Preliminary Assessment and Site Inspection Report for the Alamo Prospect

Bonner County

State of Idaho
Department of Environmental Quality

December 2015

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C. L. "Butch" Otter, Governor
John H. Tippets, Director

December 16, 2015

Mr. Ken Marcy
U.S. Environmental Protection Agency Region 10
12928 SW 276th Street
Vashon, WA 98070

Subject: Preliminary Assessment and Site Inspection Report for the Alamo Prospect, Bonner County, Idaho

Dear Mr. Marcy:

The Idaho Department of Environmental Quality (DEQ) completed the enclosed Preliminary Assessment and Site Inspection (PA/SI) for the Alamo Prospect under a cooperative agreement with Region 10 of the United States Environmental Protection Agency (EPA). Under this cooperative agreement, DEQ provides technical support for completion of preliminary assessments.

The Alamo Prospect is located on private property. DEQ visited the site on September 28, 2015. Analytical results for water originating from the mine portal showed no detections of metals above the standards. No concerns were observed for the surface water, soil exposure, ground water, or air pathways at the time of the site visit.

Based on existing conditions and uses, historic information, observations made during the site visit, potential pathways of contaminants to receptors, and potential exposures to ecological and human receptors, DEQ recommends **No Remedial Action Planned (NRAP)** for the current recreational-only land use.

This PA/SI report can also be found on DEQ's preliminary assessment web page: http://www.deq.idaho.gov/preliminary-assessments.

If you have any questions, please feel free to give me a call at (208) 373-0296 or email dana.swift@deq.idaho.gov.

Sincerely,

Dana Swift
Mine Waste Project Coordinator

Enclosures

cc: Art Green, Cloudsledge Conservation Trust



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Bonner County

December 2015

Prepared by
Idaho Department of Environmental Quality
Mine Waste Program
1410 N. Hilton
Boise, Idaho 83706

Acknowledgments

DEQ would like to thank Art Green, representing Cloudsledge Conservation Trust, for permitting access and accompanying DEQ on the site visit.

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List of Acronyms

amsl	above mean sea level
DEQ	Idaho Department of Environmental Quality
EPA	United States Environmental Protection Agency
FSP	Field Sampling Plan
g/L	grams per liter
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mV	millivolts
NRAP	No Remedial Action Planned
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
PA	preliminary assessment
PPE	probable point of entry
PWS	public water system
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RPD	relative percent difference
RSLs	regional screening levels
SI	site inspection
su	standard units
SVL	SVL Analytical, Inc.
TDL	target distance limit
TDS	total dissolved solids
µs/cm	micro-Siemens per centimeter
USGS	United States Geological Survey

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1 Introduction

This report presents the preliminary assessment and site inspection (PA/SI) results for the Alamo Prospect in Bonner County, Idaho. Under a cooperative agreement with the United States Environmental Protection Agency (EPA) Region 10, the Idaho Department of Environmental Quality (DEQ) provides technical support for performing the PA/SI process at various mine and industrial sites located on private, state, or mixed ownership (public and private) lands. Additional information about DEQ's PA program can be found at: *http://www.deq.idaho.gov/preliminary-assessments*.

DEQ initiated the PA program in February 2002 to prioritize and assess potentially contaminated sites. Due to accessibility and funding considerations, priority is given to sites where potential contamination poses the most substantial threat to human health and/or the environment. In recent years, this priority focuses DEQ's efforts in areas where residential and recreational developments are encroaching on historic mining districts. Priority is also given to mining districts where groups or clusters of sites can be cost-effectively assessed on a watershed basis.

The purpose of this PA/SI is to assess the threat posed to human health and the environment and determine the need for additional investigation at the Alamo Prospect. The PA/SI process is presented in the following sections:

- Section 2, **Site Description**, compiles desktop research information to present the location, ownership, general geology, and climatology for the site. Desktop research also includes compiling the operational history of past mining activities and current and potential future land uses.
- Section 3, **Sample Collection and Analysis**, includes the sampling location, analytical results, observations of current site conditions, and photographs from the site visit.
- Section 4, **Migration/Exposure Pathways and Targets**, presents observations and potential targets for the surface water pathway, soil exposures, ground water pathway, and air pathway.
- Section 5, **Conclusions and Recommendations**, presents a summary of the PA/SI conclusions and recommendations based on the current conditions at the site.

2 Site Description

The site description for the Alamo Prospect includes the following information: location and ownership (Section 2.1), general geology (Section 2.2), climatology (Section 2.3), operational history of past mining activities (Section 2.4), and current and potential future land uses (Section 2.5). As part of the desktop research, DEQ uses references from historic reports which often have different spellings for claim names, town sites, and/or geographic features. DEQ retains the spelling and usage from the original source documents.

2.1 Location and Ownership

The Alamo Prospect is located in the Clark Fork Mining District, Bonner County, Idaho (Figure 1; Section 20, Township 56 North, Range 2 East). The Idaho Geological Survey provides the following coordinates for the site: Latitude 48.1914748534 and Longitude -116.244320731 (WGS84; IGS 2015). The Alamo Prospect patented lands comprise 214.29 acres located at 3,199 feet above mean sea level (amsl; USGS 2015).

The Alamo Prospect patented lands are owned by Cloudsledge Conservation Trust (parcel number RP56N02E202401A). All adjacent land to the north, south, and east is private property. The adjacent land to the west is owned by the U.S. Government. Sampling for this assessment was conducted on private property. DEQ does not warrant the ownership research or location of property boundaries contained in this report. Information regarding ownership and property boundaries was obtained from the parcel maps for Bonner County (Idaho State Tax Commission, 2015).

The site is approximately five miles northwest of Clark Fork, Idaho. To access, take Highway 200 east toward Clark Fork. Turn left on Denton Road and head toward Hope. The entrance to the Cloudsledge Conservation Trust is marked as 4545 Denton Road and has a locked gate. The Alamo Prospect is located about one mile from the entrance and is accessed via private roads. The waste rock pile can be accessed on Denton Road, approximately one mile north of the entrance.



Figure 1. Aerial overview map of the Alamo Prospect with the approximate parcel boundary outlined in yellow.

2.2 General Geology

A map of the major lithology for the Alamo Prospect is shown in Figure 2. The following information from the Idaho Bureau of Mines and Geology Bulletin No. 12 *Geology and Ore Deposits of the Clark Fork District, Idaho* (Anderson 1930) was used to identify the composition of geology and lithology for the area. Since DEQ cannot improve or expand upon information included in historic reports, this information is quoted directly.

> The Alamo prospect lies on the west slope of Howe Mountain about one-half mile east of Denton Siding. The vein is crossed by the highway, but shows no sulphides except in a small shoot several hundred feet above. The vein is rather easily traced at the surface and it is explored by several cuts and a tunnel.
>
> This vein fills a fissure that trends N. 85° E. and which dips 75° N.W., although in some places the kip is vertical and even steeply to the south. For part of the distance the fissure is also occupied by a lamprophyre dike. The country rock is the upper St. Regis formation consisting mainly of thick-bedded, white and greenish quartzites interspersed with thin beds of reddish and purplish, laminated shale and sandstone. These beds strike N. 10° E. and kip about 62° S.E.
>
> The mineralization in this vein differs from that in the neighboring copper deposits in that the deposition has occurred in essentially a single, although somewhat interrupted, stage and the list of minerals includes specularite and magnetite in addition to quartz, pyrite, chaleopyrite, galena, and carbonate. The sequence of deposition has been discussed elewhere [sic] and need not be repeated. Specularite or specular hematite is the most abundant of the vein minerals except the quartz, although locally the latter may predominate. It occurs in long tabular crystals or plates as much as an inch long intergrown with the quartz and usually mixed with minor amounts of magnetite. The chalcopyrite is scattered through the hematite ore in small masses and is in some places accompanied by small grains of galena. The carbonate gangue is not abundant and forms a very minor part of the filling. Most of the pyrite occurs in a shoot by itself. Secondary alteration at the surface has produced minor quantities of chalcocite and covellite, some of it stained with malachite.
>
> The vein is tabular, but swells and pinches both along the strike and dip. Most of it is composed of quartz with a few angular and rounded inclusions of country rock. In the hematite and chalcopyrite zone the inclusions of both lamprophyre and sedimentary rock are converted largely to greenish chlorite. An altered zone also incases the vein for several inches on either side. The vein has no open cavities or clefts and shows little brecciation by mineral or post-mineral movement. Diverging stringers in some places are numerous as well as some intersecting veins and parallel seams. The vein is about one foot wide in the road-cut, but farther up the hill where it has been opened by a small cut consists of eight feet of barren quartz. The main mineral shoot has been followed by a tunnel about 125 feet long, disclosing here and there small patches of specularite and chalcopyrite. The shoot ranges from two feet to six feet wide. A 10-inch seam with large bladed crystals of specularite joins the vein near the portal at approximately right angles.

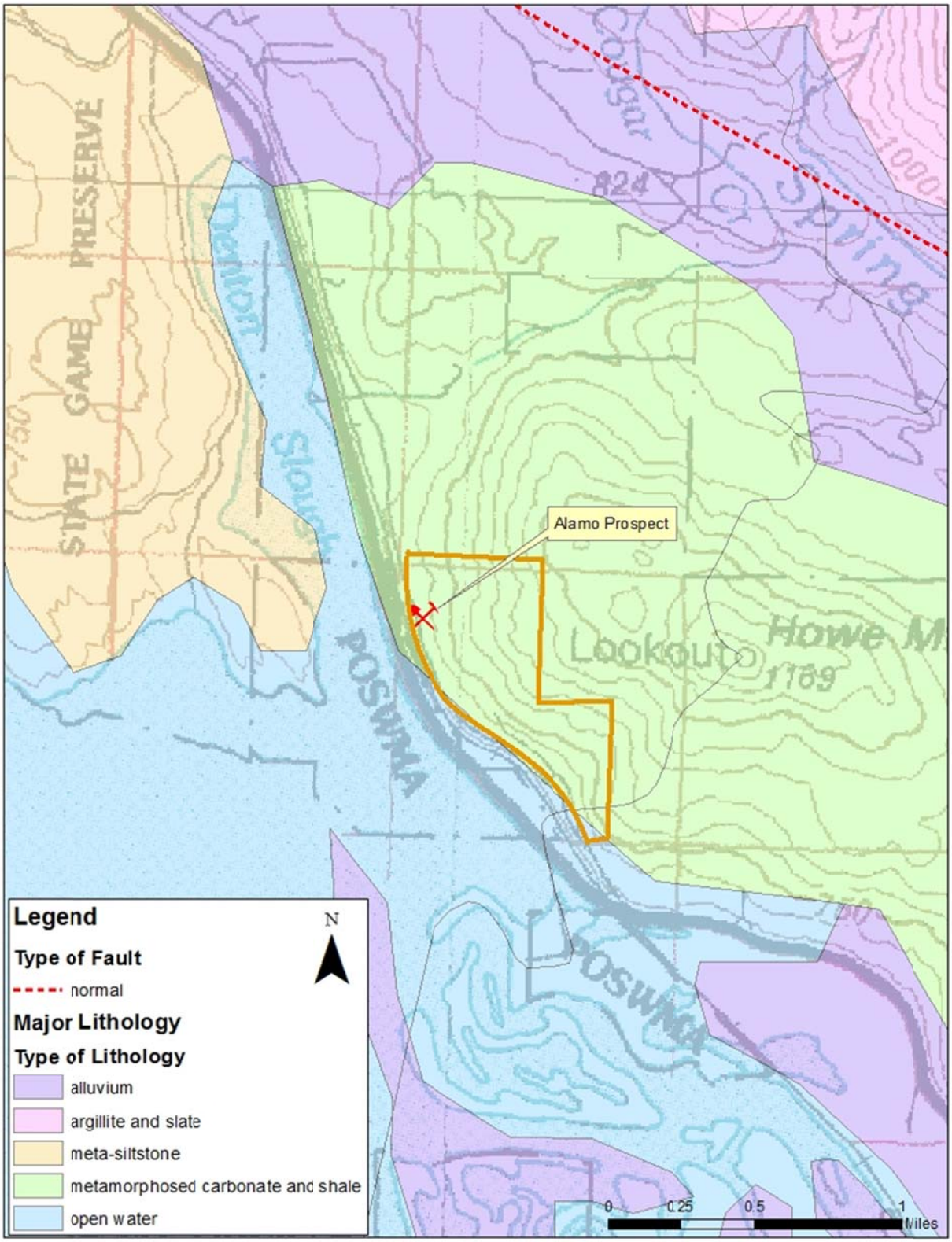


Figure 2. Map of major lithology in the vicinity of the Alamo Prospect.

2.3 Climatology

Climate information is based on a summary for Clark Fork, Idaho obtained from the Western Regional Climate Center (*http://www.wrcc.dri.edu/climatedata/climsum/*). The climatological data is collected at the Cabinet Gorge, Idaho Model Station (101363) (elevation 2,260 amsl) which is approximately 12 miles southeast of the Alamo Prospect.

The region is characterized by short, cool, dry summers and cold winters. Based on data collected from 1956 to 2015, total annual precipitation averages 31.92 inches with a total annual snowfall of 63.1 inches. The driest months of the year are July, August and September.

The average annual high temperature is 56.9°F and the average annual low temperature is 35.4°F. July and August are the hottest months with average temperature of 82.6°F and 81.9°F. January is the coldest month with an average temperature of 21.8°.

2.4 Operational History of Past Mining Activities

Information about the operational history of past mining activities helps DEQ understand the levels of production, commodities, and potential waste types at the site. This information documents the relative importance of historic mining districts and workings as they are reevaluated from the perspective of economics, multiple land use, human health risks, and ecological risks. DEQ uses historical research for several purposes: identify the potential contaminants of concern, estimate the magnitude of waste at the site, locate potentially dangerous physical hazards such as open adits and shafts, and identify historical land uses that coincide with mining. This information is necessary to prepare for the SI field work.

Numerous sources were used during desktop research prior to visiting the site. Since DEQ cannot improve or expand upon information included in historic reports, this information is quoted directly from the Idaho Bureau of Mines and Geology County Report No. 6 *Geology and Mineral Resources of Bonner County* (Savage 1967). The tables and figures referenced in this quote have not been duplicated in this report.

> General characteristics of the mineral province
>
> A region with widespread showings of metallic mineralization associated with metasedimentary and igneous rocks, Bonner County metallogenic province lies between the Coeur d'Alene mineralized region on the southeast and the Metaline-British Columbia mineralized belts on the northwest. In Bonner County, mineralization commonly is associated with fault zones; these include major faults trending northwest to southeast, northeast to southwest, and north to south, and a mosaic of intersecting secondary block faults. Geological evidence suggests that the faulting is both pre-and post-mineralization.
>
> In mineralized areas deposits of economic potential occur in three principal types of host rocks: (1) limy metasediments and (2) brittle siliceous metasediments, and (3) in at least one instance, in granitic rocks. Evidences of hydro-thermal alteration and signs of sulfide mineralization are not uncommon in these types of rocks in many prospects scattered over the county.
>
> Bonner County should probably be called a silver province, but in addition to silver some prospects yield considerable lead, zinc, and copper; and in the past, the amount of gold reportedly recovered from some developments has been surprisingly large. Iron, tungsten, and tin have all been reported and are present in small amounts in several prospects. Most of the tungsten has been found finely disseminated in iron sulfides on the west side of Pend Oreille Lake. Gold has been recovered from prospects and mines widely

scattered over the county. Occasionally small quantities of very rich gold ore reportedly have been recovered from a particular mine or prospect; however, most of the gold appears to occur with iron sulfides. Some native gold has also been obtained from small stream placers.

Field investigation has revealed a large number of small prospect pits and holes, and short shafts and tunnels; in fact, over 250 mines and prospects have been mentioned in the available literature on this area. Records at the County Courthouse in Sandpoint indicate that an even larger number of claims have been filed on properties in Bonner County.

On the basis of our present geological knowledge, market conditions, and accessibility, it seems reasonable to assume that one or more good silver mines could be developed in Bonner County. Any financial returns from silver values obtained from such mines might well be increased by values derived from other contained metals. As in the Coeur d'Alene region to the south, sufficient courage, capital, and technical skill will all be necessary to open mineralized areas to a depth suitable for their proper economic evaluation. In the past, total mineral production in the Clark Fork district alone, from about 1913 to 1953, was 201,717 short tons or ore (C.E. Woodard, Minerals Yearbook, U.S. Bureau of Mines). In terms of 1963 metal prices, the total value of all minerals extracted from this volume of ore would be almost 4.2 million dollars.

Alamo Property

The Alamo property, consisting of the claims Alamo No. 2 and No. 3, lies in the N ½ of sec. 20, T56N, R2E on the west side of Howe Mountain (Fig. 3). Alamo No. 2 (patented land) has an old discovery tunnel about 150 ft long, with a 20 ft crosscut near the end. West of this tunnel, at a lower elevation, a crosscut was driven in 1963 to undercut the old workings. The country rock here is massive, white-to-greenish-white, and probably is part of the upper St. Regis Formation. The rock type ranges from siltite to quartzite; locally, thin beds of reddish to purplish argillaceous and arenaceous siltite are intercalated in the main formation. Bedding strikes N 10° E and kips 66° SE.

The quartz fissure vein, on which the discovery tunnel is located, trends N 85° E and kips 76° NW. The vein may be traced from surface exposures on U.S. Highway 10A northeast for more than a half mile on the flank of Howe Mountain. Swelling and pinching along a sheared zone, this vein is commonly about a foot wide, but it expands by branching to produce silicified zones from 2 to 6 ft wide. A lamprophyre dike locally replaces the quartz occupying the main shear zone; in some places fragments of the lamprophyre may be found in the quartz.

Mineralization in the quartz along the old Alamo discovery tunnel resulted from replacement of the vein quartz widely disseminated grains and more massive mineral deposits; however, the volume of replacement material is small. The order of mineralization from the oldest to the youngest minerals is: quartz, magnetite, specularite, quartz, pyrite, chalcopyrite, galena, and ferriferous carbonate (Anderson 1930, p.74). The deposits appear to be the result of one stage of high-temperature mineralization in which emplacement of magnetite and specularite was important. Weathering and leaching have produced a few secondary minerals deposited as fracture coatings. Small in quantity, these minerals include malachite, chalcocite, and covellite.

A new crosscut tunnel follows the trend of the main quartz vein for more than 300 ft into the hill. Although this crosscut encounters a broad brecciated zone of quartz, several feet in width, the quartz is nearly barren, showing only traces of chalcopyrite, bornite, magnetite, and hematite. The new workings seem to have encountered an old, partially caved winze under the older workings, but this could not be fully verified. A shorter crosscut was driven southeast from the main crosscut tunnel, but this shorter crosscut is also in relatively barren rock. Above the old tunnel, several small prospect pits expose the main silicified zone where it extends up the side of Howe Mountain.

Several assays of ore samples from the Alamo discovery tunnel have been made through the years, including one by the Idaho Bureau of Mines and Geology. The ranges of values obtained by these assays area as follows:

Au	0.02 – 3.0 ozs.	Pb	0.8 - 11.0%.
Ag	0.74 – 15.6 ozs.	Zn	0.0%
Ci	0.4 – 7.0%	Fe	15.5 – 17.1%

These gold, silver, and lead values in general probably reflect only local, high grade samples. Copper and iron values are more consistently spread out in the ore zones; however, it must be carefully noted that ore zones are very patchy. Therefore, the future of this property may not be promising. On the other hand, the kind of mineralization, the persistence of the shear zone, and the geographic location are encouraging. These three things suggest that a more thorough exploration program is in order, including perhaps geophysical surveys and a drilling program.

2.5 Current and Potential Future Land Uses

This site is located on private property and public access is allowed by appointment only. According to the Cloudsledge Conservation Trust webpage (2015), there is currently one permanent residence for the Cloudsledge Resident Manager Trustee and a cottage used as a meeting hall and classroom. Current land uses include recreational activities such as hiking and picnicking. Also, Cloudsledge Conservation Trust operates an experimental working forest on the property which includes removal of dead and dying trees, trail maintenance, and reforestation. These current uses are planned to continue into the future.

3 Sample Collection and Analysis

DEQ staff, accompanied by Art Green who was representing Cloudsledge Conservation Trust, visited the Alamo Prospect on September 28, 2015. The weather was approximately 65°F, no clouds, but smoky from regional fires. Photographs, sample collection information, field parameters, and analytical results are presented in this section. The field crew did not purposely or knowingly trespass on any private holdings during field work.

Sampling and laboratory analysis was conducted in accordance with DEQ's Quality Assurance Project Plan (QAPP) for Mine Sites Addressed under the PA Program (DEQ 2015a) and the Field Sampling Plan (FSP) for Clark Fork Mining District (DEQ 2015b). All samples were collected, handled, and stored in accordance with the QAPP/FSP and submitted to SVL Analytical, Inc. (SVL) in Kellogg, Idaho.

At the time of the site visit, Art Green was coordinating and directing activities to modify the former mine portal (Photo 1). Water flows from this opening through a pipe (Photo 2). The modification plan includes closing the portal except for installation of a culvert to retain the opening for water flow.

Mining features remaining at this site include tracks exiting the portal (Photo 3) and a waste rock pile (Photos 4, 5, and 6; Figure 3). The pile contains a mix of brown and gray rock. No samples were taken from the waste rock pile because the presence of fines and erosion from the pile was observed to be minimal, the waste rock appears to be innocuous (e.g., no indications of iron oxidation), and the waste rock is believed to be solely from underground workings as no evidence of milling operations took place on the site.

Water samples AP-AD-SW1 and AP-AD-SW2 (duplicate) were taken from the existing pipe (Photo 2, Figure 3). A summary of the laboratory results and field parameters is presented in Table 1. All samples were analyzed for total metals. A copy of the laboratory report is included as Appendix A. Field observations and laboratory results are discussed in the context of migration/exposure pathways and targets in Section 4.



Figure 3. Sample locations and features of the Alamo Prospect.

Table 1. Surface water analytical results for total metals and field parameters for the Alamo Prospect samples collected on September 28, 2015 (in mg/L unless otherwise noted in table).

Analyte (Total Metals)/ Parameter	EPA Drinking Water Standard MCL	EPA RSL for Tapwater	DEQ Cold Water Biota Standard Acute	DEQ Cold Water Biota Standard Chronic	Adit AP-AD-SW1	Adit Duplicate AP-AD-SW2	Field Blank[d] LC-TR10-SW2
Antimony (Sb)	0.006	0.0078	—	—	<0.020	<0.020	<0.020
Arsenic (As)	0.01	0.000052	0.34	0.15	<0.00300	<0.00300	<0.00300
Barium (Ba)	2	3.8	—	—	0.447	0.434	<0.0020
Cadmium (Cd)	0.005	0.0092	0.00067 to 0.00200 (H)	0.00035 to 0.00075 (H)	<0.0020	<0.0020	<0.0020
Chromium (Cr)	0.1		—	—	<0.0060	<0.0060	<0.0060
Copper (Cu)	1.0[a]	0.8	0.0079 to 0.0267 (H)	0.0056 to 0.0171 (H)	<0.0100	<0.0100	<0.0100
Iron (Fe)	0.3[a]	14	—	—	<0.060	<0.060	<0.060
Lead (Pb)	0.015[b]	0.015	0.026 to 0.108 (H)	0.0010 to 0.0042 (H)	<0.00300	<0.00300	<0.00300
Manganese (Mn)	0.05[a]	0.43	—	—	<0.0040	<0.0040	<0.0040
Mercury (Hg)	0.002	0.00063	—	—	<0.00020	<0.00020	<0.00020
Selenium (Se)	0.05	0.1	0.02 (T)	0.005 (T)	<0.0030	<0.0030	<0.0030
Silver (Ag)	0.1[a]	0.094	0.0008 to 0.0078 (H)	—	<0.0050	<0.0050	<0.0050
Zinc (Zn)	5[a]	6	0.058 to 0.175 (H)	0.059 to 0.177 (H)	0.020	0.019	<0.010
Temperature (°C)[c]	—		—	Cold water aquatic life 22°C or less or a maximum daily average not >19°C[d] Salmonid spawning 13°C or less with a maximum daily average not >9°C	24	—	—
pH (su)	6.5 – 8.5[a]		—	6.5 – 9.0	7.3	—	—
Oxidation Reduction Potential (mV)	—		—	—	182	—	—
Conductivity (µs/cm)	—		—	—	0.34	—	—
Turbidity (NTU)	b		Not >50 NTU instantaneous	Not >50 NTU instantaneous and no >25 NTU over a 10 day period	1.2	—	—
Dissolved Oxygen	—		—	>6 ppm	13.6	—	—

Shaded values exceed standards and RSLs.
Note: (T)-Standard in Total, (H)-Hardness dependent for Cd, Cu, Pb, Ni, Ag, Zn, range presented based on calculated values for all samples (excluding background).
All samples were analyzed for total metals. Concentrations expressed in milligrams per liter [mg/L] unless otherwise noted. Only field parameters were collected near the adit; no analytical samples.
mg/L=milligrams per liter; MCL=maximum contaminant level; su=standard units; mV=millivolts; µs/cm=micro-Siemens per centimeter; NTU=nephelometric turbidity unit; g/L=grams per liter

[a] Secondary Standard MCL – non-enforceable guideline.
[b] Action level regulated by treatment technique.
[c] Only a snapshot temperature reading was collected. A daily temperate average was not collected.
[d] Two projects took place at the same time in this area under the same QAPP and FSP. The field blank sample for this sampling day was reported under a separate laboratory data package; therefore, the applicable page from the laboratory report for the field blank analytical results are included in Appendix A.



Photo 1. Work in progress at the Alamo Prospect mine portal.



Photo 2. Water pipe originating from the Alamo Prospect portal; water sample collected from flowing water.



Photo 3. Former tracks from the Alamo Prospect portal.



Photo 4. Alamo Prospect waste rock pile looking south toward the portal.



Photo 5. Alamo Prospect waste rock pile, looking northwest toward Hwy 200 and Denton Slough.



Photo 6. Alamo Prospect waste rock pile looking east from Denton Road.

4 Migration/Exposure Pathways and Targets

The purpose of this PA/SI is to evaluate the Alamo Prospect to identify if any releases or potentials for release are present to pathways and targets. Pathways and exposure routes that may lead to human or ecological receptors include: surface water pathways and soil exposures (Section 4.1), ground water pathways (Section 4.2), and air pathways (Section 4.3).

4.1 Surface Water Pathways and Soil Exposures

The surface water migration pathway target distance limit (TDL) begins at the probable point of entry (PPE) of surface water runoff from a site to a surface water body and extends downstream for 15 miles. The PPE for the Alamo Prospect is the location of unnamed/temporary drainage and erosion areas which would eventually flow into Denton Slough. The path for the 15-mile TDL is from Denton Slough to Lake Pend Oreille. Other surface water features, such as wetlands and rivers, are also present within a 2-mile radius of the mine site (Figure 4).

At the time of the site visit, water was flowing from the tunnel through a pipe (Photo 2). However, there was no evidence that this water source is causing erosion of the waste rock pile. Also, the waste rock pile is bounded on the downhill side by Denton Road (a paved road).

Laboratory analytical results for the water samples were compared to the following criteria: 1) EPA drinking water standards, 2) EPA RSLs for tapwater, and 3) DEQ cold water biota standards for acute and chronic. Drinking water standards and regional screening levels (RSLs) for tapwater are used to protect public health by limiting the levels of contaminants present in drinking water. These criteria are most applicable to sites where “unrestricted uses,” such as residential development, are expected; therefore, they provide a conservative threshold for remote locations. The cold water biota standards are used to protect and restore the quality of Idaho’s surface waters.

The following observations are based on the analytical laboratory results:

- No analytical results for total metals were detected above the standards. Parameters measured in the field included temperature, pH, oxidation reduction potential (ORP), conductivity, turbidity, dissolved oxygen, and total dissolved solids (TDS). A neutral pH measurement of 7.3 was observed.

- For evaluating Quality Assurance/Quality Control (QA/QC), a duplicate sample was collected using the replicate method where samples were taken one immediately following the other; rather than being collected as split subsamples drawn from the same initial volume. The duplicate analytical results show that the relative percent difference (RPD) goal of 20 percent was met for all analytes. The field blank was collected using distilled water. None of the target analytes were detected in the field blank (Table 1).

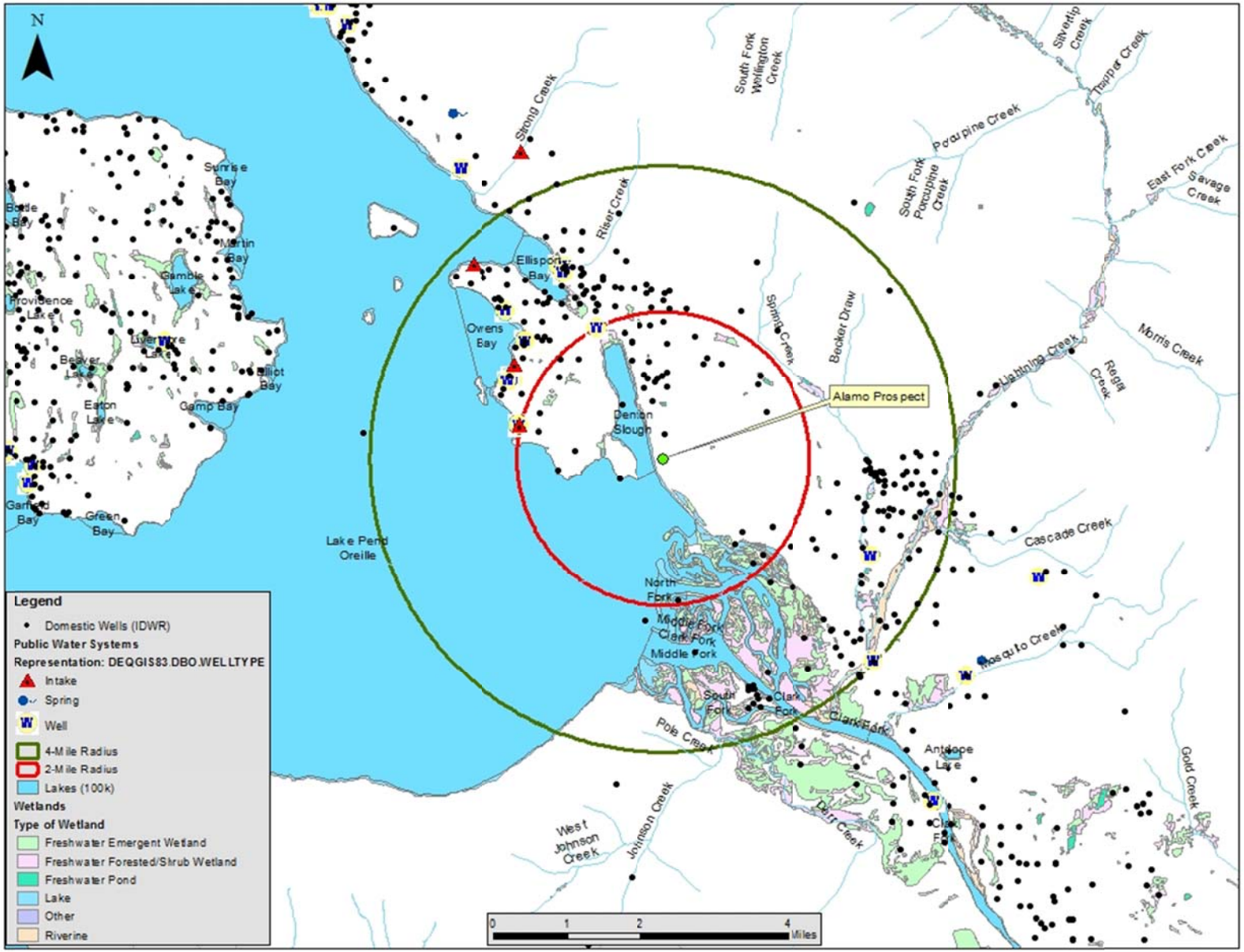


Figure 4. Map of the features supporting evaluation of the surface water and ground water pathways in the area of the Alamo Prospect.

4.2 Ground Water Pathways

In areas where historic mines are close to residential areas, contamination of drinking water systems may come from two types of mine sources (ore bodies and waste dumps) and along three ground water pathways illustrated by the following three scenarios:

- Heavy metals can leach from tailing piles and waste rock dumps, enter ephemeral or perennial drains, and contaminate the area's shallow ground water system.
- Heavy metals can leach from the local ore bodies and be transported through the geologic structure to the shallow ground water.
- Heavy metals can leach out of the ore bodies and be discharged from the underground workings as adit water, which is then conveyed through ephemeral and perennial drains to the shallow ground water system.

Potential drinking water systems within the 4-mile radius of the Alamo Prospect include 386 public water systems (PWS) and 17 domestic wells (Figure 4). For the PWS accessing ground water in the 4-mile radius of this site, none of the ground water capture zones (based on a modeled 10 year time-of-travel) overlap with this site (DEQ 2015c). Based on a source water delineation modeling report for a PWS located approximately 3 miles north of Hope (DEQ 2013), the ground water flow direction in the vicinity of the site is likely to the west toward Lake Pend Oreille. Given the lack of domestic wells located between the site and the lake that could be impacted by the direction of ground water flow and lack of PWS in the immediate vicinity of the mine site, the potential for exposure from ground water pathways is minimal. Therefore, the ground water pathway was not assessed as part of this PA/SI.

4.3 Air Pathways

All of the mine waste remaining at the Alamo Prospect appears to be waste rock from underground workings since no evidence of milling operations was observed at the mine site. The waste rock pile contains minimal fine sediments and is surrounded by vegetation; therefore, fugitive dust is likely limited in this area. The nearest residence is approximately 0.5 mile southeast of the Alamo Prospect.

Given these observations, the air pathway was not assessed as part of this PA/SI since it is not a likely pathway of contaminant release to humans or the environment.

5 Conclusions and Recommendations

The purpose of this PA/SI is to assess the threat posed to human health and the environment and determine the need for additional investigation for the Alamo Prospect. The following conclusions and recommendations are based on the observations and results for samples collected during the September 28, 2015 site visit.

- No concerns were observed for the surface water and soil exposure pathways. The analytical results for water originating from the portal showed no detections of metals above the standards.

- No concerns were observed for the ground water and air pathways at this time.
- Current land uses include recreational activities such as hiking and picnicking. These current uses are likely to continue into the future. If future land uses include residential development in the vicinity of the tunnel and waste rock pile, further characterization of the historic mining features should be performed to ensure human health protection.
- Persons recreating in this area should be aware of the hazards of historic mining areas, especially health risks associated with prolonged exposures to metals. A summary of health and safety information includes:
    - Keep dirt away from your mouth to prevent ingestion of metals. Wash your hands with soap and water before eating, drinking, or smoking. Frequently clean toys used by babies, toddlers, and children. Eat on a clean surface, not on the ground.
    - Stay out of old mine adits and structures. Rotting wood, unstable rock, oxygen-depleted air, falling debris, dust, and mining wastes are potential dangers.

Based on existing conditions and uses, historic information, observations made during the site visit, potential pathways of contaminants to receptors, and potential exposures to ecological and human receptors, DEQ recommends **No Remedial Action Planned (NRAP)** for the current recreational-only land use.

6 References

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Appendix A. Laboratory Sample Reports

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1505J0016

Page 1 of 1

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: 17°C

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil, 4 = Sediment, 5 = Rock, 6 = Rinsate, 7 = Oil
8 = Waste, 9 = Other:

Report to Company: IDEQ
Contact: Dana Swift
Address: 1410 N. Hilton
Boise ID 83706
Phone Number: 208-373-0296
FAX Number: 208-373-0154
E-mail: dana.swift@deq.idaho.gov

Invoice Sent To: IDEQ
Contact: Dana Swift
Address: same
Phone Number:
FAX Number:
PO#:

Project Name: Alamo Prospect
Sampler's Signature: Dana Swift

Indicate State of sample origination: ID

	Sample ID	Collection Date	Collection Time	Collected by: (Init.)	Misc. Matrix Type (From Table 1)	Misc. No. of Containers	Preservative(s) Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required Total Metals	Rush Instructions (Days)	Comments
1	AP-AD-SW 1	9/28/15	1247	DC	1	1			X					X		Total Metals for surface water: Ba, Cd, Cr, Ag, Cu, Fe, Mn, Zn, Sb, Se, Hg, As, Pb
2	AP-AD-SW 2	↓	↓	↓	1	1			X					X		
3																
4																
5																
6																
7																
8																
9																
10																

Dana Swift 9/28/15

Relinquished by:	Dana Swift	Date: 9/30/15	Time: 10:30	Received by:	
Relinquished by:		Date: 10/1/15	Time: 0810	Received by:	

Date: 09/30/15 Time: ~~10~~ 1030
Date: 10/1/15 Time: 8

* Sample Reject: ☐ Return ☐ Dispose ☒ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 01/14

10/1/15 14:00

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 10/1/15 **By:** CRSeavy

SVL Work No: W5J0016 surface water

Item	Description	V	VC	NV	NA	Comments
1	**Client or project name**					IDEQ Boise Dana Swift Alamo Prospect
2	**Date and time of receipt at lab**					09/30/15 @ 1030
3	**Received by**					CJ
4	**Temperature blank or cooler temperature**					Temp. 17 °C.
5	**Were the sample(s) received on ice**					N per clients QUAPP
6	**Custody tape/bottle seals**					Ø
7	**Condition of samples upon receipt (leaking; bubbles in VOA vials**					
8	**Sample numbers/IDs agree with COC**					
9	**Sample date & time agree with COC**					
10	**Number of containers for each sample**					
11	**The correct preservative for the analysis requested**					HNO_3 pres by client
12	**Did an SVL employee preserve sample(s) upon receipt**					Ø
12	**Type of container for each sample / volume received**					
13	**Analysis requested for each sample**					
14	**Sample matrix description**					
15	**COC properly completed & legible**					
16	**Corrections properly made (initials & date)**					
17	**Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)**					Klg: Total Metals: Ba, Cd, Cr, Ag, Cu, Fe, Mn, Zn, Sb, Se, Hg, As, Pb.
18	**Shipper's air bill**					

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: _____

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Alamo Prospect - 2015
Work Order: **W5J0016**
Reported: 13-Oct-15 11:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
AP-AD-SW1	W5J0016-01	Surface Water	28-Sep-15 12:47	DC	01-Oct-2015	
AP-AD-SW2	W5J0016-02	Surface Water	28-Sep-15 12:47	DC	01-Oct-2015	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Alamo Prospect - 2015
Work Order: **W5J0016**
Reported: 13-Oct-15 11:40

Client Sample ID: **AP-AD-SW1**
SVL Sample ID: **W5J0016-01 (Surface Water)**

Sampled: 28-Sep-15 12:47
Received: 01-Oct-15
Sampled By: DC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total)										
EPA 245.1	Mercury	< 0.00020	mg/L	0.00020	0.00004		W541199	HB	10/08/15 14:00	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Antimony	< 0.020	mg/L	0.020	0.005		W540213	SMB	10/09/15 13:10	
EPA 200.7	**Barium**	0.447	mg/L	0.0020	0.0003		W540213	SMB	10/09/15 13:10	
EPA 200.7	Cadmium	< 0.0020	mg/L	0.0020	0.0004		W540213	SMB	10/09/15 13:10	
EPA 200.7	Chromium	< 0.0060	mg/L	0.0060	0.0005		W540213	SMB	10/09/15 13:10	
EPA 200.7	Copper	< 0.0100	mg/L	0.0100	0.0012		W540213	SMB	10/09/15 13:10	
EPA 200.7	Iron	< 0.060	mg/L	0.060	0.024		W540213	SMB	10/09/15 13:41	
EPA 200.7	Manganese	< 0.0040	mg/L	0.0040	0.0012		W540213	SMB	10/09/15 13:10	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0010		W540213	SMB	10/09/15 13:10	
EPA 200.7	**Zinc**	0.020	mg/L	0.010	0.002		W540213	SMB	10/09/15 13:10	
EPA 200.8	Arsenic	< 0.00300	mg/L	0.00300	0.00027	2	W541049	AS	10/12/15 10:27	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000031	2	W541049	AS	10/12/15 10:27	
EPA 200.8	Selenium	< 0.0030	mg/L	0.0030	0.0006	2	W541049	AS	10/12/15 10:27	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Alamo Prospect - 2015
Work Order: **W5J0016**
Reported: 13-Oct-15 11:40

Client Sample ID: **AP-AD-SW2**
SVL Sample ID: **W5J0016-02 (Surface Water)**

Sampled: 28-Sep-15 12:47
Received: 01-Oct-15
Sampled By: DC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total)										
EPA 245.1	Mercury	< 0.00020	mg/L	0.00020	0.00004		W541199	HB	10/08/15 14:06	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Antimony	< 0.020	mg/L	0.020	0.005		W540213	SMB	10/09/15 13:13	
EPA 200.7	**Barium**	0.434	mg/L	0.0020	0.0003		W540213	SMB	10/09/15 13:13	
EPA 200.7	Cadmium	< 0.0020	mg/L	0.0020	0.0004		W540213	SMB	10/09/15 13:13	
EPA 200.7	Chromium	< 0.0060	mg/L	0.0060	0.0005		W540213	SMB	10/09/15 13:13	
EPA 200.7	Copper	< 0.0100	mg/L	0.0100	0.0012		W540213	SMB	10/09/15 13:13	
EPA 200.7	Iron	< 0.060	mg/L	0.060	0.024		W540213	SMB	10/09/15 13:45	
EPA 200.7	Manganese	< 0.0040	mg/L	0.0040	0.0012		W540213	SMB	10/09/15 13:13	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0010		W540213	SMB	10/09/15 13:13	
EPA 200.7	**Zinc**	0.019	mg/L	0.010	0.002		W540213	SMB	10/09/15 13:13	
EPA 200.8	Arsenic	< 0.00300	mg/L	0.00300	0.00027	2	W541049	AS	10/12/15 10:29	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000031	2	W541049	AS	10/12/15 10:29	
EPA 200.8	Selenium	< 0.0030	mg/L	0.0030	0.0006	2	W541049	AS	10/12/15 10:29	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Alamo Prospect - 2015
Work Order: **W5J0016**
Reported: 13-Oct-15 11:40

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Metals (Total)								
EPA 245.1	Mercury	mg/L	<0.00020	0.00004	0.00020	W541199	08-Oct-15	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)								
EPA 200.7	Antimony	mg/L	<0.020	0.005	0.020	W540213	09-Oct-15	
EPA 200.7	Barium	mg/L	<0.0020	0.0003	0.0020	W540213	09-Oct-15	
EPA 200.7	Cadmium	mg/L	<0.0020	0.0004	0.0020	W540213	09-Oct-15	
EPA 200.7	Chromium	mg/L	<0.0060	0.0005	0.0060	W540213	09-Oct-15	
EPA 200.7	Copper	mg/L	<0.0100	0.0012	0.0100	W540213	09-Oct-15	
EPA 200.7	Iron	mg/L	<0.060	0.024	0.060	W540213	09-Oct-15	
EPA 200.7	Manganese	mg/L	<0.0040	0.0012	0.0040	W540213	09-Oct-15	
EPA 200.7	Silver	mg/L	<0.0050	0.0010	0.0050	W540213	09-Oct-15	
EPA 200.7	Zinc	mg/L	<0.010	0.002	0.010	W540213	09-Oct-15	
EPA 200.8	Arsenic	mg/L	<0.00300	0.00027	0.00300	W541049	12-Oct-15	
EPA 200.8	Lead	mg/L	<0.00300	0.000031	0.00300	W541049	12-Oct-15	
EPA 200.8	Selenium	mg/L	<0.0030	0.0006	0.0030	W541049	12-Oct-15	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total)									
EPA 245.1	Mercury	mg/L	0.00502			85 - 115	W541199	08-Oct-15	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)									
EPA 200.7	Antimony	mg/L	1.01	1.00	101	85 - 115	W540213	09-Oct-15	
EPA 200.7	Barium	mg/L	0.988	1.00	98.8	85 - 115	W540213	09-Oct-15	
EPA 200.7	Cadmium	mg/L	1.01	1.00	101	85 - 115	W540213	09-Oct-15	
EPA 200.7	Chromium	mg/L	1.01	1.00	101	85 - 115	W540213	09-Oct-15	
EPA 200.7	Copper	mg/L	1.00	1.00	100	85 - 115	W540213	09-Oct-15	
EPA 200.7	Iron	mg/L	9.74	10.0	97.4	85 - 115	W540213	09-Oct-15	
EPA 200.7	Manganese	mg/L	0.983	1.00	98.3	85 - 115	W540213	09-Oct-15	
EPA 200.7	Silver	mg/L	0.0471	0.0500	94.2	85 - 115	W540213	09-Oct-15	
EPA 200.7	Zinc	mg/L	1.00	1.00	100	85 - 115	W540213	09-Oct-15	
EPA 200.8	Arsenic	mg/L	0.0234	0.0250	93.5	85 - 115	W541049	12-Oct-15	
EPA 200.8	Lead	mg/L	0.0240	0.0250	96.0	85 - 115	W541049	12-Oct-15	
EPA 200.8	Selenium	mg/L	0.0227	0.0250	90.8	85 - 115	W541049	12-Oct-15	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total)										
EPA 245.1	Mercury	mg/L	0.00098	<0.00020	0.00100	98.0	70 - 130	W541199	08-Oct-15	
EPA 245.1	Mercury	mg/L	0.00097	<0.00020	0.00100	97.0	70 - 130	W541199	08-Oct-15	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Antimony	mg/L	1.04	<0.020	1.00	104	70 - 130	W540213	09-Oct-15	
EPA 200.7	Barium	mg/L	1.03	0.0282	1.00	99.8	70 - 130	W540213	09-Oct-15	
EPA 200.7	Cadmium	mg/L	1.03	<0.0020	1.00	103	70 - 130	W540213	09-Oct-15	
EPA 200.7	Chromium	mg/L	0.998	<0.0060	1.00	99.8	70 - 130	W540213	09-Oct-15	
EPA 200.7	Copper	mg/L	1.01	<0.0100	1.00	101	70 - 130	W540213	09-Oct-15	
EPA 200.7	Iron	mg/L	9.84	0.174	10.0	96.7	70 - 130	W540213	09-Oct-15	

SVL holds the following certifications:
AZ:0538, **CA**:2080, **ID**:ID00019 & ID00965 (Microbiology), **NV**:ID000192007A, **UT**(**TNI**):ID000192015-1, **WA**:C573

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Alamo Prospect - 2015
Work Order: **W5J0016**
Reported: 13-Oct-15 11:40

Quality Control - MATRIX SPIKE Data (Continued)

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136) (Continued)										
EPA 200.7	Manganese	mg/L	1.13	0.144	1.00	98.4	70 - 130	W540213	09-Oct-15	
EPA 200.7	Silver	mg/L	0.0482	<0.0050	0.0500	96.4	70 - 130	W540213	09-Oct-15	
EPA 200.7	Zinc	mg/L	0.996	<0.010	1.00	99.6	70 - 130	W540213	09-Oct-15	
EPA 200.8	Arsenic	mg/L	0.0230	<0.00300	0.0250	92.0	70 - 130	W541049	12-Oct-15	
EPA 200.8	Arsenic	mg/L	0.0247	<0.00300	0.0250	98.9	70 - 130	W541049	12-Oct-15	
EPA 200.8	Lead	mg/L	0.0227	<0.00300	0.0250	90.7	70 - 130	W541049	12-Oct-15	
EPA 200.8	Lead	mg/L	0.0236	<0.00300	0.0250	93.8	70 - 130	W541049	12-Oct-15	
EPA 200.8	Selenium	mg/L	0.0235	<0.0030	0.0250	94.1	70 - 130	W541049	12-Oct-15	
EPA 200.8	Selenium	mg/L	0.0237	<0.0030	0.0250	94.9	70 - 130	W541049	12-Oct-15	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Metals (Total)											
EPA 245.1	Mercury	mg/L	0.00097	0.00098	0.00100	97.0	1.0	20	W541199	08-Oct-15	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)											
EPA 200.7	Antimony	mg/L	1.02	1.04	1.00	102	1.5	20	W540213	09-Oct-15	
EPA 200.7	Barium	mg/L	1.01	1.03	1.00	97.9	1.9	20	W540213	09-Oct-15	
EPA 200.7	Cadmium	mg/L	1.02	1.03	1.00	102	1.8	20	W540213	09-Oct-15	
EPA 200.7	Chromium	mg/L	0.983	0.998	1.00	98.3	1.4	20	W540213	09-Oct-15	
EPA 200.7	Copper	mg/L	0.988	1.01	1.00	98.8	1.8	20	W540213	09-Oct-15	
EPA 200.7	Iron	mg/L	9.58	9.84	10.0	94.1	2.7	20	W540213	09-Oct-15	
EPA 200.7	Manganese	mg/L	1.10	1.13	1.00	95.4	2.7	20	W540213	09-Oct-15	
EPA 200.7	Silver	mg/L	0.0473	0.0482	0.0500	94.5	2.0	20	W540213	09-Oct-15	
EPA 200.7	Zinc	mg/L	0.984	0.996	1.00	98.4	1.2	20	W540213	09-Oct-15	
EPA 200.8	Arsenic	mg/L	0.0216	0.0230	0.0250	86.4	6.3	20	W541049	12-Oct-15	
EPA 200.8	Lead	mg/L	0.0220	0.0227	0.0250	87.9	3.1	20	W541049	12-Oct-15	
EPA 200.8	Selenium	mg/L	0.0226	0.0235	0.0250	90.3	4.1	20	W541049	12-Oct-15	

Notes and Definitions

LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

SVL holds the following certifications:
AZ:0538, **CA**:2080, **ID**:ID00019 & ID00965 (Microbiology), **NV**:ID000192007A, **UT**(**TNI**):ID000192015-1, **WA**:C573

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IDEQ (Boise)
1410 N. Hilton
Boise, ID 83706

Project Name: Clark Fork 2015
Work Order: **W5J0012**
Reported: 13-Oct-15 11:33

Client Sample ID: **LC-TR10-SW2**
SVL Sample ID: **W5J0012-02 (Surface Water)**

Sampled: 28-Sep-15 15:00
Received: 01-Oct-15
Sampled By: DRC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total)										
EPA 245.1	Mercury	< 0.00020	mg/L	0.00020	0.00004		W541027	DB	10/06/15 16:18	
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Antimony	< 0.020	mg/L	0.020	0.005		W540212	SMB	10/09/15 09:57	
EPA 200.7	Barium	< 0.0020	mg/L	0.0020	0.0003		W540212	SMB	10/09/15 09:57	
EPA 200.7	Cadmium	< 0.0020	mg/L	0.0020	0.0004		W540212	SMB	10/09/15 09:57	
EPA 200.7	Chromium	< 0.0060	mg/L	0.0060	0.0005		W540212	SMB	10/09/15 09:57	
EPA 200.7	Copper	< 0.0100	mg/L	0.0100	0.0012		W540212	SMB	10/09/15 09:57	
EPA 200.7	Iron	< 0.060	mg/L	0.060	0.024		W540212	SMB	10/09/15 09:57	
EPA 200.7	Manganese	< 0.0040	mg/L	0.0040	0.0012		W540212	SMB	10/09/15 09:57	
EPA 200.7	Silver	< 0.0050	mg/L	0.0050	0.0010		W540212	SMB	10/09/15 09:57	
EPA 200.7	Zinc	< 0.010	mg/L	0.010	0.002		W540212	SMB	10/09/15 09:57	
EPA 200.8	Arsenic	< 0.00300	mg/L	0.00300	0.00027	2	W541049	AS	10/12/15 09:39	
EPA 200.8	Lead	< 0.00300	mg/L	0.00300	0.000031	2	W541049	AS	10/12/15 09:39	
EPA 200.8	Selenium	< 0.0030	mg/L	0.0030	0.0006	2	W541049	AS	10/12/15 09:39	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

Table 1, Note d - Applicable page from SVL Analytical Report W5J0012, Field Blank Sample LC-TR10-SW2.