoln adit
2011	76G 5 - Downstream of repository #2
2012	76G 6 - Downstream of Assay Shack
2013	SFSR 1 - Townsite down to SFSR Campground
2014	SFSR 2 - Downstream of repository #1 and SFSR Campground
2016	SFSR 4 - Silver Tip Campground to Hops Hill
2019	SFSR 6 - Weden to Monte Cristo Lake
2020	Monte Cristo Lake
2021	SFSR 7 - below Monte Cristo Lake
3001	Monte Cristo Townsite and Campground
3002	Monte Cristo Townsite
3003	Silver Tip Campground
3004	Sauk River Campground
3005	Hops Hill Campground
3006	Twin Bridge Campground
3007	Mowich Camp
3009	Campground
3013	Trail and road buffer - 1/4 mile
4002	Spotted owl 1.8 mile buffer
4003	Tailed frog 1/4 mile buffer
4006	Cascades frog 1/4 mile buffer
4007	Tailed frog 1/4 mile buffer
4010	Marbled murrelet 1/4 mile buffer
4014	Marbled murrelet 1/4 mile buffer
4026	Marbled murrelet 1/4 mile buffer
4082	Marbled murrelet 1/4 mile buffer
4096	Marbled murrelet 1/4 mile buffer
4102	Harlequin Breeding Area 1/4 mile buffer

5030	Unknown
5104	Snohomish County
5005,5006,5007,5008,5011,5012,5013,5015 5016,5017,5018,5019,5022,5023,5024,5025 5026,5027,5028,5029,5038,5039,5040,5041 5044,5045,5046,5047,5048,5049,5050,5061 5062,5063,5064,5065,5070,5071,5073,5074 5075,5096,5099,5100,5101,5102,5103,5120 5132,5133,5136,5138,5153,5155,5157,5158 5159,5161,5163,5164,5165,5166,5168,5169 5170,5171,5172,5173,5174,5175,5176,5177, 5178	Forest Service Property
5003,5004,5009,5010,5014,5020,5021 5031,5032,5033,5034,5035,5036,5037,5042 5043,5051,5052,5053,5054,5055,5056,5057 5058,5059,5060,5066,5067,5068,5069,5072 5076,5077,5078,5079,5080,5081,5082,5083 5084,5085,5086,5087,5088,5089,5090,5091 5092,5093,5094,5095,5097,5098,5105,5106 5107,5108,5109,5110,5111,5112,5113,5114 5115,5116,5117,5118,5119,5121,5122,5123 5124,5125,5126,5127,5128,5129,5130,5131 5134,5135,5137,5139,5140,5141,5142,5143 5144,5145,5146,5147,5148,5149,5150,5151 5152,5154,5156,5160,5162,5167	Private Property

Table 4 - Soil Human Health Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
		Screening Criteria		5.42	0.62	1650	63	0.69		2019		577	91.2	250		2340	2		130		5.2	13.7		2.85	505	5970	
1001	S	N		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	S	Average	mg/kg	1787.50	2102.50	36370.00	80.58	0.20	2.76	922.00	30.89	3.16	272.00	66925.00	6187.50	291.75	127.48	13.04		3.00	903.25	1.90	41.33	282.50	6.28	25.78	441.75
	S	Max	mg/kg	3290.00	4500.00	85800.00	203.00	0.20	4.33	2340.00	54.30	4.40	338.00	121000.00	10200.00	509.00	199.00	36.30		5.20	1730.00	3.00	57.90	488.00	8.00	32.20	644.00
	S	Min	mg/kg	980.00	400.00	6980.00	23.90	0.20	1.60	260.00	3.96	2.24	202.00	33200.00	3310.00	184.00	72.00	0.25		1.00	261.00	0.60	26.90	123.00	1.13	21.10	320.00
	S	StdDev		1026.46	1762.62	34515.81	84.23	0.00	1.37	972.90	21.06	1.03	61.06	37744.70	2941.04	150.38	63.55	17.04		1.73	642.14	0.99	14.20	186.05	3.44	5.45	145.69
1002	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	WR	Average	mg/kg	0.45	149.30				0.38	10.50			69.50		14.77			0.55		0.52	0.33					59.50	
	WR	Max	mg/kg	0.50	226.00				0.45	16.00			131.00		23.30			0.89		0.93	0.46					114.00	
	WR	Min	mg/kg	0.40	72.60				0.30	5.00			8.00		6.24			0.20		0.10	0.20					5.00	
	WR	StdDev		0.07	108.47				0.11	7.78			86.97		12.06			0.49		0.59	0.18					77.07	
1003	S	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	S	Average	mg/kg	443.50	22950.00		0.13	5.71	11.05	145.00			145.00		4645.00			1.32		11.70	2.75	11.20			0.15	307.50	
	S	Max	mg/kg	719.00	31200.00		0.15	9.12	11.10	212.00			212.00		7340.00			2.28		12.10	5.00	17.00			0.17	435.00	
	S	Min	mg/kg	168.00	14700.00		0.11	2.29	11.00	78.00			78.00		1950.00			0.37		11.30	0.50	5.39			0.12	180.00	
	S	StdDev		389.62	11667.26		0.03	4.83	0.07	94.75			94.75		3811.31			1.35		0.57	3.18	8.21			0.04	180.31	
1004	S	N		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
	S	Average	mg/kg	3333.06	2531.13	28298.13	46.18	0.99	17.31	1128.04	36.43	6.07	969.44	66793.75	9420.63	1351.49	346.46	3.17		30.11	2428.75	2.80	111.50	257.81	3.98	16.91	2247.31
	S	Max	mg/kg	10700.00	9860.00	88700.00	113.00	2.00	114.00	5130.00	81.50	12.90	4810.00	149000.00	22500.00	4460.00	1330.00	8.70		100.00	4280.00	4.40	415.00	500.00	10.00	41.70	17400.00
	S	Min	mg/kg	599.00	20.00	2160.00	19.20	0.20	2.00	22.50	1.41	0.60	51.00	32000.00	720.00	29.80	18.00	0.27		1.00	750.00	0.60	9.80	50.00	0.20	1.94	38.00
	S	StdDev		2992.35	3229.45	23479.77	25.72	0.92	27.30	1491.71	20.80	4.29	1151.79	27959.70	7288.36	1489.69	411.83	2.96		31.74	1016.50	1.31	111.95	223.21	2.83	12.91	4231.88
1005	S	N		9	12	12	9	12	12	9	12	9	12	9	12	9	12	9	2	12	9	12	9	12	9	12	
	S	Average	mg/kg	2306.56	4182.25	25680.83	140.16	0.21	13.07	560.56	18.02	3.02	1048.08	68011.11	12660.00	682.09	177.49	3.52	0.000029	16.77	1419.11	1502.36	160.75	60.11	4.87	13.74	1591.08
	S	Max	mg/kg	5430.00	10700.00	53300.00	445.00	0.60	76.30	2060.00	40.10	10.90	4240.00	142000.00	21400.00	2260.00	530.00	8.50	0.00004	45.60	2500.00	6000.00	376.00	107.00	15.80	32.80	11600.00
	S	Min	mg/kg	529.00	430.00	3460.00	25.70	0.07	1.54	25.10	1.50	0.60	114.00	38700.00	3580.00	17.10	24.20	0.83	0.000018	0.47	940.00	1.22	23.90	50.00	1.00	0.92	149.00
	S	StdDev		1745.41	2808.97	15870.02	146.75	0.13	20.30	704.96	14.26	3.51	1106.21	31675.36	6284.94	784.32	155.36	2.54	0.00	15.92	640.94	2712.18	118.53	20.87	4.26	9.88	3185.70
1006	WR	N		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	
	T	Average	mg/kg	10716.67	2035.14	17380.72	112.12	0.44	10.02	1902.80	52.42	6.41	574.37	52488.89	4709.63	2202.04	763.26	0.95	0.00002	13.01	1422.78	1.51	58.42	244.11	6.12	40.37	1502.42
	T	Max	mg/kg	25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
	T	StdDev		9139.52	2162.03	22386.73	150.86	0.52	26.30	2276.26	24.03	7.34	623.96	27748.96	4773.76	2262.41	1666.09	1.95	--	10.75	610.51	1.40	62.17	230.69	2.88	29.96	4270.25
1006	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	WR	Average	mg/kg	580.00	23950.00				52.50	30.00			592.00		6395.00			1.08			40.00	20.00				2000.00	
	WR	Max	mg/kg	970.00	33600.00				55.00	30.00			801.00		10000.00			1.80			50.00	30.00				3550.00	
	WR	Min	mg/kg	190.00	14300.00				50.00	30.00			383.00		2790.00			0.36			30.00	10.00				450.00	
	WR	StdDev		551.54	13647.16				3.54	0.00			295.57		5098.24			1.02			14.14	14.14				2192.03	
1007	WR	N		7	7	1	7	7	7	7	7	7	7	7	7	7	7	7	1	7	7	7	7	7	7	7	
	WR	Average	mg/kg	95.46	11718.86		0.07	22.54		63.32			452.47		617.46			0.33		15.70	22.00	10.39			0.92	362.14	
	WR	Max	mg/kg	280.00	39400.00		0.07	50.00		217.00			1660.00		1660.00			0.61		15.70	50.00	30.00			0.92	577.00	
	WR	Min	mg/kg	4.20	732.00		0.07	1.00		0.23			93.30		45.20			0.20		15.70	1.00	0.23			0.92	236.00	
	WR	StdDev		91.94	12718.92		--	17.28		72.08			568.16		628.17			0.17	--		17.90	10.48		--		111.49	
1010	WR	N		5	9	9	5	5	9	5	9	5	9	5	9	5	9	9	5	5	9	9	5	5	5	9	
	WR	Average	mg/kg	3218.00	2140.16	13391.11	35.48	0.21	8.42	1384.52	19.48	6.96	495.11	107920.00	12345.11	1016.80	1096.58	1.21		37.72	1954.00	2.90	114.89	98.80	2.90	27.20	1063.11
	WR	Max	mg/kg	7370.00	8800.00	24300.00	81.00	0.25	26.40	5580.00	30.00	21.20	1040.00	272000.00	89200.00	3000.00	4820.00	3.06		82.70	3370.00	17.40	307.00	294.00	5.80	73.90	3540.00
	WR	Min	mg/kg	1270.00	20.40	2480.00	19.40	0.20	1.62	91.60	4.00	1.51	129.00	45500.00	198.00	116.00	55.90	0.37		17.50	1000.00	0.19	4.58	50.00	1.50	5.94	159.00
	WR	StdDev		2609.12	2991.77	8560.01	25.94	0.02	7.60	2361.21	9.98	8.37	317.85	96927.59	28968.17	1226.05	2083.60	0.90		26.59	917.38	5.46	130.15	109.12	1.80	27.75	1036.02
1011	WR	N		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	WR	Average	mg/kg	103.00	9770.87				26.																		

Table 4 - Soil Human Health Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc		
		Screening Criteria			5.42	0.62	1650	63	0.69		2019		577		91.2	250		2340	2		130		5.2	13.7		2.85	505	5970	
1015	WR	N			2	2			2		2		2		2			2		2		2		2				2	
	WR	Average	mg/kg		6.50	1920.00			2.79		15.50		56.50		77.50			0.65				0.47	2.17					608.00	
	WR	Max	mg/kg		10.00	2120.00			4.23		27.00		69.00		129.00			0.99				0.75	3.69					971.00	
	WR	Min	mg/kg		3.00	1720.00			1.34		4.00		44.00		26.00			0.31				0.18	0.64					245.00	
	WR	StdDev			4.95	282.84			2.04		16.26		17.68		72.83			0.48				0.40	2.16					513.36	
1016	WR	N			2	2			2		2		2		2			2		2		2		2				2	
	WR	Average	mg/kg		106.25	33250.00			1.48		6.00		1800.00		111.00			0.40				1.17	11.82					313.00	
	WR	Max	mg/kg		200.00	38400.00			1.70		7.00		2460.00		117.00			0.51				1.20	14.90					337.00	
	WR	Min	mg/kg		12.50	28100.00			1.25		5.00		1140.00		105.00			0.29				1.13	8.74					289.00	
	WR	StdDev			132.58	7283.20			0.32		1.41		933.38		8.49			0.16				0.05	4.36					33.94	
1018	S	N		5	6	6	5	6	6	5	6	5	6	5	6	5	6	6	6	6	5	6	6	5	6	5	6	5	6
	S	Average	mg/kg	17760.00	134.67	7150.48	275.20	1.24	2.82	5494.00	65.14	9.82	734.50	37360.00	4118.92	5042.00	465.80	0.99		20.43	1068.40	1.32	72.33	691.40	1.47	62.82		388.27	
	S	Max	mg/kg	22100.00	570.00	22600.00	1170.00	2.93	8.33	14300.00	142.00	12.50	2880.00	68500.00	20400.00	8020.00	549.00	4.47		50.00	1900.00	3.13	320.00	1130.00	4.00	104.00		970.00	
	S	Min	mg/kg	13100.00	2.00	62.90	41.20	0.07	0.20	1270.00	0.24	5.45	35.20	14400.00	22.70	1850.00	284.00	0.03		0.48	491.00	0.30	0.60	118.00	0.40	32.40		32.50	
	S	StdDev		3734.70	219.99	8908.75	500.26	1.22	3.38	5219.73	49.79	2.78	1136.60	25235.55	8057.03	2861.43	104.41	1.72		17.50	583.63	0.99	127.67	391.18	1.35	28.11		423.32	
2003	WR	N			2	2			2		2		2		2			2		2		2		2				2	
	WR	Average	mg/kg		210.00	4930.00			0.50		8.00		145.50		835.50			2.52				0.81	30.75					102.50	
	WR	Max	mg/kg		250.00	5880.00			0.69		11.00		221.00		1260.00			3.72				0.88	42.50					184.00	
	WR	Min	mg/kg		170.00	3980.00			0.30		5.00		70.00		411.00			1.31				0.74	19.00					21.00	
	WR	StdDev			56.57	1343.50			0.28		4.24		106.77		600.33			1.70				0.10	16.62					115.26	
2005	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	S	Average	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00		213.00	
	S	Max	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00		213.00	
	S	Min	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00		213.00	
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	WR	N			2	2			2		2		2		2			2		2		2		2				2	
	WR	Average	mg/kg		205.15	40455.00			1.10		20.00		325.00		556.00			0.88				1.10	11.62					246.50	
	WR	Max	mg/kg		400.00	73400.00			1.87		32.00		523.00		880.00			0.99				1.22	16.90					352.00	
	WR	Min	mg/kg		10.30	7510.00			0.33		8.00		127.00		232.00			0.76				0.97	6.33					141.00	
	WR	StdDev			275.56	46591.27			1.09		16.97		280.01		458.21			0.16				0.18	7.47					149.20	
2006	T	N		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	1	8	8	8	8	8	8	8	8	8	
	T	Average	mg/kg	15306.25	1044.38	5974.63	165.41	0.73	2.33	2593.00	56.54	7.34	318.36	32100.00	2136.08	2460.63	444.38	0.46	0.00002	13.18	1033.13	1.29	27.65	335.88	5.56	59.10		304.94	
	T	Max	mg/kg	25800.00	3960.00	14500.00	522.00	1.85	7.94	7390.00	94.50	28.10	635.00	48200.00	6140.00	6290.00	1810.00	1.52	0.00002	20.90	1700.00	4.00	74.60	883.00	8.00	90.50		912.00	
	T	Min	mg/kg	2120.00	2.00	137.00	19.90	0.20	0.20	335.00	12.20	1.61	29.90	15400.00	36.60	459.00	131.00	0.05	0.00002	5.60	461.00	0.60	0.56	50.00	1.50	12.30		58.80	
	T	StdDev		9688.98	1650.70	5376.90	196.71	0.70	3.05	2623.29	28.11	8.76	196.41	13915.25	2326.92	1955.33	558.49	0.58	--	5.56	483.61	1.12	29.68	272.52	3.36	32.16		358.17	
2007	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	S	Average	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50		132.00	
	S	Max	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50		132.00	
	S	Min	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50		132.00	
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2009	WR	N			2	2			2		2		2		2			2		2		2		2				2	
	WR	Average	mg/kg		106.25	33250.00			1.48		6.00		1800.00		111.00			0.40				1.17	11.82					313.00	
	WR	Max	mg/kg		200.00	38400.00			1.70		7.00		2460.00		117.00			0.51				1.20	14.90					337.00	
	WR	Min	mg/kg		12.50	28100.00			1.25		5.00		1140.00		105.00			0.29				1.13	8.74					289.00	
	WR	StdDev			132.58	7283.20			0.32		1.41		933.38		8.49			0.16				0.05	4.36					33.94	
2012	S	N		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	S	Average	mg/kg	1286.67	2063.33	41626.67	84.37	0.20	2.23	449.33	39.87	3.47	250.00	70866.67	4850.00	219.33	103.63	5.29		3.67	851.00	1.83	39.10	335.67	8.00	27.23		471.33	
	S	Max	mg/kg	1510.00	4500.00	85800.00	203.00	0.20	3.47	773.00	54.30	4.40	305.00	121000.00	6300.00	276.00	163.00	15.30		5.20	1730.00	3.00	57.90	488.00	8.00	32.20		644.00	
	S	Min	mg/kg	980.00	400.00	6980.00	23.90	0.20	1.60	260.00	27																		

Table 4 - Soil Human Health Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
		Screening Criteria		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	18
				5.42	0.62	1650	63	0.69		2019			577	91.2	250		2340	2		130		5.2	13.7		2.85	505	5970
T	N			18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	18
T	Average	mg/kg		10716.67	2035.14	17380.72	112.12	0.44	10.02	1902.80	52.42	6.41	574.37	52488.89	4709.63	2202.04	763.26	0.95	0.00002	13.01	1422.78	1.51	58.42	244.11	6.12	40.37	1502.42
T	Max	mg/kg		25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
T	Min	mg/kg		1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
T	StdDev			9139.52	2162.03	22386.73	150.86	0.52	26.30	2276.26	24.03	7.34	623.96	27748.96	4773.76	2262.41	1666.09	1.95	--	10.75	610.51	1.40	62.17	230.69	2.88	29.96	4270.25
WR	N			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WR	Average	mg/kg		0.45	149.30				0.38	10.50			69.50		14.77			0.55				0.52	0.33				59.50
WR	Max	mg/kg		0.50	226.00				0.45	16.00			131.00		23.30			0.89				0.93	0.46				114.00
WR	Min	mg/kg		0.40	72.60				0.30	5.00			8.00		6.24			0.20				0.10	0.20				5.00
WR	StdDev			0.07	108.47				0.11	7.78			86.97		12.06			0.49				0.59	0.18				77.07
3009	S	N		3	4	4	3	4	4	3	4	3	4	3	4	3	3	4		4	3	4	4	3	4	3	4
S	Average	mg/kg		2003.33	3018.75	24040.00	69.97	0.17	6.38	387.00	9.62	3.15	508.00	69800.00	10867.50	939.00	289.33	3.47		9.59	1500.67	3.44	98.20	80.33	3.18	15.10	510.50
S	Max	mg/kg		3020.00	4300.00	46400.00	125.00	0.20	8.54	476.00	27.00	6.13	734.00	86700.00	17200.00	1570.00	530.00	8.50		35.90	2500.00	6.00	126.00	107.00	7.50	20.30	943.00
S	Min	mg/kg		990.00	1365.00	3460.00	31.10	0.07	4.13	237.00	2.19	0.60	329.00	49700.00	7890.00	227.00	133.00	1.56		0.47	952.00	1.85	62.40	50.00	1.00	11.50	149.00
S	StdDev			1015.00	1450.09	18778.85	48.99	0.07	1.87	130.66	11.78	2.79	188.77	18706.42	4277.78	675.15	211.51	3.36		17.54	866.83	1.79	27.81	28.68	2.93	4.61	332.27
T	N			16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	1	16	16	16	16	16	16	16	16
T	Average	mg/kg		10176.88	2114.06	17269.19	100.91	0.47	11.06	1941.28	51.92	6.15	611.06	51750.00	4699.91	1805.42	793.23	1.02	0.00002	11.71	1371.25	1.57	57.47	242.63	6.29	38.65	1659.84
T	Max	mg/kg		25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	30.70	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
T	Min	mg/kg		1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
T	StdDev			9060.34	2231.13	22923.68	150.85	0.55	27.81	2417.42	25.43	7.66	649.36	27566.09	4783.07	1743.06	1767.71	2.06	--	8.80	618.04	1.47	61.71	245.41	2.78	31.22	4519.72
WR	N			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
WR	Average	mg/kg		0.45	149.30				0.38	10.50			69.50		14.77			0.55				0.52	0.33				59.50
WR	Max	mg/kg		0.50	226.00				0.45	16.00			131.00		23.30			0.89				0.93	0.46				114.00
WR	Min	mg/kg		0.40	72.60				0.30	5.00			8.00		6.24			0.20				0.10	0.20				5.00
WR	StdDev			0.07	108.47				0.11	7.78			86.97		12.06			0.49				0.59	0.18				77.07
3013	S	N		40	43	43	40	43	43	40	43	40	43	40	43	40	40	43	2	43	40	43	43	40	43	40	43
S	Average	mg/kg		7550.70	2321.01	21904.56	98.42	0.65	10.63	1689.67	38.00	5.37	757.68	57382.50	7717.82	2033.69	314.34	3.42	0.000029	21.52	1684.75	420.83	92.92	303.30	3.83	30.22	1363.69
S	Max	mg/kg		39000.00	10700.00	88700.00	1170.00	2.93	114.00	14300.00	142.00	12.90	4810.00	149000.00	22500.00	11600.00	1330.00	36.30	0.00004	100.00	4280.00	6000.00	415.00	1130.00	15.80	104.00	17400.00
S	Min	mg/kg		529.00	1.65	23.30	9.74	0.07	0.20	22.50	1.41	0.60	8.20	14400.00	13.90	17.10	18.00	0.03	0.000018	0.47	250.00	0.30	0.50	50.00	0.20	0.92	14.40
S	StdDev			9317.49	2892.21	22164.19	192.56	0.82	20.57	2561.82	28.48	4.09	1041.48	30906.12	7241.76	2761.32	311.87	6.10	0.00	23.17	1040.71	1546.00	108.91	282.82	3.29	26.04	3137.28
T	N			18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	18
T	Average	mg/kg		10716.67	2035.14	17380.72	112.12	0.44	10.02	1902.80	52.42	6.41	574.37	52488.89	4709.63	2202.04	763.26	0.95	0.00002	13.01	1422.78	1.51	58.42	244.11	6.12	40.37	1502.42
T	Max	mg/kg		25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
T	Min	mg/kg		1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
T	StdDev			9139.52	2162.03	22386.73	150.86	0.52	26.30	2276.26	24.03	7.34	623.96	27748.96	4773.76	2262.41	1666.09	1.95	--	10.75	610.51	1.40	62.17	230.69	2.88	29.96	4270.25
WR	N			5	31	33	5	8	33	5	31	5	33	7	33	5	5	31		8	5	31	31	5	8	5	33
WR	Average	mg/kg		3218.00	700.38	14169.85	35.48	0.18	10.28	1384.52	26.20	6.96	466.10	94600.00	4075.83	1016.80	1096.58	1.20		27.15	1954.00	8.35	42.48	98.80	2.63	27.20	590.36
WR	Max	mg/kg		7370.00	8800.00	73400.00	81.00	0.25	50.00	5580.00	217.00	21.20	2460.00	272000.00	89200.00	3000.00	4820.00	8.61		82.70	3370.00	50.00	307.00	294.00	5.80	73.90	3540.00
WR	Min	mg/kg		1270.00	0.40	42.60	19.40	0.07	0.30	91.60	0.23	1.51	8.00	45500.00	6.24	116.00	55.90	0.20		5.00	1000.00	0.10	0.20	50.00	0.22	5.94	5.00
WR	StdDev			2609.12	1809.72	15870.04	25.94	0.05	14.20	2361.21	39.16	8.37	531.87	82404.53	15427.90	1226.05	2083.60	1.62		25.01	917.38	14.29	82.90	109.12	2.06	27.75	690.54
5022	S	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
S	Average	mg/kg		1495.00	3205.00	23150.00	42.45	0.20	7.79	342.50	4.52	1.66	460.00	61350.00	8345.00	898.50	367.50	1.91		1.00	1001.00	2.36	76.90	95.50	1.50	12.50	672.00
S	Max	mg/kg		2000.00	4170.00	31300.00	53.80	0.20	8.54	448.00	6.84	2.71	591.00	73000.00	8800.00	1570.00	530.00	2.13		1.00	1050.00	2.87	91.40	107			





Table 4 - Soil Human Health Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
		Screening Criteria		5.42	0.62	1650	63	0.69	2019	577	91.2	250	2340	2	130	5.2	13.7	2.85	505	5970							
5120	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	3.26	1.40	118.00	9.00	471.00											
	S	Max	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	3.26	1.40	118.00	9.00	471.00											
	S	Min	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	3.26	1.40	118.00	9.00	471.00											
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5122	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	20500.00	2.00	62.90	1170.00	2.93	0.20	14300.00	74.20	9.34	68.10	15800.00	22.70	2480.00	284.00	0.03	12.60	561.00	1.10	0.60	878.00	0.80	104.00	32.50	
	S	Max	mg/kg	20500.00	2.00	62.90	1170.00	2.93	0.20	14300.00	74.20	9.34	68.10	15800.00	22.70	2480.00	284.00	0.03	12.60	561.00	1.10	0.60	878.00	0.80	104.00	32.50	
	S	Min	mg/kg	20500.00	2.00	62.90	1170.00	2.93	0.20	14300.00	74.20	9.34	68.10	15800.00	22.70	2480.00	284.00	0.03	12.60	561.00	1.10	0.60	878.00	0.80	104.00	32.50	
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5159	S	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	S	Average	mg/kg	1175.00	2450.00	46390.00	25.05	0.20	2.55	516.50	46.00	3.00	253.50	77100.00	4125.00	230.00	73.95	7.81	2.90	411.50	1.80	29.70	440.00	8.00	26.65	547.00	
	S	Max	mg/kg	1370.00	4500.00	85800.00	26.20	0.20	3.47	773.00	54.30	3.60	305.00	121000.00	4940.00	276.00	75.90	15.30	3.10	562.00	3.00	32.50	488.00	8.00	32.20	644.00	
	S	Min	mg/kg	980.00	400.00	6980.00	23.90	0.20	1.62	260.00	37.70	2.40	202.00	33200.00	3310.00	184.00	72.00	0.33	2.70	261.00	0.60	26.90	392.00	8.00	21.10	450.00	
	S	StdDev		275.8	2899.1	55734.2	1.6	0.0	1.3	362.7	11.7	0.8	72.8	62084.0	1152.6	65.1	2.8	10.6	0.3	212.8	1.7	4.0	67.9	0.0	7.8	137.2	
5163	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	3290.00	2220.00	20600.00	69.20	0.20	4.33	2340.00	3.96	2.24	338.00	55100.00	10200.00	509.00	199.00	36.30	1.00	1060.00	2.11	48.00	123.00	1.13	21.40	353.00	
	S	Max	mg/kg	3290.00	2220.00	20600.00	69.20	0.20	4.33	2340.00	3.96	2.24	338.00	55100.00	10200.00	509.00	199.00	36.30	1.00	1060.00	2.11	48.00	123.00	1.13	21.40	353.00	
	S	Min	mg/kg	3290.00	2220.00	20600.00	69.20	0.20	4.33	2340.00	3.96	2.24	338.00	55100.00	10200.00	509.00	199.00	36.30	1.00	1060.00	2.11	48.00	123.00	1.13	21.40	353.00	
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Bold** - Value exceeds screening criteria  
**Bold italic** - Value exceeds two times the screening level  
S = Soil  
T = Tailings  
WR = Waste Rock

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Table 5 - Soil Ecological Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				50	5	28	102	10	14	42	13	70	118	220	0.1	38	0.3	560	1	2	120						
1001	S	N		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	S	Average	mg/kg	1787.50	2102.50	36370.00	80.58	0.20	2.76	922.00	30.89	3.16	272.00	66925.00	6187.50	291.75	127.48	13.04	3.00	903.25	1.90	41.33	282.50	6.28	25.78	441.75	
	S	Max	mg/kg	3290.00	4500.00	85800.00	203.00	0.20	4.33	2340.00	54.30	4.40	338.00	121000.00	10200.00	509.00	199.00	36.30	5.20	1730.00	3.00	57.90	488.00	8.00	32.20	644.00	
	S	Min	mg/kg	980.00	400.00	6980.00	23.90	0.20	1.60	260.00	3.96	2.24	202.00	33200.00	3310.00	184.00	72.00	0.25	1.00	261.00	0.60	26.90	123.00	1.13	21.10	320.00	
	S	StdDev		1026.46	1762.62	34515.81	84.23	0.00	1.37	972.90	21.06	1.03	61.06	37744.70	2941.04	150.38	63.55	17.04	1.73	642.14	0.99	14.20	186.05	3.44	5.45	145.69	
1002	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	WR	Average	mg/kg	0.45	149.30	0.38	10.50	0.45	69.50	14.77	0.55	23.30	131.00	0.89	0.52	0.33	59.50	0.93	0.46	114.00	0.10	0.20	5.00	0.15	0.17	307.50	
	WR	Max	mg/kg	0.50	226.00	0.30	16.00	0.30	131.00	16.00	0.89	8.00	131.00	0.89	0.52	0.33	59.50	0.93	0.46	114.00	0.10	0.20	5.00	0.15	0.17	307.50	
	WR	Min	mg/kg	0.40	72.60	0.30	5.00	0.30	8.00	6.24	0.20	2.24	202.00	33200.00	3310.00	184.00	72.00	0.25	1.00	261.00	0.60	26.90	123.00	1.13	21.10	320.00	
	WR	StdDev		0.07	108.47	0.11	7.78	0.11	86.97	12.06	0.49	0.49	86.97	0.49	0.52	0.33	59.50	0.93	0.46	114.00	0.10	0.20	5.00	0.15	0.17	307.50	
1003	S	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	S	Average	mg/kg	443.50	22950.00	0.13	5.71	11.05	145.00	4645.00	1.32	11.70	7340.00	2.28	12.10	5.00	17.00	2.75	11.20	0.15	307.50	435.00	180.00	180.00	180.00	180.00	180.00
	S	Max	mg/kg	719.00	31200.00	0.15	9.12	11.10	212.00	7800.00	2.28	11.30	7340.00	2.28	12.10	5.00	17.00	2.75	11.20	0.15	307.50	435.00	180.00	180.00	180.00	180.00	180.00
	S	Min	mg/kg	168.00	14700.00	0.11	2.29	11.00	78.00	1950.00	0.37	11.30	7340.00	2.28	12.10	5.00	17.00	2.75	11.20	0.15	307.50	435.00	180.00	180.00	180.00	180.00	180.00
	S	StdDev		389.62	11667.26	0.03	4.83	0.07	94.75	3811.31	1.35	0.57	3811.31	1.35	11.30	0.57	3.18	8.21	0.04	180.00	180.00	180.00	180.00	180.00	180.00	180.00	
1004	S	N		16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
	S	Average	mg/kg	3333.06	2531.13	28298.13	46.18	0.99	17.31	1128.04	36.43	6.07	969.44	66793.75	9420.63	1351.49	346.46	3.17	30.11	2428.75	2.80	111.50	257.81	3.98	16.91	2247.31	
	S	Max	mg/kg	10700.00	9860.00	88700.00	113.00	2.00	114.00	5130.00	81.50	12.90	4810.00	149000.00	22500.00	4460.00	1330.00	8.70	100.00	4280.00	4.40	415.00	500.00	10.00	41.70	17400.00	
	S	Min	mg/kg	599.00	20.00	2160.00	19.20	0.20	2.00	22.50	1.41	0.60	51.00	32000.00	720.00	29.80	18.00	0.27	1.00	750.00	0.60	9.80	50.00	0.20	1.94	38.00	
	S	StdDev		2992.35	3229.45	23479.77	25.72	0.92	27.30	1491.71	20.80	4.29	1151.79	27959.70	7288.36	1489.69	411.83	2.96	31.74	1016.50	1.31	111.95	223.21	2.83	12.91	4231.88	
1005	S	N		9	12	12	9	12	12	9	12	9	12	9	12	9	12	2	12	9	12	12	9	12	9	12	
	S	Average	mg/kg	2306.56	4182.25	25680.83	140.16	0.21	13.07	560.56	18.02	3.02	1048.08	68011.11	12660.00	682.09	177.49	3.52	0.00003	16.77	1419.11	1502.36	160.75	60.11	4.87	13.74	1591.08
	S	Max	mg/kg	5430.00	10700.00	53300.00	445.00	0.60	76.30	2060.00	40.10	10.90	4240.00	142000.00	21400.00	2260.00	530.00	8.50	0.00004	45.60	2500.00	6000.00	376.00	107.00	15.80	32.80	11600.00
	S	Min	mg/kg	529.00	430.00	3460.00	25.70	0.07	1.54	25.10	1.50	0.60	114.00	38700.00	3580.00	17.10	24.20	0.83	0.00002	0.47	940.00	1.22	23.90	50.00	1.00	0.92	149.00
	S	StdDev		1745.41	2808.97	15870.02	146.75	0.13	20.30	704.96	14.26	3.51	1106.21	31675.36	6284.94	784.32	155.36	2.54	0.00	15.92	640.94	2712.18	118.53	20.87	4.26	9.88	3185.70
1006	T	N		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	
	T	Average	mg/kg	10716.67	2035.14	17380.72	112.12	0.44	10.02	1902.80	52.42	6.41	574.37	52488.89	4709.63	2202.04	763.26	0.95	0.00002	13.01	1422.78	1.51	58.42	244.11	6.12	40.37	1502.42
	T	Max	mg/kg	25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
	T	StdDev		9139.52	2162.03	22386.73	150.86	0.52	26.30	2276.26	24.03	7.34	623.96	27748.96	4773.76	2262.41	1666.09	1.95	--	10.75	610.51	1.40	62.17	230.69	2.88	29.96	4270.25
1006	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
	WR	Average	mg/kg	580.00	23950.00	52.50	30.00	592.00	6395.00	1.08	40.00	20.00	2000.00	1.80	50.00	30.00	3550.00	450.00	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	Max	mg/kg	970.00	33600.00	55.00	30.00	801.00	10000.00	1.80	50.00	30.00	2000.00	1.80	50.00	30.00	3550.00	450.00	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	Min	mg/kg	190.00	14300.00	50.00	30.00	383.00	2790.00	0.36	30.00	10.00	450.00	0.36	30.00	10.00	450.00	0.36	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	StdDev		551.54	13647.16	3.54	0.00	295.57	5098.24	1.02	14.14	14.14	2192.03	1.02	14.14	14.14	2192.03	1.02	14.14	14.14	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
1007	WR	N		7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	1	7	7	7	7	7	7	7	
	WR	Average	mg/kg	95.46	11718.86	22.54	63.32	452.47	617.46	0.33	15.70	10.39	362.14	0.61	50.00	30.00	0.92	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	Max	mg/kg	280.00	39400.00	50.00	217.00	1660.00	2170.00	0.61	15.70	10.39	362.14	0.61	50.00	30.00	0.92	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	Min	mg/kg	4.20	732.00	1.00	0.23	93.30	45.20	0.20	15.70	10.39	362.14	0.20	15.70	10.39	0.92	30.00	10.00	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03	2192.03
	WR	StdDev		91.94	12718.92	--	17.28	72.08	568.16	0.17	17.90	10.48	111.49	0.17	17.90	10.48	111.49	0.17	17.90	10.48	111.49	111.49	111.49	111.49	111.49	111.49	111.49
1010	WR	N		5	9	9	5	9	9	5	9	5	9	5	9	5	9	5	9	5	9	9	9	5	9	5	
	WR	Average	mg/kg	3218.00	2140.16	13391.11	35.48	0.21	8.42	1384.52	19.48	6.96	495.11	107920.00	12345.11	1016.80	1096.58	1.21	37.72	1954.00	2.90	114.89					

Table 5 - Soil Ecological Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				50	5	28	102	10	14	5	42	13	70	5	118	5	220	0.1		38	5	0.3	560	5	1	2	120
1018	S	N		5	6	6	5	6	6	5	6	5	6	5	6	5	5	6	6	6	5	6	6	5	6	5	6
	S	Average	mg/kg	17760.00	134.67	7150.48	275.20	1.24	2.82	5494.00	65.14	9.82	734.50	37360.00	4118.92	5042.00	465.80	0.99		20.43	1068.40	1.32	72.33	691.40	1.47	62.82	388.27
	S	Max	mg/kg	22100.00	570.00	22600.00	1170.00	2.93	8.33	14300.00	142.00	12.50	2880.00	68500.00	20400.00	8020.00	549.00	4.47		50.00	1900.00	3.13	320.00	1130.00	4.00	104.00	970.00
	S	Min	mg/kg	13100.00	2.00	62.90	41.20	0.07	0.20	1270.00	0.24	5.45	35.20	14400.00	22.70	1850.00	284.00	0.03		0.48	491.00	0.30	0.60	118.00	0.40	32.40	32.50
	S	StdDev		3734.70	219.99	8908.75	500.26	1.22	3.38	5219.73	49.79	2.78	1136.60	25235.55	8057.03	2861.43	104.41	1.72		17.50	583.63	0.99	127.67	391.18	1.35	28.11	423.32
2003	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	210.00	4930.00				0.50		8.00		145.50		835.50			2.52				0.81	30.75				102.50
	WR	Max	mg/kg	250.00	5880.00				0.69		11.00		221.00		1260.00			3.72				0.88	42.50				184.00
	WR	Min	mg/kg	170.00	3980.00				0.30		5.00		70.00		411.00			1.31				0.74	19.00				21.00
	WR	StdDev		56.57	1343.50				0.28		4.24		106.77		600.33			1.70				0.10	16.62				115.26
2005	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	Max	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	Min	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40		1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	205.15	40455.00		1.10		20.00		2.00		325.00		556.00			0.88				1.10	11.62				246.50
	WR	Max	mg/kg	400.00	73400.00		1.87		32.00		3.00		523.00		880.00			0.99				1.22	16.90				352.00
	WR	Min	mg/kg	10.30	7510.00		0.33		8.00		0.00		127.00		232.00			0.76				0.97	6.33				141.00
	WR	StdDev		275.56	46591.27		1.09		16.97		1.00		280.01		458.21			0.16				0.18	7.47				149.20
2006	T	N		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	1	8	8	8	8	8	8	8	8
	T	Average	mg/kg	15306.25	1044.38	5974.63	165.41	0.73	2.33	2593.00	56.54	7.34	318.36	32100.00	2136.08	2460.63	444.38	0.46	0.00002	13.18	1033.13	1.29	27.65	335.88	5.56	59.10	304.94
	T	Max	mg/kg	25800.00	3960.00	14500.00	35.20	1.85	7.94	7390.00	94.50	28.10	635.00	48200.00	6140.00	6290.00	1810.00	1.52	0.00002	20.90	1700.00	4.00	74.60	883.00	8.00	90.50	912.00
	T	Min	mg/kg	2120.00	2.00	137.00	19.90	0.20	0.20	335.00	12.20	1.61	29.90	15400.00	36.60	459.00	131.00	0.05	0.00002	5.60	461.00	0.60	0.56	50.00	1.50	12.30	58.80
	T	StdDev		9688.98	1650.70	5376.90	196.71	0.70	3.05	2623.29	28.11	8.76	196.41	13915.25	2326.92	1955.33	558.49	0.58	--	5.56	483.61	1.12	29.68	272.52	3.36	32.16	358.17
2007	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50	132.00
	S	Max	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50	132.00
	S	Min	mg/kg	15500.00	4.28	127.00	70.70	0.30	0.95	2350.00	40.90	16.10	78.70	35800.00	34.60	9020.00	986.00	0.07		36.70	3290.00	0.60	0.50	240.00	1.50	56.50	132.00
	S	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2009	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	106.25	33250.00		1.48		6.00		2.00		1800.00		111.00			0.40				1.17	11.82				313.00
	WR	Max	mg/kg	200.00	38400.00		1.70		7.00		2.00		2460.00		117.00			0.51				1.20	14.90				337.00
	WR	Min	mg/kg	12.50	28100.00		1.25		5.00		1.00		1140.00		105.00			0.29				1.13	8.74				289.00
	WR	StdDev		132.58	7283.20		0.32		1.41		1.00		933.38		8.49			0.16				0.05	4.36				33.94
2012	S	N		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	S	Average	mg/kg	1286.67	2063.33	41626.67	84.37	0.20	2.23	449.33	39.87	3.47	250.00	70866.67	4850.00	219.33	103.63	5.29		3.67	851.00	1.83	39.10	335.67	8.00	27.23	471.33
	S	Max	mg/kg	1510.00	4500.00	85800.00	203.00	0.20	3.47	773.00	94.50	4.40	305.00	121000.00	6300.00	276.00	163.00	15.30		5.20	1730.00	3.00	57.90	488.00	8.00	32.20	644.00
	S	Min	mg/kg	980.00	400.00	6980.00	23.90	0.20	1.60	260.00	27.60	2.40	202.00	33200.00	3310.00	184.00	72.00	0.25		2.70	261.00	0.60	26.90	127.00	8.00	21.10	320.00
	S	StdDev		274.65	2156.63	40264.33	102.75	0.00	1.07	281.65	13.48	1.01	51.86	45208.11	1497.03	49.57	51.45	8.67		1.34	775.97	1.20	16.52	186.98	0.00	5.64	163.05
3001	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	0.45	149.30		0.38		10.50		2.00		69.50		14.77			0.55				0.52	0.33				59.50
	WR	Max	mg/kg	0.50	226.00		0.45		16.00		2.00		131.00		23.30			0.89				0.93	0.46				114.00
	WR	Min	mg/kg	0.40	72.60		0.30		5.00		1.00		8.00		6.24			0.20				0.10	0.20				5.00
	WR	StdDev		0.07	108.47		0.11		7.78		1.00		86.97		12.06			0.49				0.59	0.18				77.07
3002	S	N		15	18	18	15	18	18	15	18	15	18	15	18	15	18	18	2	18	15	18	15	18	15	18	18
	S	Average	mg/kg	5360.60	3255.64	25209.86	184.39	0.36	9.37	1597.20	25.00	3.39	763.69	61580.00	9818.04	700.59	178.82	5.26	0.00003	13.11	1153.33	1002.14	116.42	191.27	4.77	27.21	1162.39
	S	Max	mg/kg	32000.00	10700.00	85800.00	1170.00	2.93	76.30	14300.00	74.20	10.90															

Table 5 - Soil Ecological Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				50	5	28	102	10	14	42	13	70	118	220	0.1	38	0.3	560	1	2	120						
3013	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	0.45	149.30	0.38	10.50	69.50	14.77	0.55	0.52	0.33	59.50														
	WR	Max	mg/kg	0.50	226.00	0.45	16.00	131.00	23.30	0.89	0.93	0.46	114.00														
	WR	Min	mg/kg	0.40	72.60	0.30	5.00	8.00	6.24	0.20	0.10	0.20	5.00														
	WR	StdDev	mg/kg	0.07	108.47	0.11	7.78	86.97	12.06	0.49	0.59	0.18	77.07														
4003	S	N		40	43	43	40	43	43	40	43	40	43	40	43	40	40	43	2	43	40	43	40	43	40	43	43
	S	Average	mg/kg	7550.70	2321.01	21904.56	98.42	0.65	10.63	1689.67	38.00	5.37	757.68	57382.50	7717.82	2033.69	314.34	3.42	0.00003	21.52	1684.75	420.83	92.92	303.30	3.83	30.22	1363.69
	S	Max	mg/kg	39000.00	10700.00	88700.00	1170.00	2.93	114.00	14300.00	142.00	12.90	4810.00	149000.00	22500.00	11600.00	1330.00	36.30	0.00004	100.00	4280.00	6000.00	415.00	1130.00	15.80	104.00	17400.00
	S	Min	mg/kg	529.00	1.65	23.30	9.74	0.07	0.20	22.50	1.41	0.60	8.20	14400.00	13.90	17.10	18.00	0.03	0.00002	0.47	250.00	0.30	0.50	50.00	0.20	0.92	14.40
	S	StdDev	mg/kg	9317.49	2892.21	22164.19	192.56	0.82	20.57	2561.82	28.48	4.09	1041.48	30906.12	7241.76	2761.32	311.87	6.10	0.00	23.17	1040.71	1546.00	108.91	282.82	3.29	26.04	3137.28
5022	T	N		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	1	18	18	18	18	18	18	18	18
	T	Average	mg/kg	10716.67	2035.14	17380.72	112.12	0.44	10.02	1902.80	52.42	6.41	574.37	52488.89	4709.63	2202.04	763.26	0.95	0.00002	13.01	1422.78	1.51	58.42	244.11	6.12	40.37	1502.42
	T	Max	mg/kg	25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
	T	StdDev	mg/kg	9139.52	2162.03	22386.73	150.86	0.52	26.30	2276.26	24.03	7.34	623.96	27748.96	4773.76	2262.41	1666.09	1.95	--	10.75	610.51	1.40	62.17	230.69	2.88	29.96	4270.25
5023	WR	N		5	31	33	5	8	33	5	31	5	33	7	33	5	31	31	8	5	31	31	5	8	5	33	
	WR	Average	mg/kg	3218.00	700.38	14169.85	35.48	0.18	10.28	1384.52	26.20	6.96	466.10	94600.00	4075.83	1016.80	1096.58	1.20	0.00002	27.15	1954.00	8.35	42.48	98.80	2.63	27.20	590.36
	WR	Max	mg/kg	7370.00	8800.00	73400.00	81.00	0.25	50.00	5580.00	217.00	21.20	2460.00	272000.00	89200.00	3000.00	4820.00	8.61	0.00002	82.70	3370.00	50.00	307.00	294.00	5.80	73.90	3540.00
	WR	Min	mg/kg	1270.00	0.40	42.60	19.40	0.07	0.30	91.60	0.23	1.51	8.00	45500.00	6.24	116.00	55.90	0.20	0.00002	5.00	1000.00	0.10	0.20	50.00	0.22	5.94	5.00
	WR	StdDev	mg/kg	2609.12	1809.72	15870.04	25.94	0.05	14.20	2361.21	39.16	8.37	531.87	82404.53	15427.90	1226.05	2083.60	1.62	--	25.01	917.38	14.29	82.90	109.12	2.06	27.75	690.54
5034	S	N		13	15	15	13	15	15	13	15	13	15	13	15	13	15	15	2	15	13	15	15	13	15	13	15
	S	Average	mg/kg	5955.31	3173.96	24838.49	206.22	0.39	9.44	1790.23	29.01	3.65	820.69	61615.38	10202.31	670.14	149.79	5.58	0.00003	15.56	1176.77	1202.00	121.78	206.00	5.17	29.47	1248.47
	S	Max	mg/kg	32000.00	10700.00	85800.00	1170.00	2.93	76.30	14300.00	74.20	10.90	4240.00	142000.00	21400.00	2480.00	291.00	36.30	0.00004	45.60	2500.00	6000.00	376.00	878.00	15.80	104.00	11600.00
	S	Min	mg/kg	529.00	2.00	62.90	12.10	0.07	0.20	25.10	1.50	0.60	13.30	15800.00	22.70	17.10	24.20	0.03	0.00002	0.47	261.00	0.60	0.60	50.00	0.80	0.92	30.60
	S	StdDev	mg/kg	9426.96	3037.61	23713.58	317.37	0.71	18.96	3834.80	19.58	3.33	1073.30	36208.05	7497.16	808.05	93.29	9.44	0.00002	14.23	726.91	2483.20	126.53	252.02	4.19	29.48	2899.56
5035	T	N		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	1	15	15	15	15	15	15	15	15
	T	Average	mg/kg	8553.33	2435.17	20594.40	69.92	0.29	11.88	1336.69	53.63	6.50	661.71	59240.00	5571.11	2042.45	863.31	1.11	0.00002	13.57	1590.93	1.41	68.96	178.73	6.17	32.07	1782.98
	T	Max	mg/kg	24000.00	6630.00	92100.00	319.00	1.32	114.00	6590.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	40.10	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	7.60	446.00	19.60	0.20	0.20	12.40	18.50	0.60	57.70	22200.00	84.70	33.70	16.60	0.08	0.00002	2.10	495.00	0.60	1.01	50.00	1.50	3.37	63.70
	T	StdDev	mg/kg	8315.80	2155.74	23281.09	88.34	0.29	28.59	1716.36	23.81	8.05	649.96	25313.34	4783.82	2430.80	1818.01	2.11	--	11.75	518.32	1.38	63.06	158.92	2.84	25.13	4651.49
5036	WR	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	WR	Average	mg/kg	0.45	149.30	0.38	10.50	69.50	14.77	0.55	0.52	0.33	59.50														
	WR	Max	mg/kg	0.50	226.00	0.45	16.00	131.00	23.30	0.89	0.93	0.46	114.00														
	WR	Min	mg/kg	0.40	72.60	0.30	5.00	8.00	6.24	0.20	0.10	0.20	5.00														
	WR	StdDev	mg/kg	0.07	108.47	0.11	7.78	86.97	12.06	0.49	0.59	0.18	77.07														
5037	S	N		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	S	Average	mg/kg	1495.00	3205.00	23150.00	42.45	0.20	7.79	342.50	4.52	1.66	460.00	61350.00	8345.00	898.50	367.50	1.91	0.00002	1.00	1001.00	2.36	76.90	95.50	1.50	12.50	672.00
	S	Max	mg/kg	2000.00	4170.00	31300.00	85.40	0.20	8.54	448.00	6.84	2.71	591.00	73000.00	8800.00	1570.00	500.00	2.13	0.00004	1.00	1050.00	2.87	91.40	107.00	2.00	13.50	943.00
	S	Min	mg/kg	990.00	2240.00	15000.00	31.10	0.20	7.03	237.00	2.19	0.60	329.00	49700.00	7890.00	227.00	205.00	1.68	0.00002	1.00	952.00	1.85	62.40	84.00	1.00	11.50	401.00
	S	StdDev	mg/kg	714.2	1364.7	11525.8	161.0	0.0	1.1	149.2	3.3	1.5	185.3	16475.6	643.5	949.6	229.8	0.3	0.00002	0.0	69.3	0.7	20.5	16.3	0.7	1.4	383.3
5038	T	N		17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	1	17	17	17	17	17	17	17	17
	T	Average	mg/kg	9958.82	2154.41	18376.88	113.74	0.45	10.50	1901.79	51.81	6.07	604.76	53811.76	4981.68	1835.10	759.33	1.00	0.00002	11.41	1378.82	1.56	61.80	242.12	6.39	38.96	1580.44
	T	Max	mg/kg	25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	94.50	28.10	2620.00	117000.00	17900.00	8440.00	7210.00	8.35	0.00002	30.70	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
	T	StdDev	mg/kg	8818.6	2166.7	22660.8	155.3	0.5	27.0	2346.3	24.6	7.4	629.3	28011.8	4774.7	1692.1	1717.3	2.0	--	8.6	599.2	1.4	62.4	237.6	2.7	30.3	4388.4
5039	S	N		8	10	10	8	10	10	8	10	8	10	8	10	8	10	10	1	10	8	10	10	8	10	8</	

Table 5 - Soil Ecological Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				50	5	28	102	10	14	14	42	13	70	118	118	220	0.1	38	0.3	560	1	1	1	1	2	120	
5038	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	S	Average	mg/kg	14800.00	2.51	23.30	9.74	0.20	0.25	797.00	49.90	1.24	8.20	16200.00	14.60	395.00	101.00	0.03	7.20	250.00	0.78	0.50	512.00	1.50	42.50	14.40	
	S	Max	mg/kg	14800.00	2.51	23.30	9.74	0.20	0.25	797.00	49.90	1.24	8.20	16200.00	14.60	395.00	101.00	0.03	7.20	250.00	0.78	0.50	512.00	1.50	42.50	14.40	
	S	Min	mg/kg	14800.00	2.51	23.30	9.74	0.20	0.25	797.00	49.90	1.24	8.20	16200.00	14.60	395.00	101.00	0.03	7.20	250.00	0.78	0.50	512.00	1.50	42.50	14.40	
	S	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5041	WR	N		6	7	1	7	6	7	6	7	6	7	6	7	6	7	6	7	6	6	6	6	6	6	7	
	WR	Average	mg/kg	190.83	13696.09	0.18	12.16	13.35	314.00	55900.00	1483.69	5.00	3.09	59000.00	1483.69	3000.00	3.09	3.09	5.00	5.00	11.19	26.32	5.42	5.42	5.42	522.29	
	WR	Max	mg/kg	416.00	41400.00	0.18	50.00	30.00	844.00	55900.00	3460.00	5.00	8.61	59000.00	3460.00	3000.00	8.61	8.61	5.00	5.00	50.00	49.10	5.42	5.42	5.42	1770.00	
	WR	Min	mg/kg	2.00	42.60	0.18	0.30	3.00	70.00	55900.00	14.80	5.00	0.80	59000.00	14.80	3000.00	0.80	0.80	5.00	5.00	0.50	0.30	5.42	5.42	5.42	21.00	
	WR	StdDev	mg/kg	139.6	14289.9	0.18	19.9	9.9	276.9	55900.00	1231.5	2.9	2.9	59000.00	1231.5	3000.00	2.9	2.9	5.00	5.00	19.4	18.0	5.42	5.42	5.42	677.0	
5042	WR	N		5	9	9	5	5	9	5	9	5	9	5	9	5	9	5	9	5	5	9	5	5	5	9	
	WR	Average	mg/kg	3218.00	2140.16	13391.11	35.48	0.21	8.42	1384.52	19.48	6.96	495.11	107920.00	12345.11	1016.80	1096.58	1.21	1.21	37.72	1954.00	2.90	114.89	98.80	2.90	27.20	1063.11
	WR	Max	mg/kg	7370.00	8800.00	24300.00	81.00	0.25	26.40	5580.00	30.00	21.20	1040.00	272000.00	89200.00	3000.00	4820.00	3.06	3.06	82.70	3370.00	17.40	307.00	294.00	5.80	73.90	3540.00
	WR	Min	mg/kg	1270.00	20.40	2480.00	19.40	0.20	1.62	91.60	4.00	1.51	129.00	45500.00	198.00	116.00	55.90	0.37	0.37	17.50	1000.00	0.19	4.58	50.00	1.50	5.94	159.00
	WR	StdDev	mg/kg	2609.1	2991.8	8560.0	25.9	0.0	7.6	2361.2	10.0	8.4	317.9	96927.6	28968.2	1226.0	2083.6	0.9	0.9	26.6	917.4	5.5	130.1	109.1	1.8	27.7	1036.0
5045	WR	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	WR	Average	mg/kg	0.57	332.00	0.17	1.89	9.71	48.00	130.00	48.00	0.53	0.53	48.00	130.00	130.00	0.53	0.53	7.90	7.90	5.00	0.45	0.22	0.22	0.22	328.00	
	WR	Max	mg/kg	0.57	332.00	0.17	1.89	9.71	48.00	130.00	48.00	0.53	0.53	48.00	130.00	130.00	0.53	0.53	7.90	7.90	5.00	0.45	0.22	0.22	0.22	328.00	
	WR	Min	mg/kg	0.57	332.00	0.17	1.89	9.71	48.00	130.00	48.00	0.53	0.53	48.00	130.00	130.00	0.53	0.53	7.90	7.90	5.00	0.45	0.22	0.22	0.22	328.00	
	WR	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5046	WR	N		3	4	4	3	4	3	4	3	4	3	4	3	4	3	4	3	3	3	3	3	3	3	4	
	WR	Average	mg/kg	85.00	10510.00	11.82	13.67	566.00	66700.00	2845.00	0.64	0.64	66700.00	66700.00	2845.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	WR	Max	mg/kg	103.00	17300.00	30.00	30.00	1010.00	66700.00	7040.00	0.70	0.70	66700.00	66700.00	7040.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	WR	Min	mg/kg	52.00	5170.00	5.00	5.00	227.00	66700.00	1190.00	0.60	0.60	66700.00	66700.00	1190.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	WR	StdDev	mg/kg	28.6	5260.1	12.2	14.2	339.0	66700.00	2802.6	0.1	0.1	66700.00	66700.00	2802.6	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
5058	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	S	Average	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	Max	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	Min	mg/kg	2350.00	1680.00	28100.00	35.20	0.20	7.58	250.00	4.33	1.13	417.00	58200.00	8460.00	960.00	169.00	2.40	2.40	1.00	1750.00	4.14	72.40	85.00	0.20	14.00	213.00
	S	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5104	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	S	Average	mg/kg	1510.00	1290.00	32100.00	203.00	0.20	1.60	315.00	27.60	4.40	243.00	58400.00	6300.00	198.00	163.00	0.25	0.25	5.20	1730.00	1.90	57.90	127.00	8.00	28.40	320.00
	S	Max	mg/kg	1510.00	1290.00	32100.00	203.00	0.20	1.60	315.00	27.60	4.40	243.00	58400.00	6300.00	198.00	163.00	0.25	0.25	5.20	1730.00	1.90	57.90	127.00	8.00	28.40	320.00
	S	Min	mg/kg	1510.00	1290.00	32100.00	203.00	0.20	1.60	315.00	27.60	4.40	243.00	58400.00	6300.00	198.00	163.00	0.25	0.25	5.20	1730.00	1.90	57.90	127.00	8.00	28.40	320.00
	S	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5116	T	N		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	1	15	15	15	15	15	15	15	
	T	Average	mg/kg	9190.67	2391.00	19773.80	124.44	0.48	11.87	2029.36	46.83	6.27	648.73	55440.00	5398.24	1577.78	826.31	1.10	0.00002	11.35	1405.33	1.67	67.53	240.33	6.17	36.69	1777.92
	T	Max	mg/kg	25800.00	6630.00	92100.00	522.00	1.85	114.00	7390.00	76.20	28.10	2620.00	117000.00	17900.00	4150.00	7210.00	8.35	0.00002	30.70	2500.00	6.00	229.00	883.00	8.00	90.50	18500.00
	T	Min	mg/kg	1080.00	2.00	137.00	19.60	0.20	0.20	12.40	12.20	0.60	29.90	15400.00	36.60	33.70	16.60	0.05	0.00002	2.10	461.00	0.60	0.56	50.00	1.50	3.37	58.80
	T	StdDev	mg/kg	8585.4	2201.6	23851.0	162.8	0.6	28.6	2477.5	21.5	7.9	659.5	29488.8	4935.4	1326.1	1824.1	2.1	--	8.9	635.2	1.5	64.3	252.5	2.8	31.1	4653.4
5120	S	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	S	Average	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	4.33	1340.00	16300.00	16300.00	16300.00	4.33	4.33	3.26	3.26	1.40	118.00	9.00	9.00	9.00	471.00	
	S	Max	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	4.33	1340.00	16300.00	16300.00	16300.00	4.33	4.33	3.26	3.26	1.40	118.00	9.00	9.00	9.00	471.00	
	S	Min	mg/kg	3990.00	14600.00	0.10	1.54	1.50	1340.00	16300.00	4.33	4.33	1340.00	16300.00	16300.00	16300.00	4.33	4.33	3.26	3.26	1.40	118.00	9.00	9.00	9.00	471.00	
	S	StdDev	mg/kg	--	--	--	--																				

Table 6 - Surface Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				87		0.018		1000	273	20		243486		1300	300			50	0.012		610		5	25900		0.24	7400	
1002	DW	N			2	2				2		2		2	2	2			2	2			2	2				2
	DW	Average	mg/kg	1.35		4.55				0.30		50.00		30.00	95.00	0.45		21.50	0.01			0.35	0.30				50.00	
	DW	Max	mg/kg	2.00		7.30				0.50		50.00		50.00	160.00	0.80		30.00	0.02			0.50	0.30				50.00	
	DW	Min	mg/kg	0.70		1.80				0.10		50.00		10.00	30.00	0.10		13.00	0.00			0.20	0.30				50.00	
	DW	StdDev	mg/kg	0.92		3.89				0.28		0.00		28.28	91.92	0.49		12.02	0.01			0.21	0.00				0.00	
1007	DW	N		1	3	3	1	1	1	3	2	3	1	3	3	3	2	3	3		1	1	3	3	1	1	1	3
	DW	Average	mg/kg	30.00	9.63	196.00	1.08	2.80	0.66	0.35	33550.00	35.33	6.00	21.00	53.33	0.67	3930.00	17.80	0.07		10.00	630.00	0.54	0.24	4240.00	0.24	5.00	39.67
	DW	Max	mg/kg	30.00	10.30	206.00	1.08	2.80	0.66	0.50	33900.00	50.00	6.00	50.00	60.00	0.90	4010.00	30.00	0.20		10.00	630.00	0.62	0.30	4240.00	0.24	5.00	60.00
	DW	Min	mg/kg	30.00	9.10	186.00	1.08	2.80	0.66	0.15	33200.00	6.00	6.00	3.00	40.00	0.50	3850.00	11.00	0.00		10.00	630.00	0.50	0.12	4240.00	0.24	5.00	19.00
	DW	StdDev	mg/kg	--	0.61	10.00	--	--	--	0.18	494.97	25.40	--	25.36	11.55	0.21	113.14	10.59	0.11	--	--	0.07	0.10	--	--	--	20.50	
1010	DW	N		1	3	3	1	1	1	3	2	3	1	3	3	3	2	3	3		1	1	3	3	1	1	1	3
	DW	Average	mg/kg	1160.00	18.03	679.67	1.70	2.50	0.66	19.30	69450.00	35.33	14.90	475.00	8516.67	31.13	25150.00	2396.67	0.07		10.00	1210.00	0.71	0.20	4420.00	0.36	5.00	3840.00
	DW	Max	mg/kg	1160.00	31.20	1360.00	1.70	2.50	0.66	30.30	69700.00	50.00	14.90	675.00	16400.00	37.50	25200.00	4230.00	0.20		10.00	1210.00	1.00	0.22	4420.00	0.36	5.00	6590.00
	DW	Min	mg/kg	1160.00	7.50	240.00	1.70	2.50	0.66	13.10	69200.00	6.00	14.90	360.00	2920.00	27.60	25100.00	1370.00	0.00		10.00	1210.00	0.50	0.18	4420.00	0.36	5.00	2340.00
	DW	StdDev	mg/kg	--	12.07	597.53	--	--	--	9.55	353.55	25.40	--	173.85	7024.90	5.52	70.71	1591.52	0.11	--	--	0.26	0.02	--	--	--	2384.85	
1011	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	4.20		31.60				4.50		50.00		50.00	1350.00	4.40		696.00	0.01			0.50	0.08				850.00	
	DW	Max	mg/kg	4.20		31.60				4.50		50.00		50.00	1350.00	4.40		696.00	0.01			0.50	0.08				850.00	
	DW	Min	mg/kg	4.20		31.60				4.50		50.00		50.00	1350.00	4.40		696.00	0.01			0.50	0.08				850.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1012	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	12.30		162.00				4.20		50.00		90.00	500.00	15.80		108.00	0.00			0.50	0.30				830.00	
	DW	Max	mg/kg	12.30		162.00				4.20		50.00		90.00	500.00	15.80		108.00	0.00			0.50	0.30				830.00	
	DW	Min	mg/kg	12.30		162.00				4.20		50.00		90.00	500.00	15.80		108.00	0.00			0.50	0.30				830.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1013	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	Max	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	Min	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1014	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	0.80		14.00				0.50		50.00		50.00	140.00	0.90		17.00	0.01			0.10	0.30				50.00	
	DW	Max	mg/kg	0.80		14.00				0.50		50.00		50.00	140.00	0.90		17.00	0.01			0.10	0.30				50.00	
	DW	Min	mg/kg	0.80		14.00				0.50		50.00		50.00	140.00	0.90		17.00	0.01			0.10	0.30				50.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1016	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	0.60		28.80				0.50		50.00		50.00	60.00	0.50		30.00	1.00			0.50	0.30				50.00	
	DW	Max	mg/kg	0.60		28.80				0.50		50.00		50.00	60.00	0.50		30.00	1.00			0.50	0.30				50.00	
	DW	Min	mg/kg	0.60		28.80				0.50		50.00		50.00	60.00	0.50		30.00	1.00			0.50	0.30				50.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2001	SW	N		2	4	4	1	2	2	4	4	4	2	4	2	4	4	2	6		2	2	4	4	2	2	2	4
	SW	Average	mg/kg	30.00	10.48	2.23	0.04	8.15	2.00	1.25	2992.50	28.00	6.00	30.00	60.00	1.68	457.75	4.00	0.07		10.00	500.00	1.75	2.65	500.00	2.00	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	3.00	0.04	10.10	2.00	2.00	3140.00	50.00	6.00	50.00	60.00	3.00	480.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	50.00
	SW	Min	mg/kg	30.00	0.70	1.30	0.04	6.20	2.00	0.50	2870.00	6.00	6.00	10.00	60.00	0.20	434.00	4.00	0.00		10.00	500.00	0.50	0.30	500.00	2.00	5.00	10.00
	SW	StdDev	mg/kg	0.00	11.00	0.90	--	2.76	0.00	0.87	125.00	25.40	0.00	23.09	0.00	1.53	23.61	0.00	0.10		0.00	0.00	1.44	2.71	0.00	0.00	0.00	23.09
2003	DW	N		1		1				1		1		1	1	1		1	1			1	1				1	
	DW	Average	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	Max	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	Min	mg/kg	25.00		4060.00				7.70		50.00		410.00	22900.00	125.00		522.00	0.82			0.30	3.82				1220.00	
	DW	StdDev	mg/kg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2005	DW	N		2	4	4	1	2	2	4	4	4	2	4	2	4	4	2	6		2	2	4	4	2	2	4	
	SW	Average	mg/kg	30.00	10.70	4.55	0.13	8.40	2.00	1.25	3117.50	28.00	6.00	30.00	60.00	1.68	420.00	4.00	0.0									



Table 6 - Surface Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				87		0.018		1000	273	20		243486		1300		300			50	0.012		610	5	25900		0.24	7400	
2009	DW	N			1	1				1					1	1			1	1				1	1			1
	DW	Average	mg/kg	0.60		<b>28.80</b>				0.50		50.00		50.00	60.00	0.50		30.00	<b>1.00</b>			0.50	0.30				50.00	
	DW	Max	mg/kg	0.60		<b>28.80</b>				0.50		50.00		50.00	60.00	0.50		30.00	<b>1.00</b>			0.50	0.30				50.00	
	DW	Min	mg/kg	0.60		<b>28.80</b>				0.50		50.00		50.00	60.00	0.50		30.00	<b>1.00</b>			0.50	0.30				50.00	
	DW	StdDev	mg/kg	--	--				--		--		--	--	--	--	--					--	--	--	--	--	--	
2011	SW	N		1	2	1		1	1	2	2	1	1	2	1	2	2		1	2		2	1	1	1	2	1	1
	SW	Average	mg/kg	30.00	12.50	<b>9.50</b>	0.15	4.00	2.00	1.06	3180.00	6.00	6.00	5.50	60.00	1.84	277.50	4.00	<b>0.10</b>		7.50	500.00	3.00	5.00	500.00	<b>1.50</b>	5.00	10.00
	SW	Max	mg/kg	30.00	20.00	<b>9.50</b>	0.15	4.00	2.00	2.00	3220.00	6.00	6.00	10.00	60.00	3.00	279.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	Min	mg/kg	30.00	5.00	<b>9.50</b>	0.15	4.00	2.00	0.12	3140.00	6.00	6.00	1.00	60.00	0.68	276.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	10.61	--	--	--	--	1.33	56.57	--	--	6.36	--	1.64	2.12	--		0.14	3.54	--	--	--	--	0.71	--	--
2013	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2		1	3		2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	8.90	<b>9.00</b>	0.15	4.00	2.00	0.87	2700.00	28.00	6.00	20.33	60.00	1.35	302.50	4.00	<b>0.07</b>		7.50	500.00	1.75	2.65	500.00	<b>1.50</b>	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	<b>9.40</b>	0.15	4.00	2.00	2.00	2750.00	50.00	6.00	50.00	60.00	3.00	309.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	50.00
	SW	Min	mg/kg	30.00	1.70	<b>8.60</b>	0.15	4.00	2.00	0.12	2650.00	6.00	6.00	1.00	60.00	0.50	296.00	4.00	0.00		5.00	500.00	0.50	0.30	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	9.75	0.57	--	--	--	0.99	70.71	31.11	--	26.08	--	1.43	9.19	--		0.12	3.54	--	1.77	3.32	--	0.71	--	28.28
2014	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2		1	3		2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	9.00	<b>10.70</b>	0.15	3.70	2.00	0.87	2760.00	28.00	6.00	20.33	60.00	1.35	314.00	4.00	<b>0.07</b>		7.50	500.00	1.75	2.65	510.00	<b>1.50</b>	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	<b>11.30</b>	0.15	3.70	2.00	2.00	2780.00	50.00	6.00	50.00	60.00	3.00	315.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	510.00	<b>2.00</b>	5.00	50.00
	SW	Min	mg/kg	30.00	2.00	<b>10.10</b>	0.15	3.70	2.00	0.12	2740.00	6.00	6.00	1.00	60.00	0.50	313.00	4.00	0.00		5.00	500.00	0.50	0.30	510.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	9.64	0.85	--	--	--	0.99	28.28	31.11	--	26.08	--	1.43	1.41	--		0.12	3.54	--	1.77	3.32	--	0.71	--	28.28
2016	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2		1	3		2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	9.10	<b>10.20</b>	0.24	3.40	2.00	0.87	3275.00	28.00	6.00	20.33	60.00	1.35	308.00	4.00	<b>0.07</b>	0.00002	7.50	500.00	1.75	2.65	550.00	<b>1.50</b>	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	<b>12.40</b>	0.24	3.40	2.00	2.00	3280.00	50.00	6.00	50.00	60.00	3.00	309.00	4.00	<b>0.20</b>	0.00002	10.00	500.00	3.00	5.00	550.00	<b>2.00</b>	5.00	50.00
	SW	Min	mg/kg	30.00	2.30	<b>8.00</b>	0.24	3.40	2.00	0.12	3270.00	6.00	6.00	1.00	60.00	0.50	307.00	4.00	0.00	0.00002	5.00	500.00	0.50	0.30	550.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	9.54	3.11	--	--	--	0.99	7.07	31.11	--	26.08	--	1.43	1.41	--		0.12	3.54	--	1.77	3.32	--	0.71	--	28.28
2019	SW	N		5	5	5				5	5	5		5	5	5			5			5	5				5	
	SW	Average	mg/kg	2.56		<b>7.78</b>				0.60		60.00		52.00		0.60			0.00			0.60	0.34				60.00	
	SW	Max	mg/kg	3.10		<b>9.00</b>				1.00		100.00		100.00		1.00			0.00			1.00	0.50				100.00	
	SW	Min	mg/kg	1.40		<b>5.20</b>				0.50		50.00		10.00		0.50			0.00			0.50	0.30				50.00	
	SW	StdDev	mg/kg	0.73		1.59				0.22		22.36		31.94		0.22			0.00			0.22	0.09				22.36	
2020	SW	N		1	1	1				1	1	1		1	1	1			1			1	1				1	
	SW	Average	mg/kg	2.90		<b>68.50</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Max	mg/kg	2.90		<b>68.50</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Min	mg/kg	2.90		<b>68.50</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	StdDev	mg/kg	--	--				--		--	--	--	--	--				--		--	--	--	--	--	--	--	
2021	SW	N		1	1	1				1	1	1		1	1	1			1			1	1				1	
	SW	Average	mg/kg	4.40		<b>20.00</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Max	mg/kg	4.40		<b>20.00</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Min	mg/kg	4.40		<b>20.00</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	StdDev	mg/kg	--	--				--		--	--	--	--	--				--		--	--	--	--	--	--	--	
3001	DW	N		2	2	2				2	2	2		2	2	2			2			2	2				2	
	DW	Average	mg/kg	1.35		<b>4.55</b>				0.30		50.00		30.00		0.45			21.50	0.01		0.35	0.30				50.00	
	DW	Max	mg/kg	2.00		<b>7.30</b>				0.50		50.00		50.00		0.80			30.00	0.02		0.50	0.30				50.00	
	DW	Min	mg/kg	0.70		<b>1.80</b>				0.10		50.00		10.00		0.10			13.00	0.00		0.20	0.30				50.00	
	DW	StdDev	mg/kg	0.92		3.89				0.28		0.00		28.28		0.49			12.02	0.01		0.21	0.00				0.00	
3002	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2		1	3		2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	8.90	<b>9.00</b>	0.15	4.00	2.00	0.87	2700.00	28.00	6.00	20.33	60.00	1.35	302.50	4.00	<b>0.07</b>		7.50	500.00	1.75	2.65	500.00	<b>1.50</b>	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	<b>9.40</b>	0.15	4.00	2.00	2.00	2750.00	50.00	6.00	50.00	60.00	3.00	309.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	50.00
	SW	Min	mg/kg	30.00	1.70	<b>8.60</b>	0.15	4.00	2.00	0.12	2650.00	6.00	6.00	1.00	60.00	0.50	296.00	4.00	0.00		5.00	500.00	0.50	0.30	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	9.75	0.57	--	--	--	0.99	70.71	31.11	--	26.08	--	1.43	9.19	--										

Table 6 - Surface Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				87		0.018		1000	273	20		243486		1300	300			50	0.012		610	5	25900		0.24		7400	
3005	SW	N		1		1				1		1		1		1				1			1		1			1
	SW	Average	mg/kg	2.30		8.00				0.50		50.00		50.00		0.50				0.00			0.50	0.30			50.00	
	SW	Max	mg/kg	2.30		8.00				0.50		50.00		50.00		0.50				0.00			0.50	0.30			50.00	
	SW	Min	mg/kg	2.30		8.00				0.50		50.00		50.00		0.50				0.00			0.50	0.30			50.00	
	SW	StdDev		--	--				--		--		--		--				--		--		--		--		--	
3006	SW	N		1		1				1		1		1		1				1			1		1			1
	SW	Average	mg/kg	1.40		5.20				0.50		50.00		10.00		0.50				0.00			0.50	0.30			50.00	
	SW	Max	mg/kg	1.40		5.20				0.50		50.00		10.00		0.50				0.00			0.50	0.30			50.00	
	SW	Min	mg/kg	1.40		5.20				0.50		50.00		10.00		0.50				0.00			0.50	0.30			50.00	
	SW	StdDev		--	--				--		--		--		--				--		--		--		--		--	
3007	SW	N		1		1				1		1		1		1				1			1		1			1
	SW	Average	mg/kg	3.10		9.00				1.00		100.00		100.00		1.00				0.00			1.00	0.50			100.00	
	SW	Max	mg/kg	3.10		9.00				1.00		100.00		100.00		1.00				0.00			1.00	0.50			100.00	
	SW	Min	mg/kg	3.10		9.00				1.00		100.00		100.00		1.00				0.00			1.00	0.50			100.00	
	SW	StdDev		--	--				--		--		--		--				--		--		--		--		--	
3009	DW	N		2		2				2		2		2		2				2			2		2			2
	DW	Average	mg/kg	1.35		4.55				0.30		50.00		30.00		0.45				21.50	0.01		0.35	0.30			50.00	
	DW	Max	mg/kg	2.00		7.30				0.50		50.00		50.00		0.80				30.00	0.02		0.50	0.30			50.00	
	DW	Min	mg/kg	0.70		1.80				0.10		50.00		10.00		0.10				13.00	0.00		0.20	0.30			50.00	
	DW	StdDev		0.92		3.89				0.28		0.00		28.28		0.49				12.02	0.01		0.21	0.00			0.00	
	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2			1	3	2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	8.90	9.00	0.15	4.00	2.00	0.87	2700.00	28.00	6.00	20.33	60.00	1.35	302.50	4.00	0.07		7.50	500.00	1.75	2.65	500.00	1.50	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	9.40	0.15	4.00	2.00	2.00	2750.00	50.00	6.00	50.00	60.00	3.00	309.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	50.00
	SW	Min	mg/kg	30.00	1.70	8.60	0.15	4.00	2.00	0.12	2650.00	6.00	6.00	1.00	60.00	0.50	296.00	4.00	0.00		5.00	500.00	0.50	0.30	500.00	1.00	5.00	10.00
	SW	StdDev		--	9.75	0.57	--	--	--	0.99	70.71	31.11	--	26.08	--	1.43	9.19	--		0.12	3.54	--	1.77	3.32	--	0.71	--	28.28
3013	DW	N		2	12	2	2	2	2	12	4	2	2	12	12	12	4			12	12	2	2	12	2	2	2	12
	DW	Average	mg/kg	595.00	9.69	564.21	1.39	2.65	0.66	6.06	51500.00	42.67	10.45	175.67	4195.83	18.93	14540.00	712.62	0.19		10.00	920.00	0.49	0.54	4330.00	0.30	5.00	1159.08
	DW	Max	mg/kg	1160.00	31.20	4060.00	1.70	2.80	0.66	30.30	69700.00	50.00	14.90	675.00	22900.00	125.00	25200.00	4230.00	1.00		10.00	1210.00	1.00	3.82	4420.00	0.36	5.00	6590.00
	DW	Min	mg/kg	30.00	0.60	1.80	1.08	2.50	0.66	0.10	33200.00	6.00	6.00	3.00	30.00	0.10	3850.00	11.00	0.00		10.00	630.00	0.10	0.08	4240.00	0.24	5.00	19.00
	DW	StdDev		799.03	9.85	1163.11	0.44	0.21	0.00	9.24	20729.85	17.13	6.29	223.16	7575.86	36.08	12251.61	1241.86	0.35		0.00	410.12	0.23	1.04	127.28	0.08	0.00	1947.41
	SW	N		8	27	23	3	8	8	27	16	23	8	27	8	27	16			8	31	1	12	8	23	8	23	
	SW	Average	mg/kg	30.00	7.91	10.43	0.17	5.74	2.00	0.91	2993.13	36.87	6.00	31.26	60.00	1.28	355.63	4.00	0.05	0.00002	8.33	500.00	1.39	1.94	507.50	1.67	5.00	38.26
	SW	Max	mg/kg	30.00	20.00	68.50	0.24	10.10	2.00	2.00	3280.00	100.00	6.00	100.00	60.00	3.00	441.00	4.00	0.20	0.00002	10.00	500.00	3.00	5.00	550.00	2.00	5.00	100.00
	SW	Min	mg/kg	30.00	1.20	1.30	0.13	2.00	2.00	0.12	2650.00	6.00	6.00	1.00	60.00	0.20	276.00	4.00	0.00	0.00002	5.00	500.00	0.50	0.30	500.00	1.00	5.00	10.00
	SW	StdDev		0.00	8.08	13.22	0.06	2.92	0.00	0.74	232.00	25.25	0.00	25.59	0.00	1.15	61.46	0.00	0.09	--	2.46	0.00	1.21	2.28	17.53	0.49	0.00	23.48
4002	SW	N		5		5				5		5		5		5				5			5		5			5
	SW	Average	mg/kg	3.28		22.98				0.60		60.00		60.00		0.72				0.00			0.60	0.34			60.00	
	SW	Max	mg/kg	4.40		68.50				1.00		100.00		100.00		1.00				0.00		1.00	0.50			100.00		
	SW	Min	mg/kg	2.90		8.50				0.50		50.00		50.00		0.50				0.00		0.50	0.30			50.00		
	SW	StdDev		0.63		25.91				0.22		22.36		22.36		0.22				0.00		0.22	0.09			22.36		
4003	DW	N		2		2				2		2		2		2				2			2		2			2
	DW	Average	mg/kg	1.35		4.55				0.30		50.00		30.00		0.45				21.50	0.01		0.35	0.30			50.00	
	DW	Max	mg/kg	2.00		7.30				0.50		50.00		50.00		0.80				30.00	0.02		0.50	0.30			50.00	
	DW	Min	mg/kg	0.70		1.80				0.10		50.00		10.00		0.10				13.00	0.00		0.20	0.30			50.00	
	DW	StdDev		0.92		3.89				0.28		0.00		28.28		0.49				12.02	0.01		0.21	0.00			0.00	
	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2			1	3	2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	9.00	8.60		2.00	2.00	0.87	3180.00	28.00	6.00	20.33	60.00	1.33	277.50	4.00	0.07		7.50	500.00	1.75	2.65	500.00	1.50	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	9.50		2.00	2.00	2.00	3220.00	50.00	6.00	50.00	60.00	3.00	279.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	50.00
	SW	Min	mg/kg	30.00	2.00	7.70		2.00	2.00	0.12	3140.00	6.00	6.00	1.00	60.00	0.30	276.00	4.00	0.00		5.00	500.00	0.50	0.30	500.00	1.00	5.00	10.00
	SW	StdDev		--	9.64	1.27	--	--	--	0.99	56.57	31.11	--	26.08	--	1.46	2.12	--		0.11	3.54	--	1.77	3.32	--	0.71	--	28.28
4006	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2			1	3	2	1	2	1	2	1	2
	SW	Average	mg/kg	30.00	8.90	9.00	0.15	4.00	2.00	0.87	2700.00	28.00	6.00	20.33	60.00	1.35												

Table 6 - Surface Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				87		0.018		1000	273	20		243486		1300		300		50	0.012		610		5	25900		0.24	7400	
4026	SW	N			1	1				1		1		1		1				1			1		1			1
	SW	Average	mg/kg	3.10		<b>9.00</b>				1.00		100.00		100.00		1.00			0.00			1.00	0.50				100.00	
	SW	Max	mg/kg	3.10		<b>9.00</b>				1.00		100.00		100.00		1.00			0.00			1.00	0.50				100.00	
	SW	Min	mg/kg	3.10		<b>9.00</b>				1.00		100.00		100.00		1.00			0.00			1.00	0.50				100.00	
	SW	StdDev	mg/kg	--	--				--		--		--		--				--		--		--		--		--	
4082	SW	N			1	1				1		1		1		1				1			1		1			1
	SW	Average	mg/kg	2.90		<b>8.50</b>				0.50		50.00		50.00		0.50			0.00			0.50	0.30				50.00	
	SW	Max	mg/kg	2.90		<b>8.50</b>				0.50		50.00		50.00		0.50			0.00			0.50	0.30				50.00	
	SW	Min	mg/kg	2.90		<b>8.50</b>				0.50		50.00		50.00		0.50			0.00			0.50	0.30				50.00	
	SW	StdDev	mg/kg	--	--				--		--		--		--				--		--		--		--		--	
4096	SW	N			2	2				2		2		2		2				2		2	2		2			2
	SW	Average	mg/kg	3.65		<b>44.25</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Max	mg/kg	4.40		<b>68.50</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	Min	mg/kg	2.90		<b>20.00</b>				0.50		50.00		50.00		0.80			0.00			0.50	0.30				50.00	
	SW	StdDev	mg/kg	1.06		34.29				0.00		0.00		0.00		0.00			0.00		0.00	0.00	0.00				0.00	
4102	SW	N		1	3	2	1	1	1	3	2	2	1	3	1	3	2	1	3	1	2	1	2	2	1	2	1	2
	SW	Average	mg/kg	30.00	9.10	<b>10.20</b>	0.24	3.40	2.00	0.87	3275.00	28.00	6.00	20.33	60.00	1.35	308.00	4.00	<b>0.07</b>	0.00002	7.50	500.00	1.75	2.65	550.00	<b>1.50</b>	5.00	30.00
	SW	Max	mg/kg	30.00	20.00	<b>12.40</b>	0.24	3.40	2.00	2.00	3280.00	50.00	6.00	50.00	60.00	3.00	309.00	4.00	<b>0.20</b>	0.00002	10.00	500.00	3.00	5.00	550.00	<b>2.00</b>	5.00	50.00
	SW	Min	mg/kg	30.00	2.30	<b>8.00</b>	0.24	3.40	2.00	0.12	3270.00	6.00	6.00	1.00	60.00	0.50	307.00	4.00	0.00	0.00002	5.00	500.00	0.50	0.30	550.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	mg/kg	--	9.54	3.11	--	--	--	0.99	7.07	31.11	--	26.08	--	1.43	1.41	--	0.12	--	3.54	--	1.77	3.32	--	0.71	--	28.28
5004	SW	N		1	2	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	2	1	1	1	1	1	1	1
	SW	Average	ug/L	30.00	12.50	<b>9.40</b>	0.15	4.00	2.00	1.06	2700.00	6.00	6.00	5.50	60.00	1.78	302.50	4.00	<b>0.10</b>		7.50	500.00	3.00	5.00	500.00	<b>1.50</b>	5.00	10.00
	SW	Max	ug/L	30.00	20.00	<b>9.40</b>	0.15	4.00	2.00	2.00	2750.00	6.00	6.00	10.00	60.00	3.00	309.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	Min	ug/L	30.00	5.00	<b>9.40</b>	0.15	4.00	2.00	0.12	2650.00	6.00	6.00	1.00	60.00	0.55	296.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	ug/L	--	10.6	--	--	--	--	1.3	70.7	--	--	6.4	--	1.7	9.2	--	0.1	--	3.5	--	--	--	--	0.7	--	--
5005	SW	N		1	2	1	1	1	1	2	2	1	1	2	1	2	2	1	2	1	2	1	1	1	1	1	1	1
	SW	Average	ug/L	30.00	12.50	<b>11.30</b>		3.70	2.00	1.06	2760.00	6.00	6.00	5.50	60.00	1.78	314.00	4.00	<b>0.10</b>		7.50	500.00	3.00	5.00	510.00	<b>1.50</b>	5.00	10.00
	SW	Max	ug/L	30.00	20.00	<b>11.30</b>		3.70	2.00	2.00	2780.00	6.00	6.00	10.00	60.00	3.00	315.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	510.00	<b>2.00</b>	5.00	10.00
	SW	Min	ug/L	30.00	5.00	<b>11.30</b>		3.70	2.00	0.12	2740.00	6.00	6.00	1.00	60.00	0.55	313.00	4.00	0.00		5.00	500.00	3.00	5.00	510.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	ug/L	--	10.6	--	--	--	--	1.3	28.3	--	--	6.4	--	1.7	1.4	--	0.1	--	3.5	--	--	--	--	0.7	--	--
5007	SW	N		1	3	2	1	1	1	3	3	2	1	3	1	3	3	1	3	1	2	1	2	2	1	2	1	2
	SW	Average	ug/L	30.00	9.10	<b>10.20</b>	0.24	3.40	2.00	0.87	3116.67	28.00	6.00	20.33	60.00	1.35	538.67	4.00	<b>0.07</b>	0.00	7.50	500.00	1.75	2.65	550.00	<b>1.50</b>	5.00	30.00
	SW	Max	ug/L	30.00	20.00	<b>12.40</b>	0.24	3.40	2.00	2.00	3280.00	50.00	6.00	50.00	60.00	3.00	1000.00	4.00	<b>0.20</b>	0.00	10.00	500.00	3.00	5.00	550.00	<b>2.00</b>	5.00	50.00
	SW	Min	ug/L	30.00	2.30	<b>8.00</b>	0.24	3.40	2.00	0.12	2800.00	6.00	6.00	1.00	60.00	0.50	307.00	4.00	0.00	0.00	5.00	500.00	0.50	0.30	550.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	ug/L	--	9.5	3.1	--	--	--	1.0	274.3	31.1	--	26.1	--	1.4	399.5	--	0.1	--	3.5	--	1.8	3.3	--	0.7	--	28.3
5010	SW	N		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	SW	Average	ug/L	2.00		<b>10.10</b>				0.50	2300.00	50.00		50.00		0.50	1000.00		0.00			0.50	0.30				50.00	
	SW	Max	ug/L	2.00		<b>10.10</b>				0.50	2300.00	50.00		50.00		0.50	1000.00		0.00			0.50	0.30				50.00	
	SW	Min	ug/L	2.00		<b>10.10</b>				0.50	2300.00	50.00		50.00		0.50	1000.00		0.00			0.50	0.30				50.00	
	SW	StdDev	ug/L	--	--				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5022	SW	N		2	3	5			2	5	1	3		5	2	5	1		5		2	3	3		2	1	5	
	SW	Average	ug/L	35.00	1.63	<b>9.05</b>			0.10	0.16	2300.00	17.00		10.36	20.00	0.19	1000.00		0.02		0.50	0.50	0.17		0.10		14.37	
	SW	Max	ug/L	50.00	1.90	<b>12.20</b>			0.10	0.50	2300.00	50.00		50.00	20.00	0.50	1000.00		<b>0.05</b>		0.50	0.50	0.30		0.10		50.00	
	SW	Min	ug/L	20.00	1.30	<b>7.37</b>			0.10	0.04	2300.00	0.50		0.28	20.00	0.02	1000.00		0.00		0.50	0.50	0.10		0.10		5.00	
	SW	StdDev	ug/L	21.2	0.3	1.9			0.0	0.2	--	28.6		22.2	0.0	0.2	--		0.0		0.0	0.1			0.0		19.9	
5024	SW	N		1	3	2	1	1	1	3	3	2	1	3	1	3	3	1	3	1	2	1	2	2	1	2	1	2
	SW	Average	ug/L	30.00	9.00	<b>8.60</b>		2.00	2.00	0.87	2953.33	28.00	6.00	20.33	60.00	1.33	518.33	4.00	<b>0.07</b>		7.50	500.00	1.75	2.65	500.00	<b>1.50</b>	5.00	30.00
	SW	Max	ug/L	30.00	20.00	<b>9.50</b>		2.00	2.00	2.00	3220.00	50.00	6.00	50.00	60.00	3.00	1000.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	50.00
	SW	Min	ug/L	30.00	2.00	<b>7.70</b>		2.00	2.00	0.12	2500.00	6.00	6.00	1.00	60.00	0.30	276.00	4.00	0.00		5.00	500.00	0.50	0.30	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	ug/L	--																								

Table 6 - Surface Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Media	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria				87		0.018		1000	273	20		243486		1300	300			50	0.012		610		5	25900		0.24	7400	
5041	DW	N			3	4				4	2	2	4	4	3	4	2	2	2		1		2	2				4
	DW	Average	ug/L	11.37		<b>1031.23</b>				4.31	15600.00	50.00	118.00		<b>8326.33</b>	35.63	5200.00	<b>609.00</b>	<b>0.42</b>		2.00		0.40	1.95			575.73	
	DW	Max	ug/L	25.00		<b>4060.00</b>				7.70	28400.00	50.00	410.00		<b>22900.00</b>	125.00	9300.00	<b>696.00</b>	<b>0.82</b>		2.00		0.50	3.82			1220.00	
	DW	Min	ug/L	4.20		<b>2.80</b>				0.04	2800.00	50.00	2.00		<b>729.00</b>	2.00	1100.00	<b>522.00</b>	0.01		2.00		0.30	0.08			7.90	
	DW	StdDev	ug/L	11.8		2019.2				3.2	18101.9	0.0	195.8		12625.0	59.7	5798.3	123.0	0.6	--		0.1	2.6				558.5	
	SW	N			3	3				3	1	1	3	3		3	1		1		2		1	1				3
	SW	Average	ug/L	3.67		<b>4.00</b>				0.19	2300.00	50.00	18.00			1.40	1000.00		0.00		2.00		0.50	0.30			20.00	
	SW	Max	ug/L	5.50		<b>6.00</b>				0.50	2300.00	50.00	50.00			2.00	1000.00		0.00		2.00		0.50	0.30			50.00	
	SW	Min	ug/L	1.30		<b>2.00</b>				0.04	2300.00	50.00	2.00			0.20	1000.00		0.00		2.00		0.50	0.30			5.00	
	SW	StdDev	ug/L	2.2		2.0				0.3	--	--	27.7		1.0	--	--	--	0.0		0.0	--	--	--	--		26.0	
5042	DW	N		1	3	3	1	1	1	3	4	3	1	3	3	3	4	3	3		1	1	3	3	1	1	1	3
	DW	Average	ug/L	<b>1160.00</b>	18.03	<b>679.67</b>	1.70	2.50	0.66	19.30	45000.00	35.33	14.90	475.00	<b>8516.67</b>	31.13	16150.00	<b>2396.67</b>	<b>0.07</b>		10.00	1210.00	0.71	0.20	4420.00	0.36	5.00	3840.00
	DW	Max	ug/L	<b>1160.00</b>	31.20	<b>1360.00</b>	1.70	2.50	0.66	30.30	69700.00	50.00	14.90	675.00	<b>16400.00</b>	37.50	25200.00	<b>4230.00</b>	<b>0.20</b>		10.00	1210.00	1.00	0.22	4420.00	0.36	5.00	6590.00
	DW	Min	ug/L	<b>1160.00</b>	7.50	<b>240.00</b>	1.70	2.50	0.66	13.10	18900.00	6.00	14.90	360.00	<b>2920.00</b>	27.60	6400.00	<b>1370.00</b>	0.00		10.00	1210.00	0.50	0.18	4420.00	0.36	5.00	2340.00
	DW	StdDev	ug/L	--	12.1	597.5	--	--	--	9.6	28265.3	25.4	--	173.9	7024.9	5.5	10410.4	1591.5	0.1	--	--	0.3	0.0	--	--	--	2384.8	
5045	DW	N		1	1	1				1		1		1	1	1		1	1		1		1	1				1
	DW	Average	ug/L	30.00		<b>1100.00</b>				11.00				560.00		100.00					2.00							1600.00
	DW	Max	ug/L	30.00		<b>1100.00</b>				11.00				560.00		100.00					2.00							1600.00
	DW	Min	ug/L	30.00		<b>1100.00</b>				11.00				560.00		100.00					2.00							1600.00
	DW	StdDev	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5046	DW	N		1	2	2				2	1	1		2	2	2	1	1	1				1	1				2
	DW	Average	ug/L	12.30		<b>3256.00</b>				22.10	17000.00	50.00	1365.00		<b>9100.00</b>	288.90	3200.00	<b>108.00</b>	0.00				0.50	0.30			3000.00	
	DW	Max	ug/L	12.30		<b>6350.00</b>				40.00	17000.00	50.00	<b>2640.00</b>		<b>17700.00</b>	562.00	3200.00	<b>108.00</b>	0.00				0.50	0.30			5170.00	
	DW	Min	ug/L	12.30		<b>162.00</b>				4.20	17000.00	50.00	90.00		500.00	15.80	3200.00	<b>108.00</b>	0.00				0.50	0.30			830.00	
	DW	StdDev	ug/L	--	--	4375.6	--	--	--	25.3	--	--	1803.1		12162.2	386.2	--	--	--	--	--	--	--	--	--	--	3068.8	
5052	SW	N		1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	2		1	1	1	1	1	1	1	1
	SW	Average	ug/L	30.00	20.00	<b>4.50</b>	0.13	8.50	2.00	2.00	3150.00	6.00	6.00	10.00	60.00	3.00	420.50	4.00	<b>0.10</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	Max	ug/L	30.00	20.00	<b>4.50</b>	0.13	8.50	2.00	2.00	3200.00	6.00	6.00	10.00	60.00	3.00	426.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	Min	ug/L	30.00	20.00	<b>4.50</b>	0.13	8.50	2.00	2.00	3100.00	6.00	6.00	10.00	60.00	3.00	415.00	4.00	0.00		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	StdDev	ug/L	--	--	--	--	--	--	70.7	--	--	--	--	--	7.8	--	--	0.1	--	--	--	--	--	--	--	--	
5055	SW	N		1	1	1				1	1	1		1	1	1		1	1				1	1				1
	SW	Average	ug/L	1.50		<b>4.00</b>				0.50	2600.00	50.00	50.00		0.50	500.00			0.00				0.50	0.30			50.00	
	SW	Max	ug/L	1.50		<b>4.00</b>				0.50	2600.00	50.00	50.00		0.50	500.00			0.00				0.50	0.30			50.00	
	SW	Min	ug/L	1.50		<b>4.00</b>				0.50	2600.00	50.00	50.00		0.50	500.00			0.00				0.50	0.30			50.00	
	SW	StdDev	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5058	DW	N		1	1	1				1	1	1		1	1	1		1	1		1	1	1	1				1
	DW	Average	ug/L	11.60		<b>264.00</b>				0.10	0.10	0.50	2.83		0.74				<b>0.05</b>		1.19		0.50	0.10		0.10	56.80	
	DW	Max	ug/L	11.60		<b>264.00</b>				0.10	0.10	0.50	2.83		0.74				<b>0.05</b>		1.19		0.50	0.10		0.10	56.80	
	DW	Min	ug/L	11.60		<b>264.00</b>				0.10	0.10	0.50	2.83		0.74				<b>0.05</b>		1.19		0.50	0.10		0.10	56.80	
	DW	StdDev	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5060	DW	N		1	1	1				1	1	1		1	1	1		1	1		1	1	1	1				1
	DW	Average	ug/L	11.30		<b>235.00</b>				0.10	0.10	0.50	4.22		1.26				<b>0.05</b>		0.92		0.50	0.10		0.10	21.00	
	DW	Max	ug/L	11.30		<b>235.00</b>				0.10	0.10	0.50	4.22		1.26				<b>0.05</b>		0.92		0.50	0.10		0.10	21.00	
	DW	Min	ug/L	11.30		<b>235.00</b>				0.10	0.10	0.50	4.22		1.26				<b>0.05</b>		0.92		0.50	0.10		0.10	21.00	
	DW	StdDev	ug/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5073	SW	N		1	2	2	1	1	1	2	2	1	1	2	1	2	2	1	2		2	1	1	1	1	2	1	1
	SW	Average	ug/L	30.00	12.50	<b>1.73</b>	0.06	3.60	2.00	1.06	2245.00	6.00	6.00	5.50	60.00	1.78	147.00	4.00	<b>0.10</b>		7.50	500.00	3.00	5.00	500.00	<b>1.50</b>	5.00	10.00
	SW	Max	ug/L	30.00	20.00	<b>3.00</b>	0.06	3.60	2.00	2.00	2270.00	6.00	6.00	10.00	60.00	3.00	150.00	4.00	<b>0.20</b>		10.00	500.00	3.00	5.00	500.00	<b>2.00</b>	5.00	10.00
	SW	Min	ug/L	30.00	5.00	<b>0.45</b>	0.06	3.60	2.00	0.12	2220.00	6.00	6.00	1.00	60.00	0.55	144.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	<b>1.00</b>	5.00	10.00
	SW	StdDev	ug/L	--	10.6	1.8	--	--	--	1.3	35.4	--	--	6.4	--	1.7	4.2	--	0.1	--	3.5	--	--	--	--	0.7	--	

**Bold** - Value exceeds screening criteria  
**Bold italic** - Value exceeds two times the screening level

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Table 7 - Sediment Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc				
	Screening Criteria			0.6	33				0.596		37.3		149		128			0.174		48.6			2.5				121				
1004 N	Average	mg/kg	5	7.00	307.20	5	85.92	5	1.16	5	43.58	5	94.86	5	44.74	5	778.00										5	147.40			
	Max	mg/kg		14.50	469.00		91.90		1.23		49.00		111.00		30600.00		868.00											166.00			
	Min	mg/kg		3.92	112.00		79.50		1.09		36.70		78.80		27900.00		705.00											120.00			
	StdDev			4.26	128.01		5.14		0.07		4.44		11.51		1050.24		71.77										19.01				
1005 N	Average	mg/kg	5	7.45	207.20	5	93.08	5	1.07	5	47.10	5	71.18	5	39.20	5	844.80										5	135.20			
	Max	mg/kg		14.10	282.00		106.00		1.23		52.60		92.10		31400.00		1230.00											150.00			
	Min	mg/kg		3.44	130.00		84.60		0.89		41.20		30.50		24500.00		616.00											122.00			
	StdDev			4.68	66.07		7.86		0.16		4.28		23.78		2816.38		234.54										12.36				
2001 N	Average	mg/kg	3	10933.33	5.47	6	86.41	2	0.64	2	102.65	0.20	0.73	3570.00	30.30	9.01	25.77	24700.00	42.14	5970.00	1380.00	0.48	0.00001	12.23	1725.00	1.07	0.40	589.00	0.23	49.20	114.47
	Max	mg/kg		11500.00	9.90		227.00	1.08	109.00	0.20	1.55	4110.00	67.10	9.39	50.00	25000.00	104.00	6180.00	1600.00	0.87	0.00001	13.40	1910.00	5.00	1.00	649.00	0.30	51.40	172.00		
	Min	mg/kg		10500.00	0.43		0.25	0.21	96.30	0.18	0.25	3030.00	15.00	8.62	13.00	24200.00	7.88	5760.00	1190.00	0.25	0.00001	11.20	1540.00	0.11	0.06	529.00	0.14	47.00	66.00		
	StdDev			513.16	3.04		79.66	0.62	8.98	0.01	0.47	763.68	22.44	0.54	13.75	435.89	42.12	296.98	206.64	0.28	--	0.90	261.63	1.93	0.34	84.85	0.07	3.11	45.66		
2003 N	Average	mg/kg	2	10930.00	11.03	4	251.25	2.29	96.20	0.22	1.36	3465.00	31.10	9.78	45.63	25350.00	67.48	5375.00	1430.00	2.43	11.60	1730.00	0.27	0.43	589.50	0.26	48.55	159.25			
	Max	mg/kg		11900.00	16.30		367.00	3.14	98.40	0.23	1.91	3910.00	48.90	10.00	67.50	25500.00	84.80	5530.00	1510.00	4.60	11.70	1780.00	0.46	0.52	711.00	0.28	49.40	185.00			
	Min	mg/kg		9960.00	7.90		133.00	1.44	94.00	0.21	0.63	3020.00	12.00	9.56	26.00	25200.00	37.50	5220.00	1350.00	0.26	11.50	1680.00	0.08	0.21	468.00	0.25	47.70	115.00			
	StdDev			1371.79	3.89		95.56	1.20	3.11	0.01	0.58	629.33	20.36	0.31	17.23	212.13	20.97	219.20	113.14	3.07	0.14	70.71	0.20	0.15	171.83	0.02	1.20	30.84			
2005 N	Average	mg/kg	1	13400.00	6.10	7	291.00	1.54	86.33	0.20	1.21	4230.00	41.34	12.50	98.61	29333.33	43.59	7030.00	808.17	0.20	15.80	2360.00	0.22	0.36	628.00	0.20	66.20	148.71			
	Max	mg/kg		13400.00	14.50		469.00	1.54	91.90	0.20	1.79	4230.00	53.50	12.50	117.00	30600.00	72.60	7030.00	959.00	0.20	15.80	2360.00	0.30	0.50	628.00	0.20	66.20	166.00			
	Min	mg/kg		13400.00	3.80		112.00	1.54	79.50	0.20	0.89	4230.00	18.00	12.50	78.80	27900.00	32.10	7030.00	705.00	0.20	15.80	2360.00	0.14	0.22	628.00	0.20	66.20	120.00			
	StdDev			--	3.80		110.62	--	4.71	--	0.28	--	11.52	--	12.51	975.02	13.98	--	97.88	--	--	--	0.11	0.20	--	--	--	15.85			
2006 N	Average	mg/kg	5	7.45	207.20	5	93.08	5	1.07	5	47.10	5	71.18	5	39.20	5	844.80										5	135.20			
	Max	mg/kg		14.10	282.00		106.00		1.23		52.60		92.10		31400.00		1230.00											150.00			
	Min	mg/kg		3.44	130.00		84.60		0.89		41.20		30.50		24500.00		616.00											122.00			
	StdDev			4.68	66.07		7.86		0.16		4.28		23.78		2816.38		234.54										12.36				
2007 N	Average	mg/kg	1	15200.00	2.30	2	22.05	0.08	39.10	0.20	0.82	3670.00	31.80	10.60	13.80	28700.00	15.30	10600.00	657.00	0.10	14.60	1020.00	0.24	0.34	287.00	0.20	48.90	79.20			
	Max	mg/kg		15200.00	2.60		27.30	0.08	39.10	0.20	1.30	3670.00	42.60	10.60	15.60	28700.00	20.80	10600.00	657.00	0.10	14.60	1020.00	0.39	0.50	287.00	0.20	48.90	81.00			
	Min	mg/kg		15200.00	2.00		16.80	0.08	39.10	0.20	0.33	3670.00	21.00	10.60	12.00	28700.00	9.80	10600.00	657.00	0.10	14.60	1020.00	0.08	0.17	287.00	0.20	48.90	77.40			
	StdDev			--	0.42		7.42	--	--	--	0.69	--	15.27	--	2.55	--	7.78	--	--	--	--	--	0.22	0.23	--	--	--	2.55			
2011 N	Average	mg/kg	1	17100.00	11.20	1	276.00	0.82	52.80	0.20	2.91	4730.00	41.50	10.50	34.20	30600.00	89.50	9200.00	950.00	0.00001	10.20	1880.00	0.30	0.50	761.00	0.20	61.90	295.00			
	Max	mg/kg		17100.00	11.20		276.00	0.82	52.80	0.20	2.91	4730.00	41.50	10.50	34.20	30600.00	89.50	9200.00	950.00	0.00001	10.20	1880.00	0.30	0.50	761.00	0.20	61.90	295.00			
	Min	mg/kg		17100.00	11.20		276.00	0.82	52.80	0.20	2.91	4730.00	41.50	10.50	34.20	30600.00	89.50	9200.00	950.00	0.00001	10.20	1880.00	0.30	0.50	761.00	0.20	61.90	295.00			
	StdDev			--	--		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
2013 N	Average	mg/kg	2	14000.00	9.87	3	169.51	2.68	62.80	0.20	1.15	3510.00	30.10	10.60	73.33	29550.00	79.23	8720.00	801.50	0.13	0.00002	14.40	1840.00	0.30	0.59	518.00	0.25	58.50	186.33		
	Max	mg/kg		15300.00	12.00		269.00	2.68	62.80	0.20	1.90	3510.00	46.10	10.60	84.50	29600.00	96.00	8720.00	915.00	0.20	0.00002	16.10	1840.00	0.46	1.00	518.00	0.30	58.50	192.00		
	Min	mg/kg		12700.00	7.10		0.54	2.68	62.80	0.20	0.50	3510.00	21.20	10.60	56.00	29500.00	65.40	8720.00	688.00	0.07	0.00002	12.70	1840.00	0.14	0.27	518.00	0.20	58.50	177.00		
	StdDev			1838.48	2.51		147.10	--	--	0.00	0.71	--	13.89	--	15.22	70.71	15.51	--	160.51	0.09	--	2.40	--	0.16	0.37	--	0.07	8.14			
2014 N	Average	mg/kg	1	15300.00	13.15	2	498.50	2.41	66.80	0.22	1.58	3630.00	41.45	11.40	103.50	28400.00	118.50	7740.00	747.00	0.23	15.40	2020.00	0.26	0.57	624.00	0.20	56.20	214.00			
	Max	mg/kg		15300.00	13.50		544.00	2.41	66.80	0.22	1.99	3630.00	56.90	11.40	115.00	28400.00	136.00	7740.00	747.00	0.23	15.40	2020.00	0.33	0.63	624.00	0.20	56.20	222.00			
	Min	mg/kg		15300.00	12.80		453.00	2.41	66.80	0.22	1.17	3630.00	26.00	11.40	92.00	28400.00	101.00	7740.00	747.00	0.23	15.40	2020.00	0.19	0.50	624.00	0.20	56.20	206.00			
	StdDev			--	0.49		64.35	--	--	--	0.58	--	21.85	--	16.26	--	24.75	--	--	--	--	--	0.10	0.09	--	--	--	11.31			
2016 N	Average	mg/kg	1	15700.00	13.80	2	337.00	4.27	57.60	0.23	1.32	3610.00	42.75	10.90	92.00	28400.00	108.00	8450.00	715.00	0.21	0.00001	17.70	1910.00	0.28	0.49	618.00	0.20	50.70	159.50		
	Max	mg/kg		15700.00	17.30		480.00	4.27	57.60	0.23	2.02	3610.00	61.50	10.90	116.00	28400.00	156.00	8450.00	715.00	0.21	0.00001	17.70	1910.00	0.34	0.50	618.00	0.20	50.70	192.00		
	Min	mg/kg		15700.00	10.30		194.00	4.27	57.60	0.23	0.61	3610.00	24.00	10.90	68.00	28400.00	60.00	84													

Table 7 - Sediment Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
	Screening Criteria			0.6	33				0.596		37.3		149		128			0.174		48.6			2.5			121	
2021 N	Average	mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Max	mg/kg	18.00	408.00	0.81	43.00	70.00	109.00	0.20	0.17	0.99	193.00															
	Min	mg/kg	18.00	408.00	0.81	43.00	70.00	109.00	0.20	0.17	0.99	193.00															
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3001 N	Average	mg/kg	2	4	4	1	2	2	4	1	4	1	4	3	4	1	3	2	1	2	1	3	3	1	2	1	4
	Max	mg/kg	14000.00	8.26	176.39	2.68	73.70	0.20	1.09	3510.00	33.80	10.60	73.95	29300.00	66.80	8720.00	739.67	0.13	0.00002	14.40	1840.00	0.30	0.59	518.00	0.25	58.50	170.25
	Min	mg/kg	15300.00	12.00	269.00	2.68	84.60	0.20	1.90	3510.00	46.10	10.60	84.50	29600.00	96.00	8720.00	915.00	0.20	0.00002	16.10	1840.00	0.46	1.00	518.00	0.30	58.50	192.00
	StdDev	mg/kg	12700.00	3.44	0.54	2.68	62.80	0.20	0.50	3510.00	21.20	10.60	56.00	28800.00	29.50	8720.00	616.00	0.07	0.00002	12.70	1840.00	0.14	0.27	518.00	0.20	58.50	122.00
	StdDev		1838.48	3.81	120.89	--	15.41	0.00	0.59	--	13.54	--	12.49	435.89	27.91	--	156.05	0.09	--	2.40	--	0.16	0.37	--	0.07	--	32.85
3002 N	Average	mg/kg	3	10	10	2	7	3	10	2	10	2	10	8	10	2	8	3	2	3	2	5	5	2	3	2	10
	Max	mg/kg	15033.33	9.01	213.15	1.75	83.00	0.20	1.34	4120.00	38.63	10.55	63.91	29450.00	69.52	8960.00	847.13	0.13	0.00001	13.00	1860.00	0.26	0.57	639.50	0.23	60.20	181.50
	Min	mg/kg	17100.00	14.10	311.00	2.68	106.00	0.20	2.91	4730.00	52.60	10.60	92.10	31400.00	172.00	9200.00	1230.00	0.20	0.00002	16.10	1880.00	0.46	1.00	761.00	0.30	61.90	295.00
	StdDev	mg/kg	12700.00	3.44	0.54	0.82	52.80	0.20	0.50	3510.00	19.00	10.50	29.00	24500.00	29.50	8720.00	616.00	0.07	0.00001	10.20	1840.00	0.09	0.27	518.00	0.20	58.50	122.00
	StdDev		2212.09	3.79	94.37	1.31	18.60	0.00	0.68	862.67	12.60	0.07	24.40	2185.67	43.16	339.41	192.94	0.07	0.00	2.96	28.28	0.15	0.27	171.83	0.06	2.40	62.47
3003 N	Average	mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Max	mg/kg	15700.00	17.30	480.00	4.27	57.60	0.23	2.02	3610.00	61.50	10.90	116.00	28400.00	156.00	8450.00	715.00	0.00001	0.00001	17.70	1910.00	0.34	0.50	618.00	0.20	50.70	192.00
	Min	mg/kg	15700.00	17.30	480.00	4.27	57.60	0.23	2.02	3610.00	61.50	10.90	116.00	28400.00	156.00	8450.00	715.00	0.00001	0.00001	17.70	1910.00	0.34	0.50	618.00	0.20	50.70	192.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3004 N	Average	mg/kg	1	2	2	1	1	1	2	1	2	1	2	1	2	1	1	1	1	1	1	2	2	1	1	1	2
	Max	mg/kg	15300.00	13.15	498.50	2.41	66.80	0.22	1.58	3630.00	41.45	11.40	103.50	28400.00	118.50	7740.00	747.00	0.23	0.23	15.40	2020.00	0.26	0.57	624.00	0.20	56.20	214.00
	Min	mg/kg	15300.00	13.50	544.00	2.41	66.80	0.22	1.99	3630.00	56.90	11.40	115.00	28400.00	136.00	7740.00	747.00	0.23	0.23	15.40	2020.00	0.33	0.63	624.00	0.20	56.20	222.00
	StdDev	mg/kg	15300.00	12.80	453.00	2.41	66.80	0.22	1.17	3630.00	26.00	11.40	92.00	28400.00	101.00	7740.00	747.00	0.23	0.23	15.40	2020.00	0.19	0.50	624.00	0.20	56.20	206.00
	StdDev		--	0.49	64.35	--	--	--	0.58	--	21.85	--	16.26	--	24.75	--	--	--	--	--	--	0.10	0.09	--	--	--	11.31
3005 N	Average	mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Max	mg/kg	15700.00	10.30	194.00	24.00	68.00	60.00	0.61	24.00	68.00	60.00	60.00	60.00	0.21	0.22	0.47	0.21	0.21	0.22	0.47	0.22	0.47	0.22	0.47	0.22	127.00
	Min	mg/kg	15700.00	10.30	194.00	24.00	68.00	60.00	0.61	24.00	68.00	60.00	60.00	60.00	0.21	0.22	0.47	0.21	0.21	0.22	0.47	0.22	0.47	0.22	0.47	0.22	127.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3006 N	Average	mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Max	mg/kg	24.20	315.00	0.87	41.00	95.00	105.00	0.87	41.00	95.00	105.00	105.00	105.00	0.20	0.18	0.73	0.20	0.20	0.18	0.73	0.18	0.73	0.18	0.73	0.18	172.00
	Min	mg/kg	24.20	315.00	0.87	41.00	95.00	105.00	0.87	41.00	95.00	105.00	105.00	105.00	0.20	0.18	0.73	0.20	0.20	0.18	0.73	0.18	0.73	0.18	0.73	0.18	172.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3007 N	Average	mg/kg	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Max	mg/kg	51.00	384.00	1.34	45.00	83.00	171.00	1.34	45.00	83.00	171.00	171.00	171.00	0.30	0.25	1.35	0.30	0.30	0.25	1.35	0.25	1.35	0.25	1.35	0.25	157.00
	Min	mg/kg	51.00	384.00	1.34	45.00	83.00	171.00	1.34	45.00	83.00	171.00	171.00	171.00	0.30	0.25	1.35	0.30	0.30	0.25	1.35	0.25	1.35	0.25	1.35	0.25	157.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3009 N	Average	mg/kg	2	7	7	1	5	2	7	1	7	1	7	6	7	1	6	2	1	2	1	3	3	1	2	1	7
	Max	mg/kg	14000.00	8.03	197.79	2.68	87.52	0.20	1.13	3510.00	40.66	10.60	77.91	30083.33	54.06	8720.00	766.17	0.13	0.00002	14.40	1840.00	0.30	0.59	518.00	0.25	58.50	158.86
	Min	mg/kg	15300.00	14.10	282.00	2.68	106.00	0.20	1.90	3510.00	52.60	10.60	92.10	31400.00	96.00	8720.00	915.00	0.20	0.00002	16.10	1840.00	0.46	1.00	518.00	0.30	58.50	192.00
	StdDev	mg/kg	12700.00	3.44	0.54	2.68	62.80	0.20	0.50	3510.00	21.20	10.60	56.00	28800.00	29.50	8720.00	616.00	0.07	0.00002	12.70	1840.00	0.14	0.27	518.00	0.20	58.50	122.00
	StdDev		1838.48	4.19	101.78	--	15.84	0.00	0.42	--	12.91	--	11.30	1020.62	25.78	--	113.21	0.09	--	2.40	--	0.16	0.37	--	0.07	--	27.45
3013 N	Average	mg/kg	10	41	41	8	18	11	41	8	41	8	41	20	41	8	20	23	3	11	8	31	31	8	11	8	41
	Max	mg/kg	13266.00	13.82	308.00	2.17	84.71	0.21	1.25	3708.75	40.52	10.61	78.64	28450.00	90.04	7206.25	936.90	0.39	0.00001	21.11	1922.50	0.26	1.09	607.13	0.23	54.70	187.20
	Min	mg/kg	17100.00	51.00	1090.00	4.27	109.00	0.23	3.90	4730.00	65.00	12.50	207.00	31400.00	278.00	9200.00	1600.00	4.60	0.00002	96.50	2360.00	0.50	6.94	761.00	0.30	66.20	806.00
	StdDev	mg/kg	9960.00	0.01	0.25	0.82	52.80	0.17	0.44	3020.00	12.00	9.39	16.00	24500.00	19.60	5220.00	616.00	0.07	0.00001	10.20	1680.00	0.08	0.18	468.00	0.17	47.00	90.00
	StdDev		2489.18	11.55	193.91	1.17	15.61	0.02	0.65	578.88	13.86	1.02	33.28	2231.95	52.36	1557.29	286.59	0.92	0.00	25.12	203.17	0.12	1.32	99.07	0.05	7.10	107.24
4002 N	Average	mg/kg																									

Table 7 - Sediment Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
	Screening Criteria			0.6	33				0.596		37.3		149		128			0.174		48.6			2.5				121
4007 N	Average	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	Max	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	Min	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	StdDev	mg/kg	1	--	--	1			--		--		--		--			--				--	--				--
4010 N	Average	mg/kg	1	20.70	187.00	1			0.77		38.00		89.00		90.90			0.20				0.15	0.53				165.00
	Max	mg/kg	1	20.70	187.00	1			0.77		38.00		89.00		90.90			0.20				0.15	0.53				165.00
	Min	mg/kg	1	20.70	187.00	1			0.77		38.00		89.00		90.90			0.20				0.15	0.53				165.00
	StdDev	mg/kg	1	--	--	1			--		--		--		--			--				--	--				--
4014 N	Average	mg/kg	1	10.60	383.00	1			0.90		49.00		81.00		145.00			0.20				0.25	1.38				165.00
	Max	mg/kg	1	10.60	383.00	1			0.90		49.00		81.00		145.00			0.20				0.25	1.38				165.00
	Min	mg/kg	1	10.60	383.00	1			0.90		49.00		81.00		145.00			0.20				0.25	1.38				165.00
	StdDev	mg/kg	1	--	--	1			--		--		--		--			--				--	--				--
4026 N	Average	mg/kg	1	51.00	384.00	1			1.34		45.00		83.00		171.00			0.30				0.25	1.35				157.00
	Max	mg/kg	1	51.00	384.00	1			1.34		45.00		83.00		171.00			0.30				0.25	1.35				157.00
	Min	mg/kg	1	51.00	384.00	1			1.34		45.00		83.00		171.00			0.30				0.25	1.35				157.00
	StdDev	mg/kg	1	--	--	1			--		--		--		--			--				--	--				--
4082 N	Average	mg/kg	2	31.35	719.00	2	0.17	2.43	45.30	143.00	194.50	0.11	2	194.50	2	194.50	0.11	96.50	0.37	4.05	0.17	4.05	0.17	1	0.17	489.00	
	Max	mg/kg	2	47.00	1090.00	2	0.17	3.90	54.00	207.00	278.00	0.12	2	278.00	2	278.00	0.12	96.50	0.50	6.94	0.17	6.94	0.17	1	0.17	806.00	
	Min	mg/kg	2	15.70	348.00	2	0.17	0.96	36.60	79.00	111.00	0.09	2	111.00	2	111.00	0.09	96.50	0.23	1.16	0.17	1.16	0.17	1	0.17	172.00	
	StdDev	mg/kg	2	22.13	524.67	2	--	2.08	12.30	90.51	118.09	0.02	2	118.09	2	118.09	0.02	--	0.19	4.09	--	4.09	--	1	--	448.31	
4096 N	Average	mg/kg	7	20.80	396.33	7			1.01		49.43		84.00		122.50			0.19				0.26	1.80				196.14
	Max	mg/kg	7	41.00	656.00	7			1.25		65.00		100.00		158.00			0.30				0.46	3.90				250.00
	Min	mg/kg	7	0.01	0.28	7			0.78		40.00		69.00		89.50			0.11				0.14	0.83				147.00
	StdDev	mg/kg	7	14.28	203.92	7			0.18		9.74		12.34		24.01			0.06				0.13	1.05				29.99
4102 N	Average	mg/kg	1	13.80	337.00	2	4.27	57.60	1.32	3610.00	42.75	10.90	92.00	28400.00	108.00	8450.00	715.00	0.21	0.00001	17.70	1910.00	0.28	0.49	618.00	0.20	50.70	159.50
	Max	mg/kg	1	17.30	480.00	2	4.27	57.60	2.02	3610.00	61.50	10.90	116.00	28400.00	156.00	8450.00	715.00	0.21	0.00001	17.70	1910.00	0.34	0.50	618.00	0.20	50.70	192.00
	Min	mg/kg	1	10.30	194.00	2	4.27	57.60	0.61	3610.00	24.00	10.90	68.00	28400.00	60.00	8450.00	715.00	0.21	0.00001	17.70	1910.00	0.22	0.47	618.00	0.20	50.70	127.00
	StdDev	mg/kg	1	4.95	202.23	2	--	--	1.00	--	26.52	--	33.94	--	67.88	--	--	--	--	--	--	0.08	0.02	--	--	--	45.96
5004 N	Average	mg/kg	1	7.10	269.00	1	2.68	62.80	1.90	3510.00	46.10	10.60	79.50	29500.00	65.40	8720.00	688.00	0.00	16.10	1840.00	0.46	0.50	518.00	0.20	58.50	177.00	
	Max	mg/kg	1	7.10	269.00	1	2.68	62.80	1.90	3510.00	46.10	10.60	79.50	29500.00	65.40	8720.00	688.00	0.00	16.10	1840.00	0.46	0.50	518.00	0.20	58.50	177.00	
	Min	mg/kg	1	7.10	269.00	1	2.68	62.80	1.90	3510.00	46.10	10.60	79.50	29500.00	65.40	8720.00	688.00	0.00	16.10	1840.00	0.46	0.50	518.00	0.20	58.50	177.00	
	StdDev	mg/kg	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5005 N	Average	mg/kg	1	13.50	544.00	2	2.41	66.80	1.99	3630.00	56.90	11.40	115.00	28400.00	136.00	7740.00	747.00	0.00	15.40	2020.00	0.33	0.50	624.00	0.20	56.20	206.00	
	Max	mg/kg	1	13.50	544.00	2	2.41	66.80	1.99	3630.00	56.90	11.40	115.00	28400.00	136.00	7740.00	747.00	0.00	15.40	2020.00	0.33	0.50	624.00	0.20	56.20	206.00	
	Min	mg/kg	1	13.50	544.00	2	2.41	66.80	1.99	3630.00	56.90	11.40	115.00	28400.00	136.00	7740.00	747.00	0.00	15.40	2020.00	0.33	0.50	624.00	0.20	56.20	206.00	
	StdDev	mg/kg	1	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5007 N	Average	mg/kg	1	13.80	337.00	2	4.27	57.60	1.32	3610.00	42.75	10.90	92.00	28400.00	108.00	8450.00	715.00	0.21	0.00	17.70	1910.00	0.28	0.49	618.00	0.20	50.70	159.50
	Max	mg/kg	1	17.30	480.00	2	4.27	57.60	2.02	3610.00	61.50	10.90	116.00	28400.00	156.00	8450.00	715.00	0.21	0.00	17.70	1910.00	0.34	0.50	618.00	0.20	50.70	192.00
	Min	mg/kg	1	10.30	194.00	2	4.27	57.60	0.61	3610.00	24.00	10.90	68.00	28400.00	60.00	8450.00	715.00	0.21	0.00	17.70	1910.00	0.22	0.47	618.00	0.20	50.70	127.00
	StdDev	mg/kg	1	4.9	202.2	2	--	--	1.0	--	26.5	--	33.9	--	67.9	--	--	--	--	--	--	0.1	0.0	--	--	--	46.0
5010 N	Average	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	Max	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	Min	mg/kg	1	12.80	453.00	1			1.17		26.00		92.00		101.00			0.23				0.19	0.63				222.00
	StdDev	mg/kg	1	--	--	1			--		--		--		--			--				--	--				--
5022 N	Average	mg/kg	1	8.19	185.92	4	93.70	0.20	1.00		39.75		77.65	30200.00	52.17		781.80	0.13	12.70		0.22	0.64			0.30	155.83	
	Max	mg/kg	1	14.10	282.00	4	106.00	0.20	1.23		52.60		92.10	31400.00	96.00		915.00	0.20	12.70		0.30	1.00			0.30	192.00	
	Min	mg/kg	1	3.44	0.54	4	84.60	0.20	0.50		21.20		56.00	28800.00	29.50		616.00	0.07	12.70		0.14	0.27			0.30	122.00	
	StdDev	mg/kg	1	4.6	106.1	4	8.9	--	0.3		13.9		12.4	1095.4	27.7		119.1	0.1	--		0.1	0.5			--	28.8	
5024 N	Average	mg/kg	1	11.65	293.50	1	52.80	0.20	2.31	4730.00	30.25	10.50	31.60	30600.00	130.75	9200.00	950.00	0.12	0.00	10.20	1880.00	0.20	0.54	761.00	0.20	61.90	290.00
	Max	mg/kg	1	12.10	311.00	1	52.80	0.20	2.91	4730.00	41.50	10.50	34.20	30600.00	172.00	9200.00	950.00</										



Table 7 - Sediment Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
<b>Screening Criteria</b>				<b>0.6</b>	<b>33</b>				<b>0.596</b>		<b>37.3</b>		<b>149</b>		<b>128</b>			<b>0.174</b>		<b>48.6</b>			<b>2.5</b>			<b>121</b>	
5033 N	Average	mg/kg	13400.00	<b>6.10</b>	<b>291.00</b>	1.54	86.33	0.20	<b>1.21</b>	4230.00	<b>41.34</b>	12.50	98.61	29333.33	43.59	7030.00	808.17	<b>0.20</b>		15.80	2360.00	0.22	0.36	628.00	0.20	66.20	<b>148.71</b>
	Max	mg/kg	13400.00	<b>14.50</b>	<b>469.00</b>	1.54	91.90	0.20	<b>1.79</b>	4230.00	<b>53.50</b>	12.50	117.00	30600.00	72.60	7030.00	959.00	<b>0.20</b>		15.80	2360.00	0.30	0.50	628.00	0.20	66.20	<b>166.00</b>
	Min	mg/kg	13400.00	<b>3.80</b>	<b>112.00</b>	1.54	79.50	0.20	<b>0.89</b>	4230.00	18.00	12.50	78.80	27900.00	32.10	7030.00	705.00	<b>0.20</b>		15.80	2360.00	0.14	0.22	628.00	0.20	66.20	120.00
	StdDev		--	3.8	110.6	--	4.7	--	0.3	--	11.5	--	12.5	975.0	14.0	--	97.9	--	--	--	--	0.1	0.2	--	--	66.20	15.9
5040 N	Average	mg/kg	10500.00	<b>6.20</b>	0.25		0.20	0.52		17.70			33.30	25000.00	86.60		1190.00	<b>0.25</b>		13.40	0.30	1.00		0.30		<b>172.00</b>	
	Max	mg/kg	10500.00	<b>6.20</b>	0.25		0.20	0.52		17.70			33.30	25000.00	86.60		1190.00	<b>0.25</b>		13.40	0.30	1.00		0.30		<b>172.00</b>	
	Min	mg/kg	10500.00	<b>6.20</b>	0.25		0.20	0.52		17.70			33.30	25000.00	86.60		1190.00	<b>0.25</b>		13.40	0.30	1.00		0.30		<b>172.00</b>	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5041 N	Average	mg/kg		<b>8.30</b>	<b>133.00</b>			<b>0.63</b>		12.00			26.00	37.50				<b>4.60</b>			0.08	0.21				115.00	
	Max	mg/kg		<b>8.30</b>	<b>133.00</b>			<b>0.63</b>		12.00			26.00	37.50				<b>4.60</b>			0.08	0.21				115.00	
	Min	mg/kg		<b>8.30</b>	<b>133.00</b>			<b>0.63</b>		12.00			26.00	37.50				<b>4.60</b>			0.08	0.21				115.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5052 N	Average	mg/kg	9960.00	<b>11.60</b>	<b>250.00</b>	1.44	98.40	0.23	<b>1.71</b>	3020.00	<b>48.90</b>	9.56	41.00	25200.00	84.80	5220.00	1510.00			11.50	1680.00	0.41	0.50	468.00	0.28	47.70	<b>163.00</b>
	Max	mg/kg	9960.00	<b>11.60</b>	<b>250.00</b>	1.44	98.40	0.23	<b>1.71</b>	3020.00	<b>48.90</b>	9.56	41.00	25200.00	84.80	5220.00	1510.00			11.50	1680.00	0.41	0.50	468.00	0.28	47.70	<b>163.00</b>
	Min	mg/kg	9960.00	<b>11.60</b>	<b>250.00</b>	1.44	98.40	0.23	<b>1.71</b>	3020.00	<b>48.90</b>	9.56	41.00	25200.00	84.80	5220.00	1510.00			11.50	1680.00	0.41	0.50	468.00	0.28	47.70	<b>163.00</b>
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5055 N	Average	mg/kg		<b>16.30</b>	<b>255.00</b>			<b>1.17</b>		15.00			48.00	78.30				<b>0.26</b>			0.12	0.52				<b>174.00</b>	
	Max	mg/kg		<b>16.30</b>	<b>255.00</b>			<b>1.17</b>		15.00			48.00	78.30				<b>0.26</b>			0.12	0.52				<b>174.00</b>	
	Min	mg/kg		<b>16.30</b>	<b>255.00</b>			<b>1.17</b>		15.00			48.00	78.30				<b>0.26</b>			0.12	0.52				<b>174.00</b>	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5073 N	Average	mg/kg	15200.00	<b>2.00</b>	16.80	0.08	39.10	0.20	<b>1.30</b>	3670.00	<b>42.60</b>	10.60	15.60	28700.00	9.80	10600.00	657.00			14.60	1020.00	0.39	0.50	287.00	0.20	48.90	77.40
	Max	mg/kg	15200.00	<b>2.00</b>	16.80	0.08	39.10	0.20	<b>1.30</b>	3670.00	<b>42.60</b>	10.60	15.60	28700.00	9.80	10600.00	657.00			14.60	1020.00	0.39	0.50	287.00	0.20	48.90	77.40
	Min	mg/kg	15200.00	<b>2.00</b>	16.80	0.08	39.10	0.20	<b>1.30</b>	3670.00	<b>42.60</b>	10.60	15.60	28700.00	9.80	10600.00	657.00			14.60	1020.00	0.39	0.50	287.00	0.20	48.90	77.40
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5116 N	Average	mg/kg		<b>9.59</b>	<b>274.50</b>		99.20	<b>1.21</b>		<b>48.40</b>			87.45	31300.00	38.05		757.00									<b>146.50</b>	
	Max	mg/kg		<b>14.10</b>	<b>282.00</b>		106.00	<b>1.23</b>		<b>48.60</b>			92.10	31400.00	46.10		799.00									<b>150.00</b>	
	Min	mg/kg		<b>5.08</b>	<b>267.00</b>		92.40	<b>1.19</b>		<b>48.20</b>			82.80	31200.00	30.00		715.00									<b>143.00</b>	
	StdDev			6.38	10.61		9.62	0.03		0.28			6.58	141.42	11.38		59.40									4.95	

**Bold** - Value exceeds screening criteria  
**Bold italic** - Value exceeds two times the screening level

Table 8 - Pore Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria			16000	6	0.58		2000	4	5		150		592	300	15		50	2		100		50	80		0.5	112	4800
2001 N	Average	mg/kg	30.00	20.00	3.00	0.01	25.35	2.00	2.00	3980.00	6.00	6.00	10.00	60.00	3.00	516.00	4.90	0.10		10.00	500.00	3.00	5.00	585.00	2.00	5.00	14.00
	Max	mg/kg	30.00	20.00	3.00	0.01	42.30	2.00	2.00	4550.00	6.00	6.00	10.00	60.00	3.00	522.00	5.80	0.20		10.00	500.00	3.00	5.00	670.00	2.00	5.00	18.00
	Min	mg/kg	30.00	20.00	3.00	0.01	8.40	2.00	2.00	3410.00	6.00	6.00	10.00	60.00	3.00	510.00	4.00	0.00		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		0.00	0.00	0.00	--	23.97	0.00	0.00	806.10	0.00	0.00	0.00	0.00	0.00	8.49	1.27	0.11		0.00	0.00	0.00	0.00	120.21	0.00	0.00	5.66
2003 N	Average	mg/kg	30.00	20.00	3.80	0.02	9.60	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	384.00	4.00	0.10		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	3.80	0.02	9.60	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	384.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	20.00	3.80	0.02	9.60	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	384.00	4.00	0.00		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.14		--	--	--	--	--	--	--	--	--
2005 N	Average	mg/kg	30.00	20.00	7.60	0.14	5.70	2.00	2.00	2620.00	6.00	6.00	10.00	60.00	3.00	363.00	4.00	0.10		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	7.60	0.14	5.70	2.00	2.00	2620.00	6.00	6.00	10.00	60.00	3.00	363.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	20.00	7.60	0.14	5.70	2.00	2.00	2620.00	6.00	6.00	10.00	60.00	3.00	363.00	4.00	0.00		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.14		--	--	--	--	--	--	--	--	--
2007 N	Average	mg/kg	30.00	12.50	3.00	0.01	3.80	2.00	1.03	2240.00	6.00	6.00	5.50	60.00	3.00	149.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	3.00	0.01	3.80	2.00	2.00	2240.00	6.00	6.00	10.00	60.00	3.00	149.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	3.00	0.01	3.80	2.00	0.05	2240.00	6.00	6.00	1.00	60.00	3.00	149.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14		3.54	--	--	--	--	--	--	--	--
2011 N	Average	mg/kg	30.00	12.50	10.60	0.01	2.00	2.00	1.03	3060.00	6.00	6.00	5.50	60.00	3.00	266.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.60	0.01	2.00	2.00	2.00	3060.00	6.00	6.00	10.00	60.00	3.00	266.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.60	0.01	2.00	2.00	0.05	3060.00	6.00	6.00	1.00	60.00	3.00	266.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14		3.54	--	--	--	--	--	--	--	--
2013 N	Average	mg/kg	30.00	12.50	10.30	0.02	4.90	2.00	1.03	2510.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.30	0.02	4.90	2.00	2.00	2510.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.30	0.02	4.90	2.00	0.05	2510.00	6.00	6.00	1.00	60.00	3.00	287.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14		3.54	--	--	--	--	--	--	--	--
2014 N	Average	mg/kg	45.00	12.50	14.30		3.70	2.00	1.03	2530.00	6.00	6.00	5.50	60.00	3.00	297.00	4.00	0.10		7.50	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	Max	mg/kg	45.00	20.00	14.30		3.70	2.00	2.00	2530.00	6.00	6.00	10.00	60.00	3.00	297.00	4.00	0.20		10.00	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	Min	mg/kg	45.00	5.00	14.30		3.70	2.00	0.05	2530.00	6.00	6.00	1.00	60.00	3.00	297.00	4.00	0.00		5.00	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14		3.54	--	--	--	--	--	--	--	--
2016 N	Average	mg/kg	30.00	12.50	15.80	0.01	3.30	2.00	1.03	3030.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10	0.00002	7.50	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	15.80	0.01	3.30	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20	0.00002	10.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	15.80	0.01	3.30	2.00	0.05	3030.00	6.00	6.00	1.00	60.00	3.00	287.00	4.00	0.00	0.00002	5.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14		3.54	--	--	--	--	--	--	--	--
2019 N	Average	mg/kg		3.02	8.86		0.50	3560.00		50.00		50.00	50.00	0.50	520.00		0.00					0.50	0.30				50.00
	Max	mg/kg		3.20	10.30		0.50	3800.00		50.00		50.00	50.00	0.50	600.00		0.00					0.50	0.30				50.00
	Min	mg/kg		2.60	7.90		0.50	3400.00		50.00		50.00	50.00	0.50	500.00		0.00					0.50	0.30				50.00
	StdDev			0.25	0.99		0.00	151.66		0.00		0.00	0.00	0.00	44.72		0.00					0.00	0.00				0.00
2020 N	Average	mg/kg		6.30	2820.00		0.50	7200.00		50.00		50.00	50.00	0.20	1500.00		0.00					0.50	0.30				10.00
	Max	mg/kg		6.30	2820.00		0.50	7200.00		50.00		50.00	50.00	0.20	1500.00		0.00					0.50	0.30				10.00
	Min	mg/kg		6.30	2820.00		0.50	7200.00		50.00		50.00	50.00	0.20	1500.00		0.00					0.50	0.30				10.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2021 N	Average	mg/kg		4.20	13.50		0.50	4300.00		50.00		50.00	50.00	0.50	600.00		0.00					0.50	0.30				50.00
	Max	mg/kg		4.20	13.50		0.50	4300.00		50.00		50.00	50.00	0.50	600.00		0.00					0.50	0.30				50.00
	Min	mg/kg		4.20	13.50		0.50	4300.00		50.00		50.00	50.00	0.50	600.00		0.00					0.50	0.30				50.00
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3001 N	Average	mg/kg	30.00	12.50	10.30	0.02	4.90	2.00	1.03	2510.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.30	0.02	4.90	2.00	2.00	2510.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	1																						

Table 8 - Pore Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
Screening Criteria			16000	6	0.58		2000	4	5		150		592	300	15		50	2		100		50	80		0.5	112	4800
3002 N	Average	mg/kg	30.00	12.50	10.45	0.01	3.45	2.00	1.03	2785.00	6.00	6.00	5.50	60.00	3.00	276.50	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.60	0.02	4.90	2.00	2.00	3060.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.30	0.01	2.00	2.00	0.05	2510.00	6.00	6.00	1.00	60.00	3.00	266.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		0.00	8.66	0.21	0.01	2.05	0.00	1.13	388.91	0.00	0.00	5.20	0.00	0.00	14.85	0.00	0.12		2.89	0.00	0.00	0.00	0.00	0.00	0.00	
3003 N	Average	mg/kg	30.00	12.50	15.80	0.01	3.30	2.00	1.03	3030.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10	0.00002	7.50	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	15.80	0.01	3.30	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20	0.00002	10.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	15.80	0.01	3.30	2.00	0.05	3030.00	6.00	6.00	1.00	60.00	3.00	287.00	4.00	0.00	0.00002	5.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
3004 N	Average	mg/kg	45.00	12.50	14.30		3.70	2.00	1.03	2530.00	6.00	6.00	5.50	60.00	3.00	297.00	4.00	0.10		7.50	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	Max	mg/kg	45.00	20.00	14.30		3.70	2.00	2.00	2530.00	6.00	6.00	10.00	60.00	3.00	297.00	4.00	0.20		10.00	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	Min	mg/kg	45.00	5.00	14.30		3.70	2.00	0.05	2530.00	6.00	6.00	1.00	60.00	3.00	297.00	4.00	0.00		5.00	500.00	3.00	5.00	510.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
3006 N	Average	mg/kg		2.60	9.40		0.50	3500.00	50.00	50.00	50.00	50.00	0.50	600.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Max	mg/kg		2.60	9.40		0.50	3500.00	50.00	50.00	50.00	50.00	0.50	600.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Min	mg/kg		2.60	9.40		0.50	3500.00	50.00	50.00	50.00	50.00	0.50	600.00	0.00	0.00	0.00				0.50	0.30				50.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3007 N	Average	mg/kg		3.10	8.60		0.50	3600.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Max	mg/kg		3.10	8.60		0.50	3600.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Min	mg/kg		3.10	8.60		0.50	3600.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3009 N	Average	mg/kg	30.00	12.50	10.30	0.02	4.90	2.00	1.03	2510.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.30	0.02	4.90	2.00	2.00	2510.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.30	0.02	4.90	2.00	0.05	2510.00	6.00	6.00	1.00	60.00	3.00	287.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
3013 N	Average	mg/kg	32.14	10.31	210.23	0.04	10.21	2.00	0.98	3616.43	28.00	6.00	23.56	60.00	1.73	507.57	4.26	0.07	0.00002	8.18	500.00	1.75	2.65	530.00	2.00	5.00	27.71
	Max	mg/kg	45.00	20.00	2820.00	0.14	42.30	2.00	2.00	7200.00	50.00	6.00	50.00	60.00	3.00	1500.00	5.80	0.20	0.00002	10.00	500.00	3.00	5.00	670.00	2.00	5.00	50.00
	Min	mg/kg	30.00	2.60	3.00	0.01	2.00	2.00	0.05	2510.00	6.00	6.00	1.00	60.00	0.20	266.00	4.00	0.00	0.00002	5.00	500.00	0.50	0.30	500.00	2.00	5.00	10.00
	StdDev		5.67	8.01	751.15	0.06	14.35	0.00	0.85	1198.83	22.83	0.00	21.98	0.00	1.32	308.67	0.68	0.10	--	2.52	0.00	1.30	2.44	62.72	0.00	0.00	20.14
4002 N	Average	mg/kg		3.96	571.62		0.50	4480.00	50.00	50.00	50.00	50.00	0.44	720.00	0.00	0.00	0.00				0.50	0.30				42.00	
	Max	mg/kg		6.30	2820.00		0.50	7200.00	50.00	50.00	50.00	50.00	0.50	1500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Min	mg/kg		3.00	7.90		0.50	3500.00	50.00	50.00	50.00	50.00	0.20	500.00	0.00	0.00	0.00				0.50	0.30				10.00	
	StdDev			1.39	1256.88		0.00	1551.45	0.00	0.00	0.00	0.00	0.13	438.18	0.00	0.00	0.00				0.00	0.00				17.89	
4003 N	Average	mg/kg	30.00	12.50	10.60	0.01	2.00	2.00	1.03	3060.00	6.00	6.00	5.50	60.00	3.00	266.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.60	0.01	2.00	2.00	2.00	3060.00	6.00	6.00	10.00	60.00	3.00	266.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.60	0.01	2.00	2.00	0.05	3060.00	6.00	6.00	1.00	60.00	3.00	266.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
4006 N	Average	mg/kg	30.00	12.50	10.30	0.02	4.90	2.00	1.03	2510.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Max	mg/kg	30.00	20.00	10.30	0.02	4.90	2.00	2.00	2510.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	Min	mg/kg	30.00	5.00	10.30	0.02	4.90	2.00	0.05	2510.00	6.00	6.00	1.00	60.00	3.00	287.00	4.00	0.00		5.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
4010 N	Average	mg/kg		3.20	10.30		0.50	3400.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Max	mg/kg		3.20	10.30		0.50	3400.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Min	mg/kg		3.20	10.30		0.50	3400.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4014 N	Average	mg/kg		3.20	7.90		0.50	3500.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Max	mg/kg		3.20	7.90		0.50	3500.00	50.00	50.00	50.00	50.00	0.50	500.00	0.00	0.00	0.00				0.50	0.30				50.00	
	Min	mg/kg		3.20	7.90		0.50	3500.00	50.00	50.00	50.00																

Table 8 - Pore Water Exceedances for Individual Areas of Interest (AOIs)

AOI ID	Statistic	Units	Aluminum	Antimony	Arsenic	Arsenic III	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Methylmercury(1+)	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	
	Screening Criteria		16000	6	0.58		2000	4	5		150		592	300	15		50	2		100	50	80		0.5	112	4800		
4026 N	Average	mg/kg		1	1				1	1	1		1		1	1		1		100	50	1	1		0.5	112	1	
	Max	mg/kg		3.10	<b>8.60</b>				0.50	3600.00	50.00		50.00		0.50	500.00		0.00		100	50	0.50	0.30		0.5	112	50.00	
	Min	mg/kg		3.10	<b>8.60</b>				0.50	3600.00	50.00		50.00		0.50	500.00		0.00		100	50	0.50	0.30		0.5	112	50.00	
	StdDev		--	--	--				--	--	--		--	--	--		--	--		100	50	0.50	0.30		0.5	112	50.00	
4082 N	Average	mg/kg		1	1				1	1	1		1		1	1		1		100	50	1	1		0.5	112	1	
	Max	mg/kg		3.00	<b>8.10</b>				0.50	3800.00	50.00		50.00		0.50	500.00		0.00		100	50	0.50	0.30		0.5	112	50.00	
	Min	mg/kg		3.00	<b>8.10</b>				0.50	3800.00	50.00		50.00		0.50	500.00		0.00		100	50	0.50	0.30		0.5	112	50.00	
	StdDev		--	--	--				--	--	--		--	--	--		--	--		100	50	0.50	0.30		0.5	112	50.00	
4096 N	Average	mg/kg		2	2				2	2	2		2		2	2		2		100	50	2	2		0.5	112	2	
	Max	mg/kg		5.25	<b>1416.75</b>				0.50	5750.00	50.00		50.00		0.35	1050.00		0.00		100	50	0.50	0.30		0.5	112	30.00	
	Min	mg/kg		4.20	<b>13.50</b>				0.50	4300.00	50.00		50.00		0.20	600.00		0.00		100	50	0.50	0.30		0.5	112	10.00	
	StdDev		--	1.48	1984.50				0.00	2050.61	0.00		0.00		0.21	636.40		0.00		100	50	0.00	0.00		0.5	112	28.28	
4102 N	Average	mg/kg	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1
	Max	mg/kg	30.00	<b>12.50</b>	<b>15.80</b>	0.01	3.30	2.00	1.03	3030.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.10	0.00002	7.50	500.00	3.00	5.00	530.00	2.00	5.00	10.00	
	Min	mg/kg	30.00	<b>20.00</b>	<b>15.80</b>	0.01	3.30	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20	0.00002	10.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00	
	StdDev		--	10.61	--	--	--	--	1.38	--	--	--	6.36	--	--	--	--	0.14	--	3.54	--	--	--	--	--	--	--	
5004 N	Average	ug/L	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>12.50</b>	<b>10.30</b>	0.02	4.90	2.00	1.03	2510.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.20		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>10.30</b>	0.02	4.90	2.00	2.00	2510.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	StdDev		--	10.6	--	--	--	--	1.38	--	--	--	6.364	--	--	--	--	--	--	3.536	--	--	--	--	--	--	--	
5005 N	Average	ug/L	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
	Max	ug/L	45.00	<b>12.50</b>	<b>14.30</b>		3.70	2.00	1.03	2530.00	6.00	6.00	5.50	60.00	3.00	297.00	4.00	0.20		7.50	500.00	3.00	5.00	510.00	2.00	5.00	10.00	
	Min	ug/L	45.00	<b>20.00</b>	<b>14.30</b>		3.70	2.00	2.00	2530.00	6.00	6.00	10.00	60.00	3.00	297.00	4.00	0.20		10.00	500.00	3.00	5.00	510.00	2.00	5.00	10.00	
	StdDev		--	10.6	--	--	--	--	1.38	--	--	--	6.4	--	--	--	--	--	--	3.536	--	--	--	--	--	--	--	
5007 N	Average	ug/L	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>12.50</b>	<b>15.80</b>	0.01	3.30	2.00	1.03	3030.00	6.00	6.00	5.50	60.00	3.00	287.00	4.00	0.20	0.00002	7.50	500.00	3.00	5.00	530.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>15.80</b>	0.01	3.30	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	287.00	4.00	0.20	0.00002	10.00	500.00	3.00	5.00	530.00	2.00	5.00	10.00	
	StdDev		--	10.6	--	--	--	--	1.38	--	--	--	6.4	--	--	--	--	--	--	3.536	--	--	--	--	--	--	--	
5024 N	Average	ug/L	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>12.50</b>	<b>10.60</b>	0.01	2.00	2.00	1.03	3060.00	6.00	6.00	5.50	60.00	3.00	266.00	4.00	0.20		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>10.60</b>	0.01	2.00	2.00	2.00	3060.00	6.00	6.00	10.00	60.00	3.00	266.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	StdDev		--	10.6	--	--	--	--	1.38	--	--	--	6.4	--	--	--	--	--	--	3.536	--	--	--	--	--	--	--	
5033 N	Average	ug/L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>20.00</b>	<b>7.60</b>	0.14	5.70	2.00	2.00	2620.00	6.00	6.00	10.00	60.00	3.00	363.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>7.60</b>	0.14	5.70	2.00	2.00	2620.00	6.00	6.00	10.00	60.00	3.00	363.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5052 N	Average	ug/L	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>20.00</b>	<b>3.80</b>	0.02	9.60	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	384.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>3.80</b>	0.02	9.60	2.00	2.00	3030.00	6.00	6.00	10.00	60.00	3.00	384.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	StdDev		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5073 N	Average	ug/L	1	2	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
	Max	ug/L	30.00	<b>12.50</b>	<b>3.00</b>	0.01	3.80	2.00	1.03	2240.00	6.00	6.00	5.50	60.00	3.00	149.00	4.00	0.20		7.50	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	Min	ug/L	30.00	<b>20.00</b>	<b>3.00</b>	0.01	3.80	2.00	2.00	2240.00	6.00	6.00	10.00	60.00	3.00	149.00	4.00	0.20		10.00	500.00	3.00	5.00	500.00	2.00	5.00	10.00	
	StdDev		--	10.6	--	--	--	--	1.38	--	--	--	6.4	--	--	--	--	--	--	3.536	--	--	--	--	--	--	--	

**Bold** - Value exceeds screening criteria  
**Bold italic** - Value exceeds two times the screening level

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Table 9. Comparison of Different Buffer Distances for Soil Human Health Exceedances Around Cultural Features

Cultural Feature	Buffer Distance	Number of Arsenic Exceedances	Media	Sample IDs	
Trails and roads	100 feet	16	Soil	AS-02 (0.5-1), AS-03 (1.5-2), AS-04, COL-03-0.5, COL-03-2 COL-06 (0-5), COL-08 (1-7), COL-09 (6-6.5), COL-10 (0-0.5), COL-11 (0.5-1.5) HW-01 (0-0.5), HW-02 (0-0.5), HW-03 (0-0.5), HW-04 (0-0.5), Ore Collector	
		1	Waste rock	PRIDE/WOODS DUMP	
	500 feet	16+22	Soil	<b>100' samples plus</b> Assay Shack, BKG-10-0.5, COL-01-0.5, COL-01-2, COL-01-3 COL-02-0.5, COL-02-2, COL-04 (3-5.5), COL-05 (5-10), CON-01-0.5 CON-01-1.5, CON-02-0.5, CON-02-1.5, CON-04-0.5, CON-05-0.5 CON-07-0.5, CONCL2WE, HW-05 (0-0.5), Lower Mill, MC-2, MC-3, Upper Mill	
		18	Tailings	CON-03-0.5, CON-03-1.5, CON-06-0.5, CON-08-0.5, CON-09-0.5 CON-10 (1), CON-11, CON-12, CON-13, CON-14 CON-15, CON-16, CON-16 (1), CON-17, CON-18 CON-18 (24-36"), CON-19	
		1+10	Waste rock	<b>100' samples plus</b> MC-4, MCEE-WR-BA-01 and -02, MCEE-WR-PW-01 and -02 MCEE-WR-RY-01 and -02, MCEE-WR-SY-01 and -02, POWOODS	
	1,320 feet (1/4 mile)	16+22+5	Soil	<b>100' and 500' samples plus</b> BKG-05-0.5, BKG-06-0.5, BKG-07-0.5, BKG-08-0.5, BKG-09-0.5	
		18+0	Tailings	<b>Same as for 500 feet</b>	
		1+10+22	Waste rock	<b>100' and 500' samples plus</b> MCEE-WR-JU-01, -02, -03, -04, and -05 MCEE-WR-JU-06, MCEE-WR-MM-01, -02, -03, and -04 MCEE-WR-ND-01, -02, and -03, MCEE-WR-SH-01 and -02 MM-01-0.5, MM-01-1.0, MM-02-0.5, MM-03-0.5, MM-04-0.5, POMTN, PR/MTS WRD	
	Monte Cristo Townsite Campground	500 feet	2	Waste rock	MCEE-WR-BA-01 and -02
		1,320 feet (1/4 mile)	2+0	Waste rock	<b>Same as for 500 feet</b>
Monte Cristo Townsite Interperative Site	1,320 feet (1/4 mile)	18	Soil	AS-02 (0.5-1), AS-03 (1.5-2), AS-04, Assay Shack, BKG-10-0.5 CON-01-0.5, CON-01-1.5, CON-02-0.5, CON-02-1.5, CON-04-0.5 CON-05-0.5, CON-07-0.5, CONCL2WE, HW-05 (0-0.5), Lower Mill MC-2, MC-3, Upper Mill	
		18	Tailings	CON-03-0.5, CON-03-1.5, CON-06-0.5, CON-08-0.5, CON-09-0.5 CON-10 (1), CON-11, CON-12, CON-13, CON-14 CON-15, CON-16, CON-16 (1), CON-17, CON-18 CON-18 (24-36"), CON-19	
		2	Waste rock	MCEE-WR-BA-01 and -02	
No Name Campground *	1,320 feet (1/4 mile)	4	Soil	CON-07-0.5, Lower Mill, MC-2, Upper Mill	
		16	Tailings	CON-03-0.5, CON-03-1.5, CON-08-0.5, CON-09-0.5, CON-10 (1) CON-11, CON-12, CON-13, CON-14, CON-15 CON-16, CON-16 (1), CON-17, CON-18, CON-18 (24-36")	
		2	Waste rock	MCEE-WR-BA-01 and -02	

\* No Name Campground is located approximately 200 feet north of the Glacier Creek/Seventysix Creek confluence.

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**APPENDIX A  
HISTORICAL SURVEY PLATS**



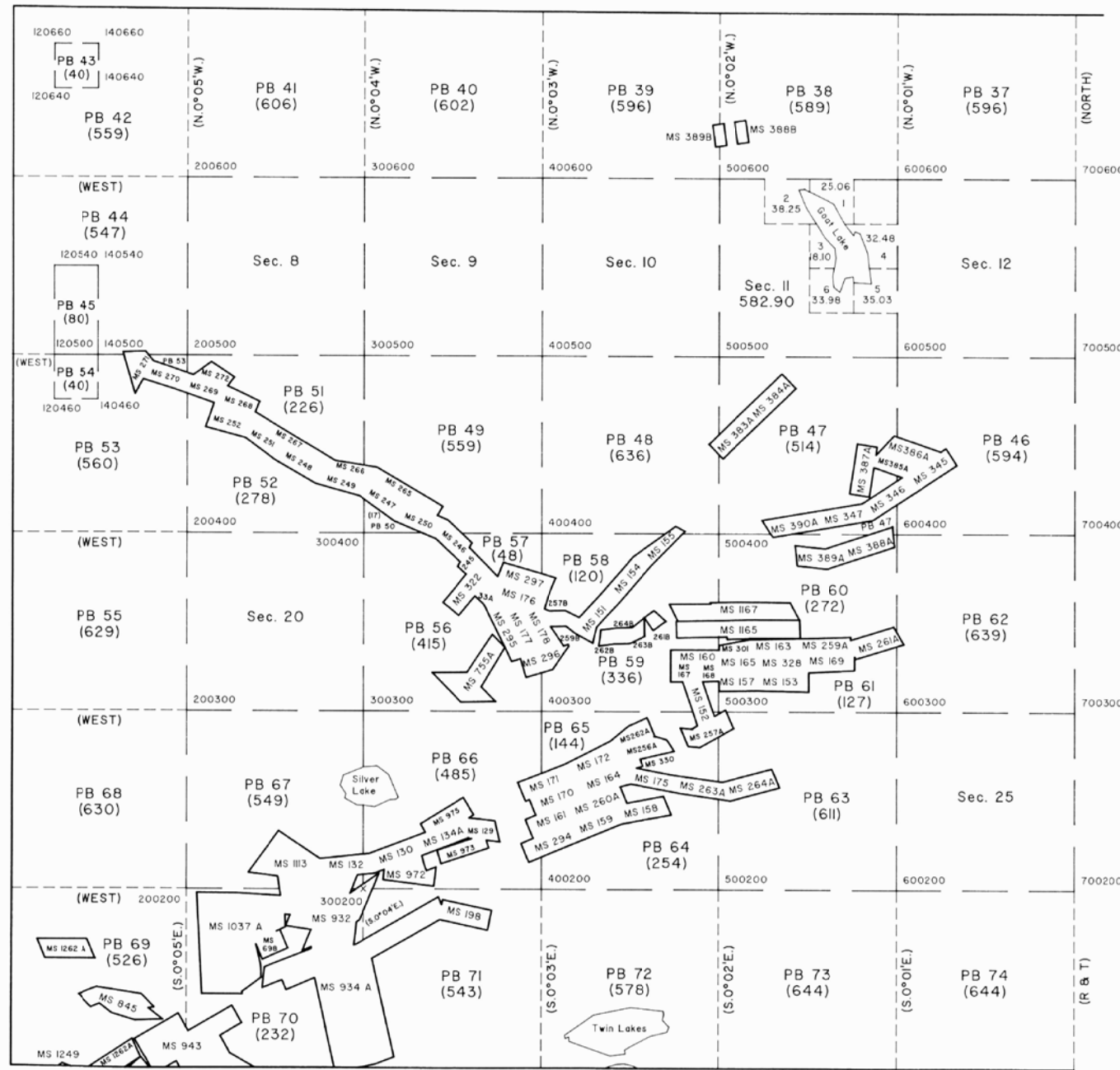
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for double-sided printing.

# TOWNSHIP 29 NORTH, RANGE II EAST, OF THE WILLAMETTE MERIDIAN, WASHINGTON

SHEET 2 OF 15

## AMENDED PROTRACTION DIAGRAM FILE 3, UNIT I

### UNSURVEYED



This amended protraction diagram was prepared for the express purpose of describing unsurveyed public land. It does not constitute an official survey but establishes the plan for extending the rectangular survey system over these unsurveyed lands and may be used for leasing and administrative purposes only.

The actual area of protracted blocks (PB) shown on this diagram may vary due to the reliability of the survey information used to determine the positions of existing surveyed boundaries. A protracted block cannot be subdivided without an official survey. Unless otherwise shown, each unsurveyed section designated Sec. on the diagram contains 640 acres. The sections and lots on this diagram depict how the area may be surveyed; but until that time they will continue to be unsurveyed lands. Data shown in parentheses ( ) is proposed information for the plan of survey and is subject to change.

This amended protraction diagram officially supersedes the existing protraction for this area, except where existing rights or administrative actions based upon the existing protraction are not adequately protected.

Latitudes and longitudes were computed to portray standard protracted sections using an elevation of 6000 feet for this township.

Point ID	NAD 1983 Latitude	Longitude
120460	48°00'16.9074"	121°26'46.5321"
120500	48°00'29.9301"	121°26'46.5633"
120540	48°00'59.9754"	121°26'46.6257"
120640	48°01'48.0659"	121°26'46.7507"
120660	48°02'01.0885"	121°26'46.7819"
140460	48°00'16.9074"	121°26'27.1268"
140500	48°00'29.9301"	121°26'27.1566"
140540	48°00'59.9754"	121°26'27.2163"
140640	48°01'48.0659"	121°26'27.3359"
140660	48°02'01.0885"	121°26'27.3658"
200200	47°57'53.6574"	121°25'48.0180"
200300	47°58'45.7485"	121°25'48.1263"
200400	47°59'37.8393"	121°25'48.2348"
200500	48°00'29.9301"	121°25'48.3433"
200600	48°01'22.0207"	121°25'48.4519"
300200	47°57'53.6574"	121°24'30.4563"
300300	47°58'45.7485"	121°24'30.5430"
300400	47°59'37.8393"	121°24'30.6298"
300500	48°00'29.9301"	121°24'30.7166"
300600	48°01'22.0207"	121°24'30.8035"
400200	47°57'53.6574"	121°23'12.8947"
400300	47°58'45.7485"	121°23'12.9597"
400400	47°59'37.8393"	121°23'13.0248"
400500	48°00'29.9301"	121°23'13.0899"
400600	48°01'22.0207"	121°23'13.1551"
500200	47°57'53.6574"	121°21'55.3331"
500300	47°58'45.7485"	121°21'55.3765"
500400	47°59'37.8393"	121°21'55.4198"
500500	48°00'29.9301"	121°21'55.4632"
500600	48°01'22.0207"	121°21'55.5067"
600200	47°57'53.6574"	121°20'37.7715"
600300	47°58'45.7485"	121°20'37.7932"
600400	47°59'37.8393"	121°20'37.8149"
600500	48°00'29.9301"	121°20'37.8366"
600600	48°01'22.0207"	121°20'37.8583"
700200	47°57'53.6574"	121°19'20.2099"
700300	47°58'45.7485"	121°19'20.2099"
700400	47°59'37.8393"	121°19'20.2099"
700500	48°00'29.9301"	121°19'20.2099"
700600	48°01'22.0207"	121°19'20.2099"

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Portland, Oregon April 30, 1999

This diagram represents the official protraction of the rectangular system of surveys and is hereby accepted.

For the Director

*Wayne D. Gardner*

Chief Cadastral Surveyor of Washington

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Monte Cristo Mining Area  
Snohomish County, Washington

Protraction Diagram for Claims in  
Township 29 North, Range 11 East  
17330-33 3/11



Figure

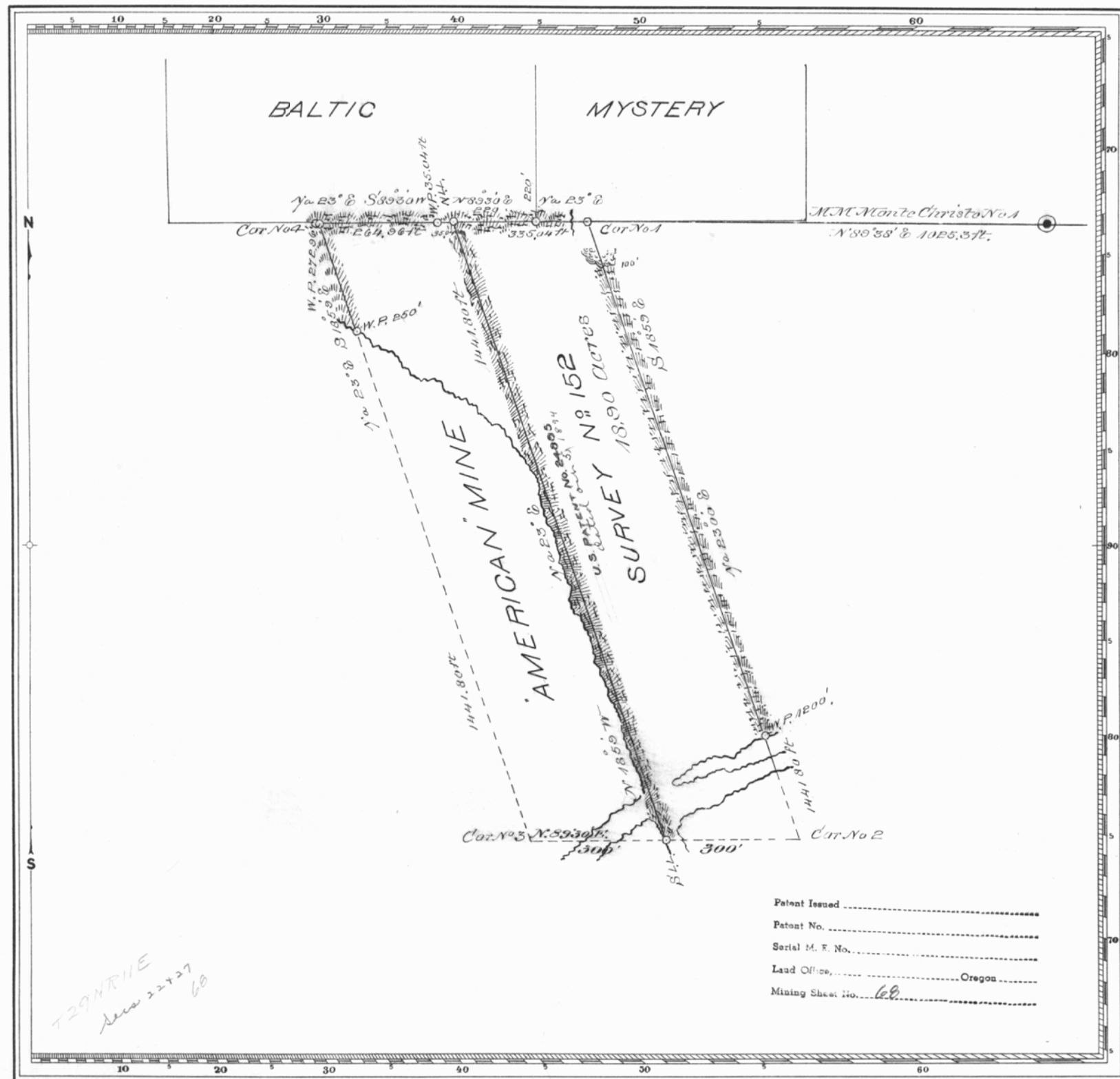
A-1

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(4-675)

American Office

ORIGINAL



T29NRHE  
June 22 1892  
68

Claim Located July 12<sup>th</sup> 1890

Mineral Survey No. 152

Lot No. \_\_\_\_\_ Land District.

**PLAT**  
OF THE CLAIM OF  
H. G. Bond & Fred W. Wilmans

KNOWN AS THE  
American Mine

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
Containing an Area of 18.90 Acres.  
Scale of 200 Feet to the inch.  
Variation N 23° E

SURVEYED Sept 20<sup>th</sup> & 24<sup>th</sup> 1891 BY  
R. H. Stetson,  
U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
H. G. Bond & Fred W. Wilmans  
known as the American Mine

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that five hundred dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants or their grantors, and that said improvements consist of 1/3132 interest in a Road 50 miles long value 516.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Thos. N. Kavanaugh  
Olympia Wash. U.S. Surveyor General for  
March 9<sup>th</sup> 1892 Washington

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

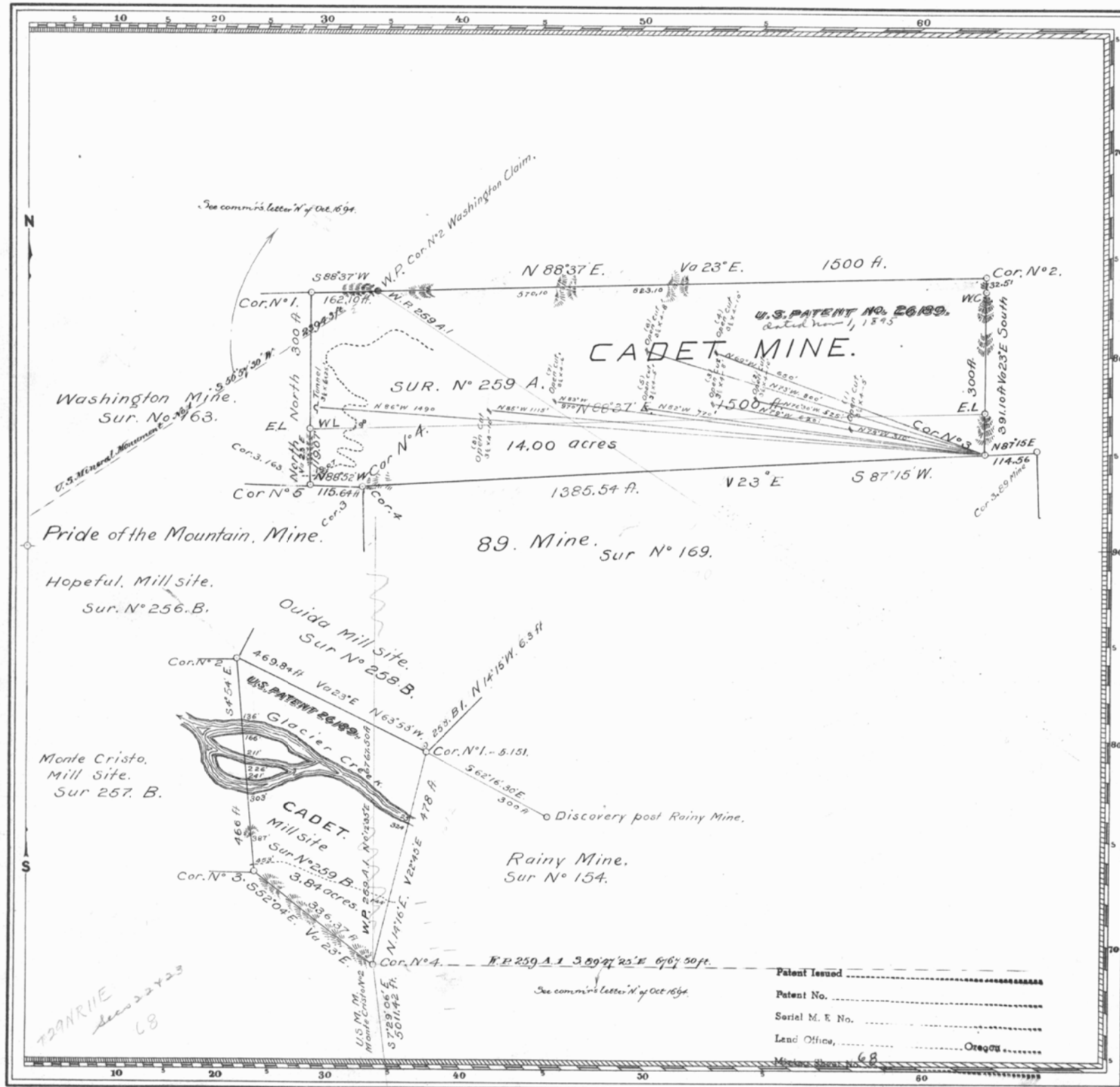
Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>American Mine</b>	
17330-33	3/11
HARTCROWSER	Figure <b>A-2</b>

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(4-675)

ORIGINAL



Claim Located June 14<sup>th</sup> 1890.  
 Mill site located June 11<sup>th</sup> 1892.  
 Mineral Survey No. 259. A & B.

L.O.T. N°  
Seattle Land District.

**PLAT**  
 OF THE CLAIM OF  
The Rainy Mining Company.

KNOWN AS THE  
Cadet Mine & Mill site.

IN Monte Cristo, MINING DISTRICT,  
Snohomish COUNTY, Washington  
 Containing an Area of 17.84 Acres.  
 Scale of 200 feet to the inch.  
 Variation 22°45' - 23° E.  
 SURVEYED August 11<sup>th</sup> to 28<sup>th</sup> 1892 BY  
Richard H. Stretch,  
 U.S. Deputy Mineral Surveyor.

*The Original Field Notes of the Survey of the Mining Claim of  
 The Rainy Mining Company  
 known as the Cadet Mine & Mill site.*

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants or their grantors, and that said improvements consist of:

N° 1 Open Cut 3 1/2 x 4 - 5	Value \$ 25.00	N° 7 Open Cut 3 1/2 x 4 x 6	Value \$ 30.00
N° 2 Open Cut 3 1/2 x 4 - 10	Value \$ 50.00	N° 8 Open Cut 3 1/2 x 4 - 10	Value \$ 50.00
N° 3 Open Cut 3 1/2 x 4 - 5	Value \$ 40.00	N° 9 Funnel 3 1/2 x 6 - 25	Value \$ 192.96
N° 4 Open Cut 3 1/2 x 4 - 10	Value \$ 50.00		
N° 5 Open Cut 3 1/2 x 4 - 5	Value \$ 25.00		
N° 6 Open Cut 3 1/2 x 4 - 5	Value \$ 40.00		
<b>Total Value</b>		<b>\$ 502.96</b>	

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *Amos Shaw*  
Olympia Wash. U.S. Surveyor General for  
December 16<sup>th</sup> 1893 Washington.

Patent Issued .....  
 Patent No. ....  
 Serial M. E. No. ....  
 Land Office, ..... Oregon

Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

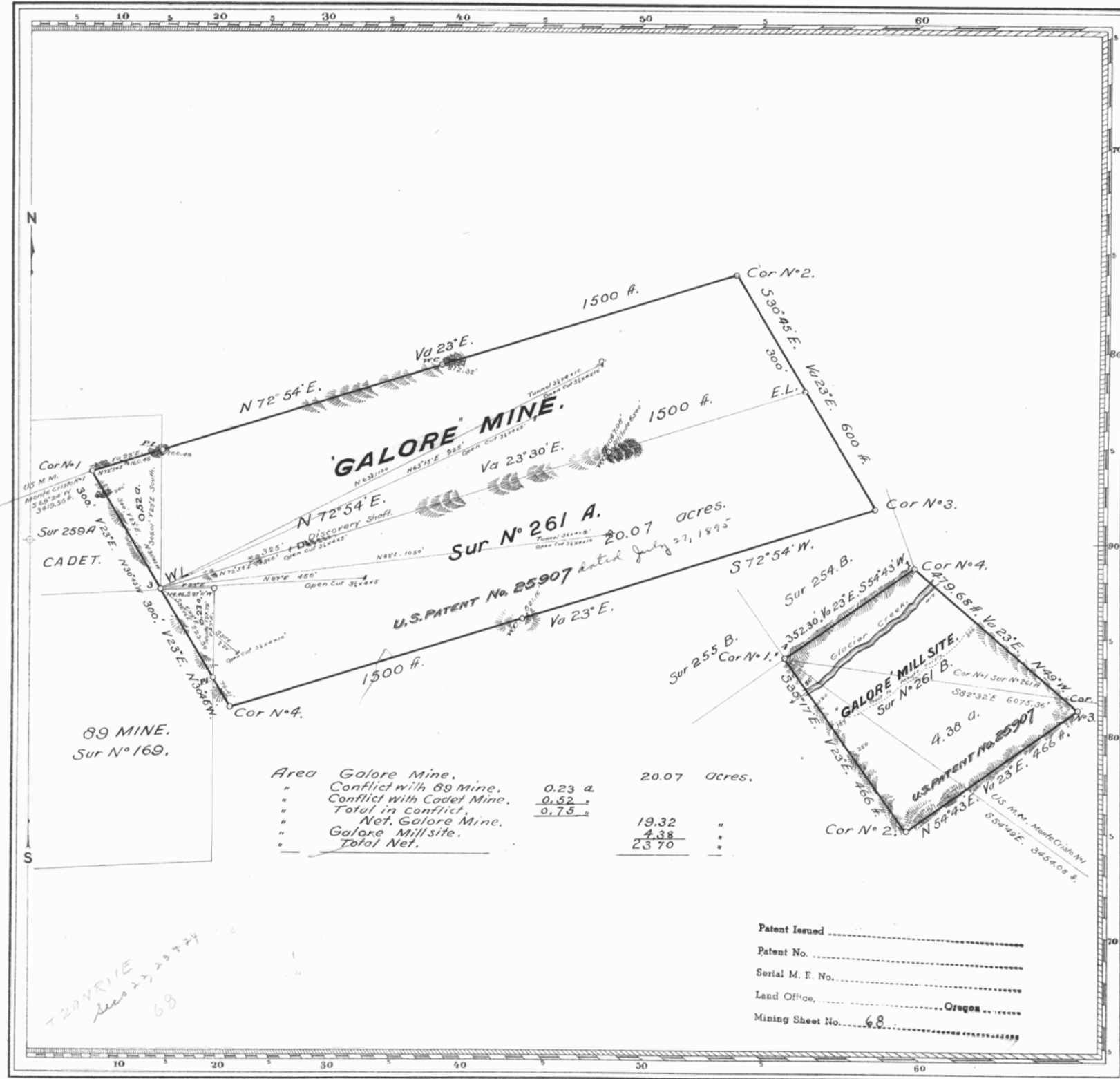
Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>Cadet Mine and Mill Site</b>	
17330-33	3/11
	Figure <b>A-3</b>

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(4-675)

ORIGINAL



Area Galore Mine.		20.07 Acres.
Conflict with 89 Mine.	0.23 a	
Conflict with Cadet Mine.	0.52	
Total in Conflict.	0.75	
Net Galore Mine.		19.32
Galore Mill site.		4.38
Total Net.		23.70

Patent Issued .....

Patent No. ....

Serial M. E. No. ....

Land Office, ..... Oregon .....

Mining Sheet No. 68 .....

Claim Located July 26<sup>th</sup> 1893.  
 Mill site Located June 11<sup>th</sup> 1892.  
 Mineral Survey No 261 A & B.

Lot No  
 Seattle Land District.

**PLAT**  
 OF THE CLAIM OF  
 The Pride of the Mountain Mining Co.

KNOWN AS THE  
 'Galore' Mine & Mill site.

IN Monte Cristo MINING DISTRICT,  
 Snohomish COUNTY, Washington.  
 Containing an Area of Acres.  
 Scale of 200 feet to the inch.  
 Variation 23° - 23° 30' E.  
 SURVEYED July 15<sup>th</sup> to August 20<sup>th</sup> 1893 BY  
 Alex. M. Reynolds,  
 U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
 The Pride of the Mountain Mining Co.  
 known as the Galore Mine & Mill site.

from which this plat has been made under my direction  
 have been examined and approved, and are on file in this Office,  
 and I hereby certify that they furnish such an accurate description  
 of said Mining Claim as will, if incorporated into a patent,  
 serve fully to identify the premises, and that such reference  
 is made therein to natural objects or permanent monuments  
 as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has  
 been expended or improvements made upon said Mining  
 Claim by claimants or their grantors, and that  
 said improvements consist of an open cut 34x44x15 Value \$ 34.25  
 1/4 in Open Cut 34x44x15 long & Tunnel 34x44x15 long Value \$ 108.75  
 Open Cut 34x44x15 " " Tunnel 34x44x15 " " " 123.25  
 Open Cut 34x44x15 " " " " " " " 36.25  
 Open Cut 34x44x15 " " " " " " " 36.25  
 Open Cut 34x44x15 " " " " " " " 71.75  
 1/2 share in trail for development of mine Total 590.00

that the location of said improvements is correctly shown  
 upon this plat, and that no portion of said labor or im-  
 provements has been included in the estimate of expendi-  
 tures upon any other claim.

And I further certify that this is a correct plat of said Mining  
 Claim made in conformity with said original field notes of the  
 survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *Amos Y. Shaw*  
 Olympia Wash. U.S. Surveyor General for  
 March 7, 1894. Washington.

Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

Claim located in the Glacier Creek Watershed

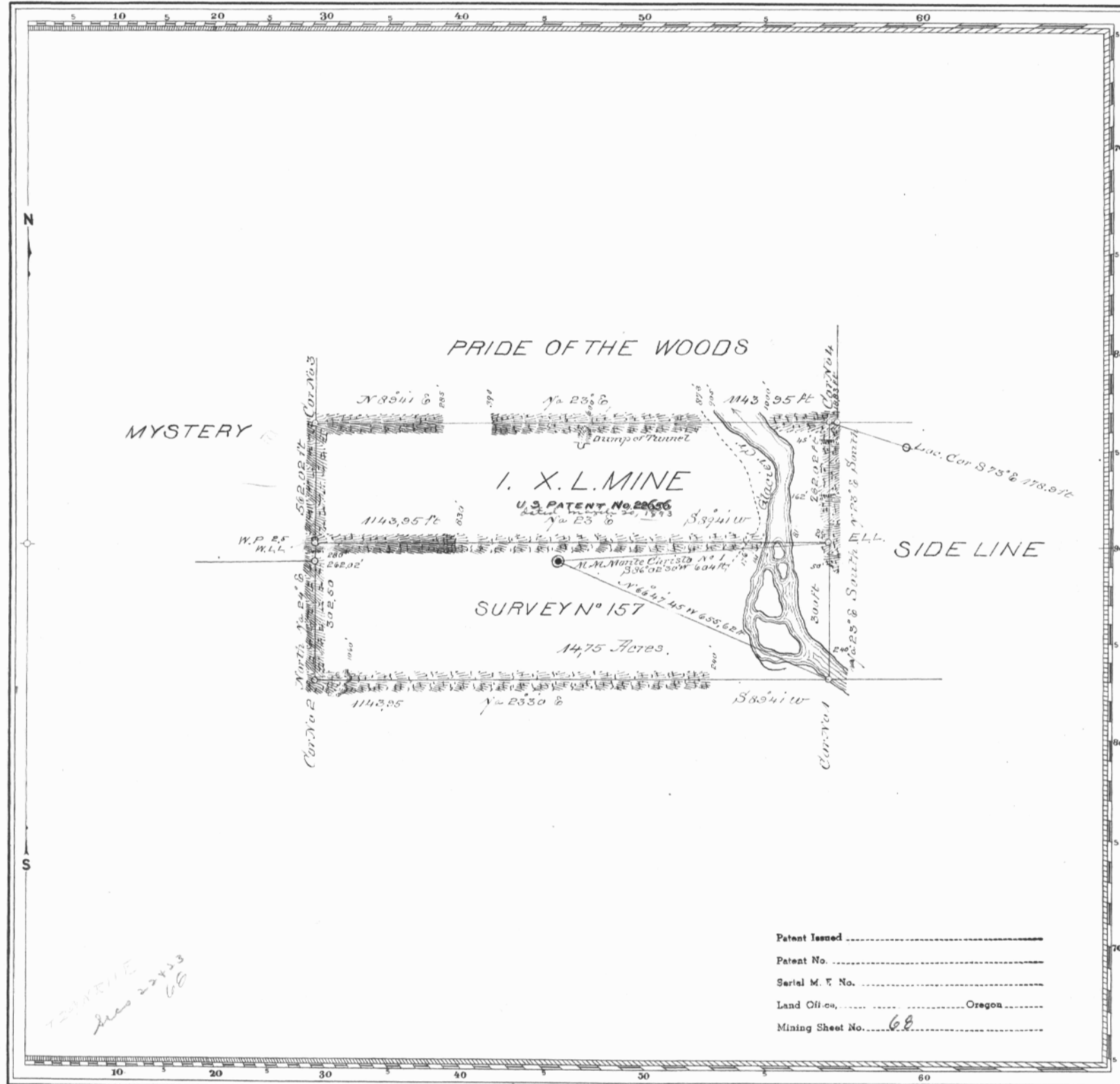
Monte Cristo Mining Area Snohomish County, Washington	
<b>Galore Mine and Mill Site</b>	
17330-33	3/11
	Figure <b>A-4</b>



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(4-675)

ORIGINAL



Claim Located June 26<sup>th</sup> 1890

Mineral Survey N° 157

Lot N° \_\_\_\_\_ Land District.

Seattle

**PLAT**  
OF THE CLAIM OF  
H. G. Bond and Fred W. Wilmans

KNOWN AS THE  
I. X. L. MINE

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington

Containing an Area of \_\_\_\_\_ Acres.  
Scale of 200 feet to the inch.  
Variation 23-24 °

SURVEYED Sept 14<sup>th</sup> - 19<sup>th</sup> 1891 BY  
R. H. Stretch,  
U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
H. G. Bond & Fred W. Wilmans  
Known as the I. X. L. Mine

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or their grantors, and that said improvements consist of an open-cut and Tunnel value 100.00  
1/2 interest in Road 50 Miles long 516.00  
Total value 616.00


that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Thos. H. Kavanaugh  
Olympia Wash U.S. Surveyor General for  
March 9<sup>th</sup> 1892 Washington

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

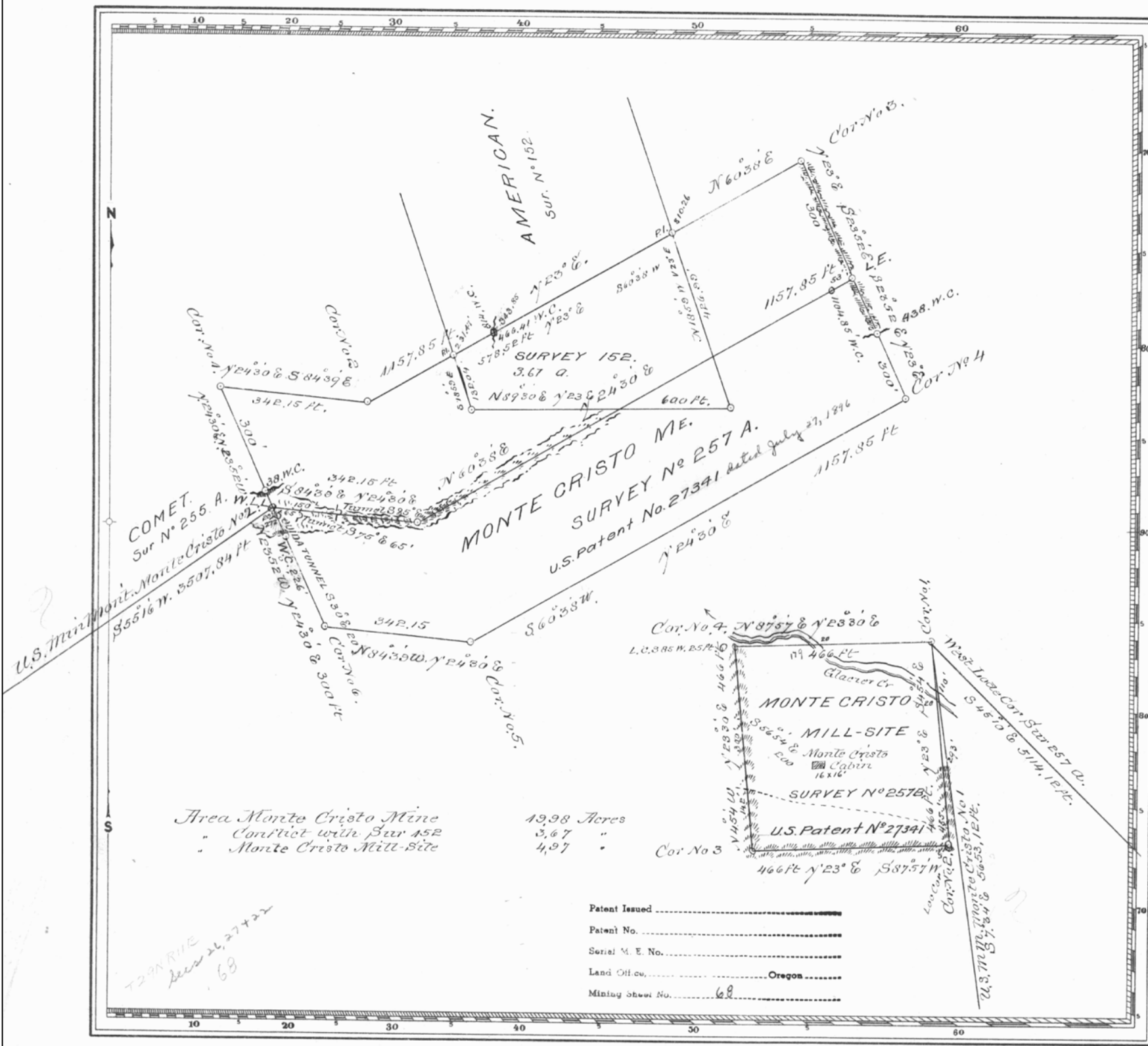
Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>I.X.L. Mine</b>	
17330-33	3/11
 <b>HARTCROWSER</b>	Figure <b>A-5</b>

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(4-675)

ORIGINAL



Claim Located July 16<sup>th</sup> 1891  
 Mill-site - June 11<sup>th</sup> 1892  
 Mineral Survey N° 257 A+B.

Lot N° \_\_\_\_\_ Land District.  
Seattle

**PLAT**  
 OF THE CLAIM OF  
The Witmans Mining Co.

KNOWN AS THE  
Monte Cristo Mine & Mill-site

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
 Containing an Area of Mill-site 4.97 Acres.  
Conflict 3.67  
 Scale of 200 feet to the inch.  
 Variation E 2° - 24.30 E

SURVEYED July 17<sup>th</sup> - 20<sup>th</sup> 1892 BY  
Alex. M. Reynolds,  
 U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
The Witmans Mining Co.  
 known as the Monte Cristo Mine  
 & Mill Site.

from which this plat has been made under my direction  
 have been examined and approved, and are on file in this office,  
 and I hereby certify that they furnish such an accurate descrip-  
 tion of said Mining Claim as will, if incorporated into a patent,  
 serve fully to identify the premises, and that such reference  
 is made therein to natural objects or permanent monuments  
 as will perpetuate and fix the locus thereof.  
 I further certify that five Hundred Dollars worth of labor has  
 been expended or improvements made upon said Mining  
 Claim by claimants or their grantors, and that  
 said improvements consist of  
 U. Tunnel 4 1/2 x 7 x 45 ft long value 540.00  
 U. Tunnel 4 1/2 x 7 x 15 ft long value 150.00  
 Total value 690.00

that the location of said improvements is correctly shown  
 upon this plat, and that no portion of said labor or im-  
 provements has been included in the estimate of expendi-  
 tures upon any other claim.  
 And I further certify that this is a correct plat of said Mining  
 Claim made in conformity with said original field notes of the  
 survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Amos Shaw  
Olympia Wash. U.S. Surveyor General for  
March 15<sup>th</sup> 1893 Washington.


Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area  
 Snohomish County, Washington

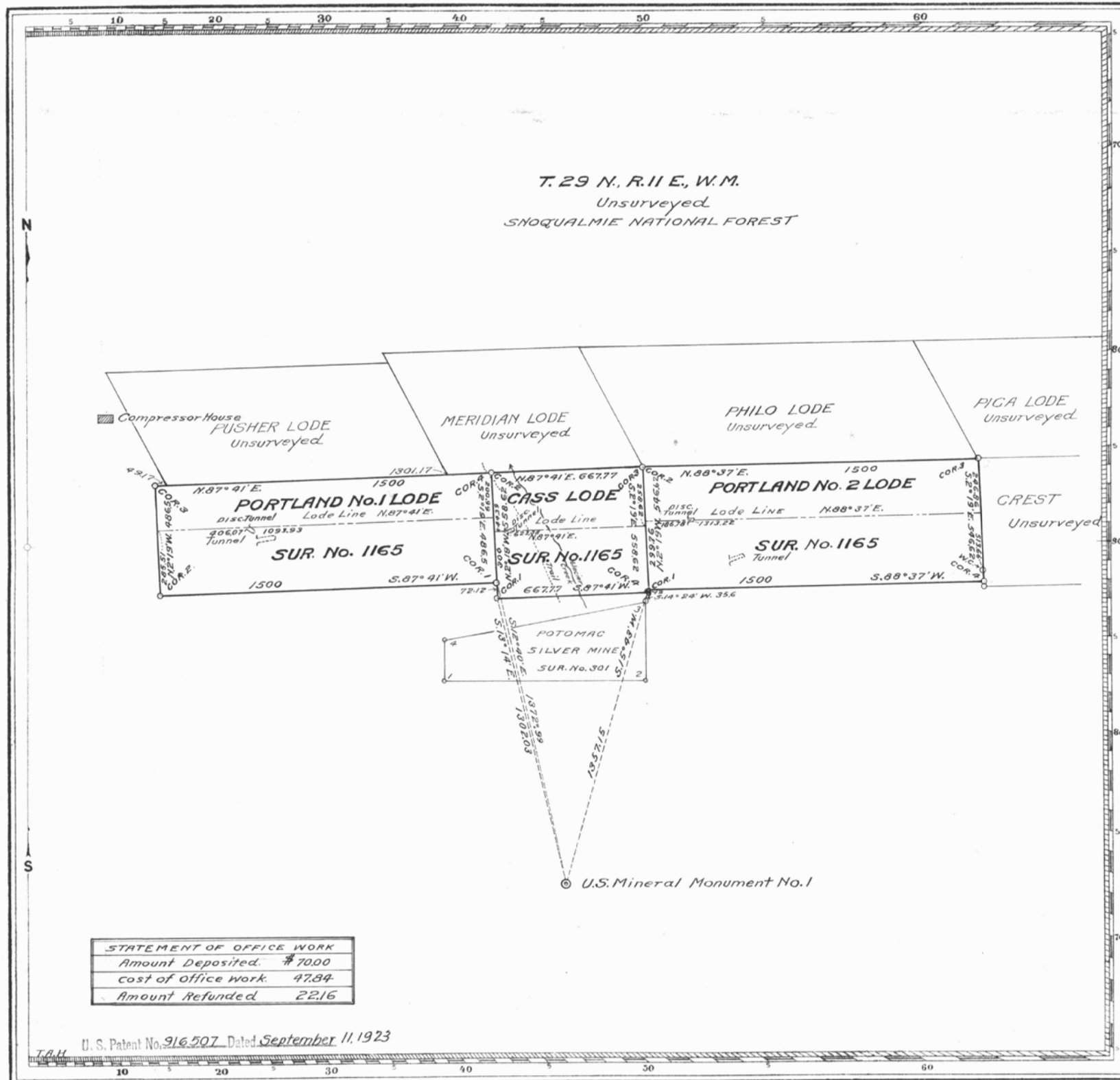
**Monte Cristo Mine and Mill Site**

17330-33 3/11

 Figure  
**A-6**

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(4-675)



STATEMENT OF OFFICE WORK	
Amount Deposited.	\$ 70.00
Cost of Office Work.	47.84
Amount Refunded	22.16

U. S. Patent No. 916,507 Dated September 11, 1923

Claim Located July 14 1915

Mineral Survey No 1165

Lot No  
Seattle Land District.

**PLAT**  
OF THE CLAIM OF  
Frank F. Casseday

KNOWN AS THE  
CASS, PORTLAND No. 1 and  
PORTLAND No. 2 LODES

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington.  
Containing an Area of Acres.  
Scale of 400 Feet to the inch.  
Variation 19° 30' E.

SURVEYED July 15 to Aug. 2 1921 BY  
Frank H. Copp,  
U. S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
Frank F. Casseday  
known as the Cass, Portland No. 1.  
and Portland No. 2

from which this plat has been made under my direction  
have been examined and approved, and are on file in this office;  
and I hereby certify that they furnish such an accurate description  
of said Mining Claim as will, if incorporated into a patent,  
serve fully to identify the premises, and that such reference  
is made therein to natural objects or permanent monuments  
as will perpetuate and fix the locus thereof.  
I further certify that Five Hundred Dollars worth of labor has  
been expended or improvements made upon said Mining  
Claim by claimant or his grantors, and that  
said improvements consist of  
(Certificate of five hundred dollars  
worth of labor or improvements to  
be made later)  
that the location of said improvements is correctly shown  
upon this plat, and that no portion of said labor or im-  
provements has been included in the estimate of expendi-  
tures upon any other claim.  
And I further certify that this is a correct plat of said Mining  
Claim made in conformity with said original field notes of the  
survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *Clair Hunt*  
Olympia, Washington U.S. Surveyor General for  
April 14 1922 Washington


Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area  
Snohomish County, Washington

**Cass, Portland No1, and Portland No2 Lodes**

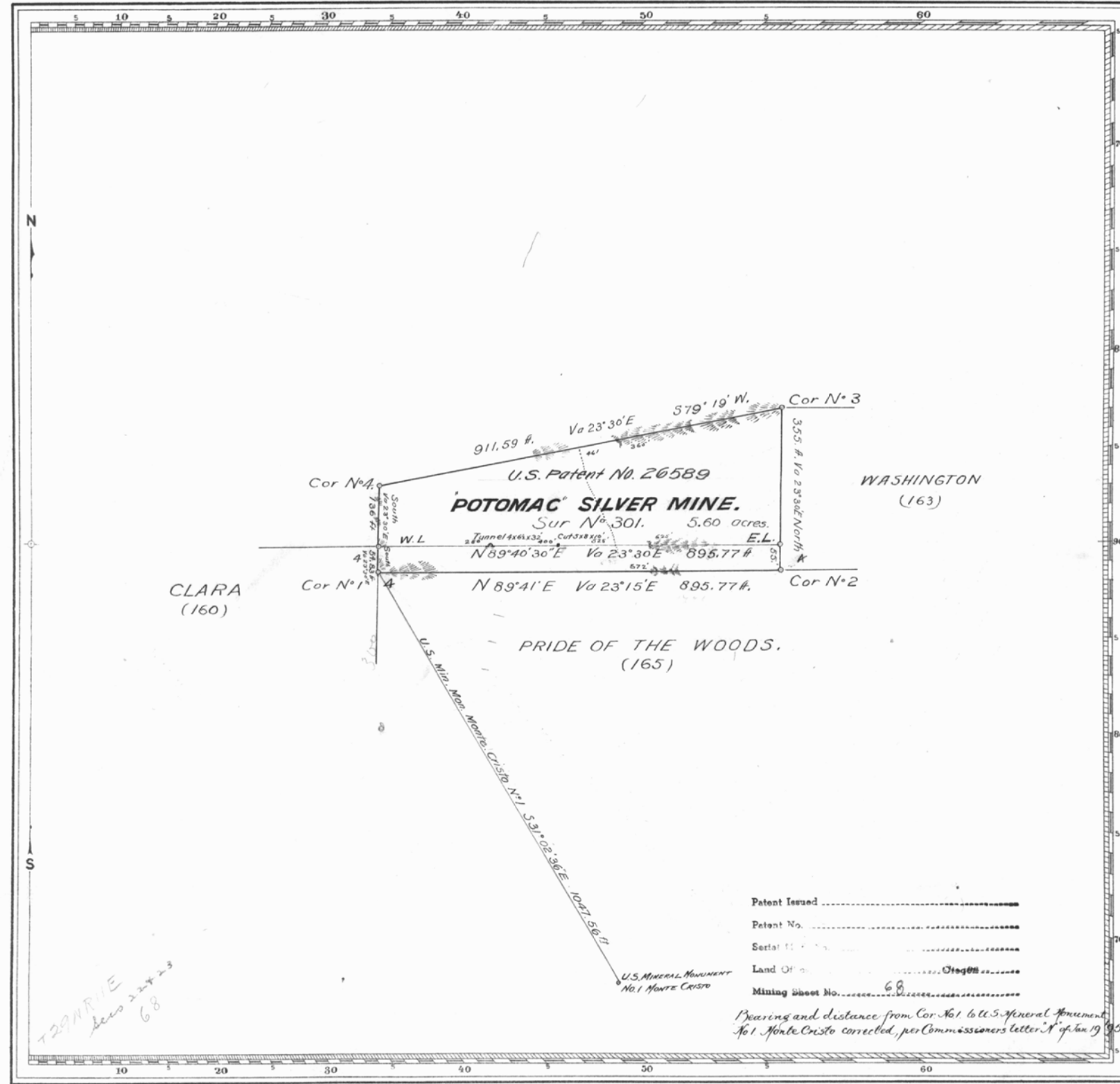
17330-33 3/11

 Figure  
**A-7**

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(4-675)

ORIGINAL



Claim Located September 29<sup>th</sup> 1894.

Mineral Survey No. 301.

Lot No. Seattle Land District.

**PLAT**  
OF THE CLAIM OF  
The Rainy Mining Company

KNOWN AS THE  
'Potomac' Silver Mine

IN Monte Cristo MINING DISTRICT,  
Snohomish County, Washington.  
Containing an Area of 5.60 Acres.  
Scale of 200 feet to the inch.  
Variation 23° 15' - 23° 30' E.

SURVEYED August 16<sup>th</sup> 1892 BY  
Alex. M. Reynolds,  
U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
The Rainy Mining Company  
known as the 'Potomac' Silver Mine.

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants or their grantors, and that said improvements consist of

an open cut 5x8x10' long	Value \$ 50.00
Tunnel 4x6 1/2 x 32'	455.00
<b>Total</b>	<b>505.00</b>

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Amos J. Shaw  
Olympia Wash. U.S. Surveyor General for  
February 10<sup>th</sup> 1894 Washington.

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Claim located in the Glacier Creek Watershed

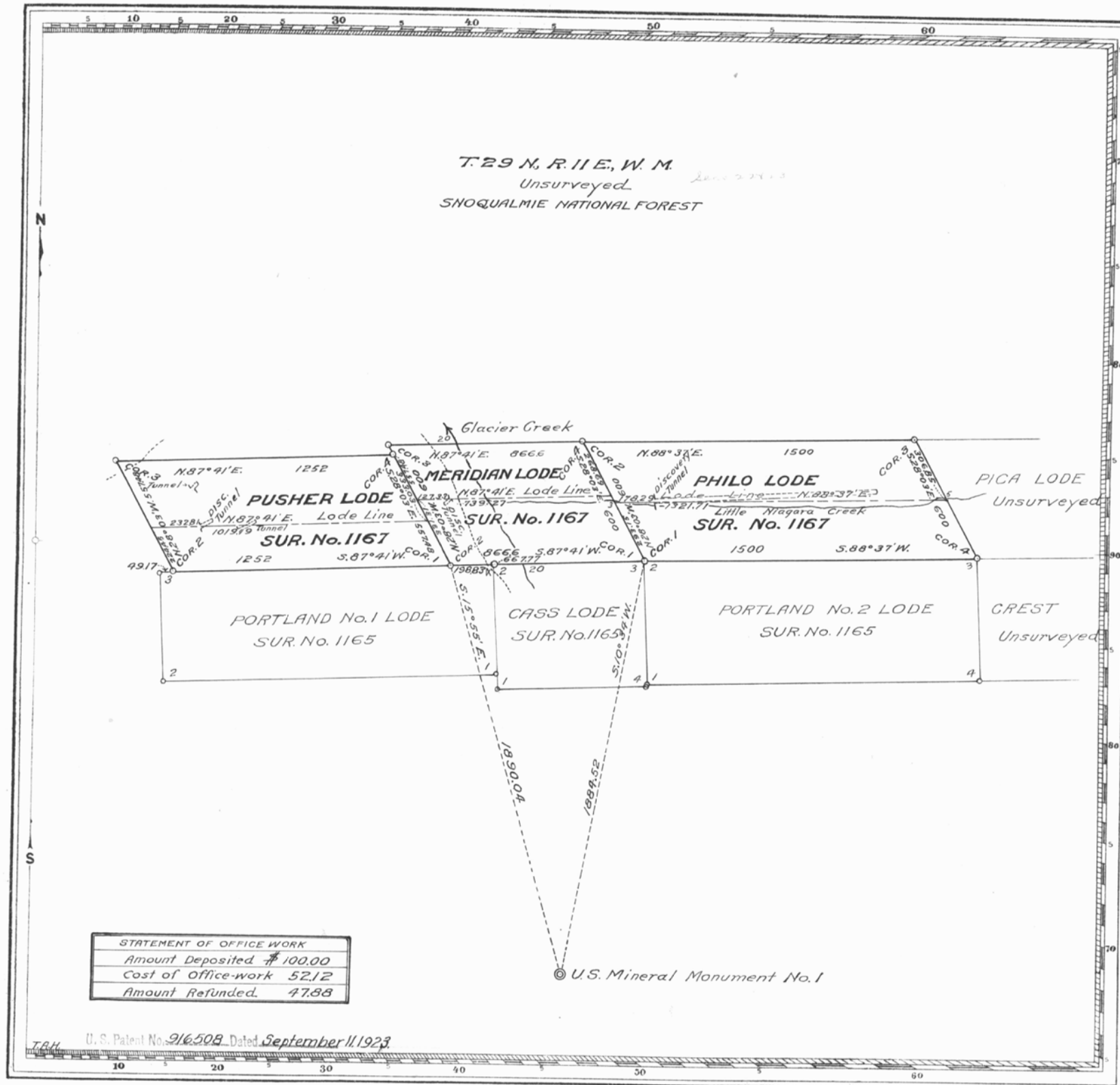
Monte Cristo Mining Area Snohomish County, Washington	
Potomac Silver Mine	
17330-33	3/11
	Figure <b>A-8</b>

Patent  
PATENT NO. 26589  
ISSUED March 9, 1896



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(4-675)



Claim Located Amended - Meridian Sept. 23, 1899  
 Pusher and Philo " 27 "  
 Mineral Survey No. 1167

Lot No.  
 Seattle Land District.

**PLAT**

OF THE CLAIM OF  
 Flora A. Casseday

KNOWN AS THE

**PHILO, PUSHER AND MERIDIAN  
 LODES**

IN Monte Cristo MINING DISTRICT,  
 Snohomish COUNTY, Washington  
 Containing an Area of Acres.

Scale of 400 feet to the inch.  
 Variation 19° 30' E.  
 SURVEYED July 15 to Aug. 2 1921 BY  
 Frank H. Copp  
 U. S. Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
 Flora A. Casseday  
 known as the  
**PHILO, PUSHER AND MERIDIAN LODES**

from which this plat has been made under my direction  
 have been examined and approved, and are on file in this Office,  
 and I hereby certify that they furnish such an accurate descrip-  
 tion of said Mining Claim as will, if incorporated into a patent,  
 serve fully to identify the premises, and that such reference  
 is made therein to natural objects or permanent monuments  
 as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has  
 been expended or improvements made upon said Mining  
 Claim by claimant or her grantors, and that  
 said improvements consist of  
 (Certificate of five hundred dollars  
 worth of labor or improvements to  
 be made later.)

that the location of said improvements is correctly shown  
 upon this plat, and that no portion of said labor or im-  
 provements has been included in the estimate of expendi-  
 tures upon any other claim.

And I further certify that this is a correct plat of said Mining  
 Claim made in conformity with said original field notes of the  
 survey thereof, and the same is hereby approved.

U. S. Surveyor General's Office.  
 Olympia, Washington  
 April 14 1922  
 Clair Hunt  
 U. S. Surveyor General for  
 Washington

Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

Claim located in the Glacier Creek Watershed

Monte Cristo Mining Area  
 Snohomish County, Washington

**Philo, Pusher, and Meridian Lodes**

17330-33

3/11

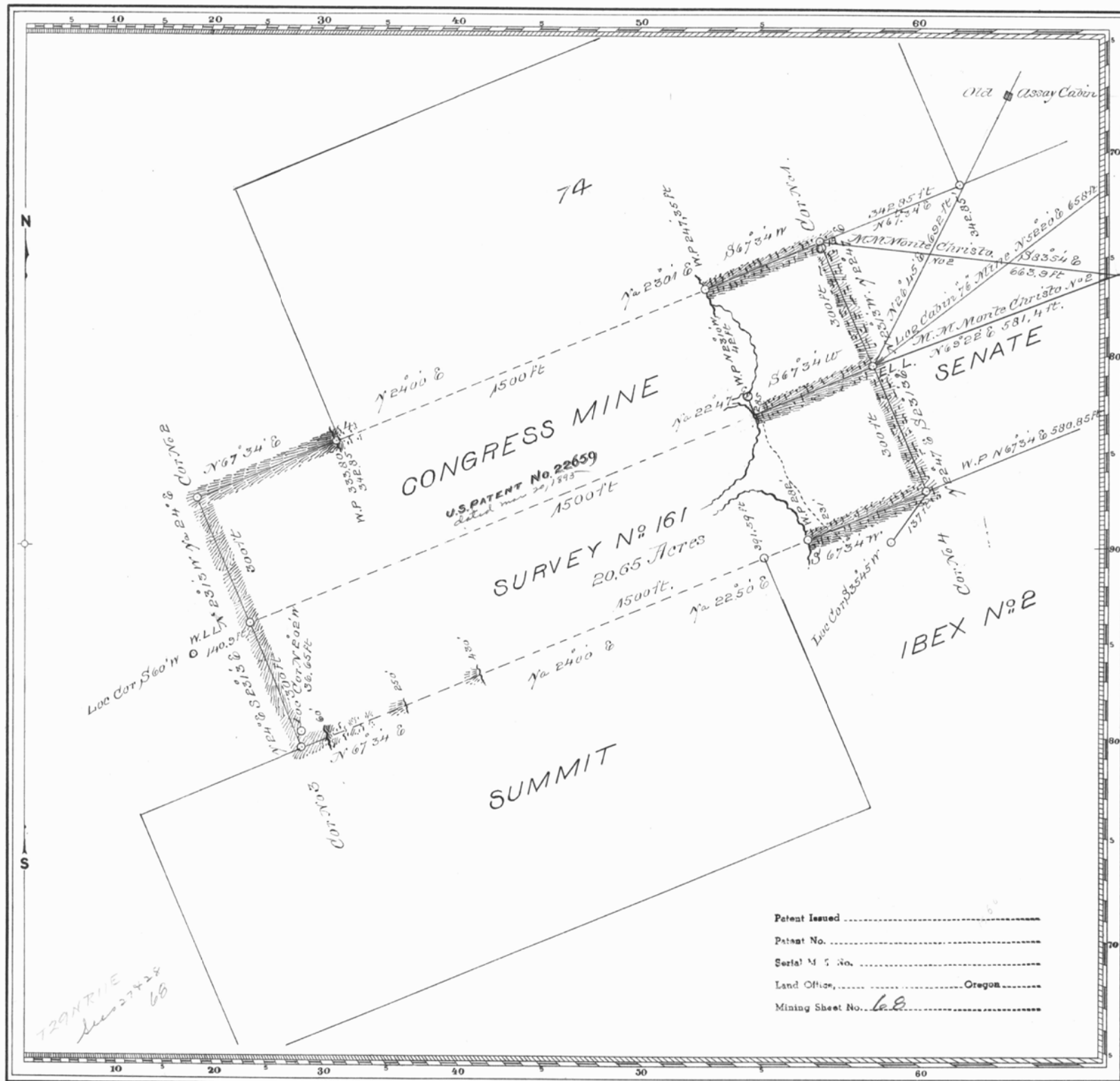


Figure  
**A-9**

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(4-675)

ORIGINAL



Claim Located July 24<sup>th</sup> 1890

Mineral Survey No. 161

Seattle Lot No. \_\_\_\_\_ Land District.

**PLAT**  
OF THE CLAIM OF  
H. G. Bond & Fred W. Wilmans

KNOWN AS THE  
Congress Mine

IX. Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
Containing an Area of 20.65 Acres.  
Scale of 200 Feet to the inch.  
Variation 2247 - 2400 E

SURVEYED Aug 24<sup>th</sup> - Sept 8<sup>th</sup> 1891 BY  
R. H. Stretch,  
U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
H. G. Bond & Fred W. Wilmans  
known as the Congress Mine

from which this plat has been made under my direction & have been examined and approved, and are on file in this office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants — or their grantors, and that said improvements consist of 2 open cuts on vein  
Date \$100.00  
Interest in Road 50 miles long 516.00  
Total value \$616.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. R. H. Stretch  
Olympia Wash. U.S. Surveyor General for  
March 9<sup>th</sup> 1892 Washington

Patent Issued \_\_\_\_\_  
Patent No. \_\_\_\_\_  
Serial No. \_\_\_\_\_  
Land Office \_\_\_\_\_ Oregon \_\_\_\_\_  
Mining Sheet No. 68

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

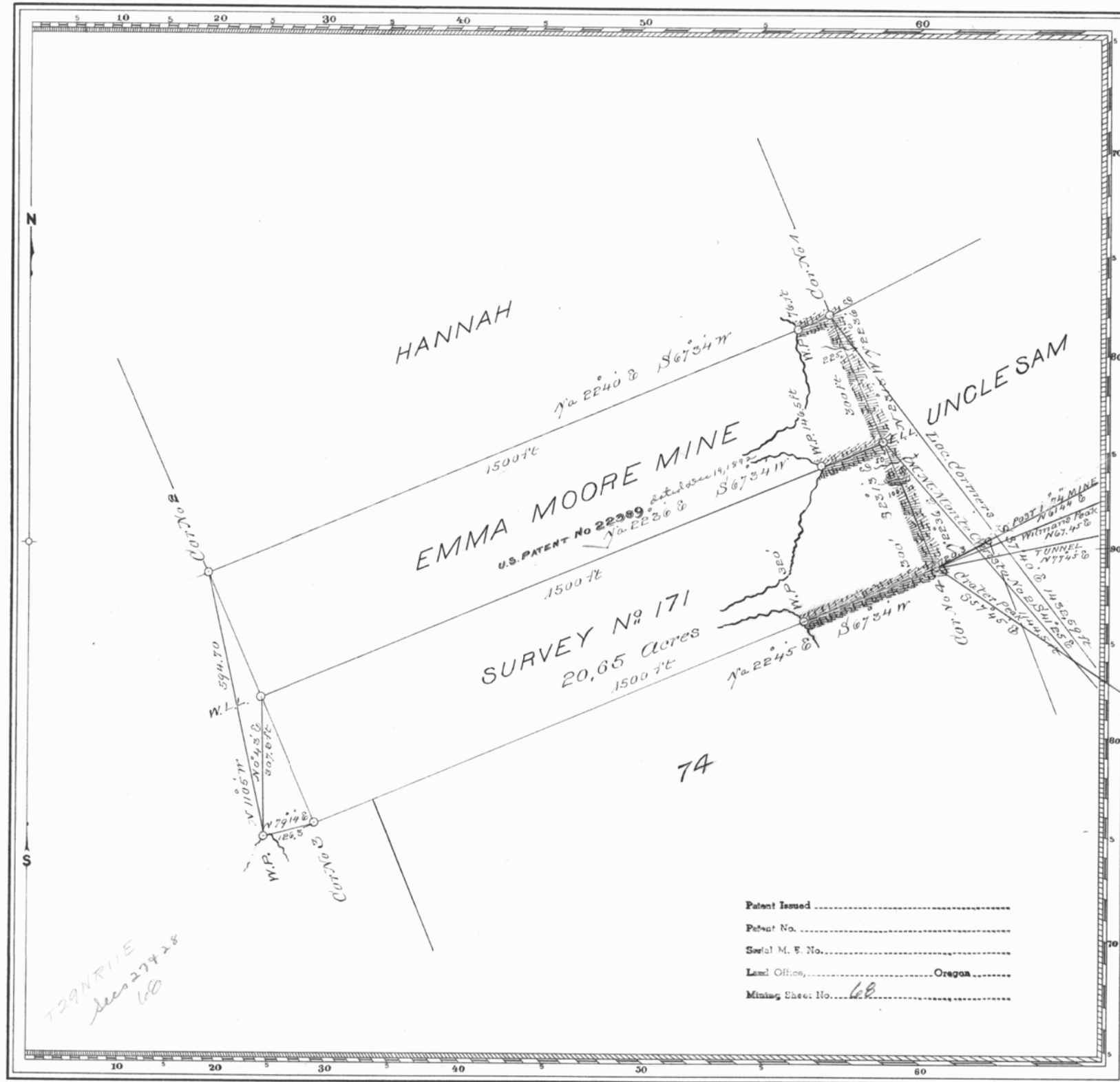
Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>Congress Mine</b>	
17330-33	3/11
HART CROWSER	Figure <b>A-10</b>

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(4-675)

ORIGINAL



Claim Located Aug 31<sup>st</sup> 1889

Mineral Survey No 171

Lot No  
 Seattle Land District.

**PLAT**  
 OF THE CLAIM OF  
 H. G. Bond & Fred W. Wilmarus

KNOWN AS THE  
 Emma Moore Mine

IN Monte Cristo MINING DISTRICT,  
 Snohomish COUNTY, Washington  
 Containing an Area of 20.65 Acres.  
 Scale of 200 Feet to the inch.  
 Variation 22°36' - 22°45'

SURVEYED Aug 25<sup>th</sup> - Sept 8<sup>th</sup> 1891 BY  
 R. H. Bretzin  
 U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
 H. G. Bond & Fred W. Wilmarus  
 known as the Emma Moore Mine.

from which this plat has been made under my direction,  
 have been examined and approved, and are on file in this office,  
 and I hereby certify that they furnish such an accurate description  
 of said Mining Claim as will, if incorporated into a patent,  
 serve fully to identify the premises, and that such reference  
 is made therein to natural objects or permanent monuments  
 as will perpetuate, and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has  
 been expended or improvements made upon said Mining  
 Claim by claimants or their grantors, and that  
 said improvements consist of an open-cut on  
 vein value 100.00  
 interest in Road 50 Miles long 516.00  
 Total value 616.00

that the location of said improvements is correctly shown  
 upon this plat, and that no portion of said labor or im-  
 provements has been included in the estimate of expendi-  
 tures upon any other claim.

And I further certify that this is a correct plat of said Mining  
 Claim made in conformity with said original field notes of the  
 survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *Thos. H. Blackburn*  
 Olympia Wash. U.S. Surveyor General for  
 March 9<sup>th</sup> 1892 Washington

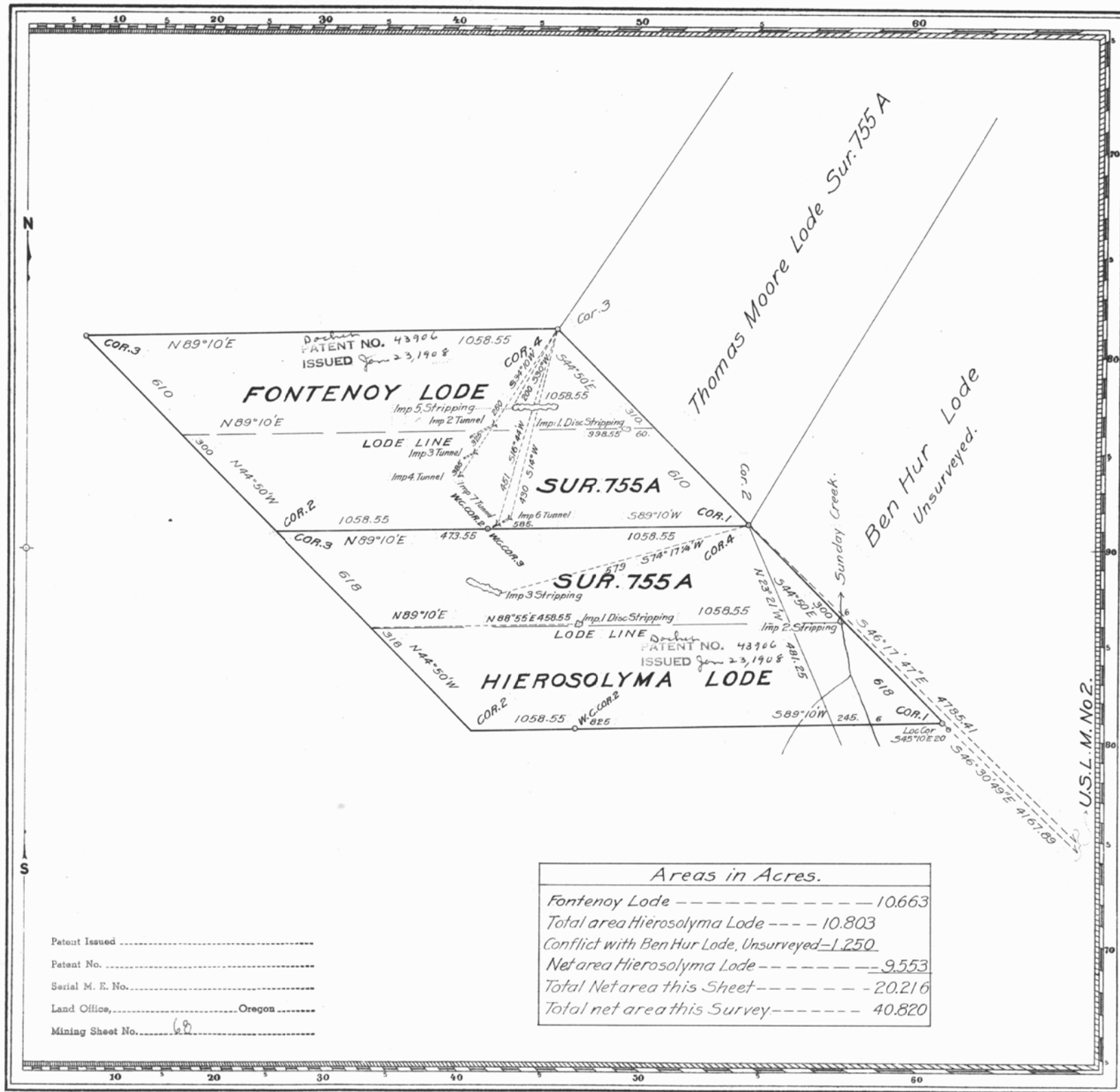
Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
Emma Moore Mine	
17330-33	3/11
	Figure A-11

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(4-675)



Areas in Acres.	
Fontenoy Lode	10.663
Total area Hierosolyma Lode	10.803
Conflict with Ben Hur Lode, Unsurveyed	1.250
Net area Hierosolyma Lode	9.553
Total Net area this Sheet	20.216
Total net area this Survey	40.820

Patent Issued .....  
 Patent No. ....  
 Serial M. E. No. ....  
 Land Office, ..... Oregon .....  
 Mining Sheet No. 68

Claims Located Fontenoy Jan 2, 1902. Hierosolyma Jan 1, 1902. 190

Mineral Survey No. 755 A & B  
 Two sheets, Sheet 2.  
 Lot No. \_\_\_\_\_  
 Seattle \_\_\_\_\_ Land District.

**PLAT**  
 OF THE CLAIM OF  
 H. H. Dearborn  
 KNOWN AS THE  
 Fontenoy and Hierosolyma Lodes.

IN— Monte Cristo — MINING DISTRICT,  
 SNOHOMISH COUNTY, WASHINGTON  
 Containing an Area of 20.216 (Net) Acres.  
 Scale of 200 Feet to the inch.  
 Variation 24° 10' E

SURVEYED Dec 30, 1903 — Nov 23, 1904 — BY  
 F. H. Whitworth, U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
 H. H. Dearborn  
 Known as the Fontenoy and Hierosolyma Lodes.

from which this plat has been made, under my direction, have been examined and approved, and are on file in this office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant or his grantors, and that said improvements consist of Fontenoy Imp. 1 Disc. Stripping 25X30 \$400, Imp. 2 Tunnel 60X6X4 to 8 \$400, Imp. 3 Tunnel 30X6X5 \$250, Imp. 4 Tunnel 10X6X5 \$150, Imp. 5 Stripping 20X100 \$800, Imp. 6 Tunnel 30X6X5 \$250, Imp. 7 Tunnel 20X6X5 \$150, Hierosolyma Imp. 1 Disc. Stripping 20X40 \$100, Imp. 2 Stripping 20X30 \$100, Imp. 3 Stripping 25X80 \$100, Total value Imp's this sheet \$1465, Total value Imp's this Survey \$2085.

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *E. P. Kingstun*  
 Olympia, Washington. U.S. Surveyor General for  
 January 5, 1905 Washington.

Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E  
 Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area  
 Snohomish County, Washington

Fontenoy and Hierosolyma Lodes

17330-33 3/11

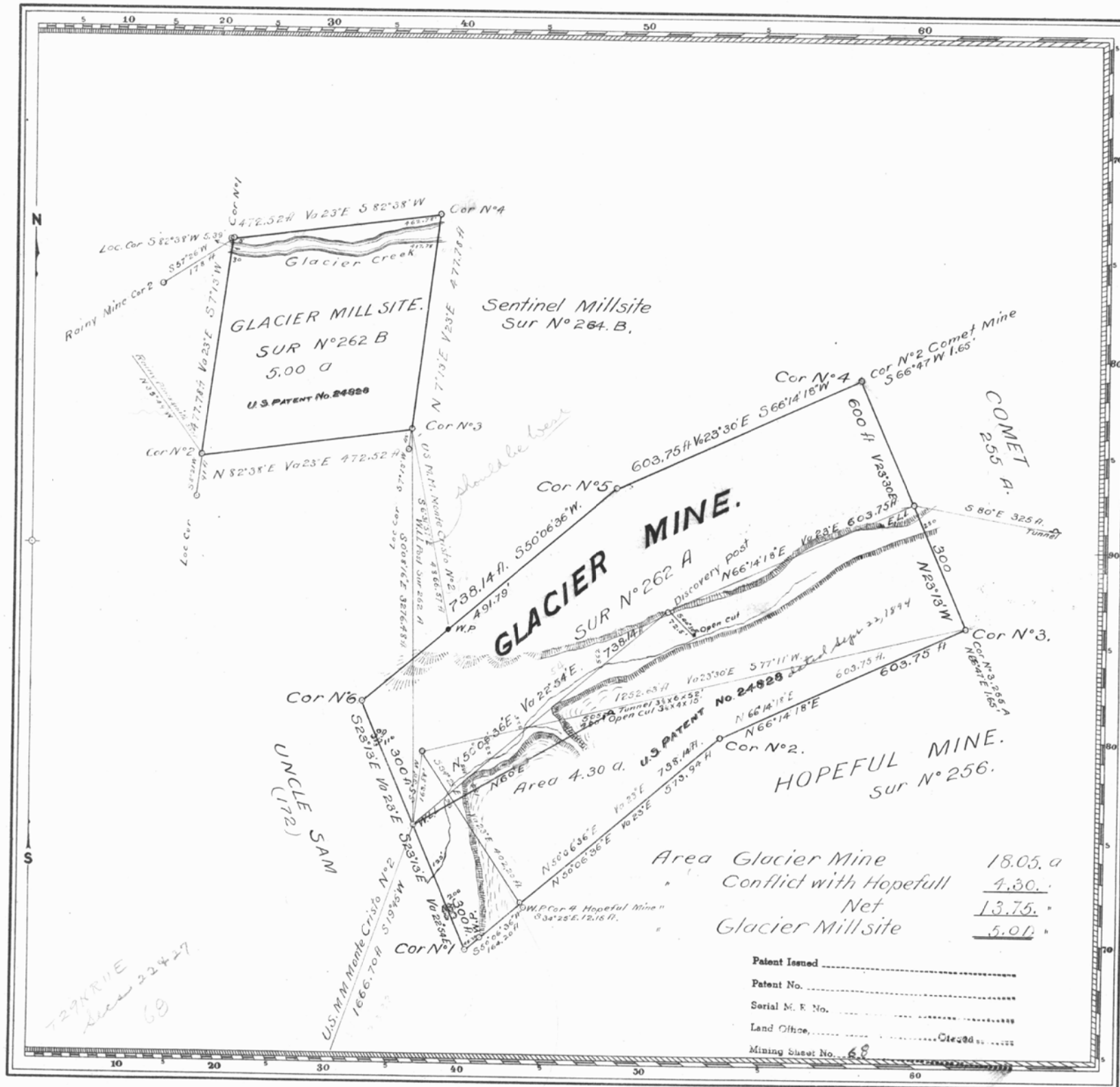
**HARTCROWSER** Figure  
 A-12



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(4-675)

ORIGINAL



Claim Located July 5<sup>th</sup> 1889.  
 Mill Site Located June 11<sup>th</sup> 1892.  
 Mineral Survey No. 262 A & B.

Lot No. \_\_\_\_\_ Land District. Seattle

**PLAT**  
 OF THE CLAIM OF  
The Monte Cristo Mining Co.

KNOWN AS THE  
Glacier Mine & Mill site.

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington.  
 Containing an Area of 18.76 Acres.  
 Scale of 200 feet to the inch.  
 Variation 22°54' - 23°30'E.  
 SURVEYED August 10<sup>th</sup> - 30<sup>th</sup> 1892 BY  
Richard H. Stretch,  
 U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
The Monte Cristo Mining Co.  
 known as the Glacier Mine  
 and Mill site.

from which this plat has been made under my direction, have been examined and approved, and are on file in this office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant S or their grantors, and that said improvements consist of as follows:

Open cut 3 1/2 x 4 x 15 ft	Value \$ 25.00
A Tunnel 3 1/2 x 6 x 52 ft	406.51
7 1/2 ft of a tunnel on Emma Moore Claim	75.00
<b>Total Value</b>	<b>506.51</b>

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Amos Shaw  
Olympia Wash. U.S. Surveyor General for  
December 16<sup>th</sup>, 1893 Washington.

Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

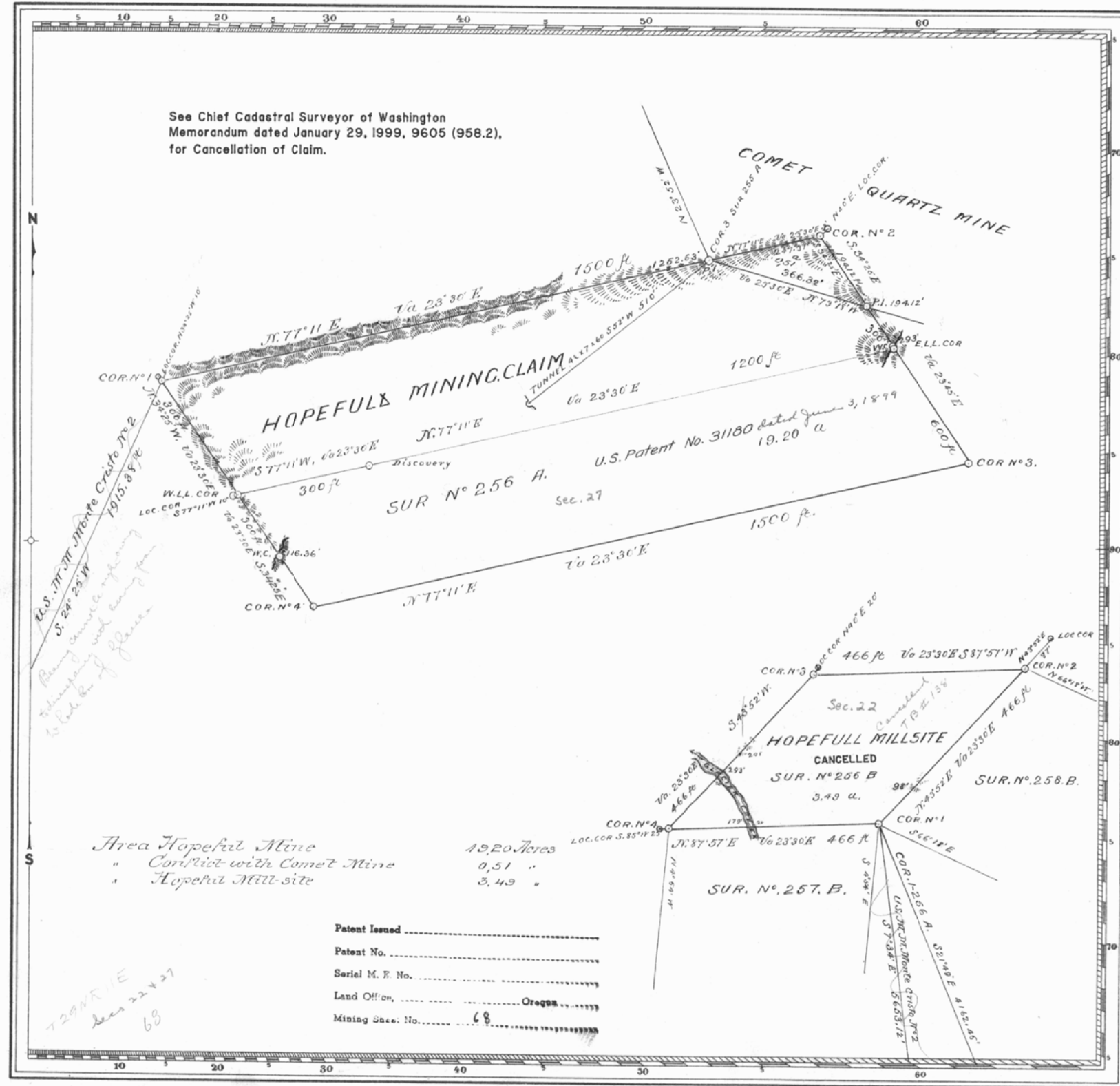
Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
Glacier Mine and Mill Site	
17330-33	3/11
	Figure <b>A-13</b>

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(4-675)

ORIGINAL



See Chief Cadastral Surveyor of Washington  
Memorandum dated January 29, 1999, 9605 (958.2),  
for Cancellation of Claim.

Claim Located July 22<sup>d</sup> 1891  
Millsite June 11<sup>m</sup> 1892  
Mineral Survey N° 256 A & B

Lot N°  
Seattle Land District.

**PLAT**  
OF THE CLAIM OF  
The Wilmans Mining Co.

KNOWN AS THE  
Hopeful Mine & Millsite

IN Monte Cristo MINING DISTRICT,  
Snohomish County, Washington  
Containing an Area of Millsite 3.49 Acres.  
Scale of 200 Feet to the inch.

Variation 23°30' - 23°45' N  
SURVEYED August 20<sup>th</sup> 22<sup>d</sup> 1892 BY  
Alex M. Reynolds,  
U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
The Wilmans Mining Co.  
known as the  
Hopefull Mine & Millsite

from which this plat has been made under my direction  
have been examined and approved, and are on file in this office,  
and I hereby certify that they furnish such an accurate descrip-  
tion of said Mining Claim as will, if incorporated into a patent,  
serve fully to identify the premises, and that such reference  
is made therein to natural objects or permanent monuments  
as will perpetuate and fix the locus thereof.  
I further certify that Five Hundred Dollars worth of labor has  
been expended or improvements made upon said Mining  
Claim by claimants or their grantors, and that  
said improvements consist of  
a Tunnel 4 1/2 x 7 x 60' long value \$600.00

that the location of said improvements is correctly shown  
upon this plat, and that no portion of said labor or im-  
provements has been included in the estimate of expendi-  
tures upon any other claim.  
And I further certify that this is a correct plat of said Mining  
Claim made in conformity with said original field notes of the  
survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Amos T. Shaw  
Olympia Wash. U.S. Surveyor General for  
March 15<sup>th</sup> 1893 Washington.

Area Hopeful Mine 49.20 Acres  
" Conflict with Comet Mine 0.51 "  
" Hopeful Millsite 3.49 "

Patent Issued .....  
Patent No. ....  
Serial M. E. No. ....  
Land Off. on. .... Oregon  
Mining Sect. No. 68

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
Hopeful Mine	
17330-33	3/11
	Figure A-14

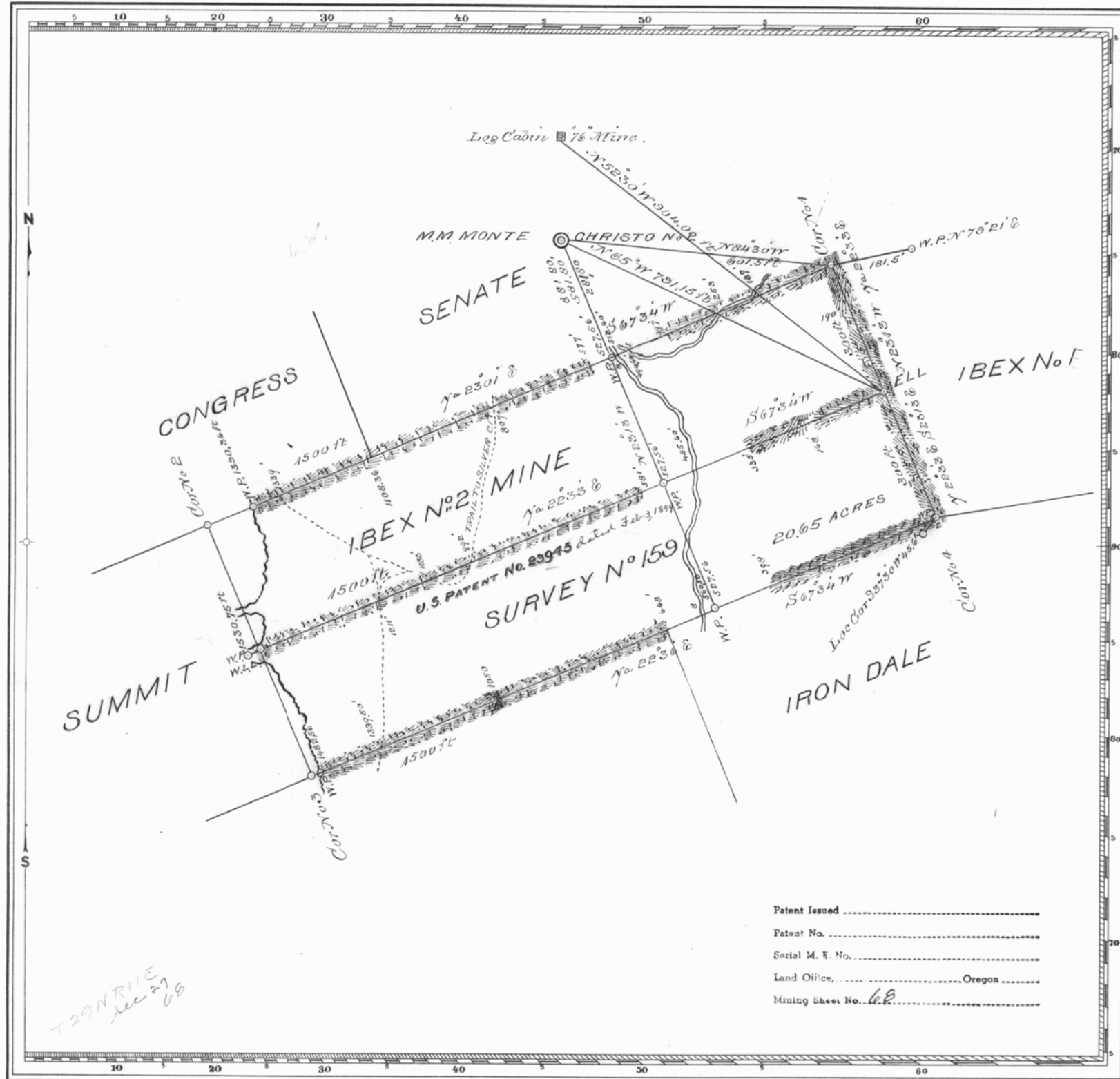
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(4-675)

ORIGINAL



Patent Issued .....

Patent No. ....

Serial M. & No. ....

Land Office, ..... Oregon .....

Mining Sheet No. 68 .....

Claim Located May 12<sup>th</sup> 1890

Mineral Survey No. 159

Seattle Land District.

### PLAT

OF THE CLAIM OF  
H. G. Bond and Fred W. Witmars

KNOWN AS THE  
IBEX No. 2 MINE

In Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
Containing an Area of 20.65 Acres.

Scale of 200 Feet to the inch.

Variation 22° 33' - 23° 01' E

SURVEYED Aug 24<sup>th</sup> - 28<sup>th</sup> 1891 BY  
R. H. Stretton

U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of  
H. G. Bond and Fred W. Witmars  
known as the IBEX No. 2 Mine.

from which this plat has been made under my direction  
have been examined and approved, and are on file in this office,  
and I hereby certify that they furnish such an accurate description  
of said Mining Claim as will, if incorporated into a patent,  
serve fully to identify the premises, and that such reference  
is made therein to natural objects or permanent monuments  
as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has  
been expended or improvements made upon said Mining  
Claim by claimant 3 or their grantors, and that  
said improvements consist of

1/3 interest in Road 50 miles long \$16,000

that the location of said improvements is correctly shown  
upon this plat, and that no portion of said labor or im-  
provements has been included in the estimate of expendi-  
tures upon any other claim.

And I further certify that this is a correct plat of said Mining  
Claim made in conformity with said original field notes of the  
survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Thos. H. Sawanough

Olympia Wash U.S. Surveyor General for

March 24, 1892 Washington

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area  
Snohomish County, Washington

IBEX No 2 Mine

17330-33

3/11



Figure

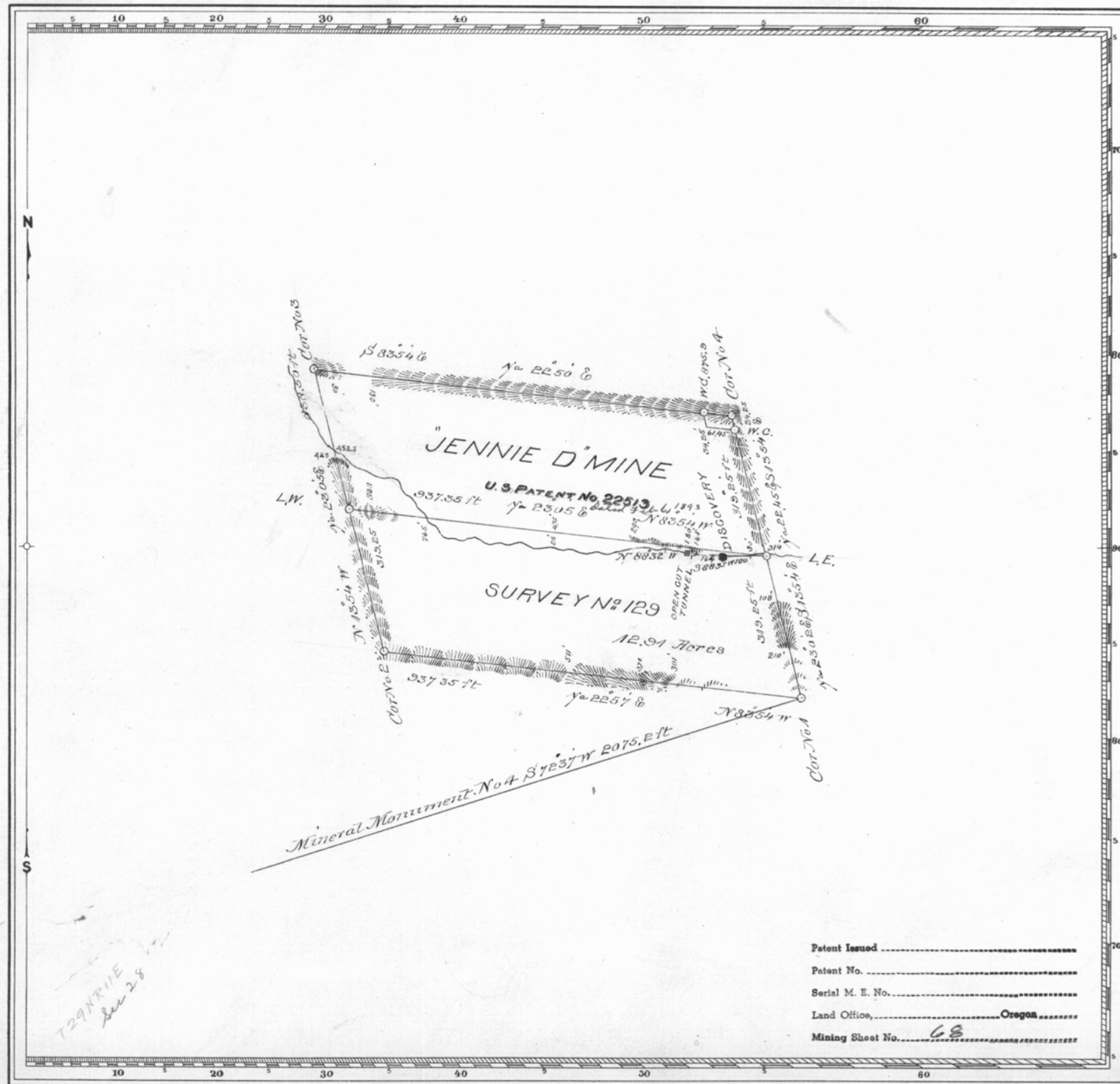
A-16



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(4-675)

ORIGINAL



Claim Located August 12<sup>th</sup> 1890

Mineral Survey No 129

Seattle Land District

**PLAT**  
OF THE CLAIM OF  
*Silver Queen Mining & Smelting Company*  
KNOWN AS THE  
*"Jennie D" Mine*

IN *Silver Creek* MINING DISTRICT,  
*Snohomish* COUNTY, *Washington*  
Containing an Area of 12.91 Acres.  
Scale of 100 Feet to the inch.  
Variation 2245-2305'

SURVEYED Sept 8<sup>th</sup> - 11 1891 BY  
*C. P. Mc Kenzie*  
U.S. Deputy Mineral Surveyor,

The Original Field Notes of the Survey of the Mining Claim of  
*Silver Queen Mining & Smelting Company*  
known as the *Jennie D Mine*

from which this plat has been made under my direction, have been examined and approved, and are on file in this office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimants or their grantors, and that said improvements consist of a Tunnel value \$20.00 an Open cut " 150.00 50% of cost of Tunnel 4 1/2 x 6 1/2 x 130 ft long 159 7.00 Total value \$1957.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *Thos. Mcavanaugh*  
*Olympia Wash* U.S. Surveyor General for  
March 9<sup>th</sup> 1892 *Washington*

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

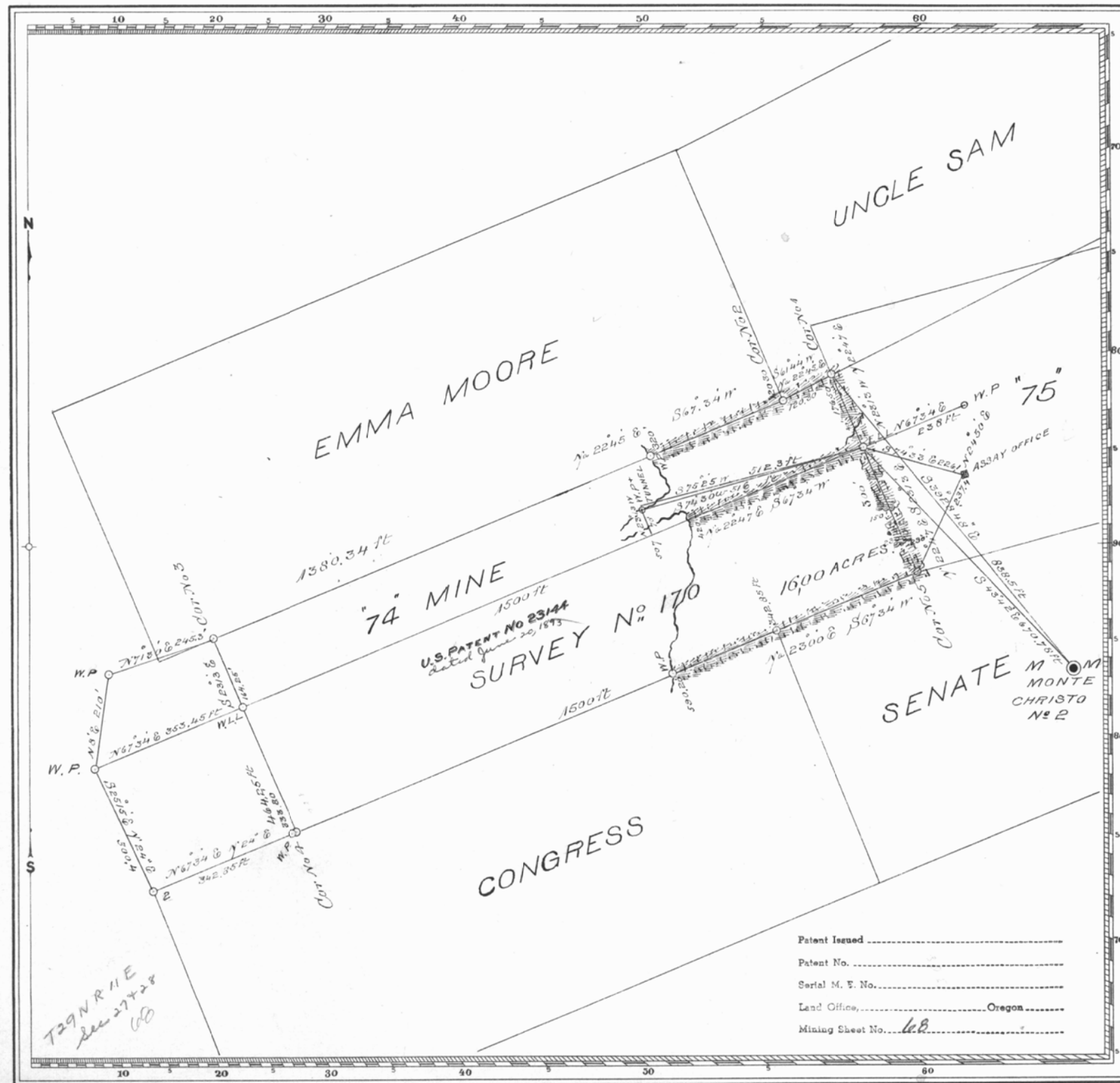
Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>Jennie D Mine</b>	
17330-33	3/11
HART CROWSER	Figure <b>A-17</b>

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(4-675)

ORIGINAL



Claim Located Aug 31<sup>st</sup> 1899

Mineral Survey No 170

Lot No  
Seattle Land District.

**PLAT**  
OF THE CLAIM OF  
H G Bondy Fred W Wilmans  
KNOWN AS THE  
'74' Mine

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
Containing an Area of 16.00 Acres.  
Scale of 200 Feet to the inch.  
Variation 22 1/2 - 24 E  
SURVEYED Aug 24<sup>th</sup> - Sept 8<sup>th</sup> 1891 BY  
R H Stretch,  
U.S. Deputy Mineral Surveyor,

The Original field Notes of the Survey of the Mining Claim of  
H G Bondy Fred W Wilmans  
Known as the '74' Mine

from which this plat has been made under my direction, have been examined and approved, and are on file in this office; and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.  
I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claim by claimant's or their grantors, and that said improvements consist of a Tunnel 3312 long  
Value \$250.00  
1/3<sup>rd</sup> interest in Road 50 miles long \$16.00  
Total value \$266.00

that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.  
And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. Thos A Savaraugh  
Olympia Wash U.S. Surveyor General for  
March 3<sup>rd</sup> 1892 Washington

Patent Issued \_\_\_\_\_  
Patent No. \_\_\_\_\_  
Serial M. F. No. \_\_\_\_\_  
Land Office, \_\_\_\_\_ Oregon \_\_\_\_\_  
Mining Sheet No. 48

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

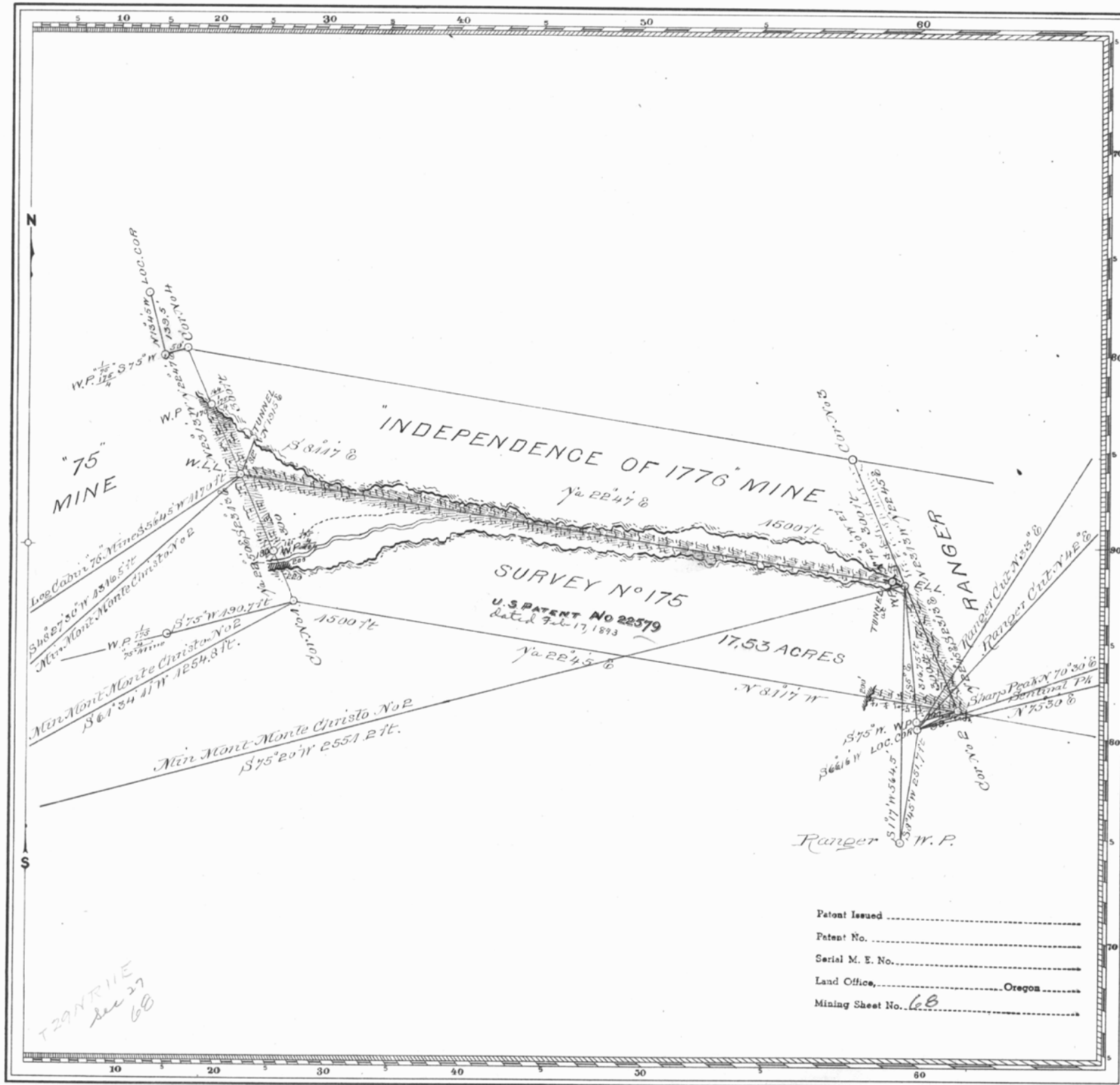
Claim located in the Seventysix Creek Watershed

Monte Cristo Mining Area Snohomish County, Washington	
74 Mine	
17330-33	3/11
	Figure <b>A-18</b>

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(4-675)

ORIGINAL



Claim Located July 4<sup>th</sup> 1889

Mineral Survey No 175

Seattle Land District

### PLAT

OF THE CLAIM OF

H.G. Bondy, Fred W. Wilman

KNOWN AS THE

### INDEPENDENCE OF 1776 MINE

IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
Containing an Area of 17.53 Acres.

Scale of 200 Feet to the inch.

Variation 2245 - 2250

SURVEYED (Nov 27<sup>th</sup> - Sept 3<sup>rd</sup> 1891) BY  
H.H. Stretch

U.S. Deputy Mineral Surveyor

The Original Field Notes of the Survey of the Mining Claim of  
H.G. Bondy, Fred W. Wilman  
known as the Independence of 1776  
Mine

from which this plat has been made under my direction  
have been examined and approved, and are on file in this office,  
and I hereby certify that they furnish such an accurate descrip-  
tion of said Mining Claim as will, if incorporated into a patent,  
serve fully to identify the premises, and that such reference  
is made therein to natural objects or permanent monuments  
as will perpetuate and fix the locus thereof.

I further certify that five hundred dollars worth of labor has  
been expended or improvements made upon said Mining  
Claim by claimants or their grantors, and that  
said improvements consist of a Cut, Tunnel, 200.00  
A Tunnel Value 400.00  
1/3 interest in Road 50 miles long 516.00  
Total value 1116.00

that the location of said improvements is correctly shown  
upon this plat, and that no portion of said labor or im-  
provements has been included in the estimate of expendi-  
tures upon any other claim.

And I further certify that this is a correct plat of said Mining  
Claim made in conformity with said original field notes of the  
survey thereof, and the same is hereby approved.

U.S. Surveyor General's Office. *W.S. Harlan*  
Olympia Wash U.S. Surveyor General for  
Feb 6<sup>th</sup> 1892 Washington

Source:  
Bureau of Land Management - Oregon State Office  
Land Status and Cadastral Survey Records  
Willamette Meridian - Oregon and Washington  
Township: 029-0N Range: 011-0E

Claim located in the Seventysix Creek Watershed

Monte Crist Mining Area  
Snohomish County, Washington

Independence of 1776 Mine

17330-33

3/11



Figure

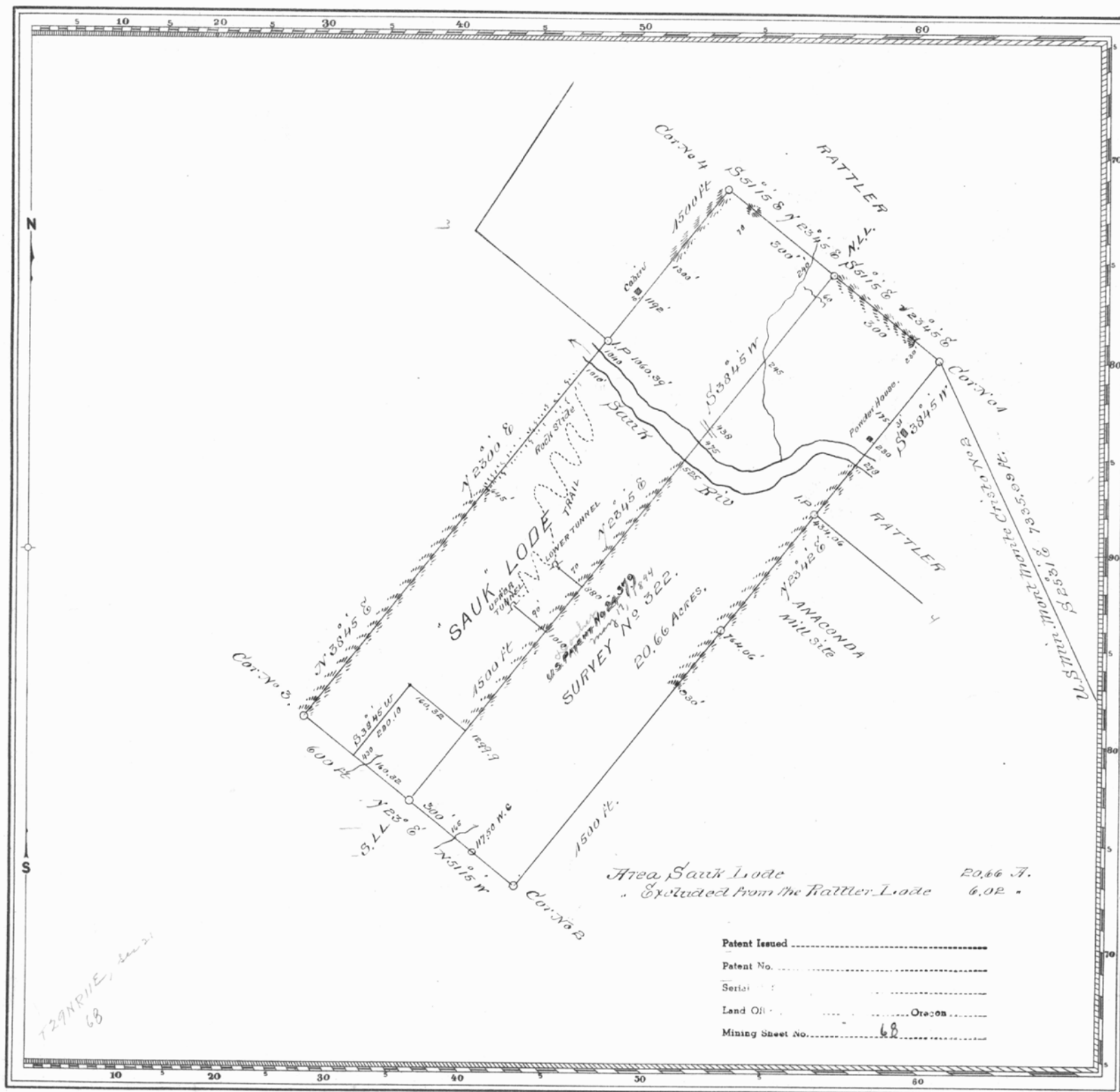
A-19

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(4-675)

Pat # 24379

ORIGINAL



Area Sauk Lodge 20.66 A.  
 Excluded from the Rattle Lodge 6.02

Patent Issued .....  
 Patent No. ....  
 Serial .....  
 Land Oil ..... Oregon .....  
 Mining Sheet No. 68

Claim Located May 13<sup>th</sup> 1893  
 Mineral Survey No. 322  
 Lot No. \_\_\_\_\_ Land District.  
Seattle  
**PLAT**  
 OF THE CLAIM OF  
Nicholas Rudebeck, A.A. Allen,  
Robert H Miller & H.J. Martin,  
 KNOWN AS THE  
"Sauk" Lode.  
 IN Monte Cristo MINING DISTRICT,  
Snohomish COUNTY, Washington  
 Containing an Area of 20.66 Acres.  
 Scale of 200 feet to the inch.  
 Variation 23 - 23 1/2 E  
 SURVEYED April 25<sup>th</sup> - 27<sup>th</sup> 1893 BY  
Richard A. Stretch  
 U.S. Deputy Mineral Surveyor,  
 The Original Field Notes of the Survey of the Mining Claim of  
Nicholas Rudebeck, A.A. Allen, Robert  
Miller & H.J. Martin,  
 known as the "Sauk" Lode.  
 from which this plat has been made under my direction  
 have been examined and approved, and are on file in this office,  
 and I hereby certify that they furnish such an accurate descrip-  
 tion of said Mining Claim as will, if incorporated into a patent,  
 serve fully to identify the premises, and that such reference  
 is made therein to natural objects or permanent monuments  
 as will perpetuate and fix the locus thereof.  
 I further certify that Five Hundred Dollars worth of labor has  
 been expended or improvements made upon said Mining  
 Claim by claimant \_\_\_\_\_ or their grantors, and that  
 said improvements consist of  
 Lower Tunnel + open cut value 100.00  
 Upper Tunnel + open cut 325.00  
 Trail to Mine Total value 425.00  
 that the location of said improvements is correctly shown  
 upon this plat, and that no portion of said labor or im-  
 provements has been included in the estimate of expendi-  
 tures upon any other claim.  
 And I further certify that this is a correct plat of said Mining  
 Claim made in conformity with said original field notes of the  
 survey thereof, and the same is hereby approved.  
 U.S. Surveyor General's Office. Ormos Shaw  
Olympia Wash U.S. Surveyor General for  
May 17<sup>th</sup> 1893 Washington

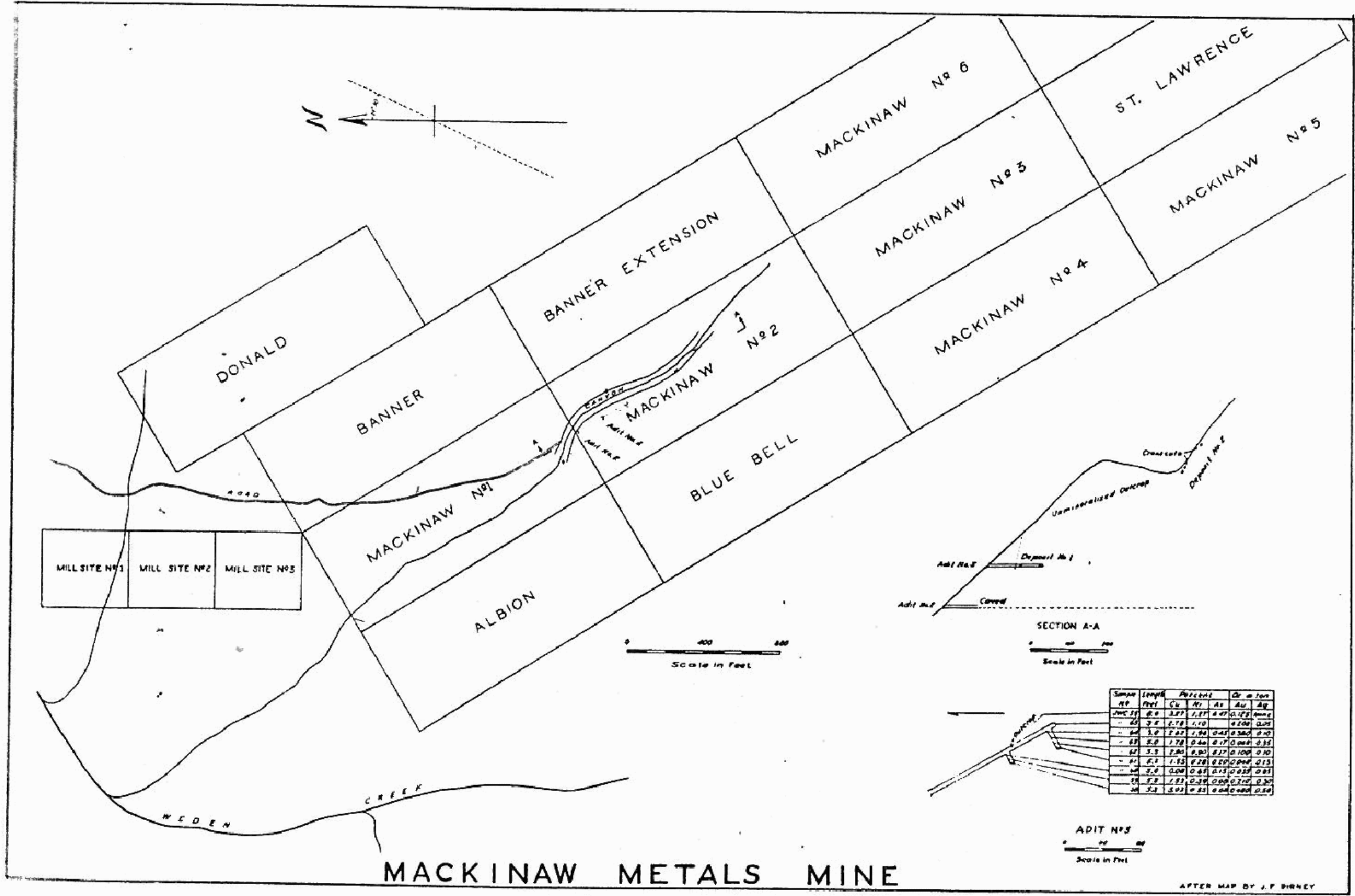
Source:  
 Bureau of Land Management - Oregon State Office  
 Land Status and Cadastral Survey Records  
 Willamette Meridian - Oregon and Washington  
 Township: 029-0N Range: 011-0E

Claim located in the South Fork Sauk River Watershed

Monte Cristo Mining Area Snohomish County, Washington	
<b>Sauk Lode</b>	
17330-33	3/11
HART-CROWSER	Figure <b>A-20</b>



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Source:  
War Minerals Report for Mackinaw Metals Mine,  
January 1944

Claim located in the Weden Creek Watershed

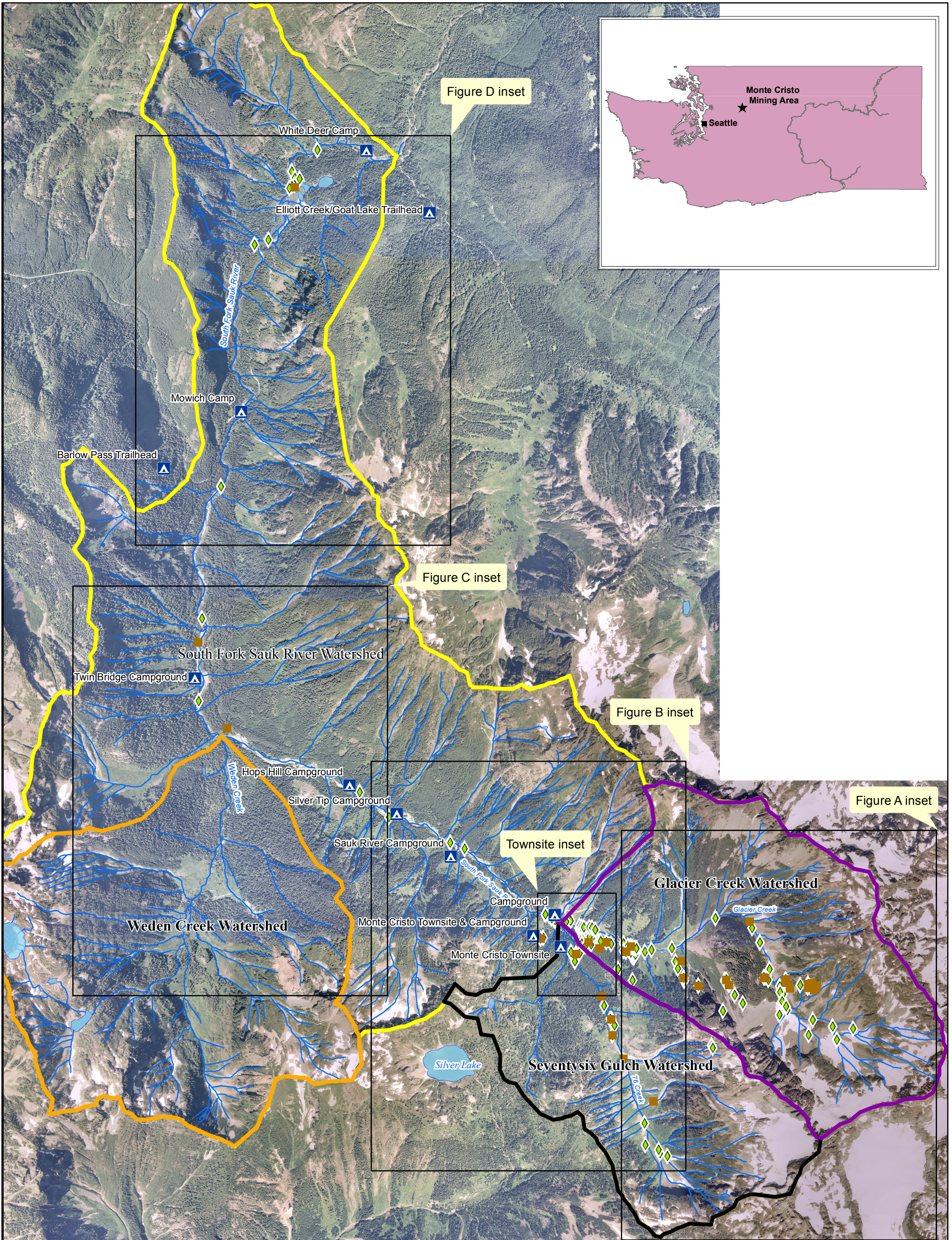
Monte Cristo Mining Area  
Snohomish County, Washington

**Mackinaw Mining Area**

17330-33 3/11

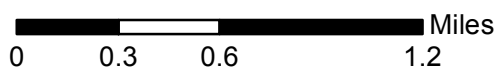
**HARTCROWSER**

Figure  
**A-21**



- Legend**
- Campgrounds
  - Weden Watershed
  - Glacier Creek Watershed
  - Seventysix Gulch Watershed
  - South Fork Sauk River
  - Mine-Related Features
  - Sample locations (all sample media)
  - Lakes
  - Streams

1 inch = 3,000 feet



Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

Vicinity Map

17330-33

04/2011



Figure

1

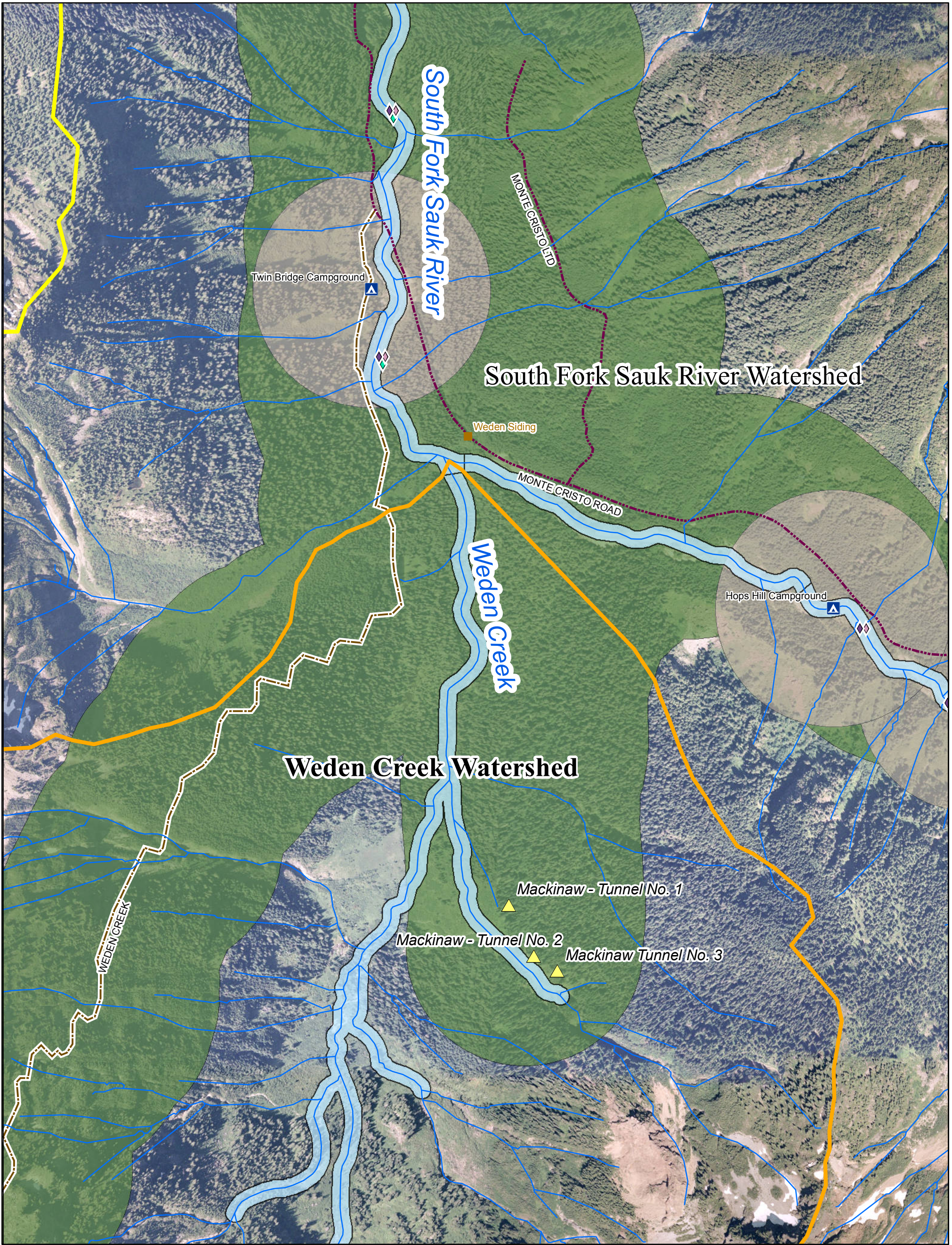
R:\GIS\PROJECTS\1733033\_MCMA\Figure 1.mxd



<b>Legend</b> <ul style="list-style-type: none"> <li><span style="border: 2px solid purple; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Glacier Creek Watershed</li> <li><span style="border: 2px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Seventysix Gulch Watershed</li> <li><span style="background-color: brown; border: 1px solid black; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Mine features previously sampled</li> <li><b>Mine features not sampled</b></li> <li><span style="color: red;">▲</span> Patented</li> <li><span style="color: yellow;">▲</span> Unpatented/unknown</li> <li><span style="color: blue;">—</span> Streams</li> <li><span style="color: red;">—</span> Roads</li> <li><span style="color: brown;">—</span> Trails</li> </ul>		<ul style="list-style-type: none"> <li><span style="background-color: blue; border: 1px solid black; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Background Soil</li> <li><span style="background-color: blue; border: 1px solid black; border-radius: 50%; display: inline-block; width: 10px; height: 10px; margin-right: 5px;"></span> Background Sediment</li> <li><span style="color: blue;">▲</span> Background Surface water</li> <li><span style="color: orange;">◆</span> Drainage water</li> <li><span style="color: green;">◆</span> Pore water</li> <li><span style="color: purple;">◆</span> Surface water</li> </ul>		<ul style="list-style-type: none"> <li><span style="color: purple;">◆</span> Sediment</li> <li><span style="color: yellow;">◆</span> Soil</li> <li><span style="color: purple;">◆</span> Tailings</li> <li><span style="color: blue;">◆</span> Waste rock</li> </ul>		<ul style="list-style-type: none"> <li><span style="border: 1px solid lightblue; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Stream buffer - 100 ft</li> <li><span style="background-color: lightgrey; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Campground buffer - 1/4 mi</li> <li><span style="background-color: green; border: 1px solid black; display: inline-block; width: 15px; height: 10px; margin-right: 5px;"></span> Trail and road buffer - 1/4 mi</li> </ul>	
<b>Mining Claims</b> <ul style="list-style-type: none"> <li><span style="color: red;">▲</span> Patented</li> <li><span style="color: yellow;">▲</span> Unpatented/unknown</li> <li><span style="color: blue;">—</span> Streams</li> <li><span style="color: red;">—</span> Roads</li> <li><span style="color: brown;">—</span> Trails</li> </ul>		<ul style="list-style-type: none"> <li><span style="color: purple;">◆</span> Sediment</li> <li><span style="color: yellow;">◆</span> Soil</li> <li><span style="color: purple;">◆</span> Tailings</li> <li><span style="color: blue;">◆</span> Waste rock</li> </ul>		<div style="text-align: center;"> <p>1 inch = 1,000 feet</p> <p>Miles</p> <p>0 0.1 0.2 0.4</p> </div>		<div style="text-align: center;"> <p>Additional Mining Claims</p> <p>17330-33 <span style="float: right;">04/2011</span></p> </div>	
				<p>Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.</p>		<p>Figure 2 A</p>	

R:\GIS\PROJECTS\1733033\_MCMA\Figure 2A.mxd





R:\GIS\PROJECTS\1733033\_MCMA\Figure 2C.mxd

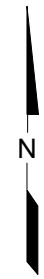
**Legend**

- |                                  |                          |            |                                |
|----------------------------------|--------------------------|------------|--------------------------------|
| Weden Watershed                  | Background Soil          | Sediment   | Stream buffer - 100 ft         |
| South Fork Sauk River            | Background Sediment      | Soil       | Campground buffer - 1/4 mi     |
| Mine features previously sampled | Background Surface water | Tailings   | Trail and road buffer - 1/4 mi |
| <b>Mine features not sampled</b> | Drainage water           | Waste rock |                                |
| <b>Mining Claims</b>             | Pore water               |            |                                |
| Patented                         | Surface water            |            |                                |
| Unpatented/unknown               |                          |            |                                |
| Campgrounds                      |                          |            |                                |
| Streams                          |                          |            |                                |
| Roads                            |                          |            |                                |
| Trails                           |                          |            |                                |

1 inch = 1,008 feet

0 0.1 0.2 0.4 Miles

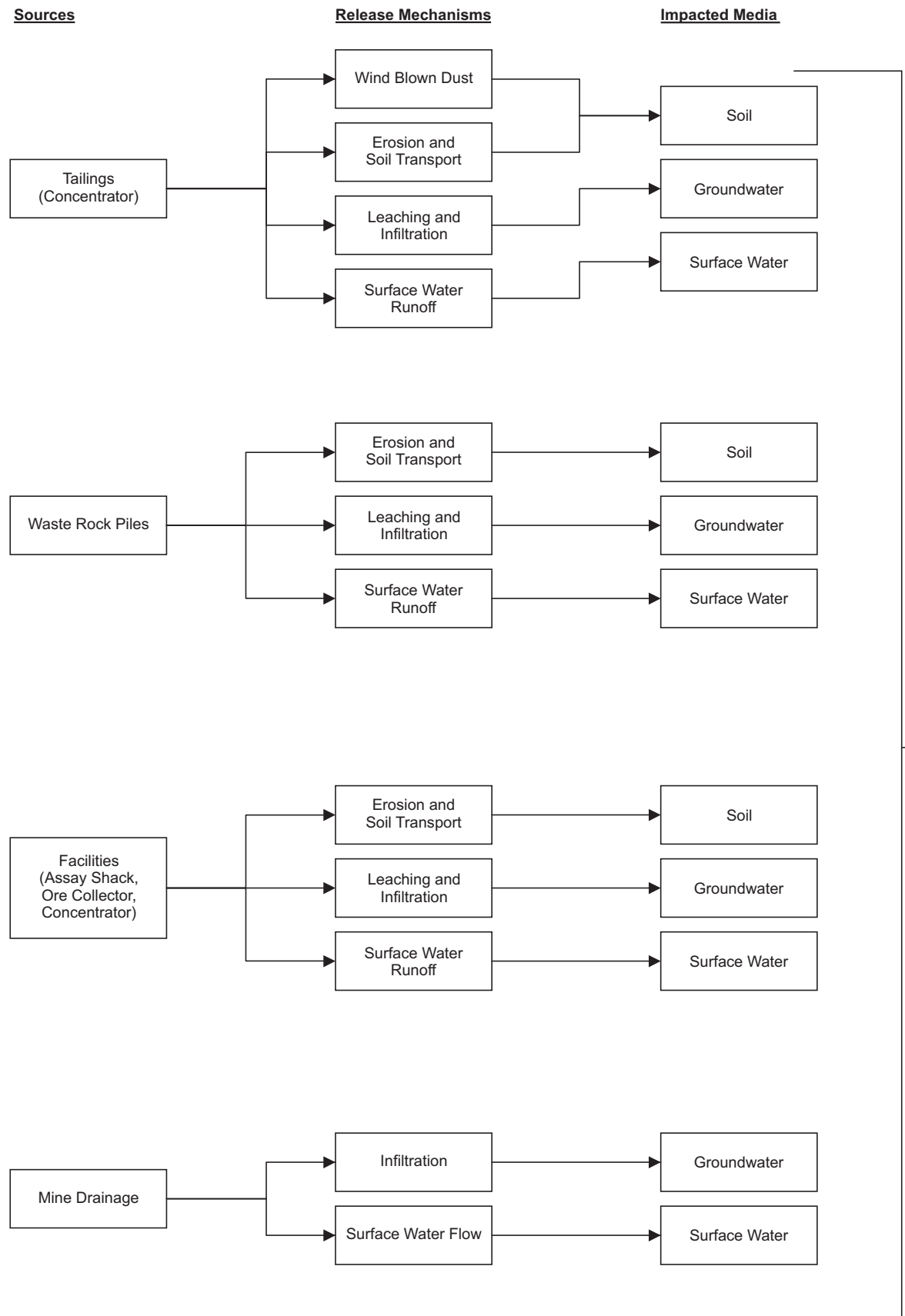
Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.



**Additional Mining Claims**

17330-33 04/2011

**HARTCROWSER** Figure 2 C

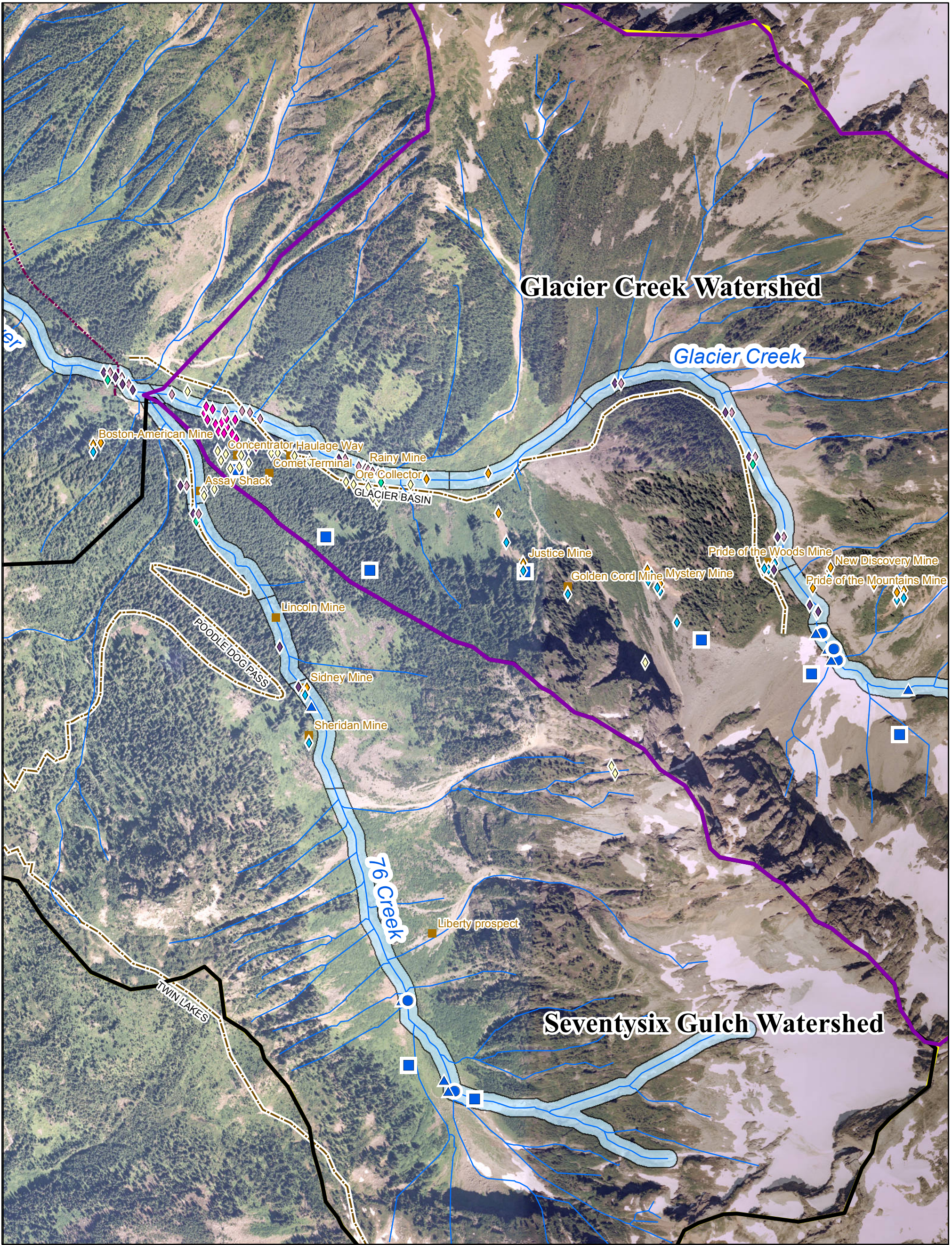


Impacted Media	Route	Resident	Visitor	Worker	Terrestrial Biota	Aquatic Biota
Soil	Inhalation		●	●	●	
	Dermal Contact		●	●	●	
	Ingestion		●	●	●	
Groundwater	Inhalation			○		
	Dermal Contact			○	○	
	Ingestion			○		
Surface Water	Inhalation					
	Dermal Contact		●	●	●	●
	Ingestion		●	●	●	●
Sediment	Inhalation		○	○	○	●
	Dermal Contact		●	○	○	●
	Ingestion		●	○	○	●
Biota*	Inhalation					
	Dermal Contact					
	Ingestion		●	●	●	●

**Legend**

- Complete Pathway
- Insignificant Pathway
- (No Symbol) Incomplete Pathway

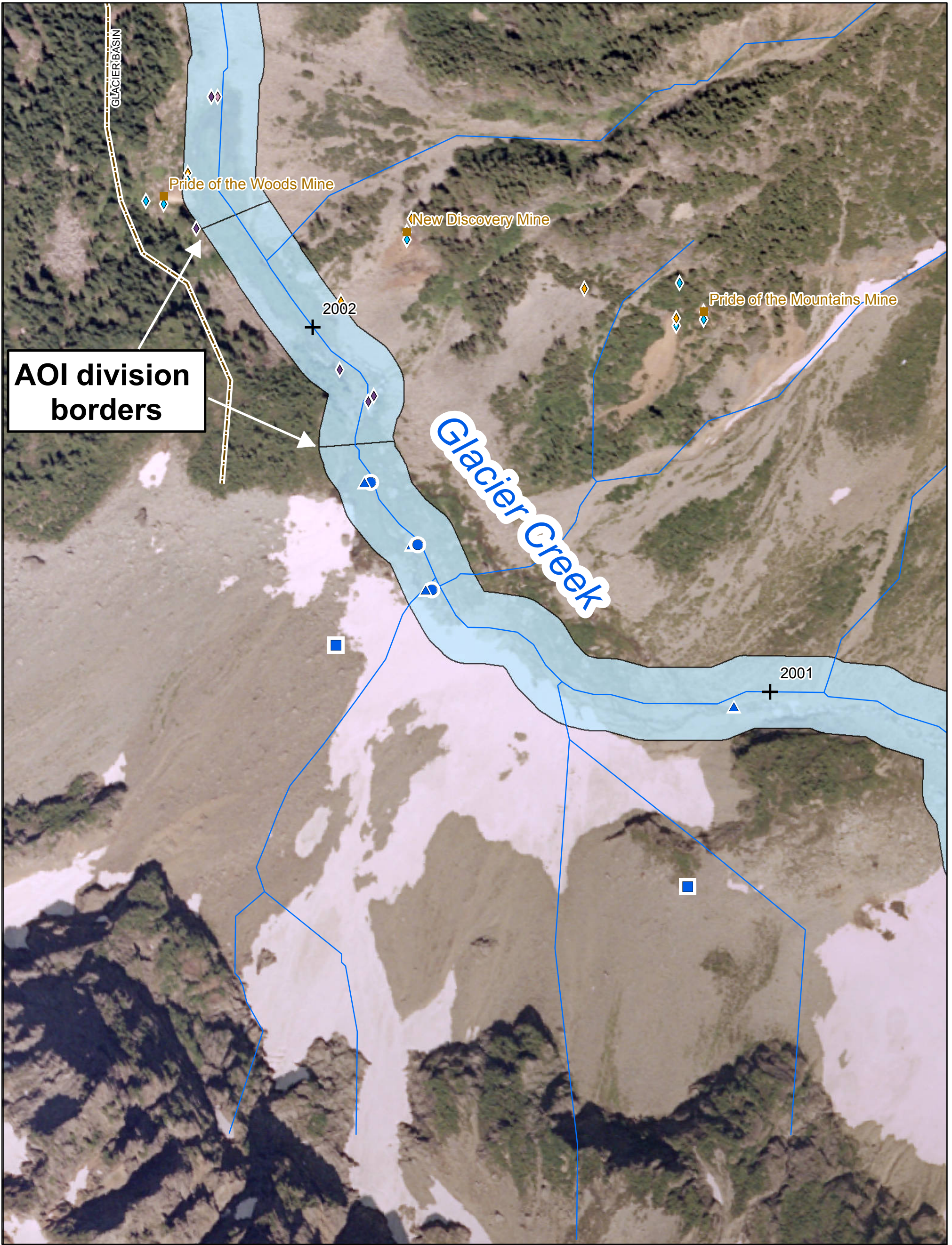
\*Biota (e.g., homegrown vegetables, insects, fish, plants) may be considered a secondary source that accumulate constituents of concern from impacted soil, sediment, surface water, and groundwater and may be consumed by humans or ecological receptors. In addition to being a secondary source, terrestrial and aquatic biota are also receptors.



<b>Legend</b> <ul style="list-style-type: none"> <li><span style="color: purple;">▭</span> Glacier Creek Watershed</li> <li><span style="color: black;">▭</span> Seventysix Gulch Watershed</li> <li><span style="color: yellow;">▭</span> South Fork Sauk River</li> <li><span style="color: brown;">▭</span> Mine features previously sampled</li> <li><span style="color: blue;">—</span> Streams</li> <li><span style="color: red;">—</span> Roads</li> <li><span style="color: orange;">—</span> Trails</li> <li><span style="color: blue;">▣</span> Background Soil</li> <li><span style="color: blue;">●</span> Background Sediment</li> <li><span style="color: blue;">▲</span> Background Surface water</li> <li><span style="color: orange;">◆</span> Drainage water</li> <li><span style="color: green;">◆</span> Pore water</li> <li><span style="color: purple;">◆</span> Surface water</li> <li><span style="color: purple;">◆</span> Sediment</li> <li><span style="color: yellow;">◆</span> Soil</li> <li><span style="color: pink;">◆</span> Tailings</li> <li><span style="color: cyan;">◆</span> Waste rock</li> <li><span style="color: lightblue;">▭</span> Stream buffer - 100 ft</li> </ul>		<p>17330-33</p> <p>04/2011</p> <p><b>Mine Features Previously Sampled</b></p>
<p>1 inch = 1,000 feet</p> <p>Miles</p> <p>0 0.1 0.2 0.4</p> <p>Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.</p>		

R:\GIS\PROJECTS\1733033\_MCMA\Figure 4.mxd





R:\GIS\PROJECTS\1733033\_MCM\A\Figure 5.mxd

**Legend**

■ Mine features previously sampled	◆ Surface water	— Streams	□ Stream buffer - 100 ft
■ Background Soil	◆ Sediment	— Roads	
● Background Sediment	◆ Soil	— Trails	
▲ Background Surface water	◆ Tailings		
◆ Drainage water	◆ Waste rock		
◆ Pore water	◆ Stream AOI ID		

1 inch = 250 feet

0 0.025 0.05 0.1 Miles

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Stream AOI Polygons**

17330-33 04/2011

**HARTCROWSER**

Figure 5

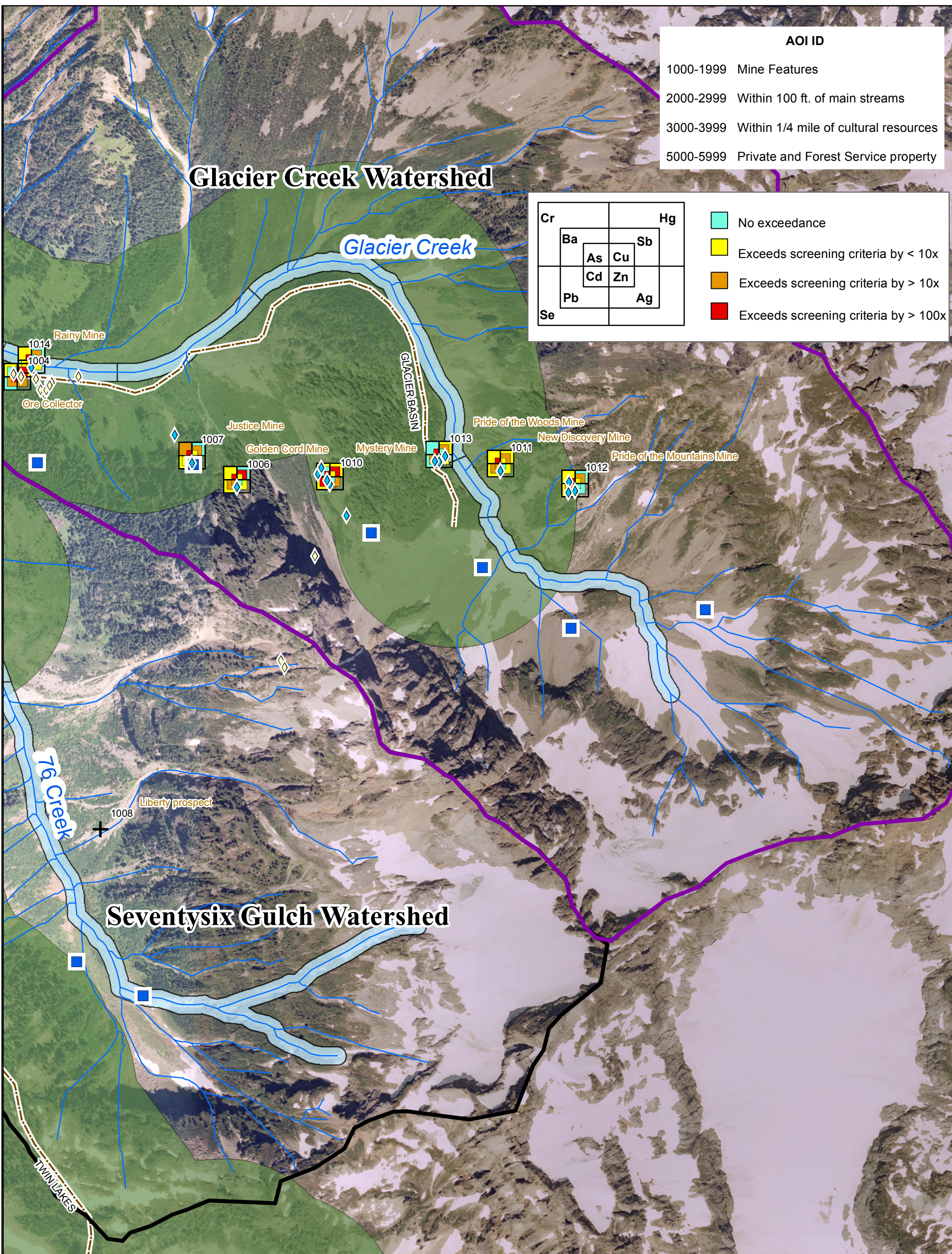
# Glacier Creek Watershed

Glacier Creek

AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr			Hg
Ba			Sb
	As	Cu	
	Cd	Zn	
Pb			Ag
Se			

- No exceedance
- Exceeds screening criteria by < 10x
- Exceeds screening criteria by > 10x
- Exceeds screening criteria by > 100x



# Seventysix Gulch Watershed

<b>Legend</b> <span style="display: inline-block; width: 15px; height: 15px; background-color: #9932CC; border: 1px solid black;"></span> Glacier Creek Watershed <span style="display: inline-block; width: 15px; height: 15px; background-color: #000000; border: 1px solid black;"></span> Seventysix Gulch Watershed <span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Background Soil <span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black;"></span> Soil <span style="display: inline-block; width: 15px; height: 15px; background-color: #FF00FF; border: 1px solid black;"></span> Tailings <span style="display: inline-block; width: 15px; height: 15px; background-color: #0000FF; border: 1px solid black;"></span> Waste rock		Streams Roads Trails Mine AOI ID	Stream buffer - 100 ft Campground buffer - 1/4 mi Trail and road buffer - 1/4 mi
--	--	---	--

1 inch = 1,000 feet

0 0.1 0.2 0.4 Miles

**Soil Human Health Exceedances Near Mine Features**

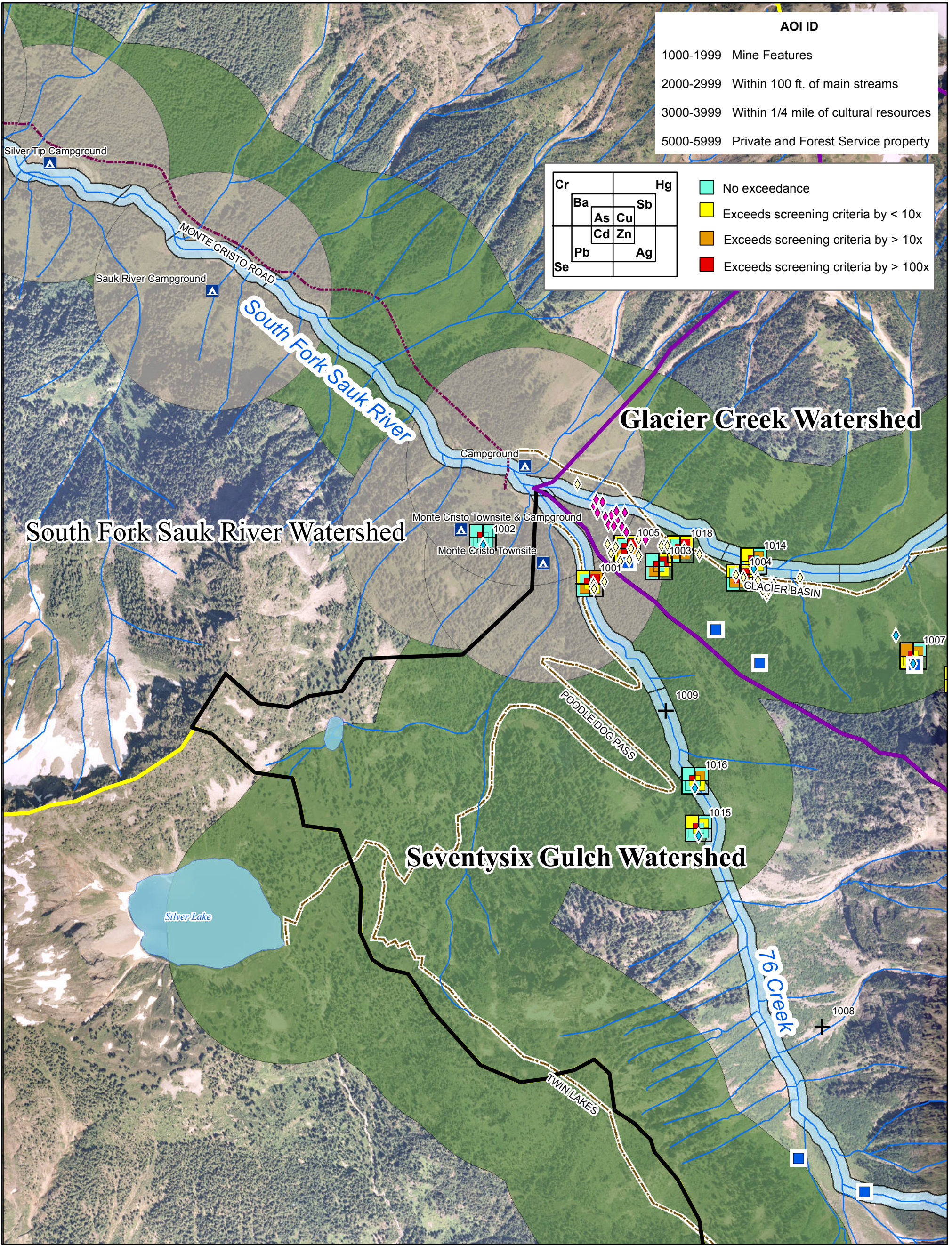
17330-33

04/2011

Figure 6 A

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

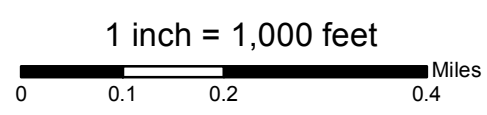
Cr		Hg
Ba	As	Cu
	Cd	Zn
Pb		Ag
Se		

Light Green	No exceedance
Yellow	Exceeds screening criteria by < 10x
Orange	Exceeds screening criteria by > 10x
Red	Exceeds screening criteria by > 100x

- Legend**
- Glacier Creek Watershed
  - Seventysix Gulch Watershed
  - South Fork Sauk River
  - Background Soil
  - ◆ Soil
  - ◆ Tailings
  - ◆ Waste rock
  - ▲ Campgrounds
  - + Mine AOI ID
  - Lakes
  - Streams
  - Roads
  - Trails
  - Stream buffer - 100 ft
  - Campground buffer - 1/4 mi
  - Trail and road buffer - 1/4 mi

**Soil Human Health Exceedances Near Mine Features**

17330-33 04/2011

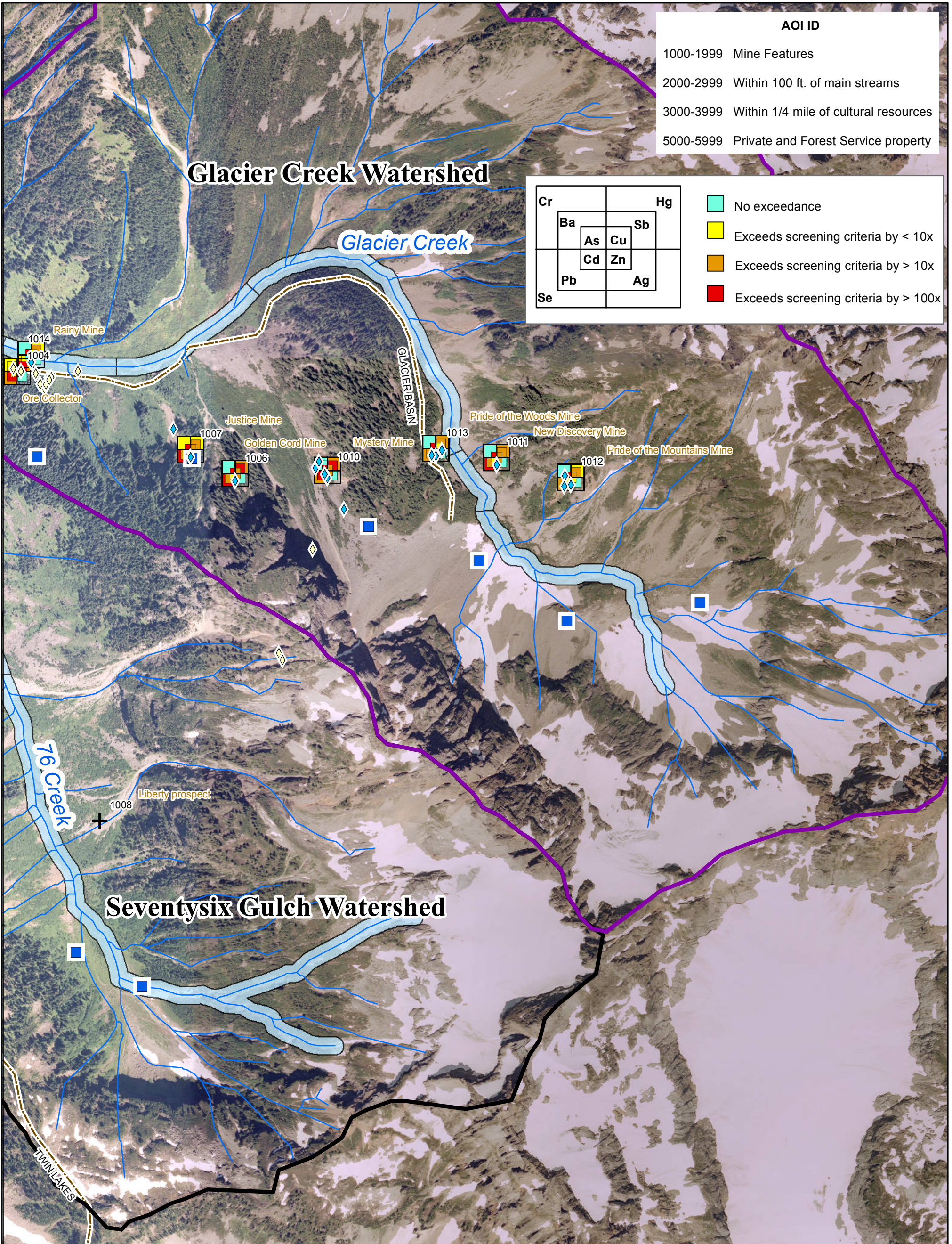


Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.



Figure 6 B

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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

- No exceedance
- Exceeds screening criteria by < 10x
- Exceeds screening criteria by > 10x
- Exceeds screening criteria by > 100x

- Legend**
- Glacier Creek Watershed
  - Seventysix Gulch Watershed
  - Background Soil
  - Soil
  - Tailings
  - Waste rock
  - Streams
  - Roads
  - Trails
  - Mine AOI ID
  - Stream buffer - 100 ft

1 inch = 1,000 feet

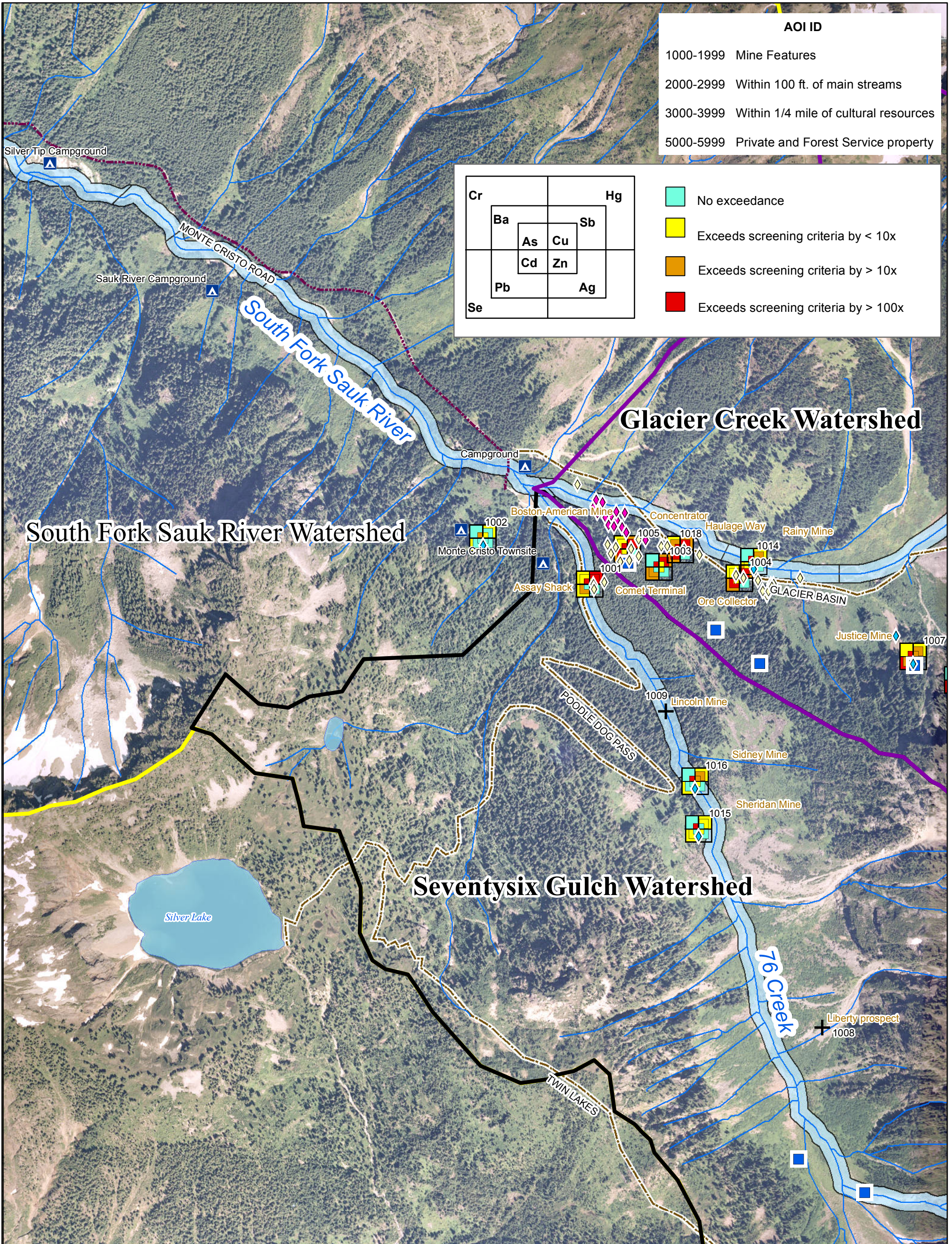
0 0.1 0.2 0.4 Miles

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Soil Ecological Exceedances Near Mine Features**

17330-33 04/2011

**HARTCROWSER** Figure 7 A



AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba		Sb
As	Cu	
Cd	Zn	
Pb		Ag
Se		

<span style="display:inline-block; width:15px; height:15px; background-color:#e0f0e0; border:1px solid black;"></span>	No exceedance
<span style="display:inline-block; width:15px; height:15px; background-color:#ffff00; border:1px solid black;"></span>	Exceeds screening criteria by < 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#ffcc00; border:1px solid black;"></span>	Exceeds screening criteria by > 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#ff0000; border:1px solid black;"></span>	Exceeds screening criteria by > 100x

Legend			
<span style="display:inline-block; width:15px; height:15px; border:2px solid purple;"></span>	Glacier Creek Watershed	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Stream buffer - 100 ft
<span style="display:inline-block; width:15px; height:15px; border:2px solid black;"></span>	Seventysix Gulch Watershed	<span style="display:inline-block; width:15px; height:15px; background-color:#add8e6;"></span>	Lakes
<span style="display:inline-block; width:15px; height:15px; background-color:#ffff00;"></span>	South Fork Sauk River	<span style="display:inline-block; width:15px; height:15px; background-color:#add8e6;"></span>	Streams
<span style="display:inline-block; width:15px; height:15px; background-color:#0000ff;"></span>	Background Soil	<span style="display:inline-block; width:15px; height:15px; border-bottom:1px solid red;"></span>	Roads
<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	Soil	<span style="display:inline-block; width:15px; height:15px; border-bottom:1px dashed brown;"></span>	Trails
<span style="display:inline-block; width:15px; height:15px; border:1px solid red;"></span>	Tailings	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Campgrounds
<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Waste rock	<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	Mine AOI ID

1 inch = 1,000 feet

0      0.1      0.2      0.4 Miles

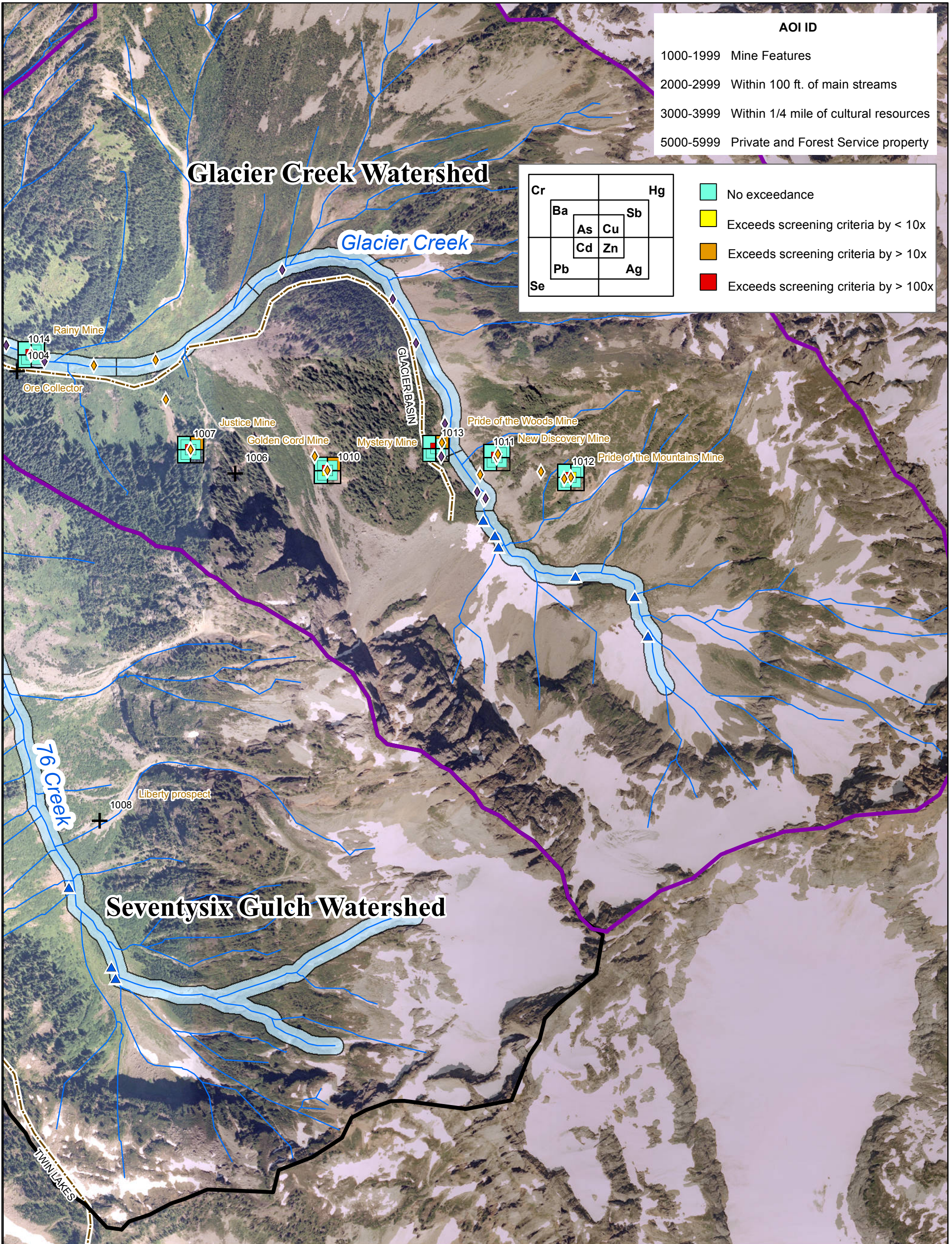
Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Soil Ecological Exceedances Near Mine Features**

17330-33 04/2011

**Figure 7 B**

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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

<span style="color: cyan;">■</span>	No exceedance
<span style="color: yellow;">■</span>	Exceeds screening criteria by < 10x
<span style="color: orange;">■</span>	Exceeds screening criteria by > 10x
<span style="color: red;">■</span>	Exceeds screening criteria by > 100x

**Legend**

<span style="border: 2px solid purple; padding: 2px;"> </span> Glacier Creek Watershed	<span style="color: blue;">—</span> Streams	<span style="border: 1px solid lightblue; padding: 2px;"> </span> Stream buffer - 100 ft
<span style="border: 2px solid black; padding: 2px;"> </span> Seventysix Gulch Watershed	<span style="color: red;">- - -</span> Roads	
<span style="color: blue;">▲</span> Background Surface water	<span style="color: brown;">- - -</span> Trails	
<span style="color: orange;">◆</span> Drainage water	<span style="color: black;">+</span> Mine AOI ID	
<span style="color: purple;">◆</span> Surface water		

1 inch = 1,000 feet

0    0.1    0.2    0.4 Miles

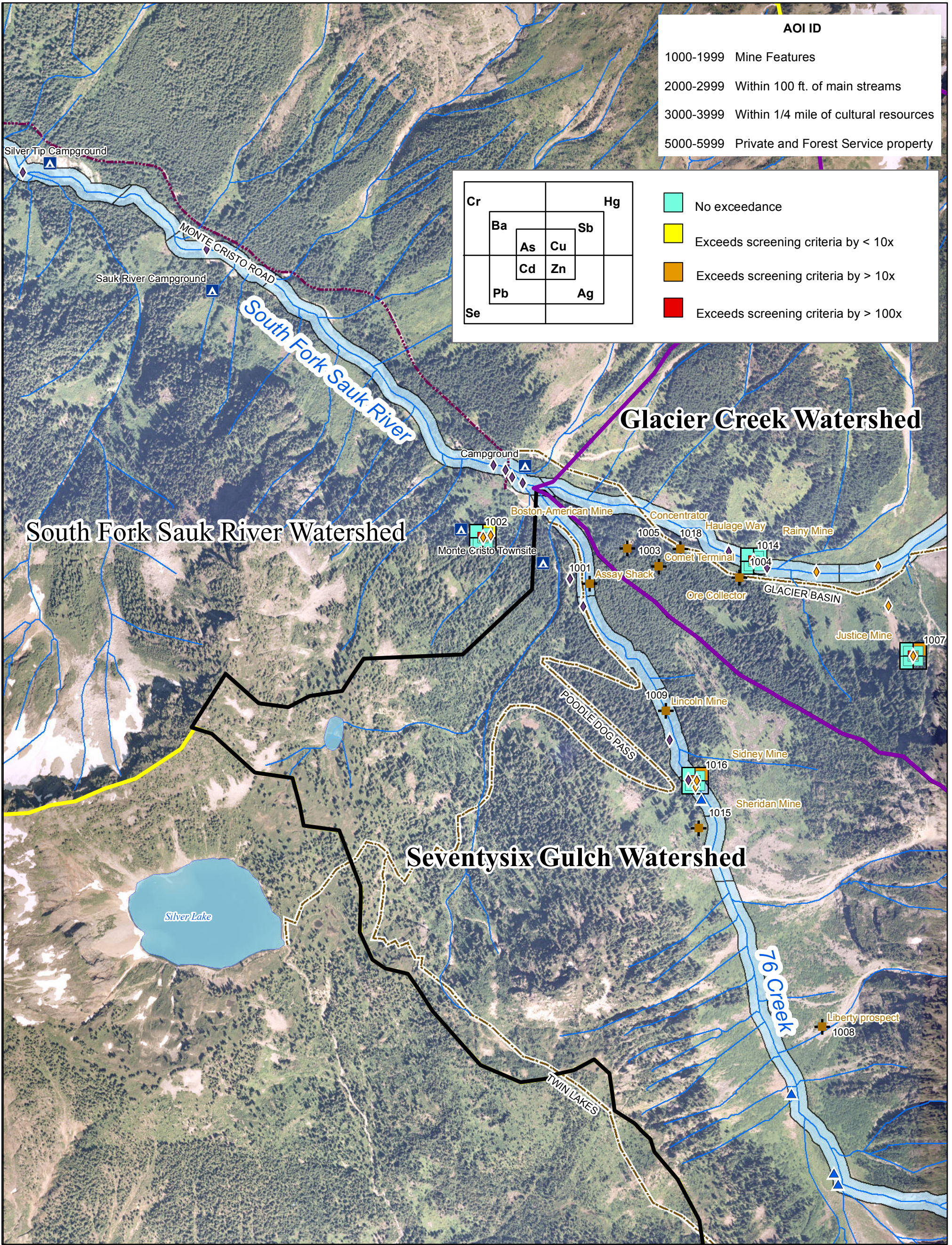
Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Mine Feature Drainage that Exceeds Surface Water Criteria**

17330-33 04/2011

Figure 8 A

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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

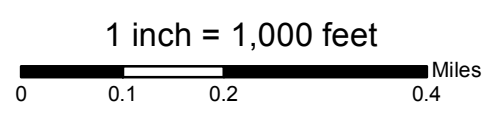
<span style="display:inline-block; width:15px; height:15px; background-color:#90EE90;"></span>	No exceedance
<span style="display:inline-block; width:15px; height:15px; background-color:#FFFF00;"></span>	Exceeds screening criteria by < 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FFA500;"></span>	Exceeds screening criteria by > 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000;"></span>	Exceeds screening criteria by > 100x

R:\GIS\PROJECTS\1733033\_MCM\A\Figure 8B.mxd

Legend			
<span style="display:inline-block; width:15px; height:15px; border:1px solid purple;"></span>	Glacier Creek Watershed	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Stream buffer - 100 ft
<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	Seventysix Gulch Watershed	<span style="display:inline-block; width:15px; height:15px; border:1px solid lightblue;"></span>	Lakes
<span style="display:inline-block; width:15px; height:15px; background-color:yellow;"></span>	South Fork Sauk River	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Streams
<span style="display:inline-block; width:15px; height:15px; background-color:orange;"></span>	Mine features previously sampled	<span style="display:inline-block; width:15px; height:15px; border:1px solid red;"></span>	Roads
<span style="display:inline-block; width:15px; height:15px; background-color:lightblue;"></span>	Background Surface water	<span style="display:inline-block; width:15px; height:15px; border:1px dashed brown;"></span>	Trails
<span style="display:inline-block; width:15px; height:15px; border:1px solid orange;"></span>	Drainage water	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Campgrounds
<span style="display:inline-block; width:15px; height:15px; border:1px solid purple;"></span>	Surface water	<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	Mine AOI ID

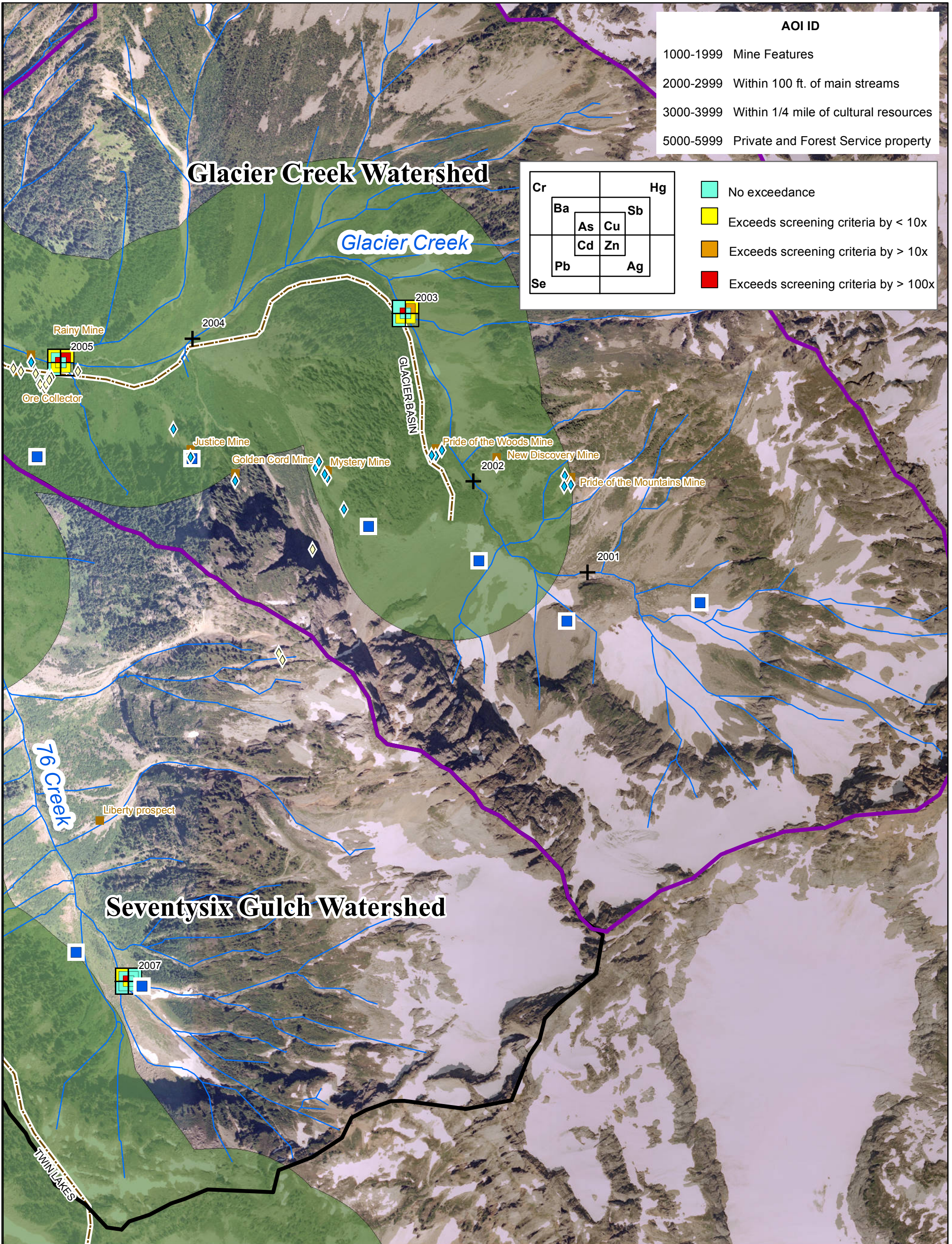
**Mine Feature Drainage that Exceeds Surface Water Criteria**

17330-33 04/2011



Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Figure 8 B**



AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

<span style="color: cyan;">■</span>	No exceedance
<span style="color: yellow;">■</span>	Exceeds screening criteria by < 10x
<span style="color: orange;">■</span>	Exceeds screening criteria by > 10x
<span style="color: red;">■</span>	Exceeds screening criteria by > 100x

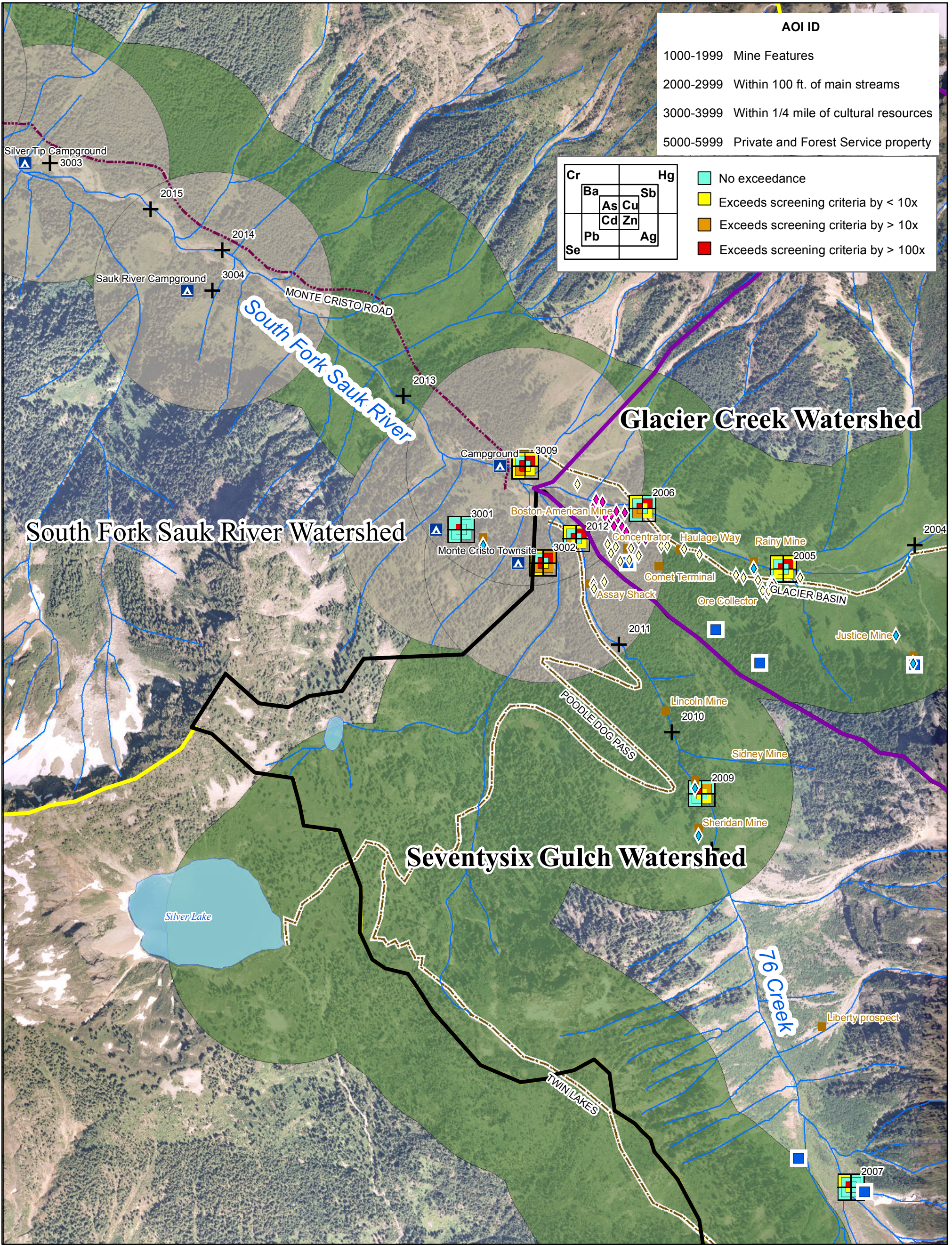
R:\GIS\PROJECTS\1733033\_MCMA\Figure 9A.mxd

**Soil Human Health Exceedances Near Cultural Features**

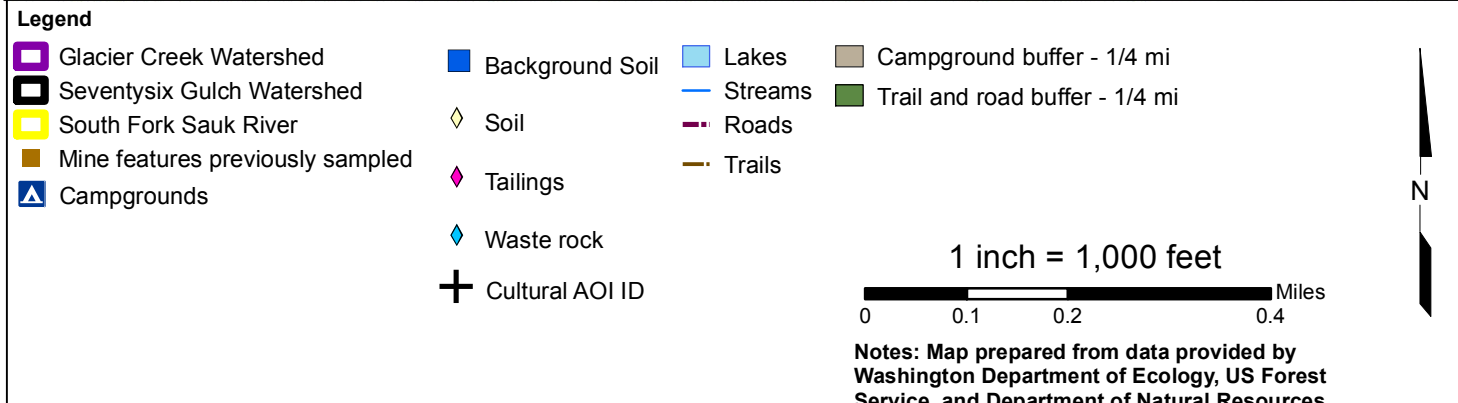
17330-33 04/2011

**HARTCROWSER** Figure 9 A





R:\GIS\PROJECTS\1733033\_MCM\A\Figure 9B.mxd



**Soil Human Health Exceedances Near Cultural Features**

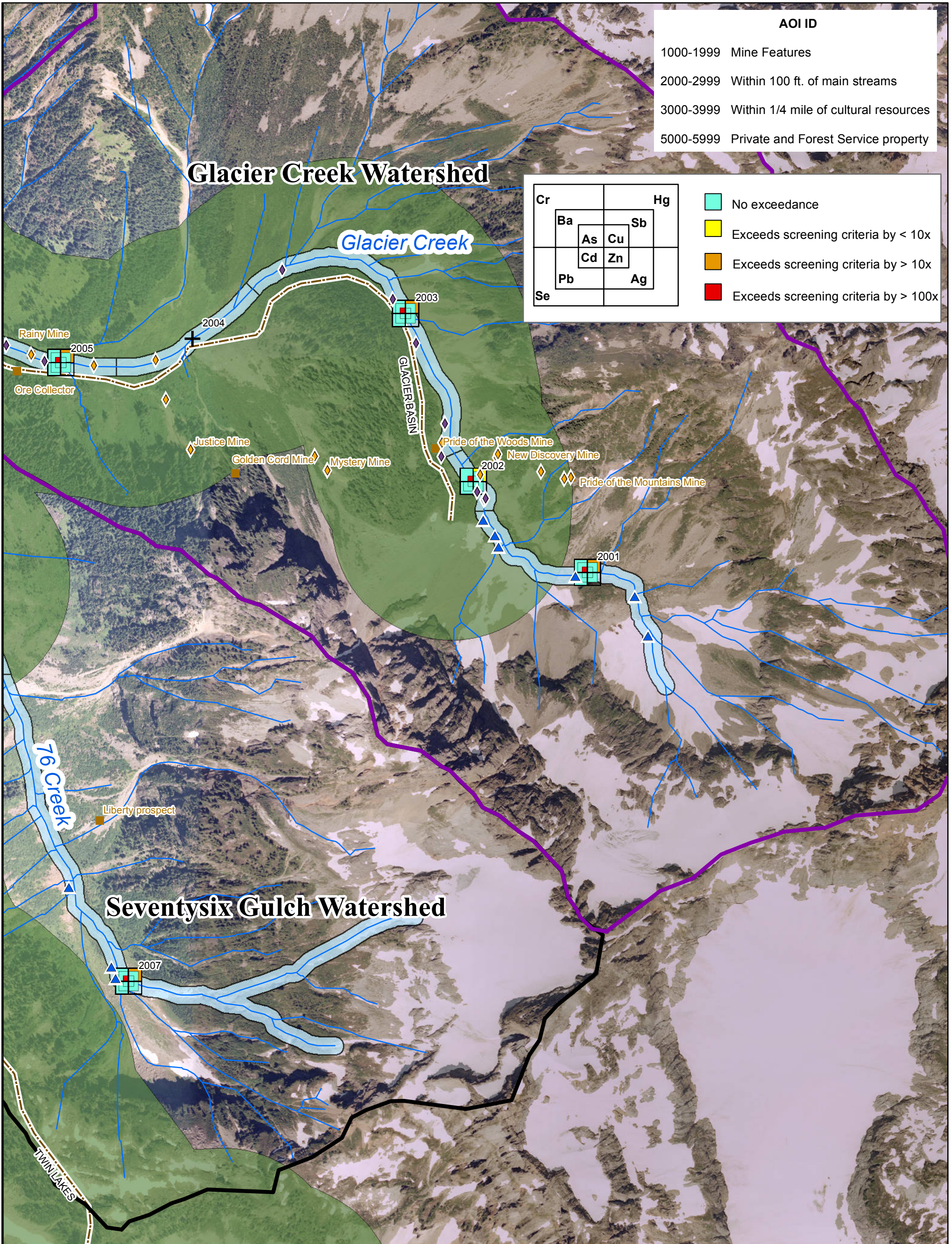
17330-33 04/2011

1 inch = 1,000 feet

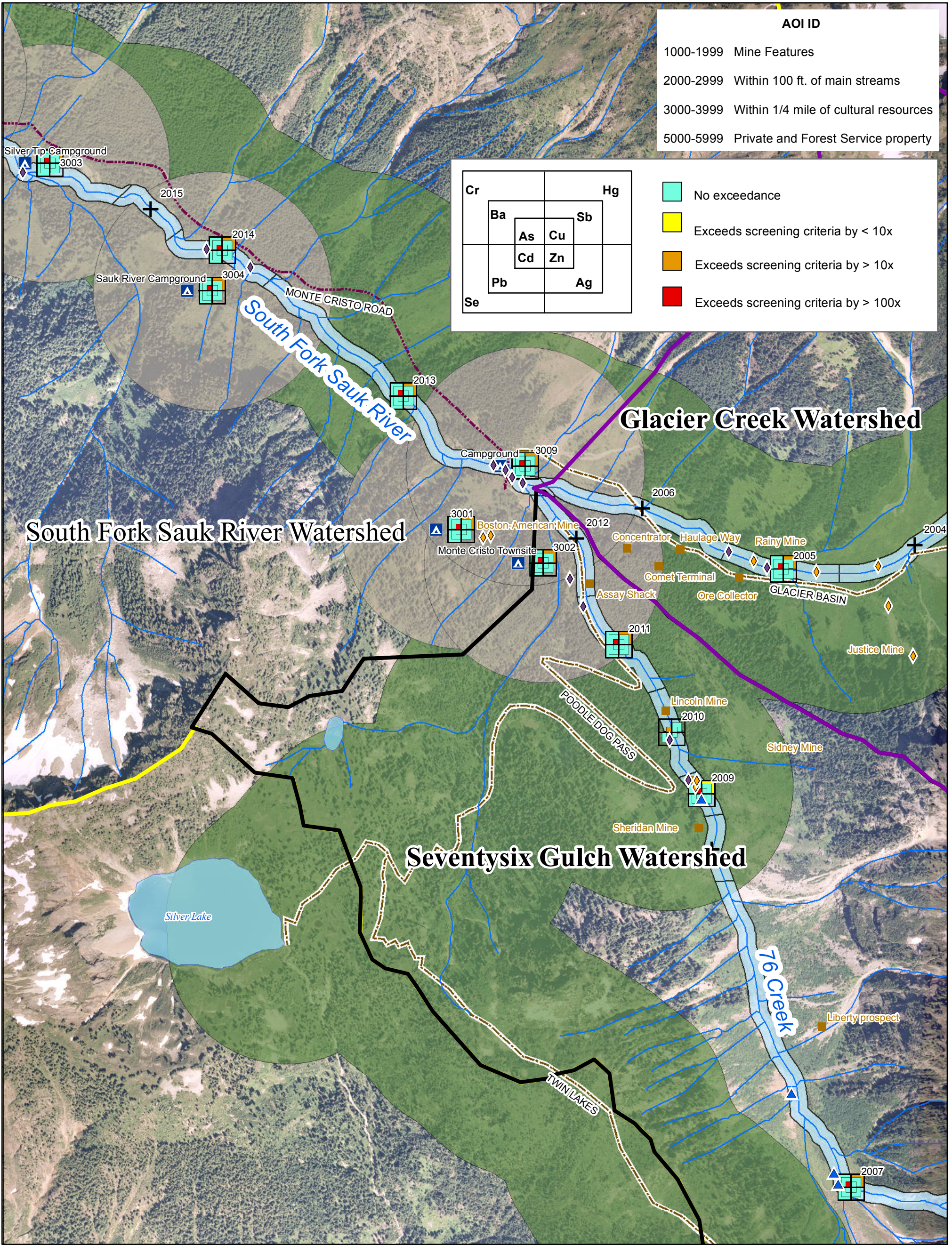
0 0.1 0.2 0.4 Miles

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Figure 9 B**



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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr			Hg
	Ba		Sb
	As	Cu	
	Cd	Zn	
	Pb		Ag
Se			

<span style="display:inline-block; width:15px; height:15px; background-color:#90EE90; border:1px solid black;"></span>	No exceedance
<span style="display:inline-block; width:15px; height:15px; background-color:#FFFF00; border:1px solid black;"></span>	Exceeds screening criteria by < 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FFA500; border:1px solid black;"></span>	Exceeds screening criteria by > 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000; border:1px solid black;"></span>	Exceeds screening criteria by > 100x

R:\GIS\PROJECTS\1733033\_MCM\A\Figure 10B.mxd

**Legend**

<span style="display:inline-block; width:15px; height:15px; border:2px solid purple;"></span> Glacier Creek Watershed	<span style="display:inline-block; width:15px; height:15px; background-color:#ADD8E6; border:1px solid blue;"></span> Lakes	<span style="display:inline-block; width:15px; height:15px; border:1px solid lightblue;"></span> Stream buffer - 100 ft
<span style="display:inline-block; width:15px; height:15px; border:2px solid black;"></span> Seventysix Gulch Watershed	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span> Streams	<span style="display:inline-block; width:15px; height:15px; background-color:#D2B48C; border:1px solid brown;"></span> Campground buffer - 1/4 mi
<span style="display:inline-block; width:15px; height:15px; background-color:#FFFF00; border:1px solid black;"></span> South Fork Sauk River	<span style="display:inline-block; width:15px; height:15px; border:1px dashed brown;"></span> Roads	<span style="display:inline-block; width:15px; height:15px; background-color:#388E3C; border:1px solid green;"></span> Trail and road buffer - 1/4 mi
<span style="display:inline-block; width:15px; height:15px; background-color:#FFA500; border:1px solid black;"></span> Mine features previously sampled	<span style="display:inline-block; width:15px; height:15px; border:1px dashed brown;"></span> Trails	
<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span> Campgrounds		
<span style="display:inline-block; width:15px; height:15px; background-color:#ADD8E6; border:1px solid blue;"></span> Background Surface water		
<span style="display:inline-block; width:15px; height:15px; background-color:#FFD700; border:1px solid black;"></span> Drainage water		
<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000; border:1px solid black;"></span> Surface water		
<span style="display:inline-block; width:15px; height:15px; border:1px solid black; text-align:center; line-height:15px;">+</span> Cultural AOI ID		

1 inch = 1,000 feet

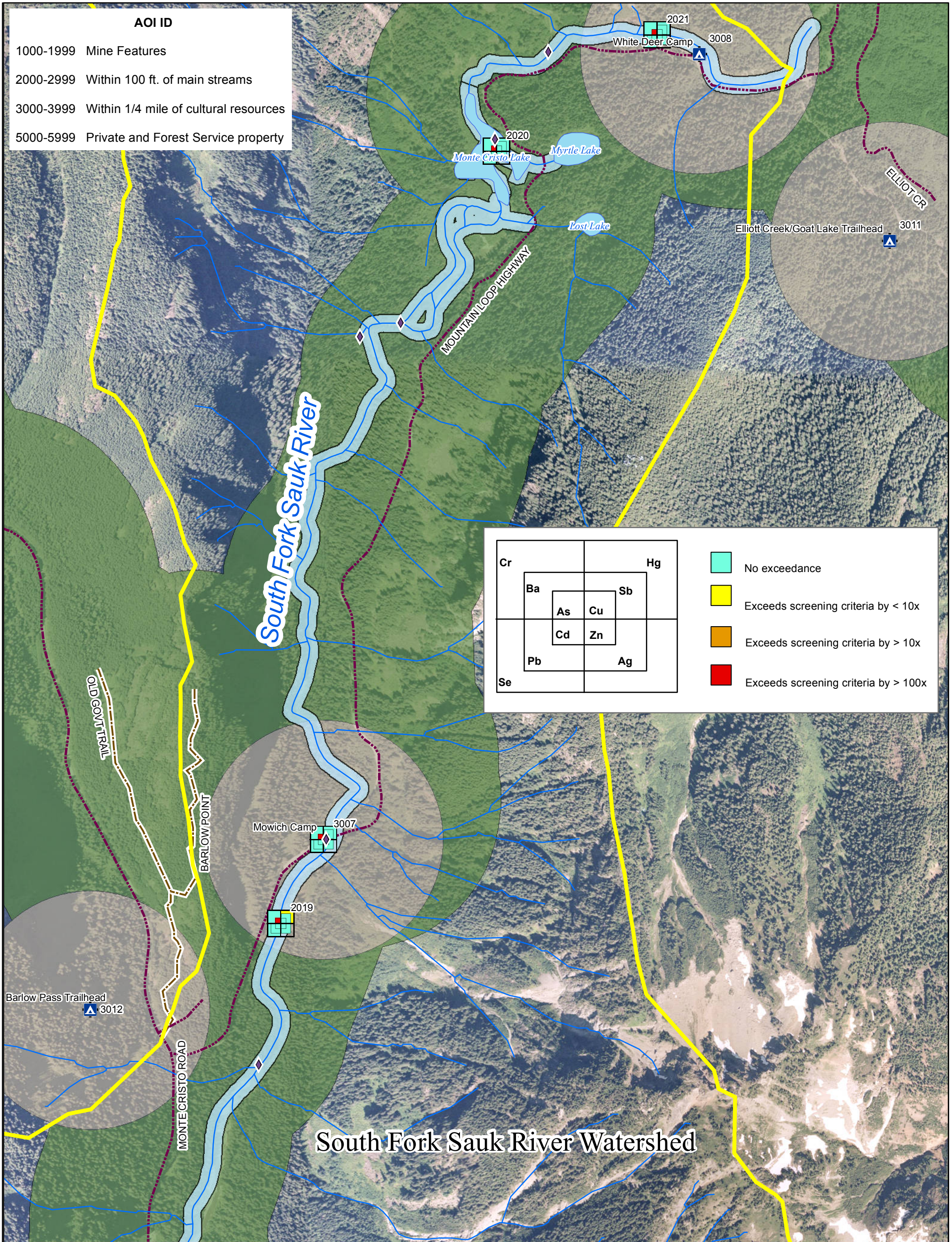
0      0.1      0.2      0.4 Miles

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Surface Water Exceedances Near Cultural Features**

17330-33      04/2011

**Figure 10 B**



**AOI ID**

1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

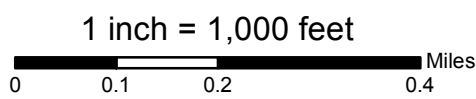
Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

- No exceedance
- Exceeds screening criteria by < 10x
- Exceeds screening criteria by > 10x
- Exceeds screening criteria by > 100x

## South Fork Sauk River Watershed

**Legend**

<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFFF00; border: 1px solid black; margin-right: 5px;"></span> South Fork Sauk River	<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Lakes	<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Stream buffer - 100 ft
<span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Mine features previously sampled	<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Streams	<span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Campground buffer - 1/4 mi
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Background Surface water	<span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Roads	<span style="display: inline-block; width: 15px; height: 15px; background-color: #008000; border: 1px solid black; margin-right: 5px;"></span> Trail and road buffer - 1/4 mi
<span style="display: inline-block; width: 15px; height: 15px; background-color: #FFD700; border: 1px solid black; margin-right: 5px;"></span> Drainage water	<span style="display: inline-block; width: 15px; height: 15px; background-color: #8B4513; border: 1px solid black; margin-right: 5px;"></span> Trails	
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Surface water		
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Campgrounds		
<span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Cultural AOI ID		



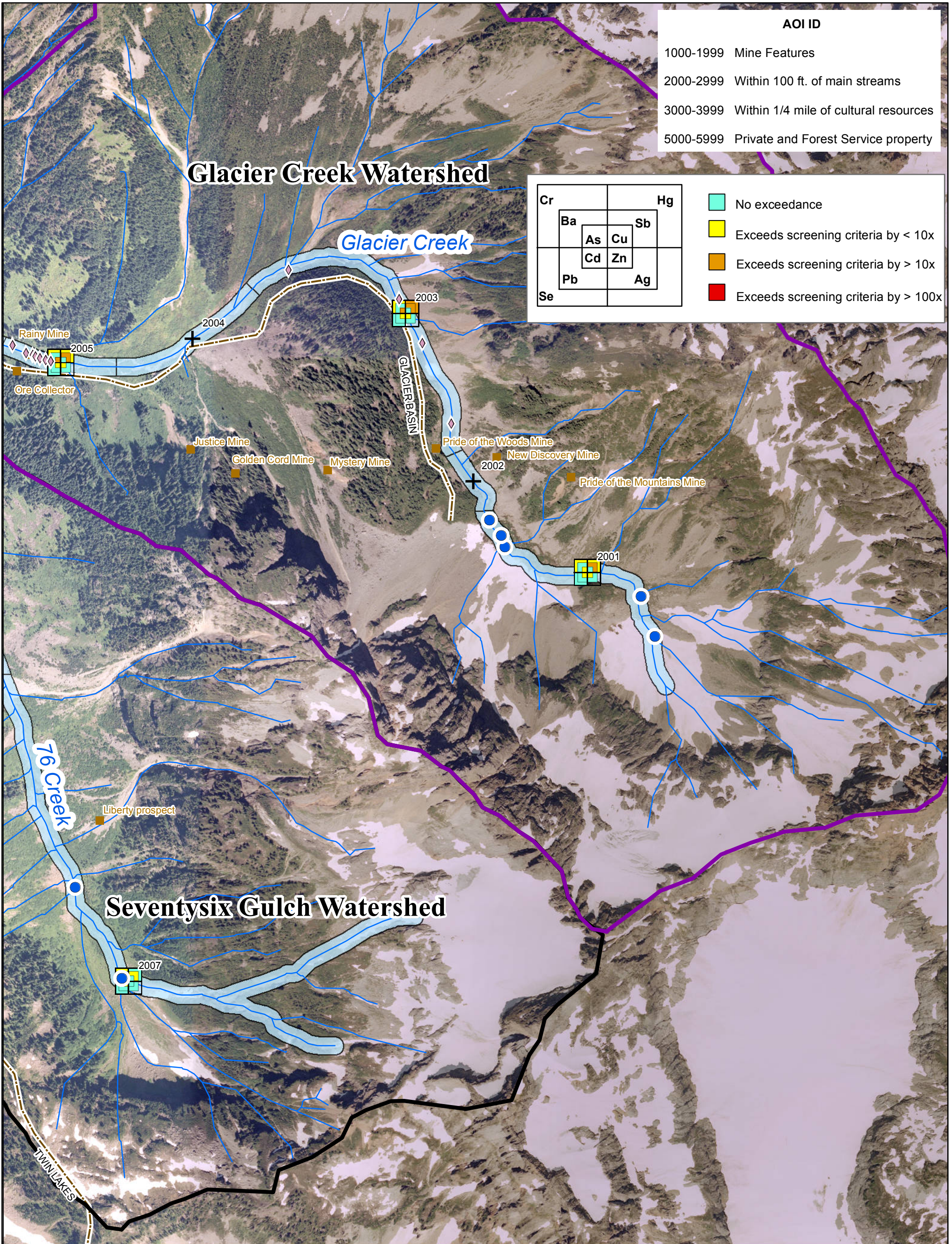
Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

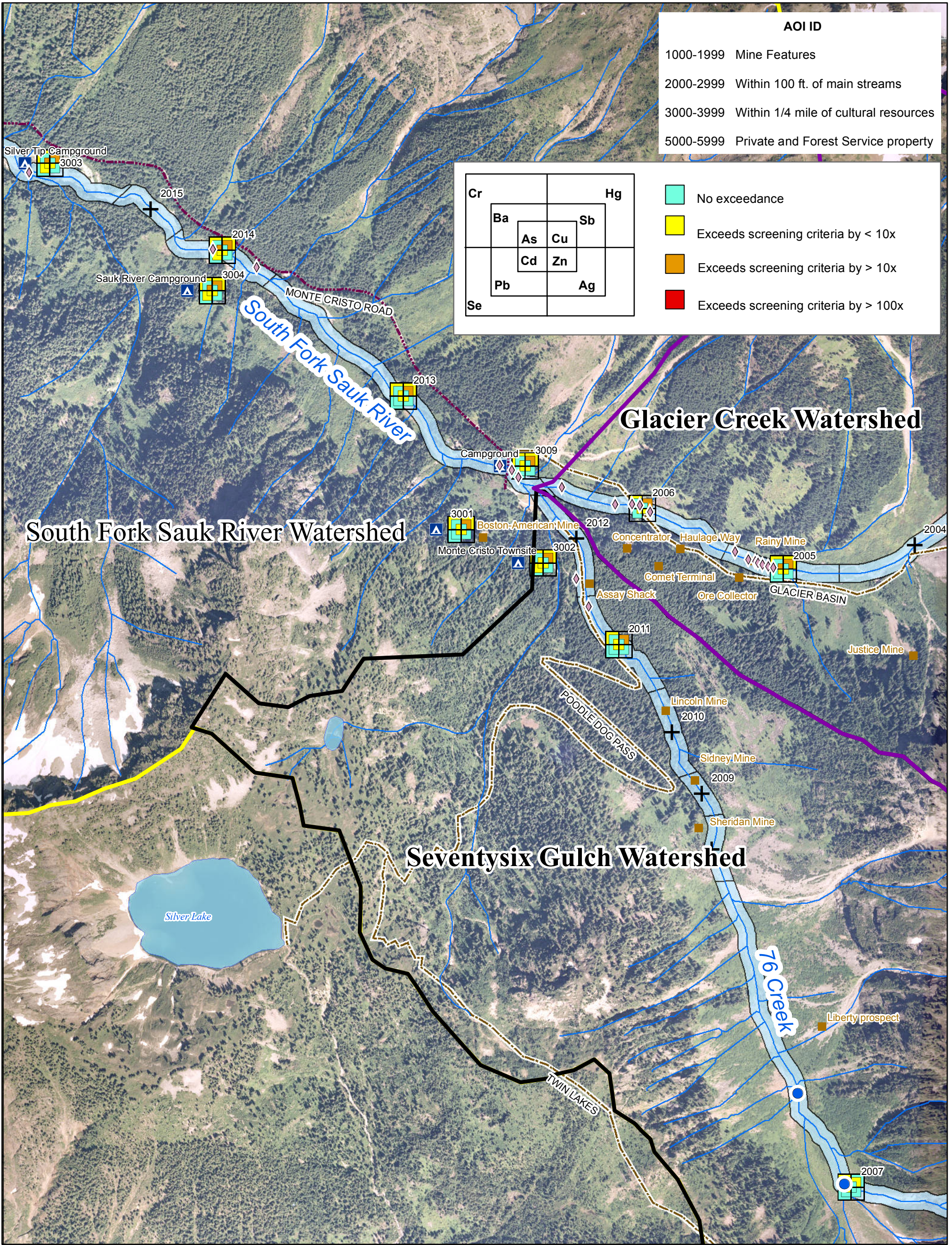
**Surface Water Exceedances Near Cultural Features**

17330-33 04/2011

**Figure 10 D**

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AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Cu
	Cd	Zn
Pb		Ag
Se		

<span style="display:inline-block; width:15px; height:15px; background-color:#90EE90;"></span>	No exceedance
<span style="display:inline-block; width:15px; height:15px; background-color:#FFFF00;"></span>	Exceeds screening criteria by < 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FFA500;"></span>	Exceeds screening criteria by > 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000;"></span>	Exceeds screening criteria by > 100x

R:\GIS\PROJECTS\1733033\_MCM\AIFigure 11B.mxd

Legend			
<span style="display:inline-block; width:15px; height:15px; border:1px solid purple;"></span>	Glacier Creek Watershed	<span style="display:inline-block; width:15px; height:15px; background-color:#ADD8E6;"></span>	Lakes
<span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span>	Seventysix Gulch Watershed	<span style="display:inline-block; width:15px; height:15px; border:1px solid lightblue;"></span>	Stream buffer - 100 ft
<span style="display:inline-block; width:15px; height:15px; border:1px solid yellow;"></span>	South Fork Sauk River	<span style="display:inline-block; width:15px; height:15px; border:1px solid blue;"></span>	Streams
<span style="display:inline-block; width:15px; height:15px; background-color: #FFA500;"></span>	Mine features previously sampled	<span style="display:inline-block; width:15px; height:15px; border:1px dashed red;"></span>	Roads
<span style="display:inline-block; width:15px; height:15px; background-color: #ADD8E6;"></span>	Campgrounds	<span style="display:inline-block; width:15px; height:15px; border:1px dashed brown;"></span>	Trails
<span style="display:inline-block; width:15px; height:15px; background-color: #ADD8E6; border-radius:50%;"></span>	Background Sediment		
<span style="display:inline-block; width:15px; height:15px; border:1px solid purple; border-radius:50%;"></span>	Sediment		
<span style="display:inline-block; width:15px; height:15px; border:1px solid black; border-radius:50%;"></span>	Cultural AOI ID		

1 inch = 1,000 feet

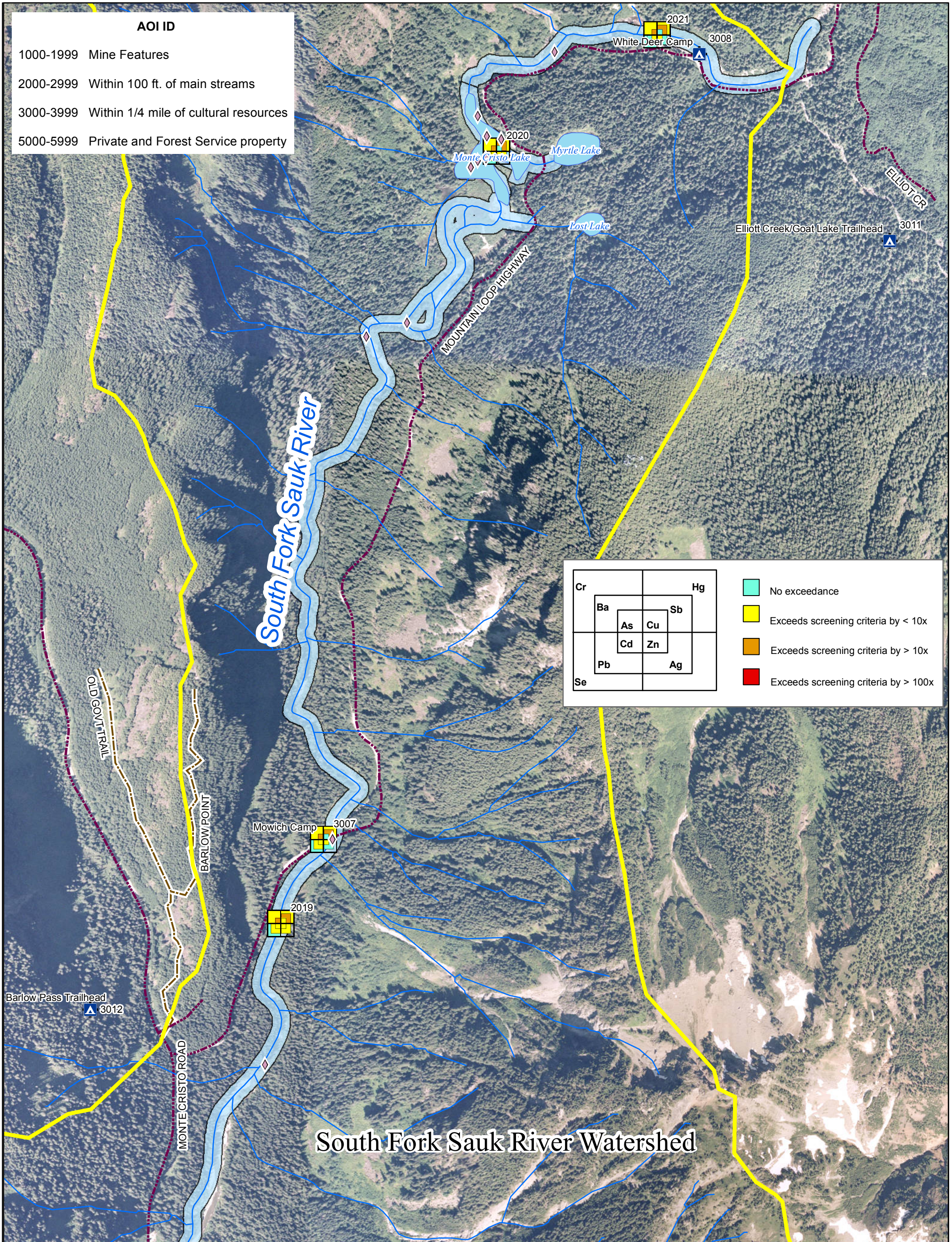
0      0.1      0.2      0.4 Miles

Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Sediment Exceedances in Major Streams**

17330-33 04/2011

**Figure 11 B**



**AOI ID**

1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

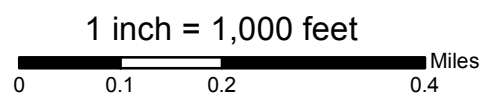
  

<span style="color: cyan;">■</span>	No exceedance
<span style="color: yellow;">■</span>	Exceeds screening criteria by < 10x
<span style="color: orange;">■</span>	Exceeds screening criteria by > 10x
<span style="color: red;">■</span>	Exceeds screening criteria by > 100x

## South Fork Sauk River Watershed

**Legend**

<span style="color: yellow;">■</span> South Fork Sauk River	<span style="color: lightblue;">■</span> Lakes	<span style="border: 1px solid lightblue;">■</span> Stream buffer - 100 ft
<span style="color: brown;">■</span> Mine features previously sampled	<span style="color: blue;">—</span> Streams	<span style="color: red;">—</span> Roads
<span style="color: blue;">▲</span> Campgrounds	<span style="color: brown;">—</span> Trails	
<span style="color: blue;">●</span> Background Sediment		
<span style="color: brown;">◆</span> Sediment		
<span style="color: black;">+</span> Cultural AOI ID		



Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

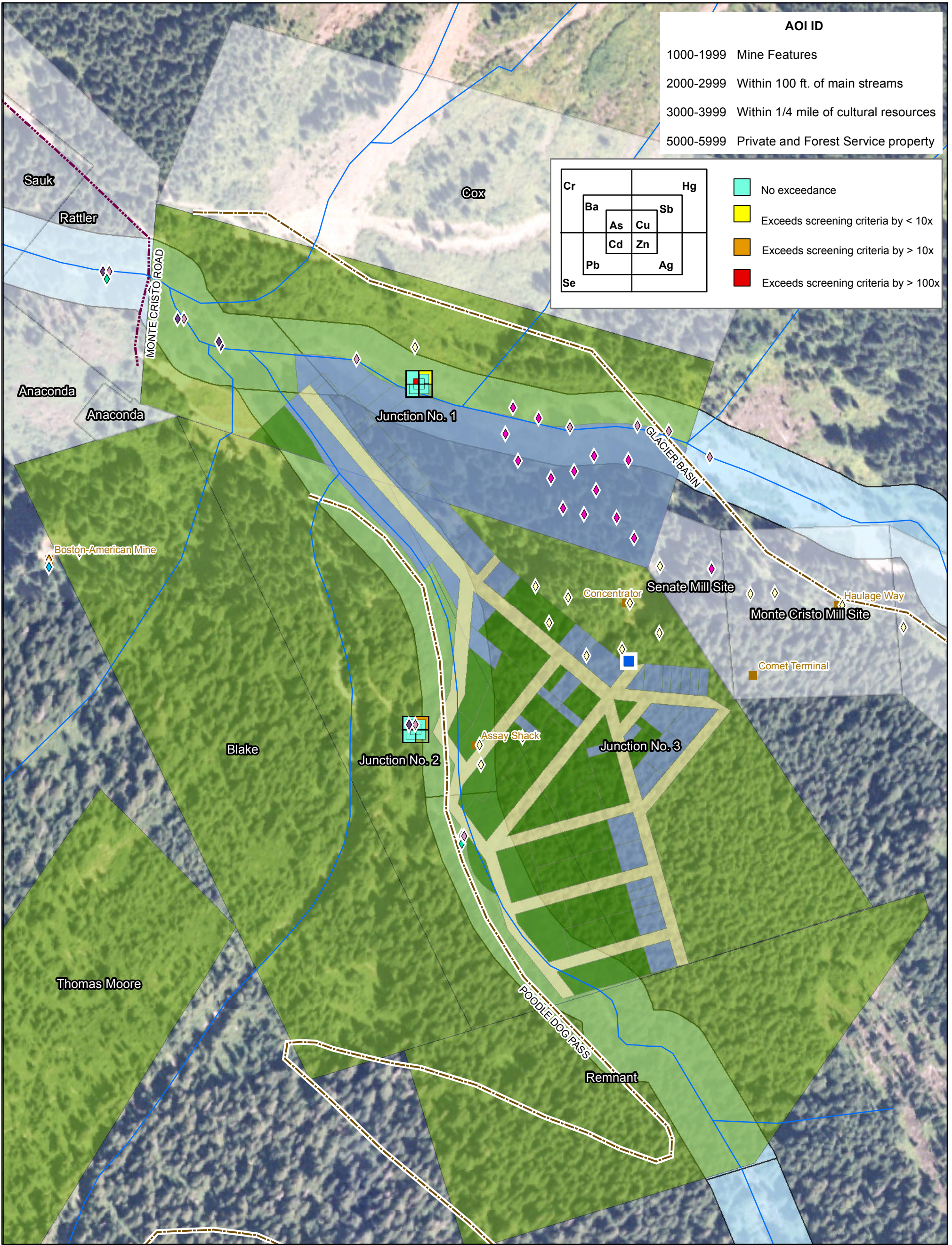
### Sediment Exceedances in Major Streams

17330-33

04/2011



Figure 11 D



AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg
Ba	As	Sb
	Cd	Zn
Pb		Ag
Se		

- No exceedance
- Exceeds screening criteria by < 10x
- Exceeds screening criteria by > 10x
- Exceeds screening criteria by > 100x

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**Legend**

<span style="display: inline-block; width: 10px; height: 10px; background-color: #FFA500; border: 1px solid black; margin-right: 5px;"></span> Mine features previously sampled	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Surface water	<b>Townsite parcels</b>	<span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px solid blue; margin-right: 5px;"></span> Streams
<span style="display: inline-block; width: 10px; height: 10px; background-color: #0000FF; border: 1px solid black; margin-right: 5px;"></span> Background Soil	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Sediment	<span style="display: inline-block; width: 10px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> County	<span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px dashed purple; margin-right: 5px;"></span> Roads
<span style="display: inline-block; width: 10px; height: 10px; background-color: #0000FF; border: 1px solid black; margin-right: 5px;"></span> Background Sediment	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Soil	<span style="display: inline-block; width: 10px; height: 10px; background-color: #008000; border: 1px solid black; margin-right: 5px;"></span> FS	<span style="display: inline-block; width: 10px; height: 10px; border-bottom: 1px dashed brown; margin-right: 5px;"></span> Trails
<span style="display: inline-block; width: 10px; height: 10px; background-color: #0000FF; border: 1px solid black; margin-right: 5px;"></span> Background Surface water	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Tailings	<span style="display: inline-block; width: 10px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Private	<span style="display: inline-block; width: 10px; height: 10px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Stream buffer - 100 ft
<span style="display: inline-block; width: 10px; height: 10px; background-color: #FFA500; border: 1px solid black; margin-right: 5px;"></span> Drainage water	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Waste rock	<b>Mineral claim survey</b>	
<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Pore water	<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Owner AOI ID	<span style="display: inline-block; width: 10px; height: 10px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> National Forest Land	
		<span style="display: inline-block; width: 10px; height: 10px; border: 1px solid black; margin-right: 5px;"></span> Private Property	

1 inch = 250 feet

0      0.025      0.05      0.1 Miles

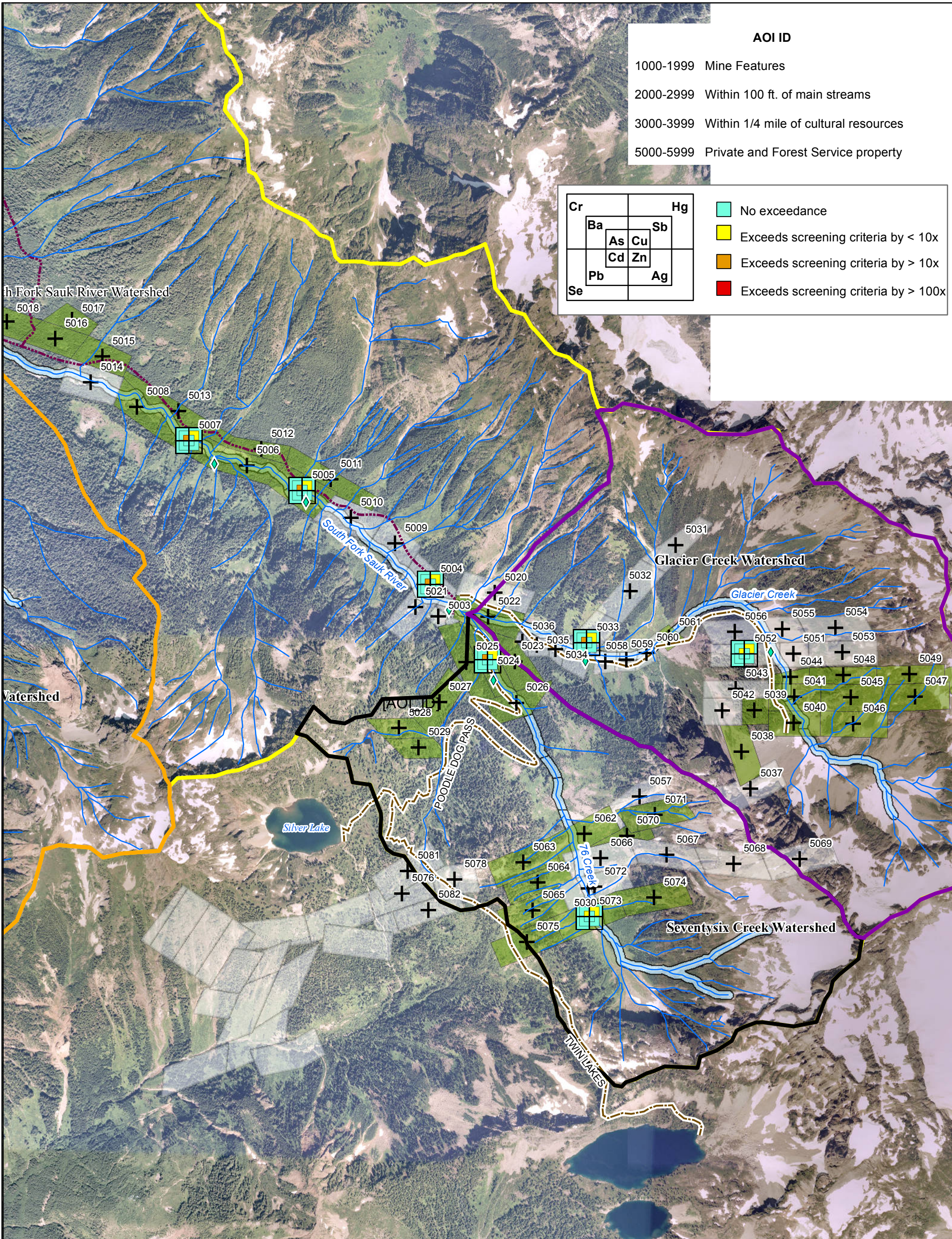
Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Townsite Parcel Map with Surface Water Exceedances**

17330-33 04/2011

**Figure 12**





AOI ID	
1000-1999	Mine Features
2000-2999	Within 100 ft. of main streams
3000-3999	Within 1/4 mile of cultural resources
5000-5999	Private and Forest Service property

Cr		Hg	
	Ba		Sb
		As	Cu
		Cd	Zn
	Pb		Ag
Se			

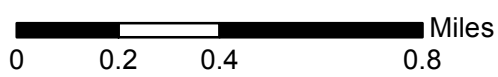
  

<span style="display:inline-block; width:15px; height:15px; background-color:#90EE90;"></span>	No exceedance
<span style="display:inline-block; width:15px; height:15px; background-color:#FFFF00;"></span>	Exceeds screening criteria by < 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FFA500;"></span>	Exceeds screening criteria by > 10x
<span style="display:inline-block; width:15px; height:15px; background-color:#FF0000;"></span>	Exceeds screening criteria by > 100x

- Legend**
- Weden Watershed
  - Glacier Creek Watershed
  - Seventysix Creek Watershed
  - South Fork Sauk River
  - Pore water
  - Streams
  - Owner AOI ID
  - Roads
  - Trails
- Mineral claim survey**
- Other National Forest Land
  - Private Property
  - Stream buffer - 100 ft

**Note: Pore water samples only collected at AOIs as indicated. Absence of sample data does not imply other AOIs are not impacted.**

1 inch = 2,000 feet



Notes: Map prepared from data provided by Washington Department of Ecology, US Forest Service, and Department of Natural Resources.

**Pore Water Exceedances on Private and Forest Service Property**

17330-33

04/2011



Figure 13

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