

New Amalga Gold Mine Aquatic Studies, 2025

by

Greg Albrecht



July 2026

Alaska Department of Fish and Game

Habitat Section



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mideye-to-fork	MEF
gram	g	all commonly accepted		mideye-to-tail fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	Mathematics, statistics	
meter	m			<i>all standard mathematical</i>	
milliliter	mL	at	@	<i>signs, symbols and</i>	
millimeter	mm	compass directions:		<i>abbreviations</i>	
nanometer	nm	east	E	alternate hypothesis	H _A
		north	N	base of natural logarithm	<i>e</i>
Weights and measures (English)		south	S	catch per unit effort	CPUE
cubic feet per second	ft ³ /s	west	W	coefficient of variation	CV
foot	ft	copyright	©	common test statistics	(F, t, χ^2 , etc.)
gallon	gal	corporate suffixes:		confidence interval	CI
inch	in	Company	Co.	correlation coefficient	
mile	mi	Corporation	Corp.	(multiple)	R
nautical mile	nmi	Incorporated	Inc.	correlation coefficient	
ounce	oz	Limited	Ltd.	(simple)	r
pound	lb	District of Columbia	D.C.	covariance	cov
quart	qt	et alii (and others)	et al.	degree (angular)	°
yard	yd	et cetera (and so forth)	etc.	degrees of freedom	df
		exempli gratia		expected value	<i>E</i>
Time and temperature		(for example)	e.g.	greater than	>
day	d	Federal Information		greater than or equal to	≥
degrees Celsius	°C	Code	FIC	harvest per unit effort	HPUE
degrees Fahrenheit	°F	id est (that is)	i.e.	less than	<
degrees kelvin	K	latitude or longitude	lat. or long.	less than or equal to	≤
hour	h	monetary symbols		logarithm (natural)	ln
minute	min	(U.S.)	\$, ¢	logarithm (base 10)	log
second	s	months (tables and figures): first three		logarithm (specify base)	log ₂ , etc.
		letters	Jan,....,Dec	minute (angular)	'
Physics and chemistry				not detected	N
all atomic symbols		registered trademark	®	no data	ND
alternating current	AC	trademark	™	not significant	NS
ampere	A	United States		null hypothesis	H ₀
calorie	cal	(adjective)	U.S.	percent	%
direct current	DC	United States of		probability	P
hertz	Hz	America (noun)	USA	probability of a type I error	
horsepower	hp	U.S.C.	United States	(rejection of the null	
hydrogen ion activity	pH		Code	hypothesis when true)	α
(negative log of)		U.S. state	use two-letter	probability of a type II error	
kilowatt	kW		abbreviations	(acceptance of the null	
Kilopascal	kPa		(e.g., AK, WA)	hypothesis when false)	β
Nephelometric Turbidity Unit	NTU			second (angular)	"
parts per million	ppm			standard deviation	SD
parts per thousand	ppt,			standard error	SE
	‰			variance	
volts	V			population	Var
watts	W			sample	var

TECHNICAL REPORT NO. 26-11

NEW AMALGA GOLD MINE AQUATIC STUDIES, 2025

By

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July 2026

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Cover: Herbert River valley near Beaver Lake, May 13, 2025.

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Alaska Department of Fish and Game Habitat Section Southeast Regional Supervisor Kate Kanouse established the contract with Grande Portage Resources Ltd. and collaborated on study design. Habitat Biologists Claire Delbecq, Dylan Krull, Nick Jensen, and Takoda Edlund conducted field sampling and stream surveys, as well as Fish and Wildlife Technicians Ruth Roys, Kaylee Brown, and Division of Sport Fish Program Technician Carly LeMieux. Ruth and Kaylee sorted benthic macroinvertebrate samples, Claire conducted taxonomic identification and reviewed the report, as well as Habitat Biologist Olivia Edwards. Kate Kanouse and Operations Manager Dr. Al Ott reviewed and edited the report. Thank you all for your contribution.

EXECUTIVE SUMMARY

Grande Portage Resources Ltd. (GPRL) initiated exploratory drilling in 2010 at the New Amalga Gold Mine (formerly known as the Herber River Gold project) in the Herbert River valley, near the terminus of the Herbert Glacier. The project is located off the Juneau road system, about 30 km miles northwest of Juneau within the Tongass National Forest. Since 2010, GPRL has conducted geotechnical studies and identified copper, gold, lead, silver, and zinc within a mesothermic quartz vein system that may support an underground hard rock mine (Webb 2024).

In 2025, GPRL contracted the Alaska Department of Fish and Game (ADF&G) Habitat Section to sample aquatic resources in the glacial Herbert and Eagle Rivers, to document existing aquatic biological conditions and sediment concentrations, and survey nearby water bodies for fish. Habitat Section and GPRL staffs developed a plan to study periphyton (live algal biomass using chlorophyll pigment concentrations), benthic macroinvertebrate density and community structure, fish species presence, and sediment element concentrations at three sites on the Herbert River and one site on Eagle River, as well as completing stream surveys. These data will serve as baseline data if GPRL moves forward with proposed mine development.

We completed the aquatic studies April 14–16, 2025, prior to annual temperature-driven flow increases in both rivers. Mean chlorophyll *a* density was greatest at the Upper Herbert River site; mean density at each site varied from below detection (<0.23 mg/m²) at Lower Herbert River to 2.49 mg/m² at Upper Herbert River. The Lower Eagle River mean density was 0.47 mg/m² and several samples were below detection. Percent chlorophyll *a* values ranged 83–87%, which is typical of glacial rivers (Krull 2025). Glacial streams tend to have lower primary production than clear water bodies due to lower stream temperatures and turbidity.

Mean benthic macroinvertebrate (BMI) densities were highest at Lower Eagle River (3,229 BMI/m²) and lowest at Lower Herbert River (500 BMI/m²). Percentage of Ephemeroptera, Plecoptera, and Trichoptera ranged 6–22% across sites, which are similar to the ranges documented at Glacier Creek (Krull 2025), a largely undeveloped watershed 135 km northwest, near Haines. Diptera from the families Chironomidae (non-biting midges) and Simuliidae (black flies) dominated samples, also similar results for glacial water bodies.

Fish were sparse in the main stem of the Herbert River, especially further up the drainage. Despite electrofishing and deploying minnow traps over more than 3 km of the river on two occasions, we were unable to collect all Dolly Varden *Salvelinus malma* fish samples for whole body element concentration analysis near the Middle and Upper Herbert River sites. Instead, we collected fish from nearby tributaries in beaver ponds (referred to as Beaver Lake; the larger pond near Upper Herbert River, and Herbert Pond; the smaller pond near Middle Herbert River). We captured 38 fish for analysis of whole body concentrations of cadmium (Cd), chromium (Cr), copper (Cu), mercury (Hg), nickel (Ni), silver (Ag), selenium (Se), and zinc (Zn).

Glacial silt and sand samples collected from each site were analyzed for a similar suite of element concentrations: Ag, aluminum (Al), arsenic (As), Cd, Cr, Cu, Hg, Ni, Pb, Se, and Zn. Element concentrations at all sites were below the probable effects concentration (PEC) and threshold effects concentration (TEC) sediment guidelines suggested by Buchman (2008), except for one sample from Lower Eagle River which contained Cu concentration above the TEC.

We documented fish habitat and fish presence with multiple gear types in both watersheds, though investigations were primarily focused on the Herbert River valley where development is proposed.

Beaver dams on tributaries with smaller watersheds tended to constitute a blockage to upstream ponds, wetlands, and streams; whereas dams on larger systems, where fish could gain access during high flow, supported multiple species of salmonids. Species captured in the mainstem rivers included Dolly Varden, and juvenile rearing coho salmon *Oncorhynchus kisutch*. We captured cutthroat trout *O. Clarkii*, and threespine stickleback *Gasterosteus aculeatus*, in tributaries. We identified coho salmon spawning habitat on the south side of the alluvial fan of the upper Herbert River, at the east end of Beaver Lake, and in the outlet stream of Herbert Pond.

INTRODUCTION

The New Amalga Gold Mine (formerly named the Herbert River Gold project) exploration area is located about 30 km northwest of Juneau at the receding terminus of the Herbert Glacier (Figure 1), and shares some geologic features with the AJ and Kensington deposits, all of these being within the Juneau Gold Belt (Webb 2024). The Herbert River flows from the glacier roughly 11 km to its confluence with Eagle River at tidewater within the Eagle Beach State Recreation area near milepost 26 on Glacier Highway in Juneau. Most of the rivers, glaciers, and surrounding landscape is within the Tongass National Forest which is managed by the U.S. Department of Agriculture Forest Service. We accessed sampling sites by the 7 km Herbert Glacier foot trail which starts at Glacier Highway and ends near the Herbert Glacier terminus, or by helicopter.

Mineral exploration in the Herbert Valley began in the 1880s and included drilling by at least two companies before the turn of the century (Barnett and Miller 2003). Glacial flour at the terminus was reportedly processed in the 1930s with little gold recovered (Webb 2024). Exploration efforts restarted in the 1980s with the retreat of the face of the glacier (Redman et al. 1989).

Water quality sampling was initiated in 2011 by Admiralty Environmental, contracted by Grande Portage Resources Ltd., which included analysis of a suite of elements and nutrients (Kyle Mehalek, Project Engineer, OreLogic LLC, Colorado, personal communication). ADF&G Habitat Section staff has periodically investigated fish habitat and fish use in the Herbert and Eagle valleys since 2014^a and efforts since 2020 focused on areas downstream of the prospect.

The ADF&G Habitat Section is delegated responsibility to maintain fish passage and properly protect anadromous fish habitat under Alaska Statutes (AS) of the Fishway Act at AS 16.05.841 and the Anadromous Fish at AS 16.05.871. The data collected and presented in this report will be used to support permitting and to monitor change over time in the event of mine development.

PURPOSE

The purpose of this investigation and technical report is to document biological communities and sediments at sites in the Herbert and Eagle River valleys before the potential development of a hard rock mine, access road, and associated facilities.

^a Ben Brewster, Habitat Biologist, to Jackie Timothy, Southeast Regional Supervisor, ADF&G Division of Habitat. Memorandum: Herbert River Anadromous Waters Investigation; dated 9/16/2024.



Figure 1.–New Amalga Gold Mine biomonitoring area map.

STUDY AREAS

Herbert River

The Herbert River provides about 9.5 km of fish habitat from its tidal confluence with the Eagle River up to the initiation of the glacial outwash fan at the base of a steep bedrock hillside, where the Herbert Glacier terminus sits 1.5 km upslope. The Herbert River is within a 152 km² watershed (USGS 2026) and transitions from a large braided glacial outwash channel at the glacier terminus to a large meandering glacial outwash channel (Paustian 2010). The watershed includes clear water tributaries from mountain streams, beaver ponds, and the 140-acre Windfall Lake to the south. The Herbert River was gaged by the USGS 1966–1971 (USGS Gage no. 15054200), during which time mean annual flow ranged 529–618 ft³/s and mean monthly flow ranged 17–1,941 ft³/s (USGS 2026). A more recent river gaging project, supported by the University of Alaska Southeast and the Alaska Coastal Rainforest Center, estimated mean annual discharges of 708–844 ft³/s from 2020–2024, due to increased glacial melting in recent years (Hood et al., 2024). The river is turbid June–September and runs clearest December–March when discharge drops below about 100 ft³/s at the Glacier Highway bridge measurement site.

The Herbert River (ADF&G Stream No. 111-50-10070-2004) supports chum *O. keta*, coho, pink *O. gorbuscha*, and sockeye *O. nerka* salmon, cutthroat trout, Dolly Varden, and steelhead *O. mykiss* (Giefer and Evers 2025). Windfall Creek (ADF&G Stream No. 111-50-10070-2004-3006), a tributary to the Herbert River, supports the same species, and popular salmon and trout sport fisheries. Coho salmon, cutthroat trout, and Dolly Varden are documented in the Herbert River upstream of the Windfall Creek confluence. Kettle ponds and beaver dams on tributaries are common in the valley, though many water bodies are isolated or impounded by beaver dams which presently exclude fish, based on surveys by Habitat Section staff since 2014.

Lower Herbert River Site

The Lower Herbert River Site is located 400 m upstream of the highway bridge in the main channel, accessible from the Herbert River Road on the east bank (Figures 2, 3). Elevation at the site is approximately 12 m above sea level. At the site, the stream is classified as a large meandering glacial outwash channel (Paustian 2010) with 1–2% channel gradient and seasonally-exposed gravel bars. Substrate is primarily gravel and cobble, and woody debris deposits are present along the banks. This reach provides migration for adult fish and rearing habitat for juvenile fish, particularly in the channel margins near woody debris clusters and in pools. Gravel suitable for salmon spawning is present, but river turbidity and deep water during the fall limit our ability to detect spawning fish.

In 2025 we collected periphyton, BMIs, and sediment samples in a 50 m reach. Dolly Varden samples for whole body elements analysis were collected from between the highway bridge and a point 1.4 km upstream, due to low fish density within the desired size range at the site.



Figure 2.–Lower Herbert River Site looking upstream, 4/14/25.



Figure 3.–Lower Herbert River Site looking downstream, 4/14/25.

Middle Herbert River Site

The Middle Herbert River Site is located about 6.5 km up the main channel at 25 m elevation and 1.7 km upstream of the Windfall Creek confluence (Figures 4–6). The site is downstream of the area where a bridge may be installed to access the proposed mine site. We accessed the site by foot from the Herbert Glacier trail. The Middle Herbert River Site is classified as a large meandering glacial outwash channel (Paustian 2010), with 1–2% gradient and seasonally-exposed gravel bars. Substrate is primarily gravel and cobble, and woody debris deposits are present along the streambanks. This reach provides migration for adult fish and rearing habitat for juvenile fish, particularly in the channel margins near woody debris clusters and in pools. Coho are the only

salmon species documented this far up the river and though spawning gravel is plentiful, we have only identified coho salmon spawning areas in upstream clearwater tributaries and an area of the headwater alluvial fan that receives year round flow from a clear water tributary.

In 2025 we collected periphyton, BMIs, and sediment samples in a 50 m reach. Few Dolly Varden were present, despite extending our trapping and electrofishing efforts 1 km upstream and downstream of the sample site. Therefore, we collected fish samples for whole body elements analysis from the small beaver pond on the east side of the river 0.3 km upstream (Figure 7). This small pond (Herbert Pond) is downgradient to conceptual locations of mine facilities.



Figure 4.—Middle Herbert River Site, 4/10/25.



Figure 5.—Middle Herbert River Site looking upstream, 4/16/25.



Figure 6.—Middle Herbert River Site looking downstream, 4/16/25.



Figure 7.—Herbert Pond near the Middle Herbert River sample site, 6/4/2025.

Upper Herbert River Site

The Upper Herbert River site is just downstream of the wide alluvial fan at the glacier terminus, within an area classified as a large braided glacial outwash channel (Paustian 2010). The site is 1.9 km upstream of Middle Herbert River, as well as all conceptually proposed development and crossing locations (Figures 8–10). We accessed the site by foot from the Herbert Glacier trail. Stream gradient at the site is 2–3%, the elevation is 30 m, and gravel and cobble substrate are dominant with minimal woody debris present. This reach provides migration for adult fish and minimal rearing habitat for juvenile fish, due to low habitat complexity and lack of woody debris. Gravel suitable for salmon spawning is present and coho are the only salmon species currently documented this far upstream in the drainage. Coho salmon spawning areas have been identified in nearby clearwater tributaries and on the southern part of the upper alluvial fan where a clearwater tributary occupies a channel that is inundated seasonally by glacial flow.

In 2025 we collected periphyton, BMIs, and sediment samples in a 50 m reach. Few Dolly Varden were present, despite extending our trapping and electrofishing efforts 0.8 km upstream and downstream of the sample site. Therefore, we collected fish for whole body elements analysis from

the large beaver pond on the southeast side of the river 0.4 km downstream, which was turbid from recent Herbert River inundation (Figure 11). This large pond (Beaver Lake) is downgradient from the conceptual portal location and portal access road.



Figure 8.—Aerial view of Upper Herbert River site, 4/10/25.



Figure 9.—Upper Herbert River site looking upstream, 4/16/25.



Figure 10.—Upper Herbert River site looking downstream, 4/16/25.



Figure 11.—Beaver Lake near the Upper Herbert River site after seasonal glacial water intrusion, 8/20/25.

Eagle River

Eagle River is comprised of a 7.2 km long reach of a large meandering glacial outwash channel accessible to anadromous fish, above which is an additional 4.5 km of river and 185 acre lake where fish have not been documented, originating at the Eagle Glacier Terminus. The watershed drains a similar area as the Herbert River and much of the drainage basin is beneath glacial ice field. Stream gaging has not been conducted on the river; however, mean annual streamflow pattern is likely similar to the Herbert River, though with a more muted pattern due to the lake near

the glacier. The lake, which remains turbid year-round, also results in higher river turbidity during low flow.

The Eagle River (ADF&G Stream No. 111-50-10070) supports chum, coho, pink, and sockeye salmon, cutthroat trout, Dolly Varden, and steelhead; though steelhead and sockeye are not documented upstream of the river confluence with the Herbert River.

Lower Eagle River Site

The Lower Eagle River site is located 1.8 km upstream of the highway bridge in the main channel and is accessible from the Amalga Trail (Figures 12–14). Elevation at the site is approximately 15 m above sea level. The site is classified as a large meandering glacial outwash channel (Paustian 2010), with 1–2% gradient and seasonally-exposed gravel bars. Substrate is primarily gravel and cobble, and woody debris deposits are present along the streambanks. This reach provides migration for adult fish and rearing habitat for juvenile fish, particularly in the channel margins near woody debris clusters and in pools. Gravel suitable for salmon spawning is present; however, turbidity during the fall makes it difficult to determine if it is used. Chum and pink salmon spawning is documented in Bear Creek and other tributaries (Giefer and Evers 2025).

In 2025 we collected periphyton, BMIs, and sediment samples in a 50 m reach. Dolly Varden for whole body elements analysis were captured within 250 m downstream and 700 m upstream of the site.



Figure 12.—Aerial view of the Lower Eagle River Site, 4/15/25.



Figure 13.–Lower Eagle River Site looking upstream, 4/15/25.



Figure 14.–Lower Eagle River Site looking downstream, 4/15/25.

AQUATIC STUDIES

We completed the following studies at the Lower, Middle, and Upper Herbert River, and Lower Eagle River sites April 14–16, 2025. We sampled the second week of April because at this time wetted substrate was likely submerged through the winter, daylight was sufficient for periphyton growth, and turbidity and river stage height were low. We also conducted fish use investigations throughout the Herbert River valley spring through late fall of 2025.

Chlorophyll Density and Composition

Periphyton is composed of primary producing organisms, such as algae, cyanobacteria, heterotrophic microbes, and detritus attached to the submerged surfaces of aquatic ecosystems. Algal density and community structure are influenced by water and sediment characteristics through physical, chemical, and biological factors, and disturbances that change throughout the year (Barbour et al. 1999).

Periphyton was collected at all sites to estimate algal density and community composition at each site, using concentrations of chlorophylls *a*, *b*, and *c*. The concentration of chlorophyll-*a* (Chl-*a*) pigment in periphyton samples provides an estimate of active algal biomass (density), while concentrations of chlorophyll-*b* (Chl-*b*) and chlorophyll-*c* (Chl-*c*) pigments estimate the composition of algal organisms present, such as green algae that produce Chl-*b*, and diatoms and brown algae that produce Chl-*c*. Chlorophyll data are used to document baseline primary productivity (e.g., live algal biomass). We targeted the second week in April to sample the periphyton crop at maximum daylight prior to seasonal melt and subsequent increased turbidity and elevated river stage, which limits access to perennially wetted substrates.

Benthic Macroinvertebrate Density and Community Composition

Benthic macroinvertebrates classified in the orders Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies), collectively known as EPT taxa, have complex life cycles and include genera sensitive to changes in water and sediment quality (Barbour et al. 1999). These organisms are secondary producers, feed on periphyton and other macroinvertebrates, and provide a food source for fish. We sampled BMI in the second week of April, prior to seasonal discharge increase to ensure we could sample substrates that are wetted perennially. Sampling targets riffle habitats which support greater densities of EPT taxa than other stream habitat types (Barbour et al. 1999) and generally are sensitive to environmental changes and have short life cycles. The BMI data are used to document secondary productivity (e.g. macroinvertebrate density and diversity).

Dolly Varden Whole Body Element Concentrations

Element bioavailability and bioaccumulation depend on physical and chemical factors and interactions among biological communities (Tchounwou et al. 2012). Resident fish samples were analyzed for whole body concentrations of Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, and Zn to document baseline concentrations and variability. These elements were selected because they are present in the ore body and have been monitored at the Kensington Gold Mine, 38 km to the north (Albrecht 2026, Kanouse 2015).

Sediment Element Concentrations

Sediment element concentrations are influenced by a variety of factors, such as geochemical composition and weathering within the watershed, sediment grain size, organic content, and development/disturbance (Tchounwou et al. 2012). Subsequently, sediment element

concentrations influence aquatic productivity, and heavy metals in sediments can decrease BMI taxa richness and alter the composition of BMI communities (Qu et al. 2010). Fine sediments were sampled at all sites and analyzed for total concentrations of Ag, Al, As, Cd, Cu, Cr, Hg, Ni, Pb, Se, and Zn to document baseline conditions and variability. These elements were selected based on target elements identified in the ore body, which is similar to the Kensington Gold Mine 38 km to the north. Total organic carbon (TOC), total solids, and total volatile solids impact the binding and bioavailability of metals and are therefore included in the analysis suite. High TOC can increase metal concentration but reduce bioavailability (APHA 2012).

Fish Use Investigations

Documenting the presence of anadromous and resident fish, as well as key habitat features like rearing and spawning areas, is important to inform permitting decisions under Alaska's Fish Habitat and Fish Passage Statutes (AS 16.05.871 and AS 16.05.841). Habitat in the Herbert River valley is diverse and may change depending on hydrology and beaver activity. Expanding on survey efforts from previous years, we performed surveys to identify fish presence in undocumented streams in the spring, summer, and fall months, as well as investigations to assess adult coho and sockeye spawning locations in the fall.

METHODS

Water Quality

Basic water quality data were collected with a YSI Pro 2030 and a Hach 2100P Portable Turbidimeter (mean of 3 grab samples); both instruments were calibrated per the manufacturer's instructions prior to sampling. Data is provided in tables for each site.

Periphyton: Chlorophyll Density and Composition

Sample Collection and Analysis

Sampling methods are adapted from Barbour et al. (1999). Ten smooth, flat, undisturbed, and perennially wetted rocks were collected from submerged cobble in riffle habitats in less than 0.45 m water depth at each sample site. To collect a sample from each rock, a 5 × 5 cm square of high-density foam was held on the sample area and the area around the foam was scrubbed with a toothbrush to remove algae and other organisms outside the sample area. The rock was rinsed by submerging it in the stream while holding the foam in place. The brush also was rinsed and scrubbed in the stream to remove remnant periphyton.

A 47 mm diameter Type A/E 1 µm glass fiber filter was placed into a Nalgene® filter receptacle attached to a vacuum pump with a gauge. The foam square was removed and the underside of the foam and the sample area were gently scrubbed in a circular pattern with the brush into the filter receptacle. Stream water in a wash bottle was used to rinse loosened periphyton from the foam, sample area of the rock, brush, and the inside of the filter receptacle onto the filter. The brush was rinsed inside the receptacle, and the sample area was scrubbed a second time and the rinse cycle repeated. With most of the water pumped through the filter, maintaining pressure less than 34 kPa, a few drops^b of saturated magnesium carbonate solution were added to the filter^c. After all the water was pumped through the glass fiber filter, it was removed from the receptacle, folded in half with the sample inside, and wrapped in a white coffee filter for additional moisture absorption. The samples were placed in a sealed, labeled plastic bag with desiccant and stored in a light-proof cooler containing frozen icepacks during transportation; the samples were stored in a -20°C freezer in the ADF&G Douglas laboratory until processing.

USEPA (1997) protocol was followed for chlorophyll extraction and measurement, determining instrument and estimated detection limits, and data analysis.^d Samples were removed from the freezer, cut into small pieces, and placed into individual 15 mL screw cap centrifuge tubes containing 10 mL of 90% buffered acetone. The centrifuge tubes were capped and shaken to ensure complete submersion of the sample. Samples were secured in a vial rack covered with aluminum foil to reduce light exposure and stored in a refrigerator for 18 hours to allow for saturation and chlorophyll extraction.

In a dimly-lit laboratory, the samples were removed from the refrigerator and centrifuged for 20 min at 500 relative centrifugal force, using a balanced centrifuge. Prior to sample measurement, two cuvettes containing 90% buffered acetone were placed into a Shimadzu UV-1800

^b This measurement is not exact as the amount of water and magnesium carbonate used to create a saturated solution varies and does not affect sample integrity; supernatant solution was used to avoid solids.

^c To prevent acidification and conversion of chlorophyll to phaeophytin.

^d Deviations from USEPA (1997) include samples storage longer than 3.5 weeks and cutting sample filters to reduce acetone exposure for laboratory staff (as opposed to homogenization, an unnecessary risk to employee health).

spectrophotometer to calibrate absorbance of the solvent at wavelengths 664 nm, 647 nm, 630 nm, and 750 nm. Supernatant from each sample was decanted into an individual cuvette and absorbance was measured at each wavelength. Each sample was treated with 80 μ L of 0.1 N hydrochloric acid for 90 seconds to convert the chlorophyll to phaeophytin, and absorbance was measured at wavelengths 665 nm and 750 nm. To minimize stray light and improve resolution, sample cuvettes were cleaned with a nonabrasive wipe prior to placement in the spectrophotometer.

Trichromatic equations were used to estimate Chl-*a*, Chl-*b*, and Chl-*c* concentrations, correcting for turbidity using the 750 nm absorbance value (APHA 2012, USEPA 1997). Chl-*a* concentrations were corrected when phaeophytin was detected. When Chl-*a* was not detected in a sample, the concentration is reported as the spectrophotometer estimated detection limit and the values for Chl-*b* or Chl-*c* were excluded. When Chl-*a* exceeds the upper detection limit, the value is reported at the upper detection limit and the Chl-*b* or Chl-*c* are reported as calculated. The 2025 estimated detection limit for Chl-*a* concentration was 0.23 mg/m².

Data Presentation

For each site and by year, mean densities of Chl-*a*, Chl-*b*, and Chl-*c* are presented in a table. Chl-*a* sample densities and mean proportions of Chl-*a*, Chl-*b*, and Chl-*c* are presented in figures. A comparison of mean densities of Chl-*a* among sites is also presented in a figure. The sample data are provided in Appendix A.

Benthic Macroinvertebrate Density and Community Composition

Sample Collection and Analysis

Six BMI samples were collected from each site using a Surber stream bottom sampler in riffles and runs with gravel and cobble substrate and varying flow velocities—habitats that support greater BMI densities and taxonomic richness (Barbour et al. 1999). Other habitat types (e.g., pools) were excluded to reduce data variability.

The Surber stream bottom sampler has a 0.093 m² sample area and material is captured in a 200 mL cod end, constructed with 300 μ m mesh net. After securing the frame on the streambed with the opening facing upstream, rocks within the sample area were scoured with a scrub brush; gravel, sand, and silt were disturbed to about 10 cm depth to dislodge macroinvertebrates into the net. If the contents of the sample exceeded the capacity of the cod end, the sample was discarded and repeated at a new location. The net was rinsed in the stream to ensure all organisms drifted into the cod end, and each sample was transferred from the cod end to a labeled 500 mL plastic bottle. Samples were preserved in 95% ethanol at a ratio of three parts ethanol to one part sample.

ADF&G Habitat biologists used an elutriator system and a 300 μ m sieve to sort macroinvertebrates from debris,^e and identified organisms to the lowest practical taxonomic level^f using Merritt and Cummins (1996) and Stewart and Oswood (2006). Habitat biologists provided quality control by verifying macroinvertebrate identification of eight samples (more than 10% of samples).

^e Claire Delbecq, Habitat Biologist, to Kate Kanouse, Southeast Regional Supervisor, ADF&G Habitat Section. Memorandum: Region 1 BMI Elutriation Methods; dated 2/4/2026.

^f Insects of the orders Ephemeroptera, Plecoptera, Trichoptera, and Diptera to genus, except nonbiting midges to family Chironomidae, and all others to class or order.

The BMI density (per m²) was calculated for each sample by dividing the number of macroinvertebrates by 0.093 m²—the Surber sampling area. Mean density was estimated for each site by calculating the mean density among the six samples. Taxa richness is reported as the number of taxonomic groups identified to the lowest practical level; terrestrial^g organisms were excluded from all calculations.

Data Presentation

For each site and by year, a table is presented summarizing mean BMI density, total taxa, total EPT taxa, percent EPT insects, and percent Chironomidae insects. BMI densities and community composition are illustrated in figures and BMI density and taxa richness data comparisons among sites are presented. The 2025 sample data and summaries are provided in Appendix B.

Resident Fish Element Concentrations

Sample Collection and Analysis

Fish were collected using ¼ inch mesh Gee minnow traps, baited with disinfected salmon roe in perforated bags, and a Smithroot LR-24 backpack electrofisher. The target size range for sample retention of whole-body fish was 85–130 mm fork length (FL), similar to other methods used in Southeast Alaska (Albrecht 2025, Legere and Timothy 2016, Krull 2025). An 85 mm fish provides the minimum weight requirement for laboratory testing, while a 130 mm fish is 2–3 years old and young enough to reasonably conclude it is not anadromous.

Wearing nitrile gloves, each fish was placed in an individually labeled plastic bag. During transport, samples were stored in a cooler with frozen icepacks. At the ADF&G Douglas laboratory, FL (mm) and weight (0.1 g) were measured in the sample bags, correcting for bag weight. Samples were stored in a -20°C freezer in the ADF&G lab until shipped to an external lab for analysis.

The samples were shipped in a cooler with ice packs to ALS Environmental in Kelso, WA, maintaining written chain of custody documentation. ALS Environmental individually digested, dried, and analyzed each sample for total Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, and Zn on a dry weight basis following EPA (2002) method 1631E for Hg, and EPA (1998) method 6020A for other elements. ALS Environmental provided Tier II quality control information, including results for matrix spikes, sample blanks, sample duplicates, and standard reference materials.

Data Presentation

For each site and by year, fish whole body element concentrations are presented in a figure; comparisons of element concentrations data among sites are also presented. A table with the raw data^h and 2025 laboratory report are provided in Appendix C.

To avoid misrepresenting sample results below method reporting limits as whole body element concentrations data, element concentrations undetected are illustrated as an empty circle (○) at the method reporting limit, while measured element concentrations are illustrated as a solid circle (●). We compare the data with the Glacier Creek data (Krull 2025), a glacial water body within the

^g Including adult terrestrial insects of the orders Ephemeroptera, Plecoptera, Trichoptera, and Diptera.

^h When duplicate tests are conducted by the laboratory for quality control, the mean value is listed.

Palmer Project area about 135 km northwest of Juneau, which has different host rock and ore body elements created by volcanic massive sulfide deposits.

Sediment Element Concentrations

Sample Collection and Analysis

Wearing nitrile gloves, three samples of submerged glacial silt and sand were collected within actively flowing channels. For each sample, the top 4 cm of sediment was retained in glass jars provided by the laboratory for element analyses, and filled to the top with stream water to minimize air space.ⁱ Samples were stored in a cooler with frozen icepacks during transport and in an ADF&G Douglas laboratory fridge until shipment to the ALS Environmental laboratory in Kelso, WA for analyses.

The samples were shipped in a cooler with frozen icepacks via overnight air freight, maintaining written chain of custody documentation. ALS Environmental analyzed the samples for total solids, total volatile solids, total organic carbon, and total concentrations of Ag, Al, As, Cd, Cr, Cu, Hg, Ni, Pb, Se, and Zn on a dry-weight basis (Table 1). The laboratory provided Tier IV quality assurance and quality control information, including results for matrix spikes, sample blanks, and sample duplicates.

Table 1.—2025 sediment tests, analytes, and methods.

Test Description	Analyte	Method
Puget Sound Estuary Program sediment total organic carbon	Total organic carbon	PSEP TOC
Total solids on liquids, modified for solids	Total solids	EPA 160.3 Modified
Total volatile solids, modified for solids	Total volatile solids	EPA 160.4 Modified
Mercury in solid or semisolid waste	Hg	EPA 7471B
Determination of trace elements in waters and wastes by ICP/MS	Ag, Al, As, Cd, Cr, Cu, Ni, Pb, Se, Zn	EPA 6020B

Data Presentation

For each site and by year, all sediment element concentration data are presented in a figure, including the mean values. When duplicate data are provided by the lab for quality control, we report the mean values.

The data are compared with the threshold effects concentrations (TEC) and the probable effects concentrations (PEC) for inorganics in freshwater sediment guidelines developed by the National Oceanic and Atmospheric Administration (Buchman 2008). The guidelines are based on results of controlled laboratory bioassays, where element concentrations below the TECs rarely affect aquatic life survival and growth, and element concentrations above the PECs can affect aquatic life survival and growth. We chose not to compare the data with Glacier Creek data (Krull 2025) since the ore bodies differ geologically and have different elemental content.

Sediment element concentration data are also compared among sites and presented as a figure. Appendix D contains the 2025 composition and raw element data in a table and the 2025 laboratory reports.

ⁱ Per laboratory staff instruction (S. Samy, Kelso Laboratory Senior Project Manager, ALS Environmental, Kelso, WA, personal communication).

Fish Habitat Investigations

Surveys to map fish habitat and fish presence were conducted on foot by biologists sampling with a backpack electrofisher and ¼ inch mesh Gee minnow traps, baited with disinfected salmon roe. We sampled habitat opportunistically to document presence or absence and did not standardize effort. Fish were captured, identified and released in the field and data including species, number, and general habitat description were recorded with a field tablet using the ArcGIS Field Maps application. All water bodies suspected of bearing fish were sampled and generally tracked in an upstream direction to find the upper limit of potential fish habitat, when steep gradient or a barrier to migration was identified. Habitat Biologists have conducted hundreds of hours of stream surveys in the Herbert River valley in the last decade. These past efforts guided our field sampling strategy and priorities in 2025.

Three lightweight, transportable fyke nets were deployed at the outlet of the Beaver Lake and captured fish overnight on two occasions in the spring to investigate outmigrating salmonids, in particular targeting juvenile sockeye salmon, which are less likely to enter minnow traps. Areas on the main stem of Herbert River and its tributaries were surveyed by foot to look for spawning salmon in the early and late fall. Lake spawning investigations were conducted from packrafts.

Data Presentation

Maps showing survey waypoints and fish habitat type are presented in a figure and beaver pond trapping results along with water quality data are presented in a table. Waypoint and stream layer data are available as ArcGIS shapefiles.

RESULTS

Lower Herbert River Site

We sampled periphyton, BMIs, fish, and sediment at the Lower Herbert River Site on April 14, 2025, and measured basic water quality at 1100 hours (Table 2). The river was not wadable during sampling and stream discharge was sourced from a gage station at the highway bridge maintained by the University of Alaska, Southeast (Emily Whitney, University of Alaska Southeast, Juneau, personal communication).

Table 2.–Lower Herbert River water quality data.

Sample Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μS/cm)	Turbidity (NTU)	Discharge (ft ³ /s)
4/14/2025	4.6	12.2	34.9	5.3	398

Periphyton: Chlorophyll Density and Composition

All periphyton samples collected from Lower Herbert River contained Chl-*a* values below the estimated detection limit, 0.23 mg/m².

Benthic Macroinvertebrate Density and Community Composition

Among the 2025 Lower Herbert River BMI samples, we identified 15 taxa and estimated mean density at 500 BMI/m², of which 8% were EPT insects (Table 3; Figures 15, 16). Diptera of the family Chironomidae represented 58% of the BMI present in samples. Of note, samples contained hundreds of planktonic daphnia which constituted an average of 96% of invertebrates identified at the site. These organisms are planktonic, not benthic dwelling, and therefore they are not included in the data presented.

Table 3.–Lower Herbert River benthic macroinvertebrate data summary.

	2025
Mean BMI density (per m ²)	500
Total BMI taxa	15
Number of EPT taxa	5
Proportion of EPT insects	8%
Proportion of Chironomidae insects	58%

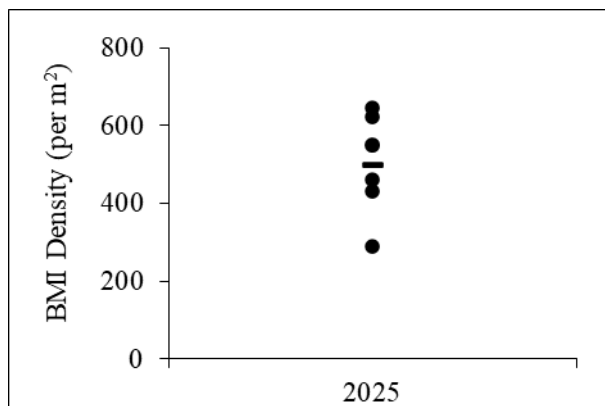


Figure 15.–Lower Herbert River benthic macroinvertebrate sample densities.

Note: Bar represents the sample mean.

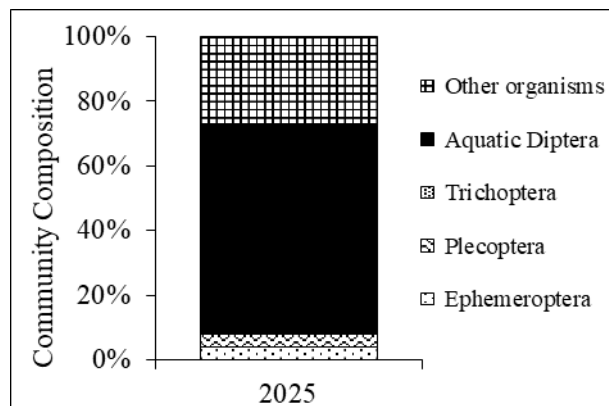


Figure 16.–Lower Herbert River mean benthic macroinvertebrate community composition.

Resident Fish Element Concentrations

We were unable to capture fish for element analysis on April 14 and returned on May 13, 14, and July 15, 2025, to complete sample collections, retaining nine Dolly Varden samples (78–156 mm FL) for individual whole body elements analysis. Individual concentrations of elements were mostly within the ranges observed from samples collected from Glacier Creek, 2016–2024 (Krull 2025), however, maximum Hg and Pb concentrations (Hg = 0.171 mg/kg, Pb = 1.15 mg/kg) were higher than maximums observed at Glacier Creek (Middle Glacier Creek 2019 Hg = 0.1060 mg/kg, and Middle Glacier Creek 2016 Pb=0.717 mg/kg; Figure 17).

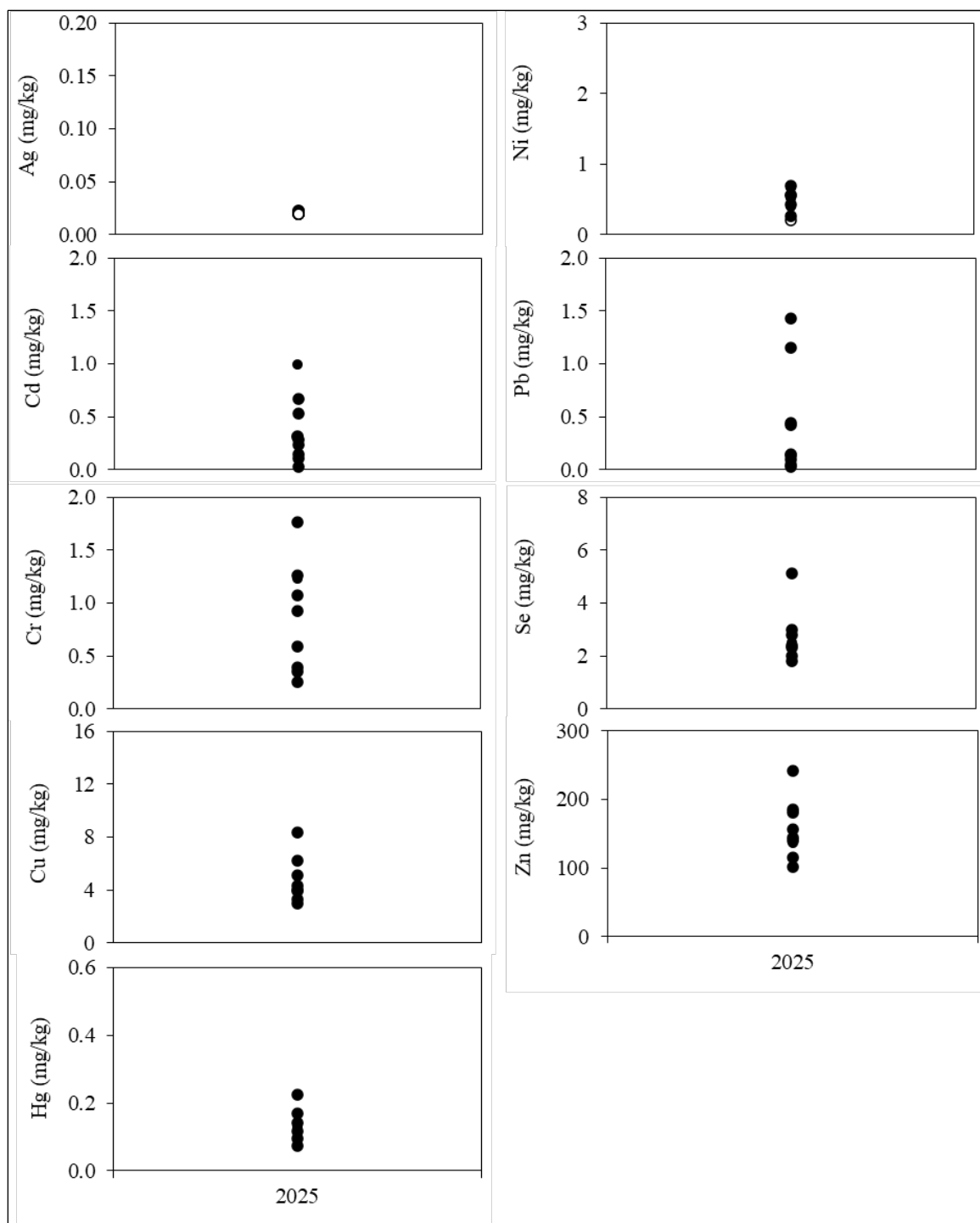


Figure 17.–Lower Herbert River whole body Dolly Varden element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit.

Sediment Composition and Element Concentrations

The 2025 Lower Herbert River sediment samples were all below the PEC and TEC guidelines for freshwater sediments published in Buchman (2008; Figure 18). Mean percent total solids was 69%

(range: 68.8–69.8%), mean percent volatile solids was 0.3% (range: 0.2–0.4%), and mean percent total organic carbon was below the detection limit of 0.1%.

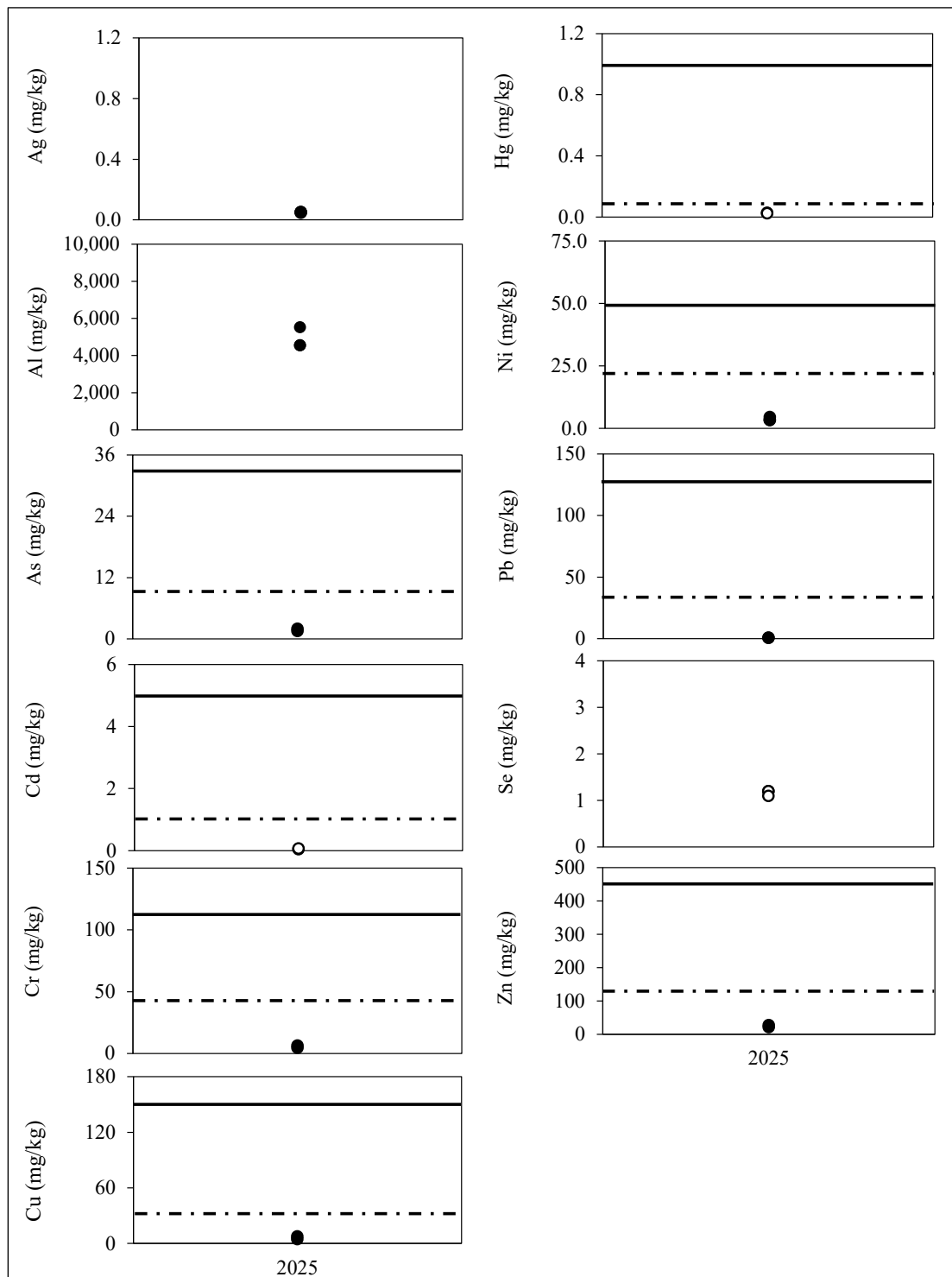


Figure 18.–Lower Herbert River sediment element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit. The dashed line represents the TEC and the solid line represents the PEC for freshwater sediments (Buchman 2008); guidelines are not published for Ag, Al, or Se.

Middle Herbert River Site

We sampled periphyton, BMIs, fish, and sediment at the Middle Herbert River Site on April 16, 2025, and measured basic water quality and stream discharge at 1100 hours (Table 4).

Table 4.–Middle Herbert River water quality data.

Sample Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μS/cm)	Turbidity (NTU)	Discharge (ft ³ /s)
4/16/2025	3.0	14.2	49.2	7.3	104

Periphyton: Chlorophyll Density and Composition

The Middle Herbert River mean Chl-*a* density was 0.92 mg/m² and values ranged 0.23–5.13 mg/m². The samples contained about 86% Chl-*a*, 2% Chl-*b*, and 12% Chl-*c*.

Benthic Macroinvertebrate Density and Community Composition

Among the 2025 Middle Herbert River BMI samples, we identified 14 taxa and estimated mean density at 1,410 BMI/m², of which 21% were EPT insects (Table 5; Figures 19, 20). Diptera of the family Chironomidae represented 78% of the BMI present in samples and *Daphnia* were not found.

Table 5.–Middle Herbert River benthic macroinvertebrate data summaries.

	2025
Mean BMI density (per m ²)	1,410
Total BMI taxa	14
Number of EPT taxa	10
Proportion of EPT insects	21%
Proportion of Chironomidae insects	78%

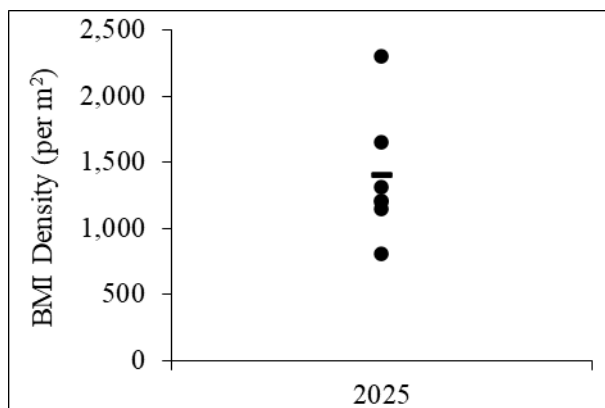


Figure 19.–Middle Herbert River benthic macroinvertebrate densities.

Note: Bar represents sample mean.

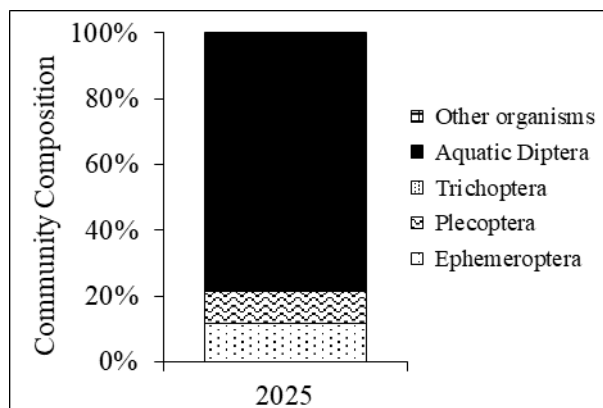


Figure 20.–Middle Herbert River mean benthic macroinvertebrate community composition.

Resident Fish Element Concentrations

We were unable to collect Dolly Varden samples from the site and, after several attempts, decided to retain fish (nine Dolly Varden; 75–125 mm FL) from Herbert Pond captured on July 15, 2025, for whole body elements analysis. Individual concentrations of elements were within the ranges

observed from samples collected in the Glacier Creek watershed, 2016–2025 (Figure 21; Krull 2025).

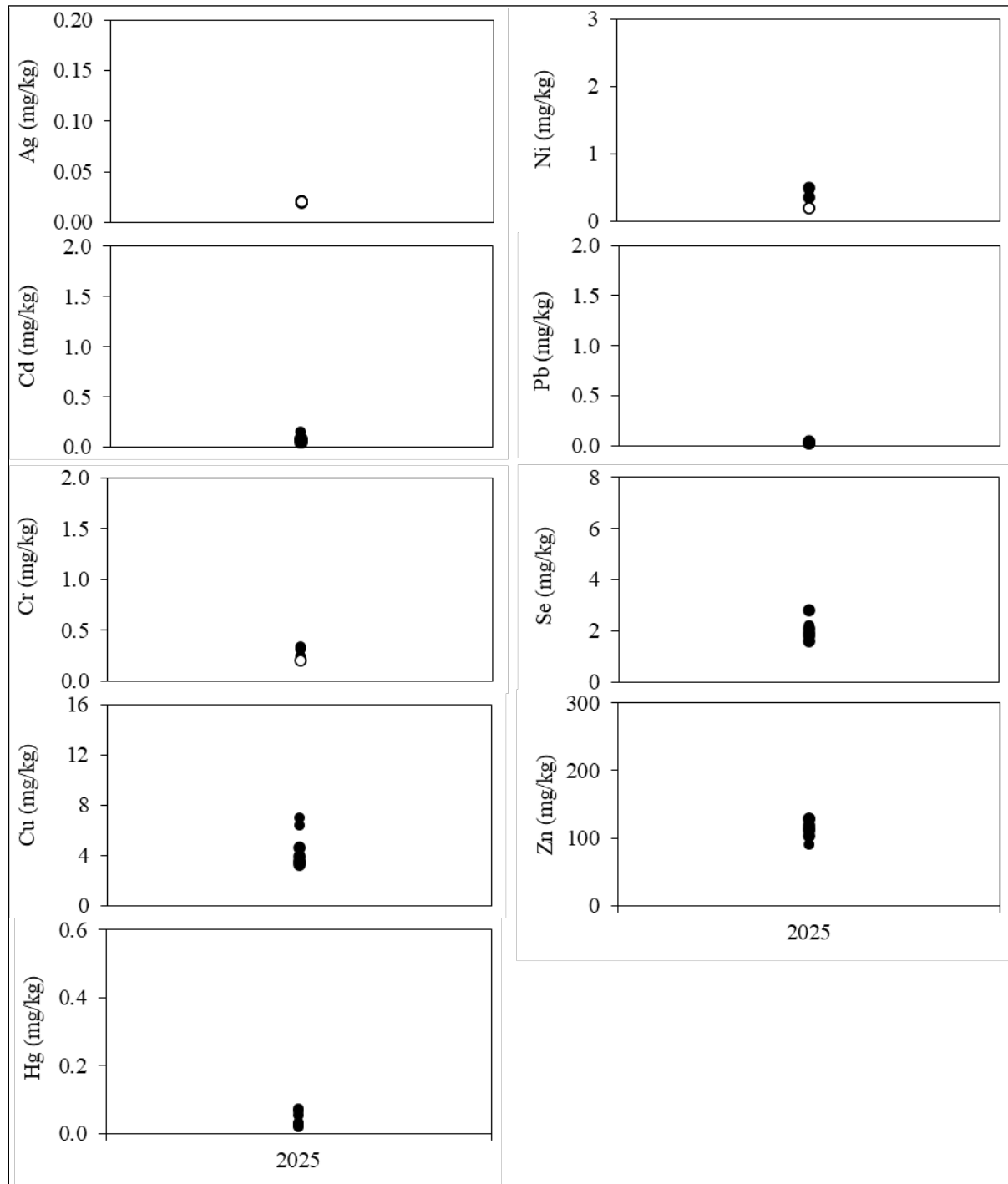


Figure 21.–Middle Herbert River whole body Dolly Varden element concentrations.
Note: Element concentrations undetected (o) are presented at the method reporting limit.

Sediment Composition and Element Concentrations

The 2025 Middle Herbert River Site sediment samples were all below the PEC and TEC guidelines for freshwater sediments published in Buchman (2008; Figure 22). Mean percent total solids was 70.3% (range: 68.1–74.4%), mean percent volatile solids was 0.26% (range: 0.2–0.3%), and mean percent total organic carbon was below the detection limit of 0.1%.

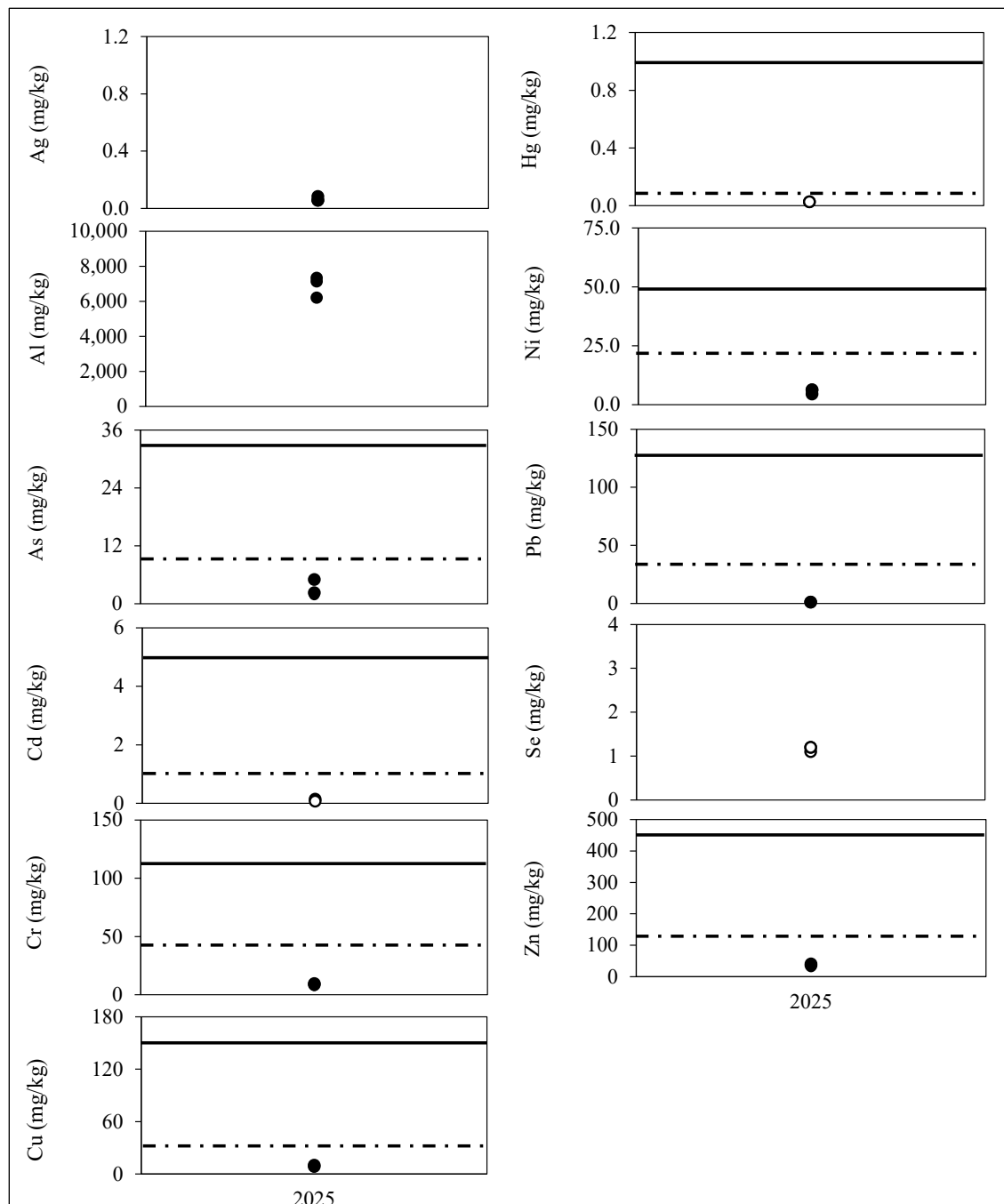


Figure 22.—Middle Herbert River sediment element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit. The dashed line represents the TEC and the solid line represents the PEC for freshwater sediments (Buchman 2008); guidelines are not published for Ag, Al, or Se.

Upper Herbert River Site

We sampled periphyton, BMI, fish, and sediment at the Upper Herbert River Site on April 16, 2025, and measured basic water quality and stream discharge at 0800 hours (Table 6).

Table 6.—Upper Herbert River water quality data.

Sample Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μS/cm)	Turbidity (NTU)	Discharge (ft ³ /s)
4/16/2025	2.8	13.3	40.3	3.2	77

Periphyton: Chlorophyll Density and Composition

The Upper Herbert River mean Chl-*a* density was 2.49 mg/m² and values ranged 1.39–3.71 mg/m². The samples contained about 87% Chl-*a*, 0% Chl-*b*, and 13% Chl-*c*.

Benthic Macroinvertebrate Density and Community Composition

Among the 2025 Upper Herbert River BMI samples, we identified 14 taxa and estimated mean density at 2,054 BMI/m², of which 6% were EPT insects (Table 7; Figures 23, 24). Diptera of the family Chironomidae represented 93% of the BMI present in samples.

Table 7.—Upper Herbert River benthic macroinvertebrate data summary.

	2025
Mean BMI density (per m ²)	2,054
Total BMI taxa	14
Number of EPT taxa	7
Proportion of EPT insects	6%
Proportion of Chironomidae insects	93%

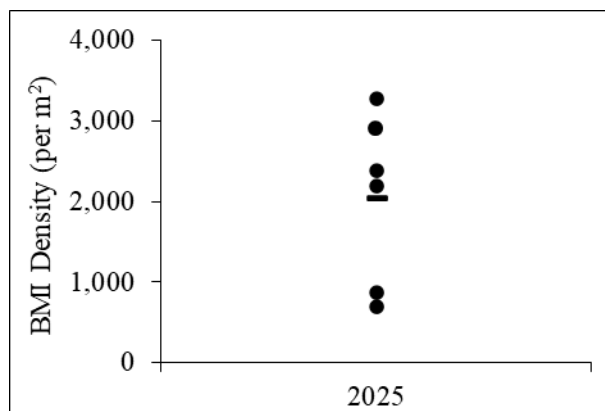


Figure 23.—Upper Herbert River benthic macroinvertebrate densities.

Note: Bar represents sample mean.

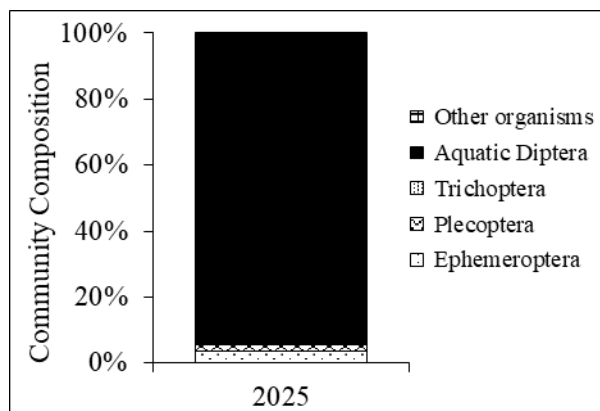


Figure 24.—Upper Herbert River mean benthic macroinvertebrate community composition.

Resident Fish Element Concentrations

We were unable to collect Dolly Varden samples from the site and, after several attempts, decided to retain fish (10 Dolly Varden; 83–125 mm FL) from Beaver Lake captured on June 3, 4, and July 15, 2025, for individual whole body elements analysis. Individual concentrations of elements were

within the ranges observed from samples collected in Glacier Creek 2016–2025 (Figure 25; Krull 2025).

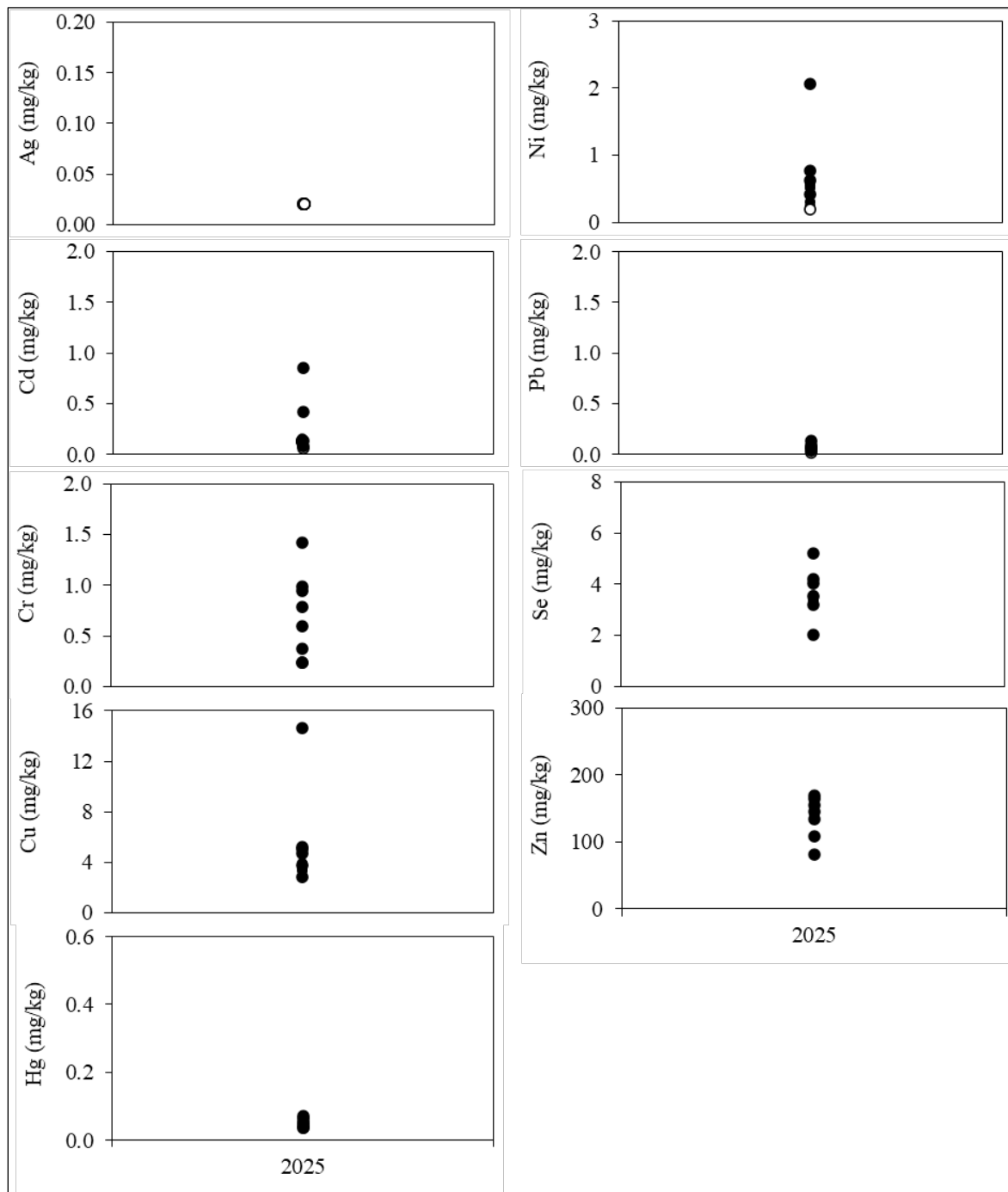


Figure 25.–Upper Herbert River whole body fish element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit.

Sediment Composition and Element Concentrations

The 2025 Upper Herbert River Site sediment samples were all below the PEC and TEC guidelines for freshwater sediments published in Buchman (2008; Figure 26). Mean percent total solids was

69% (range: 66.4–70.5%), mean percent volatile solids was 0.23% (range: 0.2–0.3%), and mean percent total organic carbon was below the detection limit of 0.1%.

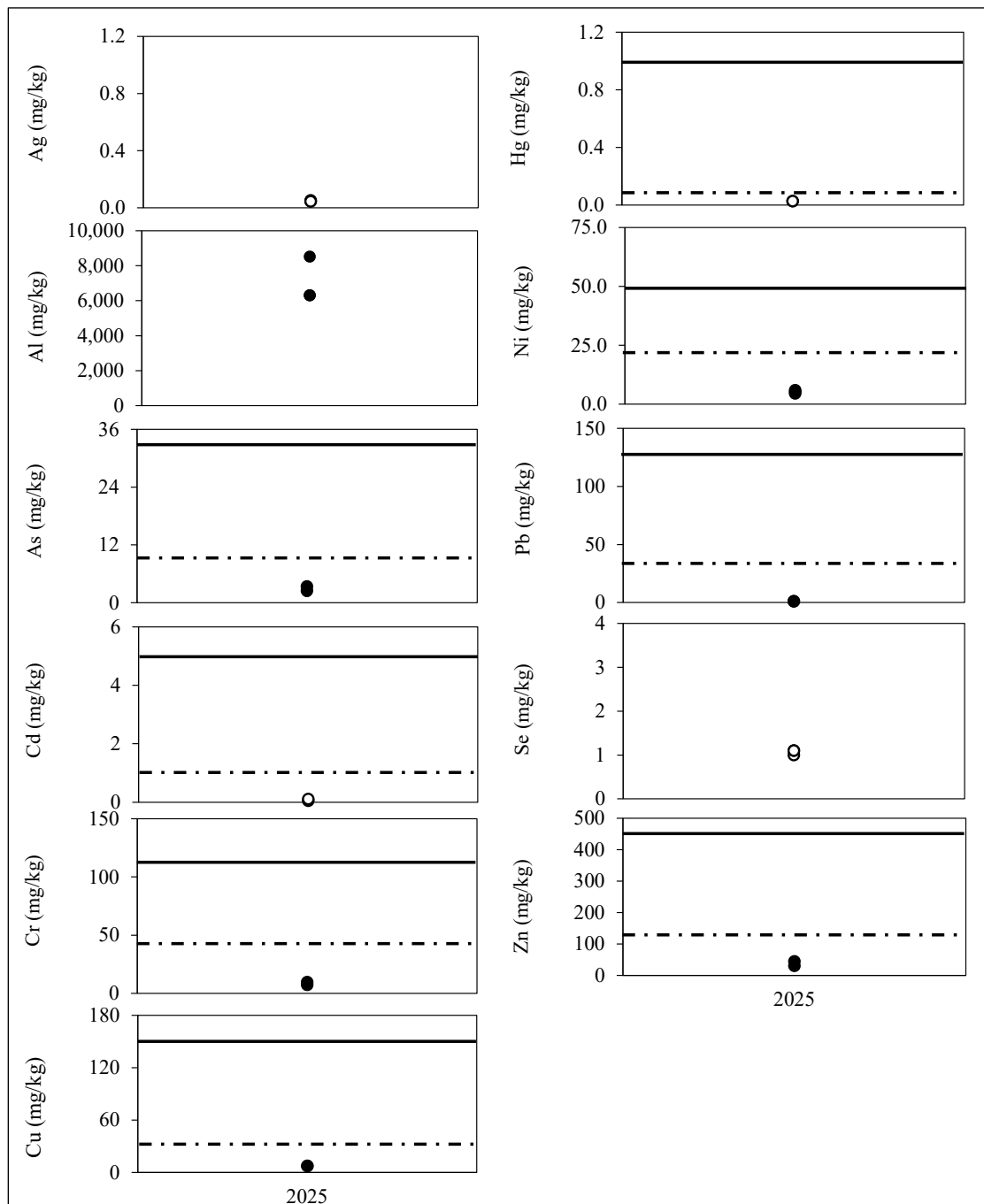


Figure 26.—Upper Herbert River sediment element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit. The dashed line represents the TEC and the solid line represents the PEC for freshwater sediments (Buchman 2008); guidelines are not published for Ag, Al, or Se.

Lower Eagle River Site

We sampled periphyton, BMIs, sediment, and fish for elements analysis at the Lower Eagle River Site on April 15, 2025, and measured basic water quality and stream discharge at 1300 hours (Table 8).

Table 8.—Lower Eagle River water quality data.

Sample Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity (μS/cm)	Turbidity (NTU)	Discharge (ft ³ /s)
4/15/2025	3.1	13.7	59.5	21.8	130

Periphyton: Chlorophyll Density and Composition

The Lower Eagle River mean Chl-*a* density was 0.47 mg/m² and values ranged 0.23–0.77 mg/m². The samples contained about 83% Chl-*a*, 2% Chl-*b*, and 15% Chl-*c*.

Benthic Macroinvertebrate Density and Community Composition

Among the 2025 Lower Eagle River BMI samples, we identified 18 taxa and estimated mean density at 3,229 BMI/m², of which 22% were EPT insects (Table 9; Figures 27, 28). Diptera of the family Chironomidae represented 78% of the BMI present in samples.

Table 9.—Lower Eagle River benthic macroinvertebrate data summaries.

	2025
Mean BMI density (per m ²)	3,229
Total BMI taxa	18
Number of EPT taxa	11
Proportion of EPT insects	22%
Proportion of Chironomidae insects	32%

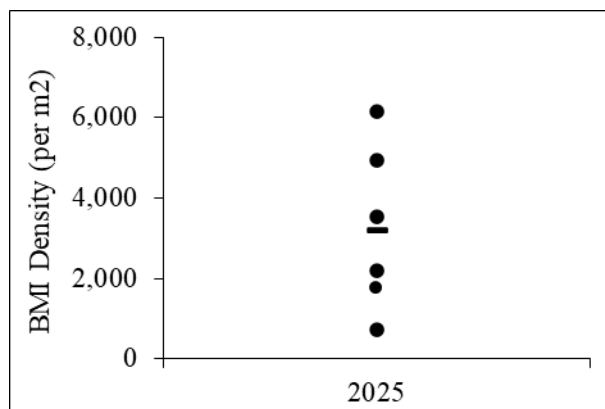


Figure 27.—Lower Eagle River benthic macroinvertebrate densities.

Note: Bar represents sample mean.

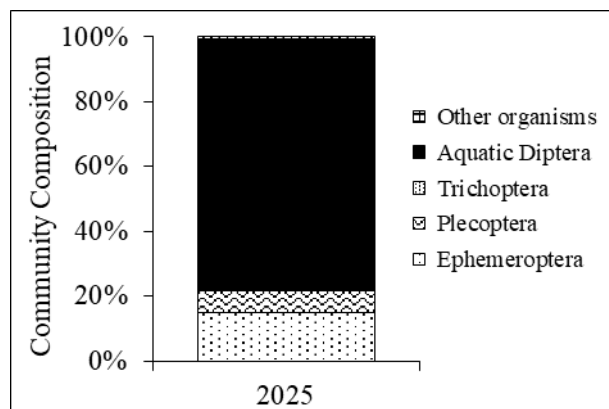


Figure 28.—Lower Eagle River mean benthic macroinvertebrate community compositions.

Resident Fish Element Concentrations

We captured 10 Dolly Varden (86–130 mm) for individual whole body elements analysis. Individual concentrations of elements were within the ranges observed from samples collected in Glacier Creek 2016–2024, except the mean Hg concentration (0.252 mg/kg) was higher than the maximum value observed (Middle Glacier Creek 2019 Hg = 0.1060 mg/kg; Figure 29; Krull 2025).

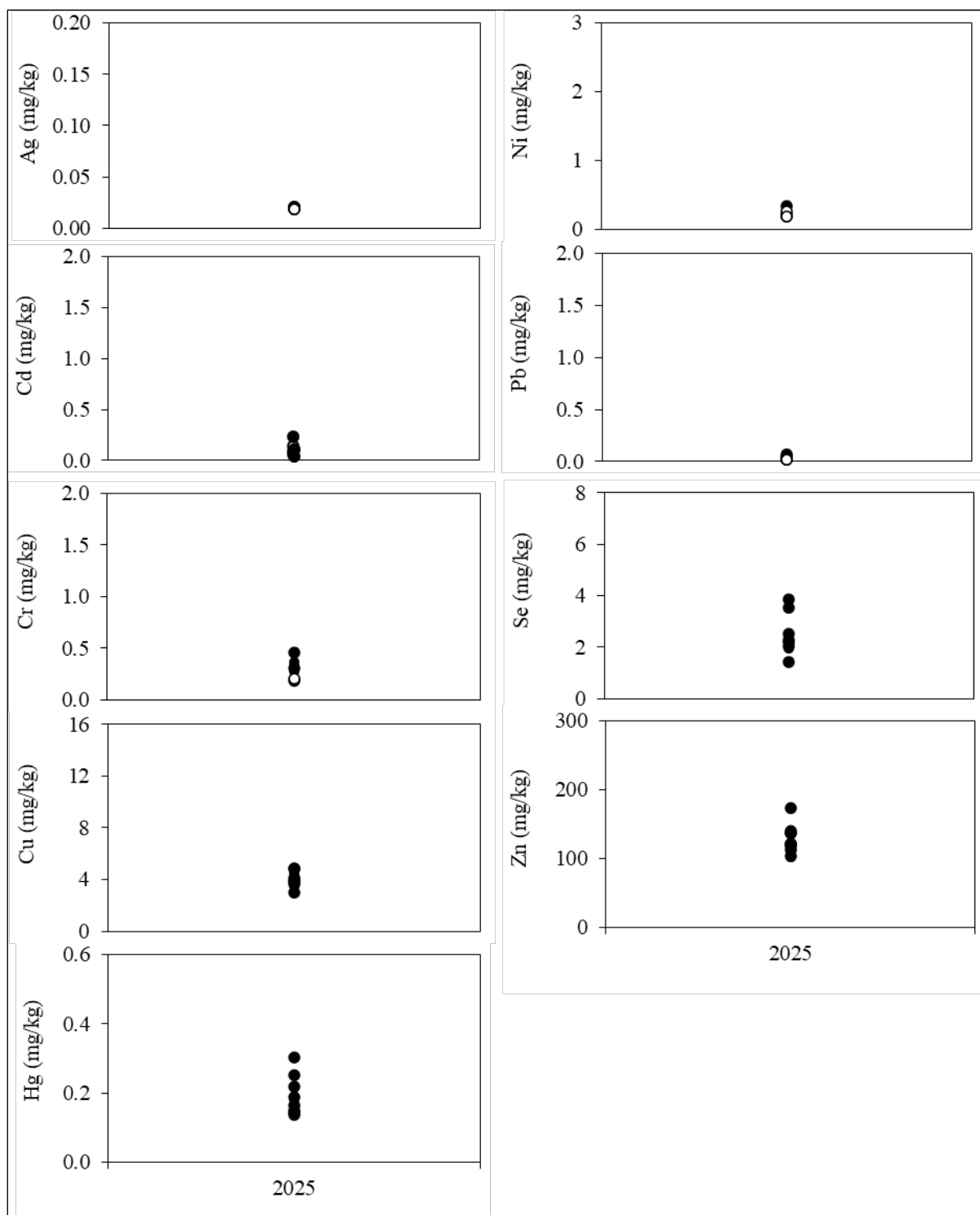


Figure 29.–Lower Eagle River whole body Dolly Varden element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit.

Sediment Composition and Element Concentrations

The 2025 Lower Eagle River Site sediment samples were all below the PEC and TEC guidelines for freshwater sediments published in Buchman (2008; Figure 30), except for one sample, which

was above the TEC for Cu concentration. Mean percent total solids was 74% (range: 66.2–78.6%), mean percent volatile solids was 0.56% (range: 0.2–1.3%), and mean percent total organic carbon was 0.2% (range: 0.05–0.44%).

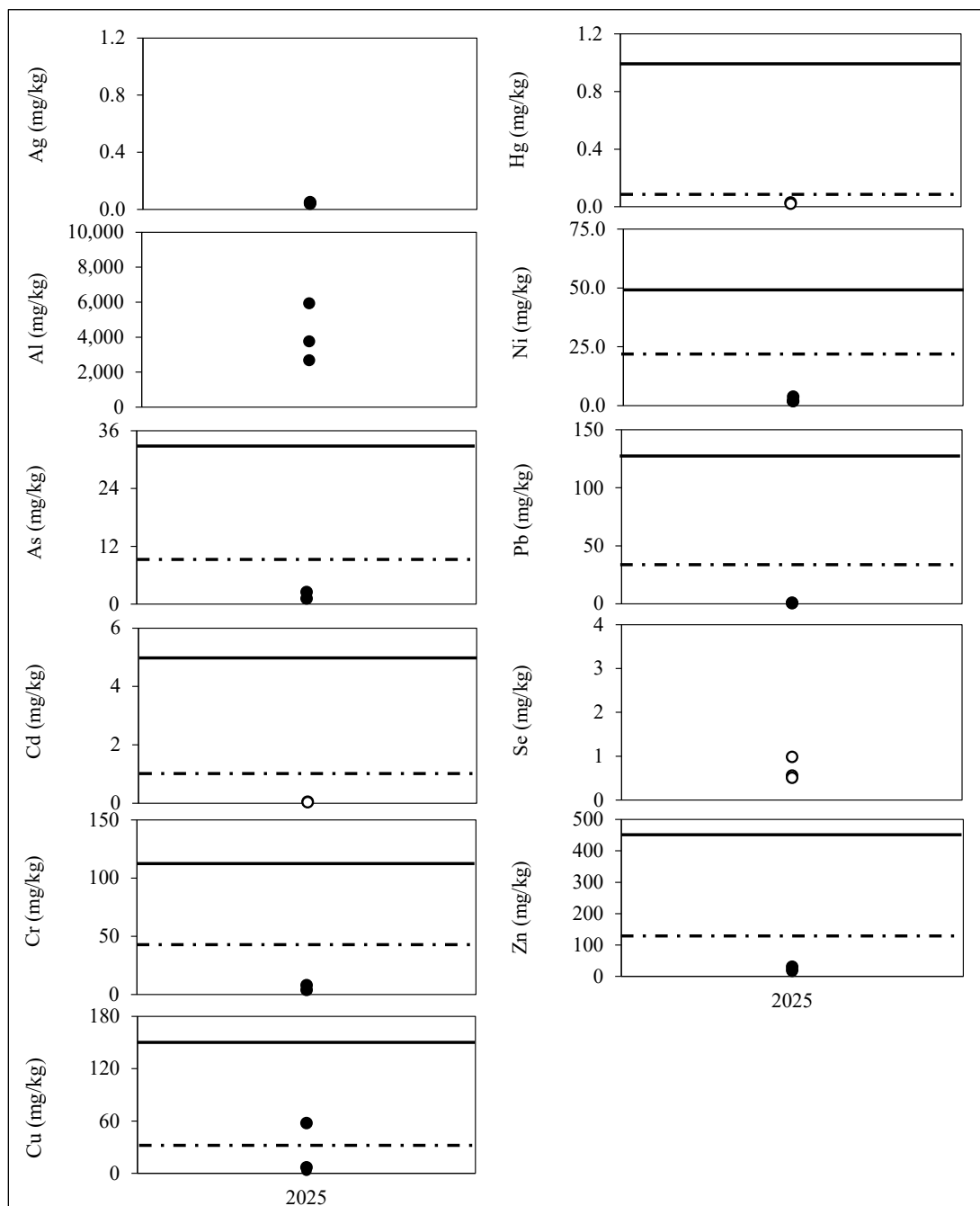


Figure 30.–Lower Eagle River sediment element concentrations.

Note: Element concentrations undetected (o) are presented at the method reporting limit. The dashed line represents the TEC and the solid line represents the PEC for freshwater sediments (Buchman 2008); guidelines are not published for Ag, Al, or Se.

Fish Presence and Use Investigations

Habitat Section staff spent several weeks in the field mapping Herbert River tributary stream networks and sampling for fish (Figure 31). We recorded over 100 fish and fish habitat observation waypoints accompanied by photos. This work built upon the stream mapping efforts staff opportunistically conducted 2014–2025. Beaver dams are prevalent in the Herbert River valley and were found to create fish habitat in some cases and restrict fish access in others.

From the headwaters down to the Middle Herbert River Site, during spring we found juvenile coho salmon and Dolly Varden in the mainstem of the Herbert River at low densities (8 juvenile coho salmon and 5 Dolly Varden over 3 km). We did not sample in the summer during high flow except at the mouth of tributaries, and at a large log jam and gravel bar network near the Lower Herbert River Site to collect fish for element analysis. In several cases, a few juvenile coho salmon or Dolly Varden were found near the confluence of tributaries. However, beaver dams were often present within the first few feet of the confluence and precluded the presence of these species upstream, where threespine stickleback or no fish were found.

In contrast, Beaver Lake and Herbert Pond on the southeast side of the river, contained extensive rearing habitat in which we captured up to 38 juvenile coho salmon in a single trap set overnight, as well as numerous Dolly Varden and cutthroat trout (Table 10, Figure 32). These two water bodies and other off-channel ponds that support rearing salmonids generally had larger drainage areas than those without salmonids, and although beaver dams were present, periodic high flow appears to be sufficient to create migration pathways around dams. Fyke nets (Figure 33) deployed in the Beaver Lake outlet stream and near its lake mouth caught juvenile coho salmon (some of which exhibited smolting characteristics) and Dolly Varden. We expect fish habitat occupation in the valley to fluctuate over time based on beaver presence and dam maintenance. We mapped most water bodies under the designation “future investigation” to indicate continued sampling over time is needed, unless steep gradient, small size, or evidence of ephemeral flow was likely to preclude fish presence.

On October 14, we documented 25 adult coho salmon digging redds and spawning on the south side of the glacial alluvial fan where an unnamed clearwater tributary enters the Herbert River, an occurrence we have documented since 2018 (Figures 34, 35). We also observed two adult coho salmon and 4 recently-constructed redds at the upper end of the Beaver Lake in about 2–4 ft of water (Figure 36). Three additional redds were observed in the alluvial deltas of the two tributary streams in the southeast corner of Beaver Lake (Figure 37).

In the spring of 2025, we captured several coho fry near a gravel deposit at the base of a beaver dam on the main outlet of Herbert Pond near Middle Herbert River (Figure 38). We suspect coho salmon may have spawned here in the previous year due to this being the best available spawning habitat in the tributary downstream of the pond. We explored the pond and its tributaries for evidence of adult salmon and found none. We did not find other adult salmon, carcasses, or evidence of spawning while walking and floating the main stem of the river upstream of the Middle Herbert River Site; however, glacial occlusion makes sighting fish difficult. We electrofished the upper 3 km of the river, focusing on the margins, on April 16 and May 15, 2025, to collect Dolly Varden and look for juvenile salmon fry or redds still occupied by fry, but found none.

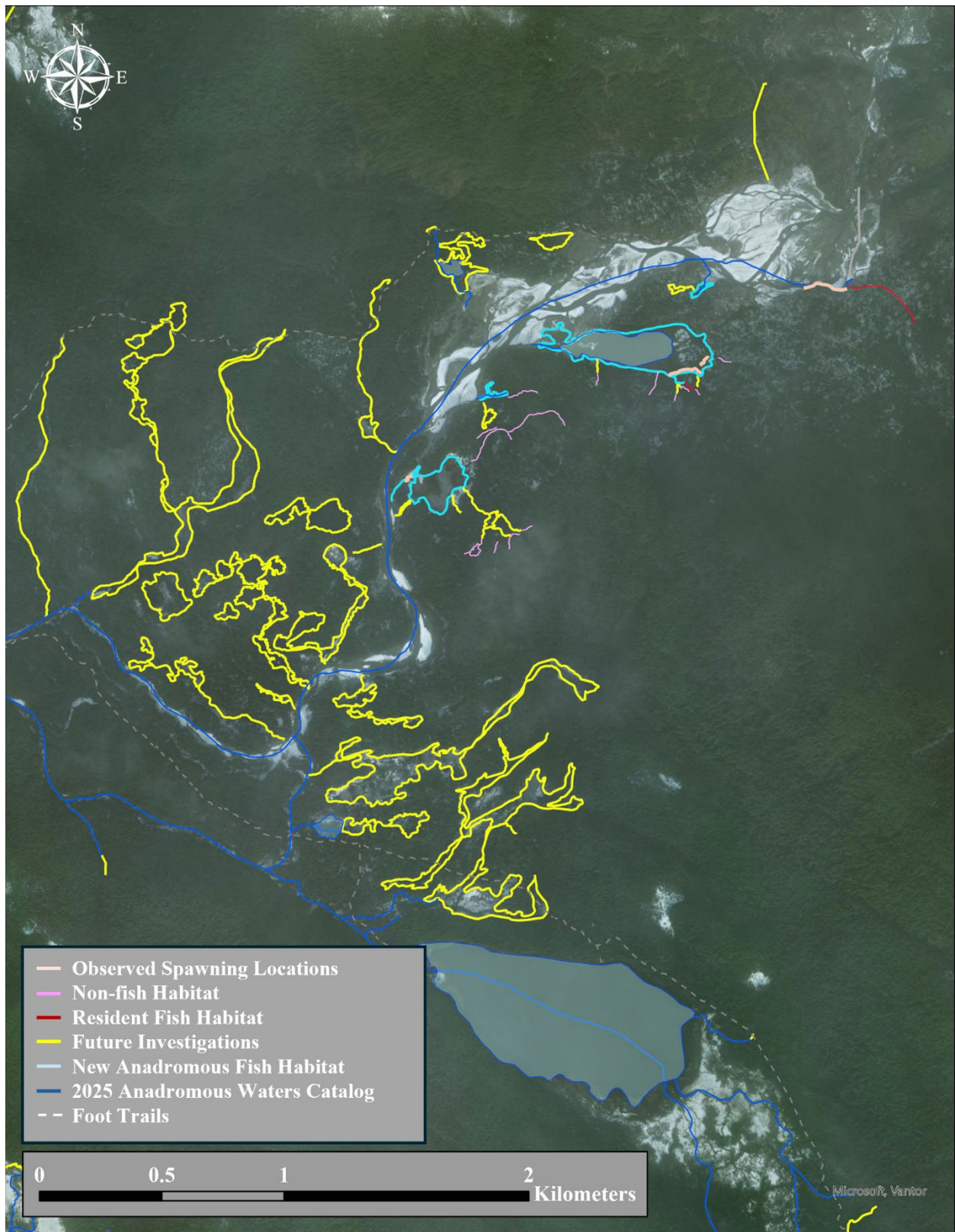


Figure 31.—Herbert River Valley fish habitat map.

Table 10.—Fish capture and water quality data from trapping in the Beaver Lake and Herbert Pond.

Gear type	Date	Location	CO	DV	CT	Temp. (°C)	Cond. (µs/cm)	Dissolved Oxygen (mg/L)	Notes
FN	5/13/25	Beaver Lake shore near outlet							24 h soak.
2 FN	5/13/25	Beaver Lake outlet creek	18	11					Several coho in smolt condition and losing scales, 24 h soak.
MT	5/13/25	Island in Beaver Lake	20						24 h soak.
2 FN	6/3/25	Beaver Lake outlet creek	10	5		11.2	49.9	10	24 h soak.
MT	6/4/25	SW shore of Beaver Lake	38			11.8	63.5	9.7	WQ taken at surface, 24 h soak.
MT	6/4/25	SW shore of Beaver Lake	3						24 h soak.
MT	6/4/25	S shore of Beaver Lake	15		1	10.6	65.1	10.7	WQ taken at 6 ft deep, 24 h soak.
MT	6/4/25	SE shore of Beaver Lake				10.7	63.9	9.5	WQ taken at 2 ft deep, 24 h soak.
MT	6/4/25	NE shore of Beaver Lake	1						24 h soak.
MT	6/4/25	N shore of Beaver Lake	4	3	1	11.5/8.2	63.1/66.8	9.7/8.9	WQ taken at surface/8 ft deep, 24 h soak.
MT	6/4/25	N shore of Beaver Lake	1	9					Coho salmon smolt, 24 h soak.
MT	6/4/25	N shore of Beaver Lake	2	3					24 h soak.
MT	6/4/25	N shore of Beaver Lake				10	66.8	9.6	24 h soak.
N/A	6/4/25	SE shore of Herbert Pond				12.1	85.7	9.4	24 h soak.
10 MT	7/15/25	Throughout Herbert pond	35	9					Trapping was to collect fish for elements analysis, 2 h soak.
10 MT	7/15/25	Throughout Beaver Lake	29	5					Trapping was to collect fish for elements analysis, 2 h soak.
MT	7/15/25	S shore of Herbert Pond	6						

Note: Flyke Net (FN), Minnow Trap (MT), coho salmon (CO), Dolly Varden (DV), and cutthroat trout (CT).



Figure 32. –Juvenile coho salmon captured in a minnow trap.



Figure 33.–Packable fyke net in the outlet stream of the Beaver Lake.



Figure 34.—Spawning coho salmon near excavated redds, 11/14/25.



Figure 35.—Spawning salmon and clearwater habitat, 11/14/25.



Figure 36.—Coho salmon redds excavated on the bottom of Beaver Lake, 11/14/25.



Figure 37.—Coho salmon redds at the confluence of a hillside tributary with Beaver Lake, 11/14/25.



Figure 38.—Gravel deposit and suspected coho salmon redd site at the outlet of Herbert Pond, 5/13/25.

COMPARISONS AMONG SITES

Periphyton: Chlorophyll Density and Composition

Upper Herbert River had the highest mean Chl-*a* density among all sites in 2025 and percent Chl-*a* ranged 83–87% across sites (Figure 41).

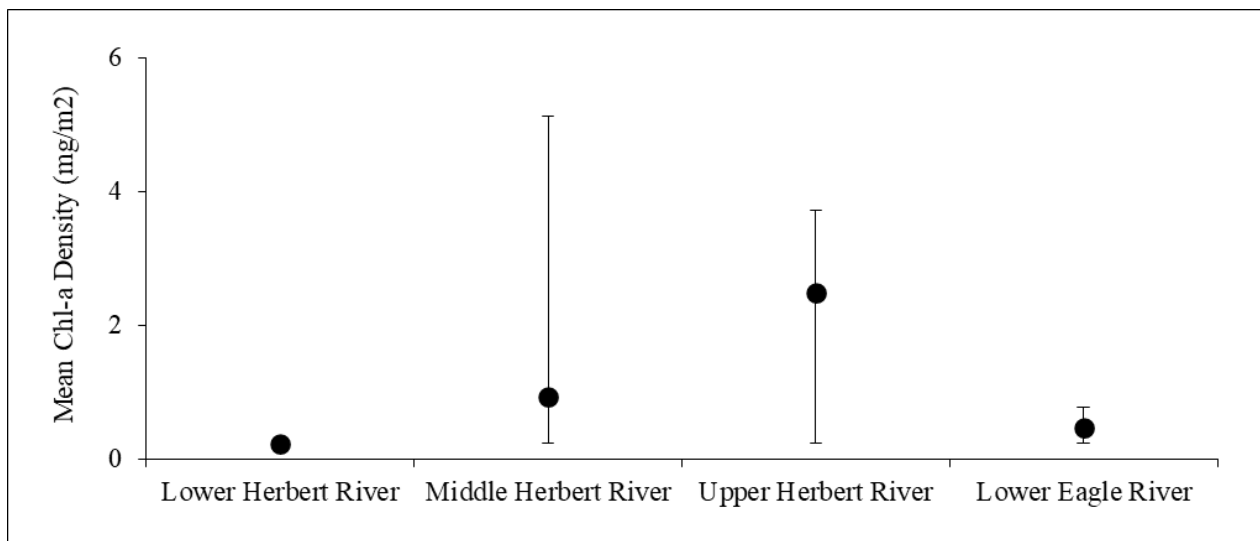


Figure 39.—Mean New Amalga Gold Mine chlorophyll-*a* densities, 2025.

Note: Minimum, mean, and maximum values shown.

Benthic Macroinvertebrate Density and Community Composition

Benthic macroinvertebrate density was lowest at Lower Herbert River and increased moving up the drainage. Percent EPT was highest at Middle Herbert River. The Lower Eagle River Site had the highest density, taxa diversity, and percent EPT of all sites. We observed black fly larvae (Simuliidae) blanketing most rocks in the riffle we sampled (Table 11; Figure 40).

Table 11.–2025 benthic macroinvertebrate data.

	Lower Herbert River	Middle Herbert River	Upper Herbert River	Lower Eagle River
Mean BMI density (per m ²)	500	1,410	2,054	3,229
Total BMI taxa	15	14	14	18
Number of EPT taxa	5	10	7	11
% EPT	8%	21%	6%	22%

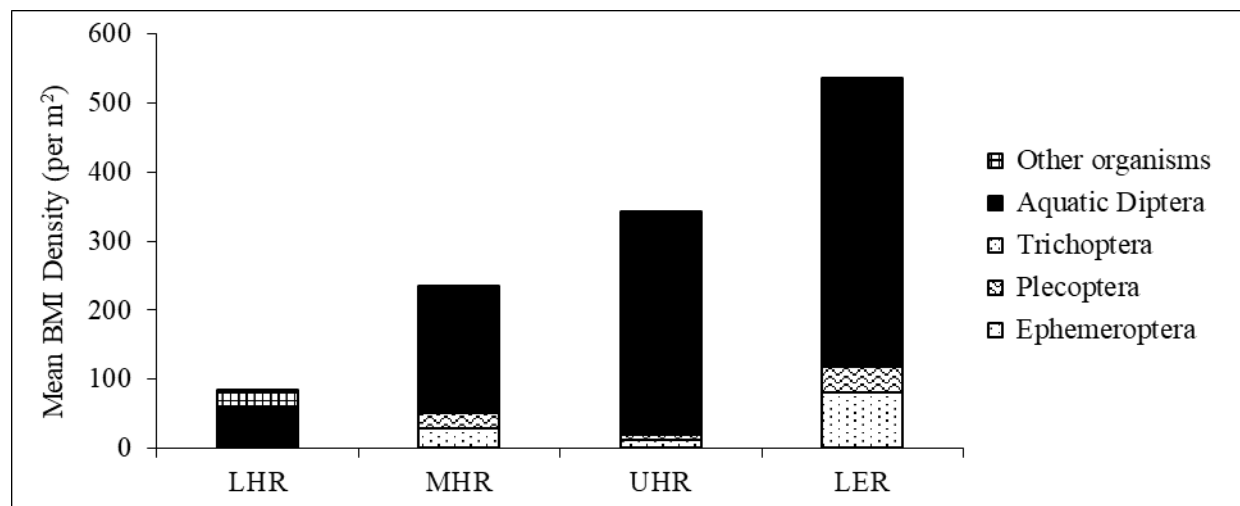


Figure 40.– Lower (LHR), Middle (MHR), and Upper (UHR) Herbert River and Lower Eagle River (LER) mean benthic macroinvertebrate community composition, 2025.

Resident Fish Element Concentrations

Mean element concentrations in Dolly Varden samples were largely similar across sites, though Hg values from fish sampled at Lower Herbert and Lower Eagle River sites, which are mainstem glacial river sites (as opposed to ponds) and near tidal influence (Figure 41) were slightly higher. Pb concentrations were most variable among the Lower Herbert River samples.

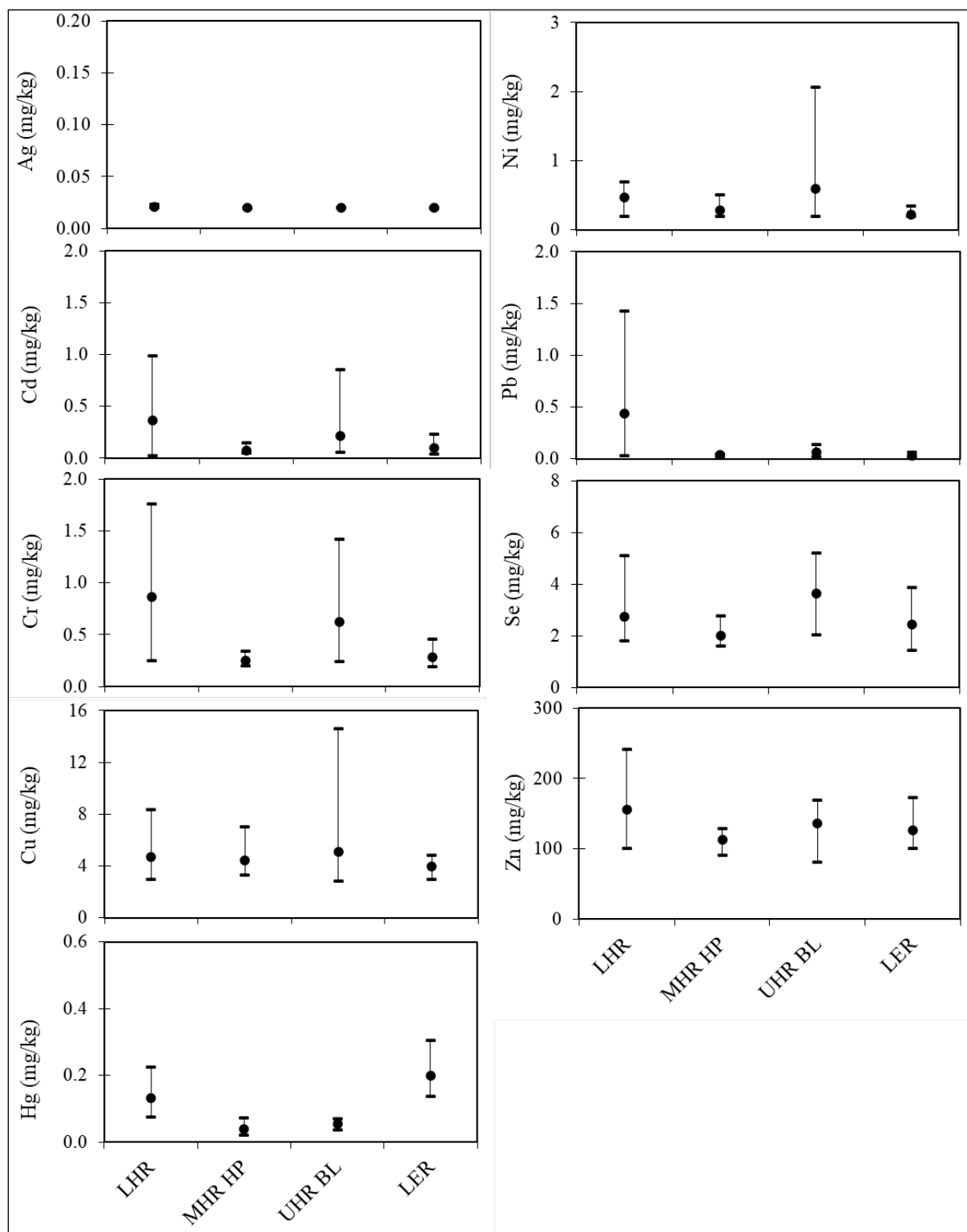


Figure 41.–Lower Herbert River (LHR), Middle Herbert River Herbert Pond (MHR HP), Upper Herbert River Beaver Lake (UHR BL), and Lower Eagle River (LER) whole body Dolly Varden element concentrations, 2025.

Note: Mean (●), minimum, and maximum concentrations presented; element concentrations not detected are included at the method reporting limit.

Sediment Composition and Element Concentrations

Sediment element concentrations were largely consistent across sites and all below the TEC and PEC guidelines, except for one Lower Eagle River sample above the TEC for Cu. Aluminum concentrations were progressively higher in samples moving upstream (Figure 42).

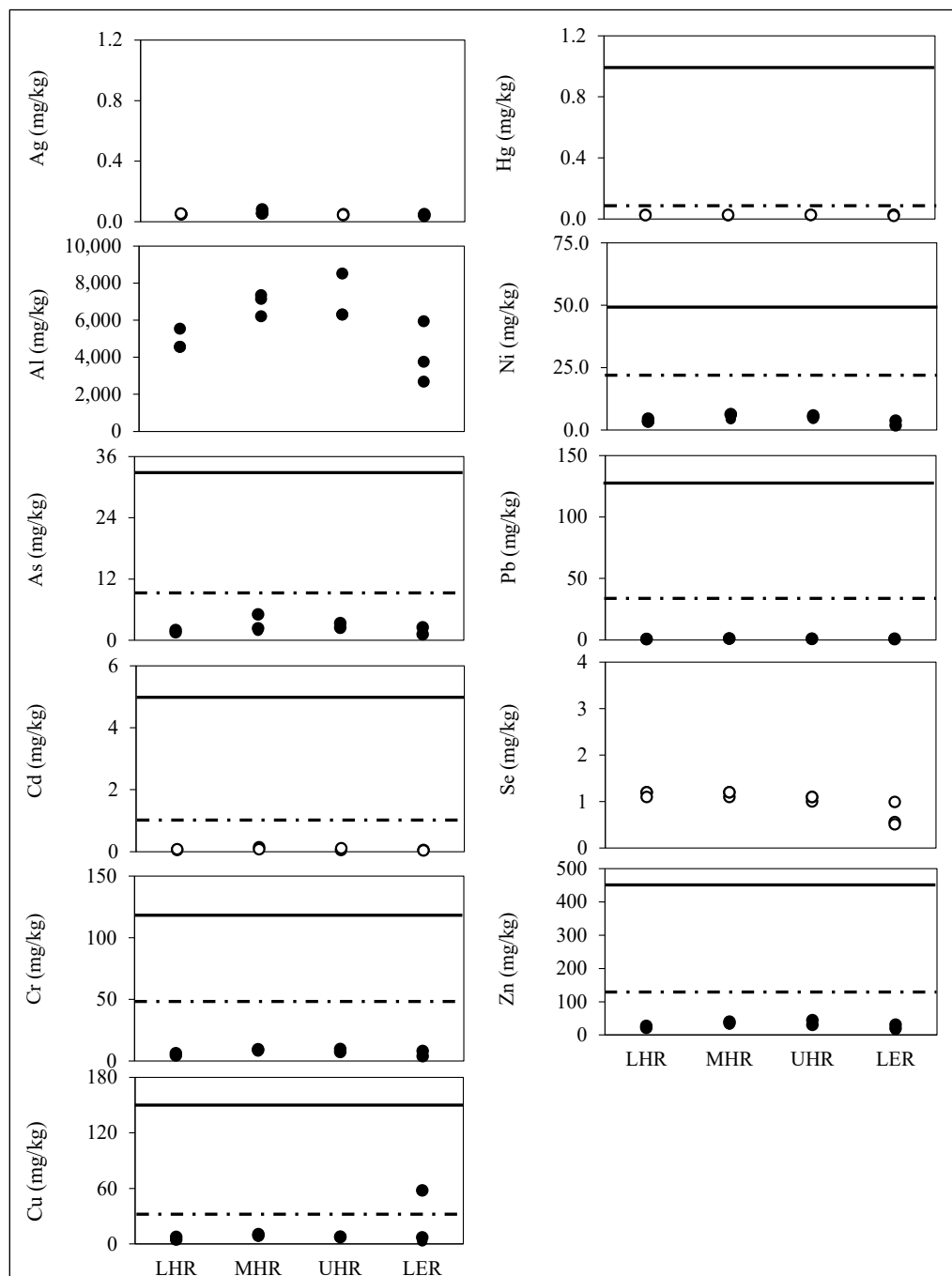


Figure 42.—Lower (LHR), Middle (MHR), and Upper (UHR) Herbert River and Lower Eagle River (LER) sediment element concentrations, 2025.

Note: The dashed line represents the TEC and the solid line represents the PEC for freshwater sediments (Buchman 2008); guidelines are not published for Ag, Al, Fe, or Se.

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APPENDIX A: CHLOROPHYL DATA

Appendix A.1.–Lower Herbert River chlorophylls *a*, *b*, and *c* densities, 2025.

4/14/2025			
mg/m ²	Chl- <i>a</i>	Chl- <i>b</i>	Chl- <i>c</i>
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
Mean	0.23	ND	ND
Minimum	0.23	ND	ND
Maximum	0.23	ND	ND

Note: Bold value is the spectrophotometer estimated detection limit, Chl-*a* not detected.

Appendix A.2.–Middle Herbert River chlorophylls *a*, *b*, and *c* densities, 2025.

4/16/2025			
mg/m ²	Chl- <i>a</i>	Chl- <i>b</i>	Chl- <i>c</i>
	1.28	ND	0.17
	0.43	0.10	0.15
	0.23	ND	0.00
	0.41	0.04	0.04
	0.28	ND	ND
	0.50	ND	0.03
	0.43	ND	0.13
	0.31	0.08	0.06
	5.13	ND	0.72
	0.23	ND	ND
Mean	0.92	0.07	0.16
Minimum	0.23	0.04	ND
Maximum	5.13	0.10	0.72

Note: Bold value is the spectrophotometer estimated detection limit, Chl-*a* not detected.

Appendix A.3.–Upper Herbert River chlorophylls *a*, *b*, and *c* densities, 2025.

4/16/2025			
mg/m ²	Chl- <i>a</i>	Chl- <i>b</i>	Chl- <i>c</i>
	2.93	ND	0.56
	3.31	ND	0.55
	3.43	ND	0.49
	2.52	ND	0.38
	2.52	ND	0.29
	1.39	ND	0.22
	3.44	ND	0.52
	3.71	ND	0.52
	0.23	ND	ND
	1.39	ND	0.28
Mean	2.49	ND	0.42
Minimum	0.23	ND	0.22
Maximum	3.71	ND	0.56

Note: Bold value is the spectrophotometer estimated detection limit.

Appendix A.4.–Lower Eagle River chlorophylls *a*, *b*, and *c* densities, 2025.

4/15/2025			
mg/m ²	Chl- <i>a</i>	Chl- <i>b</i>	Chl- <i>c</i>
	0.40	ND	0.21
	0.50	ND	0.13
	0.41	ND	0.08
	0.23	ND	ND
	0.23	ND	ND
	0.23	ND	ND
	0.53	ND	0.07
	0.73	ND	0.16
	0.77	ND	0.13
	0.64	ND	0.11
Mean	0.47	ND	0.13
Minimum	0.23	ND	0.07
Maximum	0.77	ND	0.21

Note: Bold value is the spectrophotometer estimated detection limit.

APPENDIX B: BENTHIC MACROINVERTEBRATE DATA

Appendix B.1.–Lower Herbert River macroinvertebrate sample data, 2025.

Class or Subclass	Order	Family	Genus	Sample Number					
				1	2	3	4	5	6
Insecta	Ephemeroptera	Baetidae	Baetis	5		2	3	1	
	Plecoptera	Capniidae	Capnia	2	1		2	1	
		Chloroperlidae	Suwallia				1		
		Nemouridae	Zapada	2		2			
		Rhyacophilidae	Rhyacophila				1		
	Diptera	Chironomidae	unidentified	27	10	22	32	45	27
		Simuliidae	Prosimulium		3		3	1	5
			Simulium			4			1
	Coleoptera	Elmidae	unidentified			1			
Arachnida: Acari	unidentified			1				1	1
Entognatha	Collembola	Unidentified	unidentified		1			1	1
Copepoda	unidentified				11	12	15	9	14
Oligochaeta	unidentified			3	1				2
Ostracoda	unidentified						1		
Arachnida (spiders)						1			1
Misc. Terrestrial							1	2	1
Daphnia (planktonic)				578	500	515	664	545	661

Appendix B.2.—Lower Herbert River benthic macroinvertebrate data summary, 2025.

	2025
Total BMI taxa	15
Number of EPT taxa	5
Total counts	
Ephemeroptera	11
Plecoptera	11
Trichoptera	1
Aquatic Diptera	181
Other organisms	75
% Ephemeroptera	4%
% Plecoptera	4%
% Trichoptera	0%
% Aquatic Diptera	65%
% Other organisms	27%
% EPT	8%
% Chironomidae	58%
Total aquatic invertebrates	279
Total terrestrial invertebrates	4
Total planktonic invertebrates	3,463
Total invertebrates	3,746
% Sample aquatic	7%
% Sample terrestrial	0%
% Sample Planktonic	92%
Total sample area (m ²)	0.56
Mean BMI density (per m ²)	500
±1 SD	133

Appendix B.3.–Middle Herbert River benthic macroinvertebrate sample data, 2025.

Class or Subclass	Order	Family	Genus	Sample Number					
				1	2	3	4	5	6
Insecta	Ephemeroptera	Baetidae	<i>Baetis</i>	18	14	15	3	25	13
		Heptageniidae	<i>Cinygmula</i>	1					
			<i>Epeorus</i>		1				
			<i>Rhithrogena</i>	1			2		
	Plecoptera	Capniidae	<i>Capnia</i>	3		3	2	7	2
		Chloroperlidae	<i>Suwallia</i>	3				2	1
		Nemouridae	<i>Nemoura</i>						7
			<i>Podmosta</i>		18	8			
			<i>Shipsa</i>					18	
		Perlodidae	<i>Isoperla</i>				1		
	Diptera	Chironomidae	unidentified	125	73	96	67	162	88
		Simuliidae	<i>Prosimulium</i>	1	1				
Copepoda	unidentified			1					1
Oligochaeta	unidentified			1					
Misc. Terrestrial							1	1	1

Appendix B.4.—Middle Herbert River benthic macroinvertebrate data summaries, 2025.

	2025
Total BMI taxa	14
Number of EPT taxa	10
Total counts	
Ephemeroptera	93
Plecoptera	75
Trichoptera	0
Aquatic Diptera	613
Other organisms	3
% Ephemeroptera	12%
% Plecoptera	10%
% Trichoptera	0%
% Aquatic Diptera	78%
% Other organisms	0%
% EPT	21%
% Chironomidae	78%
Total aquatic invertebrates	784
Total terrestrial invertebrates	3
Total planktonic invertebrates	0
Total invertebrates	787
% Sample aquatic	100%
% Sample terrestrial	0%
% Sample Planktonic	0%
Total sample area (m ²)	0.56
Mean BMI density (per m ²)	1,410
±1 SD	1,405

Appendix B.5.–Upper Herbert River benthic macroinvertebrate sample data, 2025.

Class or Subclass	Order	Family	Genus	Sample Number					
				1	2	3	4	5	6
Insecta	Ephemeroptera	Baetidae	<i>Baetis</i>	6	19	10	2	2	2
		Heptageniidae	<i>Cinygmula</i>	1					
	Plecoptera	Capniidae	<i>Capnia</i>		2				
		Nemouridae	<i>Nemoura</i>				1		
			<i>Podmosta</i>	3					
			<i>Shipsa</i>		3	3			7
			<i>Zapada</i>	2				1	
	Diptera	Chironomidae	unidentified	188	279	205	60	78	258
		Empididae	<i>Chelifera</i>	1					
			<i>Oreogeton</i>		1	1			1
		Simuliidae	<i>Parasimulium</i>				1		
		Tipulidae	<i>Dicranota</i>	2					
Entognatha	Collembola	Unidentified	unidentified	1	1	2			1
Oligochaeta	unidentified					1			1
Misc. Terrestrial				1	4	7	3	6	12

Appendix B.6.–Upper Herbert River benthic macroinvertebrate sample summaries, 2025.

	2025
Total BMI taxa	14
Number of EPT taxa	7
Total counts	
Ephemeroptera	42
Plecoptera	22
Trichoptera	0
Aquatic Diptera	1,075
Other organisms	7
% Ephemeroptera	4%
% Plecoptera	2%
% Trichoptera	0%
% Aquatic Diptera	94%
% Other organisms	1%
% EPT	6%
% Chironomidae	93%
Total aquatic invertebrates	1,146
Total terrestrial invertebrates	33
Total planktonic invertebrates	0
Total invertebrates	1,179
% Sample aquatic	97%
% Sample terrestrial	3%
% Sample Planktonic	0%
Total sample area (m ²)	0.56
Mean BMI density (per m ²)	2,054
±1 SD	1,060

Appendix B.7.–Lower Eagle River benthic macroinvertebrate sample data, 2025.

Class or Subclass	Order	Family	Genus	Sample Number					
				1	2	3	4	5	6
Insecta	Ephemeroptera	Amelitidae	Ameletus				1		
			Baetis	12	30	73	61	67	16
		Ephemerellidae	Drunella						1
		Heptageniidae	Cinygmula	1		2	1	2	
			Epeorus				1		
			Rhithrogena						1
	Plecoptera	Capniidae	Capnia	1		7		21	19
		Chloroperlidae	Suwallia				3	1	1
		Nemouridae	Podmosta	7		9	7	36	8
			Zapada		1			1	
		Perlodidae	Isoperla						1
	Diptera	Chironomidae	unidentified	38	36	113	101	193	95
		Simuliidae	Prosimulium	5	262		281	247	19
		Tipulidae	Dicranota				2		
Arachnida: Acari	unidentified							1	
Entognatha	Collembola	Unidentified	unidentified	2	1				
Copepoda	unidentified			1					
Oligochaeta	unidentified			1				2	3
Misc. Terrestrial				2	1		1	2	1

Appendix B.8.– Lower Eagle River benthic macroinvertebrate sample summaries, 2025.

	2025
Total BMI taxa	18
Number of EPT taxa	11
Total counts	
Ephemeroptera	45
Plecoptera	21
Trichoptera	0
Aquatic Diptera	232
Other organisms	2
% Ephemeroptera	15%
% Plecoptera	7%
% Trichoptera	0%
% Aquatic Diptera	78%
% Other organisms	1%
% EPT	22%
% Chironomidae	32%
Total aquatic invertebrates	1,795
Total terrestrial invertebrates	7
Total planktonic invertebrates	0
Total invertebrates	1,802
% Sample aquatic	100%
% Sample terrestrial	0%
% Sample Planktonic	0%
Total sample area (m ²)	0.56
Mean BMI density (per m ²)	3,229
±1 SD	3,217

APPENDIX C: RESIDENT FISH ELEMENTS DATA AND LABORATORY REPORT

Appendix C.1.–Lower Herbert River whole body Dolly Varden element concentrations, 2025.

Sample ID	Date Collected	Ag (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Pb (mg/kg)	Se (mg/kg)	Zn (mg/kg)	Total Solids (%)	FL (mm)	Weight (g)
LHR DV1	4/13/2025	0.02	0.026	0.250	5.110	0.0747	0.200	0.049	1.800	136.0	23.8	156	29.9
LHR DV2	4/13/2025	0.02	0.144	0.390	3.990	0.1	0.390	0.099	2.830	101.0	20.5	78	5.0
LHR DV3	4/13/2025	0.022	0.106	0.350	3.910	0.138	0.260	0.029	1.990	185.0	20.8	127	19.3
LHR DV4	4/14/2025	0.02	0.670	1.230	2.950	0.128	0.520	1.430	2.520	115.0	23.3	129	17.9
LHR DV5	4/14/2025	0.02	0.526	1.260	3.340	0.143	0.660	1.150	2.800	140.0	21.4	131	20.9
LHR DV6	4/14/2025	0.023	0.984	0.920	8.380	0.118	0.560	0.441	5.120	145.0	22.7	104	12.3
LHR DV7	4/14/2025	0.02	0.306	1.76	4.060	0.224	0.690	0.425	2.990	242.0	19.1	132	19.8
LHR DV8	4/14/2025	0.02	0.234	1.070	6.250	0.0959	0.560	0.148	2.310	181.0	19.9	101	11.7
LHR DV9	7/15/2025	0.02	0.284	0.590	4.330	0.171	0.430	0.134	2.400	157.0	20.9	95	12.6

Note: Bold values were not detected at the MRL.

Appendix C.2.–Middle Herbert River Herbert Pond whole body Dolly Varden element concentrations, 2025.

Sample ID	Date Collected	Ag (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Pb (mg/kg)	Se (mg/kg)	Zn (mg/kg)	Total Solids (%)	FL (mm)	Weight (g)
MHRHP DV1	7/15/2025	0.02	0.078	0.34	6.42	0.0253	0.47	0.05	2.08	109	24.5	116	16.0
MHRHP DV2	7/15/2025	0.02	0.056	0.2	3.92	0.0684	0.2	0.05	2.24	105	22.8	125	21.2
MHRHP DV3	7/15/2025	0.02	0.075	0.2	3.3	0.0265	0.2	0.041	1.79	115	22.6	89	8.2
MHRHP DV4	7/15/2025	0.02	0.079	0.24	4.04	0.032	0.2	0.05	1.83	119	21	83	7.9
MHRHP DV5	7/15/2025	0.02	0.071	0.2	3.69	0.0557	0.2	0.032	1.92	112	23.8	84	8.2
MHRHP DV6	7/15/2025	0.019	0.148	0.32	4.61	0.0737	0.36	0.025	2.79	129	20.6	75	5.8
MHRHP DV7	7/15/2025	0.02	0.057	0.32	7	0.027	0.5	0.04	1.88	90.4	26.4	123	22.7
MHRHP DV8	7/15/2025	0.02	0.047	0.2	3.42	0.0274	0.2	0.026	1.62	104	24.3	114	17.3
MHRHP DV9	7/15/2025	0.02	0.047	0.2	3.57	0.0205	0.2	0.022	2.02	129	23.6	110	14.8

Note: Bold values were not detected at the MRL.

Appendix C.3.–Upper Herbert River Beaver Lake whole body Dolly Varden element concentrations, 2025.

Sample ID	Date Collected	Ag (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Pb (mg/kg)	Se (mg/kg)	Zn (mg/kg)	Total Solids (%)	FL (mm)	Weight (g)
UHRBL DV1	7/15/2025	0.02	0.08	0.24	3.47	0.0466	0.2	0.02	4.19	142	23.7	104	12.8
UHRBL DV2	6/3/2025	0.02	0.421	0.99	4.71	0.0488	0.56	0.087	4.02	156	20.5	103	8.5
UHRBL DV3	6/3/2025	0.02	0.126	0.79	5.06	0.0365	0.51	0.02	4.02	169	25.8	96	7.7
UHRBL DV4	6/4/2025	0.02	0.059	0.37	3.72	0.0672	0.24	0.023	3.41	80.8	22	125	22.7
UHRBL DV5	6/4/2025	0.02	0.131	0.25	3.32	0.0378	0.31	0.036	5.2	134	22	86	6.8
UHRBL DV6	7/15/2025	0.02	0.074	0.24	2.87	0.0561	0.2	0.068	2.04	155	22.1	83	6.5
UHRBL DV7	7/15/2025	0.02	0.155	0.6	3.94	0.0705	0.41	0.094	3.34	108	22.3	105	18.3
UHRBL DV8	7/15/2025	0.02	0.117	1.42	5.21	0.0425	0.77	0.133	3.21	145	23.9	121	21.1
UHRBL DV9	7/15/2025	0.02	0.855	0.37	14.6	0.0688	2.07	0.061	3.59	164	24.2	104	8.7
UHRBL DV10	7/15/2025	0.02	0.131	0.94	3.77	0.0669	0.62	0.138	3.55	109	21.1	85	6.9

Note: Bold values were not detected at the MRL.

Appendix C.4.–Lower Eagle River whole body Dolly Varden element concentrations, 2025.

Sample ID	Date Collected	Ag (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Cu (mg/kg)	Hg (mg/kg)	Ni (mg/kg)	Pb (mg/kg)	Se (mg/kg)	Zn (mg/kg)	Total Solids (%)	FL (mm)	Weight (g)
LER DV1	4/15/2025	0.02	0.039	0.2	3.11	0.252	0.2	0.02	1.43	112	25.3	99	10.8
LER DV2	4/15/2025	0.02	0.116	0.28	4.86	0.181	0.2	0.035	2.5	101	21.3	88	7.6
LER DV3	4/15/2025	0.02	0.14	0.37	3.91	0.165	0.2	0.045	3.86	119	21.5	130	19.1
LER DV4	4/15/2025	0.02	0.041	0.2	3.55	0.136	0.2	0.02	2.17	136	21.9	86	6.9
LER DV5	4/15/2025	0.019	0.057	0.3	2.97	0.189	0.2	0.037	2.04	137	21.7	92	7.6
LER DV6	4/15/2025	0.019	0.083	0.19	3.62	0.218	0.19	0.02	2.51	173	22.7	89	6.7
LER DV7	4/15/2025	0.02	0.233	0.33	4.54	0.304	0.21	0.042	3.54	139	21.6	128	21.1
LER DV8	4/15/2025	0.02	0.09	0.46	4.16	0.142	0.34	0.066	2.2	120	23.4	92	9.1
LER DV9	4/15/2025	0.02	0.112	0.31	4.83	0.148	0.26	0.035	1.95	121	23.4	96	10.9
LER DV10	4/15/2025	0.019	0.099	0.21	3.89	0.251	0.19	0.022	2.28	103	23.5	102	11.8

Note: Bold values were not detected at the MRL.

C.2.–2025 New Amalga Gold Mine whole body fish laboratory reports.



ALS Environmental
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September 12, 2025

Analytical Report for Service Request No: K2508259

Greg Albrecht
Alaska Department of Fish and Game
802 3rd St.,
P.O. Box 110024
Juneau, AK 99811-0024

RE: 2025 New Amalga Gold Mine Biomonitoring

Dear Greg,

Enclosed are the results of the sample(s) submitted to our laboratory August 19, 2025
For your reference, these analyses have been assigned our service request number **K2508259**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

For Mark Harris
Project Manager



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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
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www.alsglobal.com



Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Service Request: K2508259
Date Received: 08/19/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Nineteen animal tissue samples were received for analysis at ALS Environmental on 08/19/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

No significant anomalies were noted with this analysis.

Approved by

A handwritten signature in cursive script, appearing to read "Dayleigh Smith".

Date

09/12/2025



Chain of Custody

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
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New Amalga Gold Mine Biomonitoring 2025
 Juvenile Fish for Whole Body Metals
 Basis, all samples: Dry Weight, Report %Solids
 Requested Analysis: Ag,Cd,Cu,Hg,Pb,Se,Zn

Sheet 1 of 2

K2508259

Matrix	Date Collected	Sample Name	Sample ID	Total Metals	FK Length (mm)	Weight (g)
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 1	2025LERDV1	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	99	10.8
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 2	2025LERDV2	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	88	7.6
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 3	2025LERDV3	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	130	19.1
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 4	2025LERDV4	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	86	6.9
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 5	2025LERDV5	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	92	7.6
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 6	2025LERDV6	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	89	6.7
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 7	2025LERDV7	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	128	21.1
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 8	2025LERDV8	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	92	9.1
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 9	2025LERDV9	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	96	10.9
Whole Body	5/15/2025	Lower Eagle River DV Metals Fish 10	2025LERDV10	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	102	11.8
Whole Body	5/13/2025	Lower Herbert River DV Metals Fish 1	2025LHRDV1	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	156	29.9
Whole Body	5/13/2025	Lower Herbert River DV Metals Fish 2	2025LHRDV2	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	78	5
Whole Body	5/13/2025	Lower Herbert River DV Metals Fish 3	2025LHRDV3	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	127	19.3
Whole Body	5/14/2025	Lower Herbert River DV Metals Fish 4	2025LHRDV4	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	129	17.9
Whole Body	5/14/2025	Lower Herbert River DV Metals Fish 5	2025LHRDV5	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	131	20.9
Whole Body	5/14/2025	Lower Herbert River DV Metals Fish 6	2025LHRDV6	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	104	12.3
Whole Body	5/14/2025	Lower Herbert River DV Metals Fish 7	2025LHRDV7	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	132	19.8
Whole Body	5/14/2025	Lower Herbert River DV Metals Fish 8	2025LHRDV8	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	101	11.7
Whole Body	7/15/2025	Lower Herbert River DV Metals Fish 9	2025LHRDV9	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	95	12.6
Whole Body		Lower Herbert River DV Metals Fish 10	2025LHRDV10	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	N/A	N/A

Cooler Receipt and Preservation Form

PM Mark

Client Alaska Dept of Fish and Game Service Request K25 08259
 Received: 8/18/25 Opened: 8/18/25 By: pdp Unloaded: 8/18/25 By: pdp

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 FRONT
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID/ <u>NA</u>	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number <u>NA</u>	Filled
<u>1.7</u>	<u>2.6</u>	<u>1806</u>				<u>392238654005</u>	

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges? NA Y N

If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N

8. Were samples received in good condition (unbroken) NA Y N

9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N

10. Did all sample labels and tags agree with custody papers? NA Y N

11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N

12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N

13. Were VOA vials received without headspace? Indicate in the table below. NA Y N

14. Was C12/Res negative? NA Y N

15. Were samples received within method specified time limit? If not, note the error below and notify the PM. NA Y N

16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Total Solids

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Analysis Method: Freeze Dry
Prep Method: None

Service Request: K2508259
Date Collected: 05/13/25 - 07/15/25
Date Received: 08/19/25
Units: Percent
Basis: Wet

Total Solids

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
2025LERDV1	K2508259-001	25.3	-	-	1	08/29/25 11:37	
2025LERDV2	K2508259-002	21.3	-	-	1	08/29/25 11:37	
2025LERDV3	K2508259-003	21.5	-	-	1	08/29/25 11:37	
2025LERDV4	K2508259-004	21.9	-	-	1	08/29/25 11:37	
2025LERDV5	K2508259-005	21.7	-	-	1	08/29/25 11:37	
2025LERDV6	K2508259-006	22.7	-	-	1	08/29/25 11:37	
2025LERDV7	K2508259-007	21.6	-	-	1	08/29/25 11:37	
2025LERDV8	K2508259-008	23.4	-	-	1	08/29/25 11:37	
2025LERDV9	K2508259-009	23.4	-	-	1	08/29/25 11:37	
2025LERDV10	K2508259-010	23.5	-	-	1	08/29/25 11:37	
2025LHRDV1	K2508259-011	23.8	-	-	1	08/29/25 11:37	
2025LHRDV2	K2508259-012	20.5	-	-	1	08/29/25 11:37	
2025LHRDV3	K2508259-013	20.8	-	-	1	08/29/25 11:37	
2025LHRDV4	K2508259-014	23.3	-	-	1	08/29/25 11:37	
2025LHRDV5	K2508259-015	21.4	-	-	1	08/29/25 11:37	
2025LHRDV6	K2508259-016	22.7	-	-	1	08/29/25 11:37	
2025LHRDV7	K2508259-017	19.1	-	-	1	08/29/25 11:37	
2025LHRDV8	K2508259-018	19.9	-	-	1	08/29/25 11:37	
2025LHRDV9	K2508259-019	20.9	-	-	1	08/29/25 11:37	



Metals

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal tissue

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25

Mercury, Total

Prep Method: METHOD
Analysis Method: 1631E
Test Notes:

Units: ng/g
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2025LERDV1	K2508259-001	9.9	1.99	10	09/10/25	09/11/25	252	
2025LERDV2	K2508259-002	10.0	1.99	10	09/10/25	09/11/25	165	
2025LERDV3	K2508259-003	9.9	1.98	10	09/10/25	09/11/25	136	
2025LERDV4	K2508259-004	9.9	1.99	10	09/10/25	09/11/25	189	
2025LERDV5	K2508259-005	9.9	1.99	10	09/10/25	09/11/25	218	
2025LERDV6	K2508259-006	9.9	1.98	10	09/10/25	09/11/25	304	
2025LERDV7	K2508259-007	10.0	2.00	10	09/10/25	09/11/25	142	
2025LERDV8	K2508259-008	9.9	1.98	10	09/10/25	09/11/25	148	
2025LERDV9	K2508259-009	9.9	1.98	10	09/10/25	09/11/25	251	
2025LERDV10	K2508259-010	9.9	1.98	10	09/10/25	09/11/25	181	
2025LHRDV1	K2508259-011	10.0	2.00	10	09/10/25	09/11/25	74.7	
2025LHRDV2	K2508259-012	9.9	1.97	10	09/10/25	09/11/25	100	
2025LHRDV3	K2508259-013	9.9	1.97	10	09/10/25	09/11/25	138	
2025LHRDV4	K2508259-014	10.0	1.99	10	09/10/25	09/11/25	128	
2025LHRDV5	K2508259-015	9.9	1.98	10	09/10/25	09/11/25	143	
2025LHRDV6	K2508259-016	9.9	1.98	10	09/10/25	09/11/25	118	
2025LHRDV7	K2508259-017	9.9	1.98	10	09/10/25	09/11/25	224	
2025LHRDV8	K2508259-018	9.9	1.97	10	9/10/2025	9/11/2025	95.9	
2025LHRDV9	K2508259-019	10.0	1.99	10	9/10/2025	9/11/2025	171	
Method Blank 1	K2508259-MB1	1	0.20	1	9/10/2025	9/11/2025	ND	
Method Blank 2	K2508259-MB2	1	0.20	1	9/10/2025	9/11/2025	ND	
Method Blank 3	K2508259-MB3	1	0.20	1	9/10/2025	9/11/2025	ND	

ALS Group USA, Corp.
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 QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal tissue

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Matrix Spike/Duplicate Matrix Spike Summary
 Total Metals

Sample Name: 2025LERDV7 Units: ng/g
 Lab Code: K2508259-007MS, K2508259-007DMS Basis: Dry
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Spike Level		Sample Result	Spike Result		Percent Recovery		ALS Acceptance Limits	Relative Percent Difference	Result Notes
				MS	DMS		MS	DMS	MS	DMS			
Mercury	METHOD	1631E	10.0	249	249	142	383	376	97	94	70-130	2	

ALS Group USA, Corp.
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 QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal tissue

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Matrix Spike/Duplicate Matrix Spike Summary
 Total Metals

Sample Name: 2025LHRDV1 Units: ng/g
 Lab Code: K2508259-011MS, K2508259-011DMS Basis: Dry
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Spike Level		Sample Result	Spike Result		Percent Recovery		ALS Acceptance Limits	Relative Percent Difference	Result Notes
				MS	DMS		MS	DMS	MS	DMS			
Mercury	METHOD	1631E	10.0	247	249	74.7	304	305	93	92	70-130	<1	

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
LCS Matrix: Water

Service Request: K2508259
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Initial) **Units:** ng/g
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery	Result Notes
						Acceptance Limits	
Mercury	METHOD	1631E	5.00	4.92	98	70-130	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
LCS Matrix: Water

Service Request: K2508259
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Final) **Units:** ng/g
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery	Result Notes
						Acceptance Limits	
Mercury	METHOD	1631E	5.00	4.80	96	70-130	

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
LCS Matrix: Animal tissue

Service Request: K2508259
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Quality Control Sample (QCS) Summary
Total Metals

Sample Name: Quality Control Sample
Lab Code:
Test Notes: Tort-3 Solids = 97.4%

Units: ng/g
Basis: Dry

Source: TORT-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS	Result Notes
						Percent Recovery Acceptance Limits	
Mercury	METHOD	1631E	292	250	86	70-130	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV1
Lab Code: K2508259-001

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.039	mg/Kg	0.020	0.004	5	09/11/25 12:03	09/09/25	
Chromium	6020B	0.19 J	mg/Kg	0.20	0.03	5	09/11/25 12:03	09/09/25	
Copper	6020B	3.11	mg/Kg	0.098	0.035	5	09/11/25 12:03	09/09/25	
Lead	6020B	0.006 J	mg/Kg	0.020	0.003	5	09/11/25 12:03	09/09/25	
Nickel	6020B	0.14 J	mg/Kg	0.20	0.01	5	09/11/25 12:03	09/09/25	
Selenium	6020B	1.43	mg/Kg	0.98	0.03	5	09/11/25 12:03	09/09/25	
Silver	6020B	0.005 J	mg/Kg	0.020	0.002	5	09/11/25 12:03	09/09/25	
Zinc	6020B	112	mg/Kg	0.49	0.16	5	09/11/25 12:03	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV2
Lab Code: K2508259-002

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.140	mg/Kg	0.020	0.004	5	09/11/25 12:05	09/09/25	
Chromium	6020B	0.37	mg/Kg	0.20	0.03	5	09/11/25 12:05	09/09/25	
Copper	6020B	3.91	mg/Kg	0.099	0.036	5	09/11/25 12:05	09/09/25	
Lead	6020B	0.045	mg/Kg	0.020	0.003	5	09/11/25 12:05	09/09/25	
Nickel	6020B	0.19 J	mg/Kg	0.20	0.01	5	09/11/25 12:05	09/09/25	
Selenium	6020B	3.86	mg/Kg	0.99	0.03	5	09/11/25 12:05	09/09/25	
Silver	6020B	0.007 J	mg/Kg	0.020	0.002	5	09/11/25 12:05	09/09/25	
Zinc	6020B	119	mg/Kg	0.50	0.16	5	09/11/25 12:05	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV3
Lab Code: K2508259-003

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.041	mg/Kg	0.020	0.004	5	09/11/25 12:07	09/09/25	
Chromium	6020B	0.11 J	mg/Kg	0.20	0.03	5	09/11/25 12:07	09/09/25	
Copper	6020B	3.55	mg/Kg	0.098	0.035	5	09/11/25 12:07	09/09/25	
Lead	6020B	0.005 J	mg/Kg	0.020	0.003	5	09/11/25 12:07	09/09/25	
Nickel	6020B	0.09 J	mg/Kg	0.20	0.01	5	09/11/25 12:07	09/09/25	
Selenium	6020B	2.17	mg/Kg	0.98	0.03	5	09/11/25 12:07	09/09/25	
Silver	6020B	0.010 J	mg/Kg	0.020	0.002	5	09/11/25 12:07	09/09/25	
Zinc	6020B	136	mg/Kg	0.49	0.16	5	09/11/25 12:07	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV4
Lab Code: K2508259-004

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.057	mg/Kg	0.019	0.004	5	09/11/25 12:26	09/09/25	
Chromium	6020B	0.30	mg/Kg	0.19	0.03	5	09/11/25 12:26	09/09/25	
Copper	6020B	2.97	mg/Kg	0.097	0.035	5	09/11/25 12:26	09/09/25	
Lead	6020B	0.037	mg/Kg	0.019	0.003	5	09/11/25 12:26	09/09/25	
Nickel	6020B	0.20	mg/Kg	0.19	0.01	5	09/11/25 12:26	09/09/25	
Selenium	6020B	2.04	mg/Kg	0.97	0.03	5	09/11/25 12:26	09/09/25	
Silver	6020B	0.008 J	mg/Kg	0.019	0.002	5	09/11/25 12:26	09/09/25	
Zinc	6020B	137	mg/Kg	0.49	0.16	5	09/11/25 12:26	09/09/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV5
Lab Code: K2508259-005

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.083	mg/Kg	0.019	0.004	5	09/11/25 12:28	09/09/25	
Chromium	6020B	0.18 J	mg/Kg	0.19	0.03	5	09/11/25 12:28	09/09/25	
Copper	6020B	3.62	mg/Kg	0.097	0.035	5	09/11/25 12:28	09/09/25	
Lead	6020B	0.020	mg/Kg	0.019	0.003	5	09/11/25 12:28	09/09/25	
Nickel	6020B	0.17 J	mg/Kg	0.19	0.01	5	09/11/25 12:28	09/09/25	
Selenium	6020B	2.51	mg/Kg	0.97	0.03	5	09/11/25 12:28	09/09/25	
Silver	6020B	0.012 J	mg/Kg	0.019	0.002	5	09/11/25 12:28	09/09/25	
Zinc	6020B	173	mg/Kg	0.49	0.16	5	09/11/25 12:28	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV6
Lab Code: K2508259-006

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.233	mg/Kg	0.020	0.004	5	09/11/25 12:30	09/09/25	
Chromium	6020B	0.33	mg/Kg	0.20	0.03	5	09/11/25 12:30	09/09/25	
Copper	6020B	4.54	mg/Kg	0.099	0.036	5	09/11/25 12:30	09/09/25	
Lead	6020B	0.042	mg/Kg	0.020	0.003	5	09/11/25 12:30	09/09/25	
Nickel	6020B	0.21	mg/Kg	0.20	0.01	5	09/11/25 12:30	09/09/25	
Selenium	6020B	3.54	mg/Kg	0.99	0.03	5	09/11/25 12:30	09/09/25	
Silver	6020B	0.007 J	mg/Kg	0.020	0.002	5	09/11/25 12:30	09/09/25	
Zinc	6020B	139	mg/Kg	0.50	0.16	5	09/11/25 12:30	09/09/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV7
Lab Code: K2508259-007

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.090	mg/Kg	0.020	0.004	5	09/11/25 12:32	09/09/25	
Chromium	6020B	0.46	mg/Kg	0.20	0.03	5	09/11/25 12:32	09/09/25	
Copper	6020B	4.16	mg/Kg	0.10	0.04	5	09/11/25 12:32	09/09/25	
Lead	6020B	0.066	mg/Kg	0.020	0.003	5	09/11/25 12:32	09/09/25	
Nickel	6020B	0.34	mg/Kg	0.20	0.02	5	09/11/25 12:32	09/09/25	
Selenium	6020B	2.2	mg/Kg	1.0	0.03	5	09/11/25 12:32	09/09/25	
Silver	6020B	0.013 J	mg/Kg	0.020	0.002	5	09/11/25 12:32	09/09/25	
Zinc	6020B	120	mg/Kg	0.50	0.16	5	09/11/25 12:32	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV8
Lab Code: K2508259-008

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.112	mg/Kg	0.020	0.004	5	09/11/25 12:35	09/09/25	
Chromium	6020B	0.31	mg/Kg	0.20	0.03	5	09/11/25 12:35	09/09/25	
Copper	6020B	4.83	mg/Kg	0.099	0.036	5	09/11/25 12:35	09/09/25	
Lead	6020B	0.035	mg/Kg	0.020	0.003	5	09/11/25 12:35	09/09/25	
Nickel	6020B	0.26	mg/Kg	0.20	0.01	5	09/11/25 12:35	09/09/25	
Selenium	6020B	1.95	mg/Kg	0.99	0.03	5	09/11/25 12:35	09/09/25	
Silver	6020B	0.012 J	mg/Kg	0.020	0.002	5	09/11/25 12:35	09/09/25	
Zinc	6020B	121	mg/Kg	0.49	0.16	5	09/11/25 12:35	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV9
Lab Code: K2508259-009

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.099	mg/Kg	0.019	0.004	5	09/11/25 12:37	09/09/25	
Chromium	6020B	0.21	mg/Kg	0.19	0.03	5	09/11/25 12:37	09/09/25	
Copper	6020B	3.89	mg/Kg	0.097	0.035	5	09/11/25 12:37	09/09/25	
Lead	6020B	0.022	mg/Kg	0.019	0.003	5	09/11/25 12:37	09/09/25	
Nickel	6020B	0.15 J	mg/Kg	0.19	0.01	5	09/11/25 12:37	09/09/25	
Selenium	6020B	2.28	mg/Kg	0.97	0.03	5	09/11/25 12:37	09/09/25	
Silver	6020B	0.005 J	mg/Kg	0.019	0.002	5	09/11/25 12:37	09/09/25	
Zinc	6020B	103	mg/Kg	0.49	0.16	5	09/11/25 12:37	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LERDV10
Lab Code: K2508259-010

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.116	mg/Kg	0.020	0.004	5	09/11/25 12:39	09/09/25	
Chromium	6020B	0.28	mg/Kg	0.20	0.03	5	09/11/25 12:39	09/09/25	
Copper	6020B	4.86	mg/Kg	0.099	0.036	5	09/11/25 12:39	09/09/25	
Lead	6020B	0.035	mg/Kg	0.020	0.003	5	09/11/25 12:39	09/09/25	
Nickel	6020B	0.19 J	mg/Kg	0.20	0.01	5	09/11/25 12:39	09/09/25	
Selenium	6020B	2.50	mg/Kg	0.99	0.03	5	09/11/25 12:39	09/09/25	
Silver	6020B	0.009 J	mg/Kg	0.020	0.002	5	09/11/25 12:39	09/09/25	
Zinc	6020B	101	mg/Kg	0.50	0.16	5	09/11/25 12:39	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV1
Lab Code: K2508259-011

Service Request: K2508259
Date Collected: 05/13/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.026	mg/Kg	0.020	0.004	5	09/11/25 12:41	09/09/25	
Chromium	6020B	0.25	mg/Kg	0.20	0.03	5	09/11/25 12:41	09/09/25	
Copper	6020B	5.11	mg/Kg	0.10	0.04	5	09/11/25 12:41	09/09/25	
Lead	6020B	0.049	mg/Kg	0.020	0.003	5	09/11/25 12:41	09/09/25	
Nickel	6020B	0.20 J	mg/Kg	0.20	0.02	5	09/11/25 12:41	09/09/25	
Selenium	6020B	1.8	mg/Kg	1.0	0.03	5	09/11/25 12:41	09/09/25	
Silver	6020B	0.011 J	mg/Kg	0.020	0.002	5	09/11/25 12:41	09/09/25	
Zinc	6020B	136	mg/Kg	0.50	0.16	5	09/11/25 12:41	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV2
Lab Code: K2508259-012

Service Request: K2508259
Date Collected: 05/13/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.144	mg/Kg	0.020	0.004	5	09/11/25 12:47	09/09/25	
Chromium	6020B	0.39	mg/Kg	0.20	0.03	5	09/11/25 12:47	09/09/25	
Copper	6020B	3.99	mg/Kg	0.098	0.035	5	09/11/25 12:47	09/09/25	
Lead	6020B	0.099	mg/Kg	0.020	0.003	5	09/11/25 12:47	09/09/25	
Nickel	6020B	0.39	mg/Kg	0.20	0.01	5	09/11/25 12:47	09/09/25	
Selenium	6020B	2.83	mg/Kg	0.98	0.03	5	09/11/25 12:47	09/09/25	
Silver	6020B	0.009 J	mg/Kg	0.020	0.002	5	09/11/25 12:47	09/09/25	
Zinc	6020B	101	mg/Kg	0.49	0.16	5	09/11/25 12:47	09/09/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV3
Lab Code: K2508259-013

Service Request: K2508259
Date Collected: 05/13/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.106	mg/Kg	0.020	0.004	5	09/11/25 12:49	09/09/25	
Chromium	6020B	0.35	mg/Kg	0.20	0.03	5	09/11/25 12:49	09/09/25	
Copper	6020B	3.91	mg/Kg	0.098	0.035	5	09/11/25 12:49	09/09/25	
Lead	6020B	0.029	mg/Kg	0.020	0.003	5	09/11/25 12:49	09/09/25	
Nickel	6020B	0.26	mg/Kg	0.20	0.01	5	09/11/25 12:49	09/09/25	
Selenium	6020B	1.99	mg/Kg	0.98	0.03	5	09/11/25 12:49	09/09/25	
Silver	6020B	0.022	mg/Kg	0.020	0.002	5	09/11/25 12:49	09/09/25	
Zinc	6020B	185	mg/Kg	0.49	0.16	5	09/11/25 12:49	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV4
Lab Code: K2508259-014

Service Request: K2508259
Date Collected: 05/13/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.670	mg/Kg	0.020	0.004	5	09/11/25 12:52	09/09/25	
Chromium	6020B	1.23	mg/Kg	0.20	0.03	5	09/11/25 12:52	09/09/25	
Copper	6020B	2.95	mg/Kg	0.099	0.036	5	09/11/25 12:52	09/09/25	
Lead	6020B	1.43	mg/Kg	0.020	0.003	5	09/11/25 12:52	09/09/25	
Nickel	6020B	0.52	mg/Kg	0.20	0.01	5	09/11/25 12:52	09/09/25	
Selenium	6020B	2.52	mg/Kg	0.99	0.03	5	09/11/25 12:52	09/09/25	
Silver	6020B	0.020	mg/Kg	0.020	0.002	5	09/11/25 12:52	09/09/25	
Zinc	6020B	115	mg/Kg	0.49	0.16	5	09/11/25 12:52	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Sample Name: 2025LHRDV5
Lab Code: K2508259-015

Service Request: K2508259
Date Collected: 05/14/25
Date Received: 08/19/25 09:55

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.526	mg/Kg	0.020	0.004	5	09/11/25 12:54	09/09/25	
Chromium	6020B	1.26	mg/Kg	0.20	0.03	5	09/11/25 12:54	09/09/25	
Copper	6020B	3.34	mg/Kg	0.099	0.036	5	09/11/25 12:54	09/09/25	
Lead	6020B	1.15	mg/Kg	0.020	0.003	5	09/11/25 12:54	09/09/25	
Nickel	6020B	0.66	mg/Kg	0.20	0.01	5	09/11/25 12:54	09/09/25	
Selenium	6020B	2.80	mg/Kg	0.99	0.03	5	09/11/25 12:54	09/09/25	
Silver	6020B	0.011 J	mg/Kg	0.020	0.002	5	09/11/25 12:54	09/09/25	
Zinc	6020B	140	mg/Kg	0.50	0.16	5	09/11/25 12:54	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Sample Name: 2025LHRDV6
Lab Code: K2508259-016

Service Request: K2508259
Date Collected: 05/14/25
Date Received: 08/19/25 09:55

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.984	mg/Kg	0.020	0.004	5	09/11/25 12:56	09/09/25	
Chromium	6020B	0.92	mg/Kg	0.20	0.03	5	09/11/25 12:56	09/09/25	
Copper	6020B	8.38	mg/Kg	0.099	0.036	5	09/11/25 12:56	09/09/25	
Lead	6020B	0.441	mg/Kg	0.020	0.003	5	09/11/25 12:56	09/09/25	
Nickel	6020B	0.56	mg/Kg	0.20	0.01	5	09/11/25 12:56	09/09/25	
Selenium	6020B	5.12	mg/Kg	0.99	0.03	5	09/11/25 12:56	09/09/25	
Silver	6020B	0.023	mg/Kg	0.020	0.002	5	09/11/25 12:56	09/09/25	
Zinc	6020B	145	mg/Kg	0.50	0.16	5	09/11/25 12:56	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV7
Lab Code: K2508259-017

Service Request: K2508259
Date Collected: 05/14/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.306	mg/Kg	0.020	0.004	5	09/11/25 12:58	09/09/25	
Chromium	6020B	1.76	mg/Kg	0.20	0.03	5	09/11/25 12:58	09/09/25	
Copper	6020B	4.06	mg/Kg	0.098	0.035	5	09/11/25 12:58	09/09/25	
Lead	6020B	0.425	mg/Kg	0.020	0.003	5	09/11/25 12:58	09/09/25	
Nickel	6020B	0.69	mg/Kg	0.20	0.01	5	09/11/25 12:58	09/09/25	
Selenium	6020B	2.99	mg/Kg	0.98	0.03	5	09/11/25 12:58	09/09/25	
Silver	6020B	0.019 J	mg/Kg	0.020	0.002	5	09/11/25 12:58	09/09/25	
Zinc	6020B	242	mg/Kg	0.49	0.16	5	09/11/25 12:58	09/09/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV8
Lab Code: K2508259-018

Service Request: K2508259
Date Collected: 05/14/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.234	mg/Kg	0.020	0.004	5	09/11/25 13:00	09/09/25	
Chromium	6020B	1.07	mg/Kg	0.20	0.03	5	09/11/25 13:00	09/09/25	
Copper	6020B	6.25	mg/Kg	0.098	0.035	5	09/11/25 13:00	09/09/25	
Lead	6020B	0.148	mg/Kg	0.020	0.003	5	09/11/25 13:00	09/09/25	
Nickel	6020B	0.56	mg/Kg	0.20	0.01	5	09/11/25 13:00	09/09/25	
Selenium	6020B	2.31	mg/Kg	0.98	0.03	5	09/11/25 13:00	09/09/25	
Silver	6020B	0.008 J	mg/Kg	0.020	0.002	5	09/11/25 13:00	09/09/25	
Zinc	6020B	181	mg/Kg	0.49	0.16	5	09/11/25 13:00	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: 2025LHRDV9
Lab Code: K2508259-019

Service Request: K2508259
Date Collected: 07/15/25
Date Received: 08/19/25 09:55
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.284	mg/Kg	0.020	0.004	5	09/11/25 13:02	09/09/25	
Chromium	6020B	0.59	mg/Kg	0.20	0.03	5	09/11/25 13:02	09/09/25	
Copper	6020B	4.33	mg/Kg	0.10	0.04	5	09/11/25 13:02	09/09/25	
Lead	6020B	0.134	mg/Kg	0.020	0.003	5	09/11/25 13:02	09/09/25	
Nickel	6020B	0.43	mg/Kg	0.20	0.02	5	09/11/25 13:02	09/09/25	
Selenium	6020B	2.4	mg/Kg	1.0	0.03	5	09/11/25 13:02	09/09/25	
Silver	6020B	0.017 J	mg/Kg	0.020	0.002	5	09/11/25 13:02	09/09/25	
Zinc	6020B	157	mg/Kg	0.50	0.16	5	09/11/25 13:02	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue
Sample Name: Method Blank
Lab Code: KQ2515935-01

Service Request: K2508259
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	ND U	mg/Kg	0.020	0.004	5	09/11/25 11:53	09/09/25	
Chromium	6020B	ND U	mg/Kg	0.20	0.03	5	09/11/25 11:53	09/09/25	
Copper	6020B	ND U	mg/Kg	0.10	0.04	5	09/11/25 11:53	09/09/25	
Lead	6020B	ND U	mg/Kg	0.020	0.003	5	09/11/25 11:53	09/09/25	
Nickel	6020B	ND U	mg/Kg	0.20	0.02	5	09/11/25 11:53	09/09/25	
Selenium	6020B	ND U	mg/Kg	1.0	0.03	5	09/11/25 11:53	09/09/25	
Silver	6020B	ND U	mg/Kg	0.020	0.002	5	09/11/25 11:53	09/09/25	
Zinc	6020B	ND U	mg/Kg	0.50	0.16	5	09/11/25 11:53	09/09/25	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Service Request: K2508259**Date Collected:** 05/15/25**Date Received:** 08/19/25**Date Analyzed:** 09/11/25**Replicate Sample Summary****Total Metals****Sample Name:** 2025LERDV3**Units:** mg/Kg**Lab Code:** K2508259-003**Basis:** Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2515935-05	Average	RPD	RPD Limit
					Result			
Cadmium	6020B	0.020	0.004	0.041	0.041	0.041	<1	20
Chromium	6020B	0.20	0.03	0.11 J	0.11 J	0.11	<1	20
Copper	6020B	0.099	0.036	3.55	3.36	3.46	5	20
Lead	6020B	0.020	0.003	0.005 J	0.005 J	0.005	<1	20
Nickel	6020B	0.20	0.01	0.09 J	0.10 J	0.10	11	20
Selenium	6020B	0.99	0.03	2.17	2.13	2.15	2	20
Silver	6020B	0.020	0.002	0.010 J	0.009 J	0.010	11	20
Zinc	6020B	0.50	0.16	136	135	136	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Service Request: K2508259
Date Collected: 05/15/25
Date Received: 08/19/25
Date Analyzed: 09/11/25
Date Extracted: 09/9/25

Matrix Spike Summary
Total Metals

Sample Name: 2025LERDV3
Lab Code: K2508259-003
Analysis Method: 6020B
Prep Method: PSEP Metals

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ2515935-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Cadmium	0.041	4.71	4.95	94	75-125
Chromium	0.11 J	18.8	19.8	95	75-125
Copper	3.55	26.7	24.8	93	75-125
Lead	0.005 J	46.3	49.5	94	75-125
Nickel	0.09 J	46.7	49.5	94	75-125
Selenium	2.17	18.5	16.5	99	75-125
Silver	0.010 J	4.54	4.95	92	75-125
Zinc	136	175	49.5	79	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Service Request: K2508259
Date Analyzed: 09/11/25

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ2515935-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cadmium	6020B	4.75	5.00	95	80-120
Chromium	6020B	19.3	20.0	97	80-120
Copper	6020B	24.1	25.0	96	80-120
Lead	6020B	47.5	50.0	95	80-120
Nickel	6020B	48.4	50.0	97	80-120
Selenium	6020B	16.4	16.7	98	80-120
Silver	6020B	4.70	5.00	94	80-120
Zinc	6020B	46.5	50.0	93	80-120

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
LCS Matrix: Tissue

Service Request: K2508259
Date Collected: NA
Date Received: NA
Date Extracted: 9/9/2025
Date Analyzed: 9/11/2025

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ2515935-03
Test Notes: Dorm-5 Solids = 95.8%

Units: mg/Kg (ppm)
Basis: Dry

Source: N.R.C.C. Dorm-5

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Cadmium	PSEP Tissue	6020B	0.148	0.139	94	0.113 - 0.186	
Chromium	PSEP Tissue	6020B	0.515	0.500	97	0.358 - 0.700	
Copper	PSEP Tissue	6020B	3.30	3.16	96	2.58 - 4.04	
Lead	PSEP Tissue	6020B	0.058	0.068	117	0.042 - 0.077	
Nickel	PSEP Tissue	6020B	0.44	0.33	75	0.33 - 0.56	
Selenium	PSEP Tissue	6020B	2.40	2.38	99	1.83 - 3.01	
Silver	PSEP Tissue	6020B	0.135	0.134	99	0.097 - 0.179	
Zinc	PSEP Tissue	6020B	28.7	26.8	93	22.2 - 35.6	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
LCS Matrix: Tissue

Service Request: K2508259
Date Collected: NA
Date Received: NA
Date Extracted: 9/9/2025
Date Analyzed: 9/11/2025

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material Units: mg/Kg (ppm)
Lab Code: KQ2515935-04 Basis: Dry
Test Notes: Tort-3 Solids = 97.4%
Source: N.R.C.C. Tort-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Cadmium	PSEP Tissue	6020B	42.3	38.8	92	32.4-52.9	
Chromium	PSEP Tissue	6020B	1.95	1.78	91	1.37-2.63	
Copper	PSEP Tissue	6020B	497	443	89	380-623	
Lead	PSEP Tissue	6020B	0.225	0.201	89	0.166-0.292	
Nickel	PSEP Tissue	6020B	5.3	4.9	92	4.05-6.65	
Selenium	PSEP Tissue	6020B	10.9	10.1	93	7.9-14.3	
Zinc	PSEP Tissue	6020B	136	126	93	104-170	

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Prep Summary Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring
Sample Matrix: Animal Tissue

Service Request:K2508259

Metals

Prep Method: PSEP Metals
Analytical Method: 6020B

Extraction Lot: 463825
Extraction Date: 09/09/25 17:05

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
2025LERDV1	K2508259-001	5/15/25	8/19/25	0.30500 g	30 mL	
2025LERDV2	K2508259-002	5/15/25	8/19/25	0.30200 g	30 mL	
2025LERDV3	K2508259-003	5/15/25	8/19/25	0.30700 g	30 mL	
2025LERDV4	K2508259-004	5/15/25	8/19/25	0.30800 g	30 mL	
2025LERDV5	K2508259-005	5/15/25	8/19/25	0.30800 g	30 mL	
2025LERDV6	K2508259-006	5/15/25	8/19/25	0.30300 g	30 mL	
2025LERDV7	K2508259-007	5/15/25	8/19/25	0.30000 g	30 mL	
2025LERDV8	K2508259-008	5/15/25	8/19/25	0.30400 g	30 mL	
2025LERDV9	K2508259-009	5/15/25	8/19/25	0.30800 g	30 mL	
2025LERDV10	K2508259-010	5/15/25	8/19/25	0.30300 g	30 mL	
2025LHRDV1	K2508259-011	5/13/25	8/19/25	0.30000 g	30 mL	
2025LHRDV2	K2508259-012	5/13/25	8/19/25	0.20400 g	20 mL	
2025LHRDV3	K2508259-013	5/13/25	8/19/25	0.30500 g	30 mL	
2025LHRDV4	K2508259-014	5/13/25	8/19/25	0.30400 g	30 mL	
2025LHRDV5	K2508259-015	5/14/25	8/19/25	0.30200 g	30 mL	
2025LHRDV6	K2508259-016	5/14/25	8/19/25	0.30200 g	30 mL	
2025LHRDV7	K2508259-017	5/14/25	8/19/25	0.30500 g	30 mL	
2025LHRDV8	K2508259-018	5/14/25	8/19/25	0.30500 g	30 mL	
2025LHRDV9	K2508259-019	7/15/25	8/19/25	0.30000 g	30 mL	
Method Blank	KQ2515935-01MB	NA	NA	0.30000 g	30 mL	
Lab Control Sample	KQ2515935-02LCS	NA	NA	0.30000 g	30 mL	
Standard Reference Material	KQ2515935-03SRM	8/18/25	8/20/25	0.30300 g	30 mL	
Standard Reference Material	KQ2515935-04SRM	8/18/25	8/20/25	0.30600 g	30 mL	
Duplicate	KQ2515935-05DUP	5/15/25	8/19/25	0.30300 g	30 mL	
Matrix Spike	KQ2515935-06MS	5/15/25	8/19/25	0.30300 g	30 mL	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 09/11/25 11:17	Cadmium	6020B	892891	12.6	12.5	101	90-110
	Chromium	6020B	892891	10.2	10.0	102	90-110
	Copper	6020B	892891	12.7	12.5	101	90-110
	Lead	6020B	892891	24.9	25.0	99	90-110
	Nickel	6020B	892891	24.6	25.0	99	90-110
	Selenium	6020B	892891	25.0	25.0	100	90-110
	Silver	6020B	892891	12.6	12.5	101	90-110
	Zinc	6020B	892891	25.0	25.0	100	90-110
CCV 09/11/25 11:19	Cadmium	6020B	892891	24.5	25.0	98	90-110
	Chromium	6020B	892891	24.7	25.0	99	90-110
	Copper	6020B	892891	24.6	25.0	98	90-110
	Lead	6020B	892891	24.8	25.0	99	90-110
	Nickel	6020B	892891	24.9	25.0	99	90-110
	Selenium	6020B	892891	24.9	25.0	99	90-110
	Silver	6020B	892891	12.5	12.5	100	90-110
	Zinc	6020B	892891	24.8	25.0	99	90-110
CCV 09/11/25 12:18	Cadmium	6020B	892891	24.6	25.0	98	90-110
	Chromium	6020B	892891	24.9	25.0	100	90-110
	Copper	6020B	892891	25.0	25.0	100	90-110
	Lead	6020B	892891	25.1	25.0	100	90-110
	Nickel	6020B	892891	25.2	25.0	101	90-110
	Selenium	6020B	892891	24.6	25.0	99	90-110
	Silver	6020B	892891	12.4	12.5	99	90-110
	Zinc	6020B	892891	24.9	25.0	100	90-110
CCV 09/11/25 12:43	Cadmium	6020B	892891	24.8	25.0	99	90-110
	Chromium	6020B	892891	24.7	25.0	99	90-110
	Copper	6020B	892891	24.8	25.0	99	90-110
	Lead	6020B	892891	25.0	25.0	100	90-110
	Nickel	6020B	892891	24.6	25.0	99	90-110
	Selenium	6020B	892891	25.2	25.0	101	90-110
	Silver	6020B	892891	12.3	12.5	98	90-110
	Zinc	6020B	892891	24.5	25.0	98	90-110

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID		Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
Analyte							
CCV	09/11/25 13:04						
	Cadmium	6020B	892891	24.7	25.0	99	90-110
	Chromium	6020B	892891	25.3	25.0	101	90-110
	Copper	6020B	892891	25.3	25.0	101	90-110
	Lead	6020B	892891	25.3	25.0	101	90-110
	Nickel	6020B	892891	25.2	25.0	101	90-110
	Selenium	6020B	892891	25.3	25.0	101	90-110
	Silver	6020B	892891	12.4	12.5	99	90-110
	Zinc	6020B	892891	25.1	25.0	100	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte		Method	Analysis Batch:	Result	C
ICB 09/11/25 11:22					
Cadmium		6020B	892891	0.009	J
Chromium		6020B	892891	0.06	U
Copper		6020B	892891	0.07	U
Lead		6020B	892891	0.011	J
Nickel		6020B	892891	0.03	U
Selenium		6020B	892891	0.05	U
Silver		6020B	892891	0.008	J
Zinc		6020B	892891	0.3	U
CCB 09/11/25 11:24					
Cadmium		6020B	892891	0.008	U
Chromium		6020B	892891	0.06	U
Copper		6020B	892891	0.07	U
Lead		6020B	892891	0.006	U
Nickel		6020B	892891	0.03	U
Selenium		6020B	892891	0.05	U
Silver		6020B	892891	0.004	U
Zinc		6020B	892891	0.3	U
CCB 09/11/25 12:20					
Cadmium		6020B	892891	0.008	U
Chromium		6020B	892891	0.06	U
Copper		6020B	892891	0.07	U
Lead		6020B	892891	0.009	J
Nickel		6020B	892891	0.03	U
Selenium		6020B	892891	0.05	U
Silver		6020B	892891	0.006	J
Zinc		6020B	892891	0.3	U
CCB 09/11/25 12:45					
Cadmium		6020B	892891	0.008	U
Chromium		6020B	892891	0.06	U
Copper		6020B	892891	0.07	U
Lead		6020B	892891	0.009	J
Nickel		6020B	892891	0.03	U
Selenium		6020B	892891	0.05	U
Silver		6020B	892891	0.007	J
Zinc		6020B	892891	0.3	U

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

	Analyte	Method	Analysis Batch:	Result	C
CCB	09/11/25 13:06				
	Cadmium	6020B	892891	0.008	U
	Chromium	6020B	892891	0.06	U
	Copper	6020B	892891	0.07	U
	Lead	6020B	892891	0.009	J
	Nickel	6020B	892891	-0.0362	J
	Selenium	6020B	892891	0.05	U
	Silver	6020B	892891	0.004	U
	Zinc	6020B	892891	0.3	U

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID							% Rec.	
Analyte	Method	Analysis Batch:	Result	True Value	% Rec	Limits	Analysis Date	
LLICVT								
Cadmium	6020B	892891	0.040	0.04	101	80-120	09/11/25 11:31	
Chromium	6020B	892891	0.39	0.4	97	80-120	09/11/25 11:31	
Copper	6020B	892891	0.19	0.2	97	80-120	09/11/25 11:31	
Lead	6020B	892891	0.042	0.04	104	80-120	09/11/25 11:31	
Nickel	6020B	892891	0.34	0.4	86	80-120	09/11/25 11:31	
Selenium	6020B	892891	2.0	2.0	100	80-120	09/11/25 11:31	
Silver	6020B	892891	0.038	0.04	95	80-120	09/11/25 11:31	
Zinc	6020B	892891	0.97	1.0	97	80-120	09/11/25 11:31	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	Analysis Date
						Limits	
Cadmium	6020B	892891	0.420	-	-	-	09/11/25 11:34
Chromium	6020B	892891	0.25	-	-	-	09/11/25 11:34
Copper	6020B	892891	0.55	-	-	-	09/11/25 11:34
Lead	6020B	892891	0.227	-	-	-	09/11/25 11:34
Nickel	6020B	892891	0.58	-	-	-	09/11/25 11:34
Selenium	6020B	892891	0.01	-	-	-	09/11/25 11:34
Silver	6020B	892891	0.012	-	-	-	09/11/25 11:34
Zinc	6020B	892891	0.7	-	-	-	09/11/25 11:34

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	Analysis Date
						Limits	
Cadmium	6020B	892891	25.3	25.0	101	80-120	09/11/25 11:36
Chromium	6020B	892891	50.9	50.0	102	80-120	09/11/25 11:36
Copper	6020B	892891	48.7	50.0	97	80-120	09/11/25 11:36
Lead	6020B	892891	0.227	-	-	-	09/11/25 11:36
Nickel	6020B	892891	48.4	50.0	97	80-120	09/11/25 11:36
Selenium	6020B	892891	25.3	25.0	101	80-120	09/11/25 11:36
Silver	6020B	892891	12.4	12.5	99	80-120	09/11/25 11:36
Zinc	6020B	892891	23.8	25.0	95	80-120	09/11/25 11:36

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID				Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
Analyte	Method	Analysis Batch:							
K2508259-003A									
Cadmium	6020B	892891		0.08 J	49.2	50.0	98	75-125	09/11/25 12:22
Chromium	6020B	892891		0.3 U	49.8	50.0	99	75-125	09/11/25 12:22
Copper	6020B	892891		7.3	56.9	50.0	99	75-125	09/11/25 12:22
Lead	6020B	892891		0.03 U	48.2	50.0	96	75-125	09/11/25 12:22
Nickel	6020B	892891		0.2 J	49.7	50.0	99	75-125	09/11/25 12:22
Selenium	6020B	892891		4 J	55	50	100	75-125	09/11/25 12:22
Silver	6020B	892891		0.02 J	4.89	5.00	97	75-125	09/11/25 12:22
Zinc	6020B	892891		279	325	50.0	92 #	75-125	09/11/25 12:22

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring

Service Request: K2508259

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID			Initial Sample Result	Serial Dilution Result	% Diff	% Diff. Limit	Analysis Date
Analyte	Method	Analysis Batch:					
K2508259-003SDL							
Cadmium	6020B	892891	0.4	0.4 J	6	10	09/11/25 12:11
Chromium	6020B	892891	1 J	1 U	25	10	09/11/25 12:11
Copper	6020B	892891	36.4	37.8	4	10	09/11/25 12:11
Lead	6020B	892891	0.05 J	0.05 U	17	10	09/11/25 12:11
Nickel	6020B	892891	0.9 J	1 J	33	10	09/11/25 12:11
Selenium	6020B	892891	22	22 J	2	10	09/11/25 12:11
Silver	6020B	892891	0.1 J	0.1 U	1	10	09/11/25 12:11
Zinc	6020B	892891	1390	1390	0	10	09/11/25 12:11

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dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring/

Service Request: K2508259

Detection Limits

Instrument: K-ICP-MS-06

Matrix: Animal Tissue

Analyte	Mass	Units	MRL	MDL	Method
Cadmium	111	ug/L	0.04	0.0076	6020B
Chromium	52	ug/L	0.4	0.058	6020B
Copper	65	ug/L	0.2	0.072	6020B
Lead	208	ug/L	0.04	0.006	6020B
Nickel	60	ug/L	0.4	0.03	6020B
Selenium	78	ug/L	2	0.052	6020B
Silver	107	ug/L	0.04	0.0044	6020B
Zinc	66	ug/L	1	0.32	6020B

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine Biomonitoring/

Service Request: K2508259

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-06

Analyte	Concentration (ug/L)	Method
Cadmium 111	9000	6020B
Chromium 52	9000	6020B
Copper 65	4500	6020B
Lead 208	4500	6020B
Nickel 60	4500	6020B
Selenium 78	9000	6020B
Silver 107	450	6020B
Zinc 66	9000	6020B



ALS Environmental
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September 12, 2025

Analytical Report for Service Request No: K2508260

Greg Albrecht
Alaska Department of Fish and Game
802 3rd St.,
P.O. Box 110024
Juneau, AK 99811-0024

RE: New Amalga Gold Mine Biomonitoring 2025

Dear Greg,

Enclosed are the results of the sample(s) submitted to our laboratory August 19, 2025
For your reference, these analyses have been assigned our service request number **K2508260**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

For Mark Harris
Project Manager



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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Service Request: K2508260
Date Received: 08/19/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Nineteen animal tissue samples were received for analysis at ALS Environmental on 08/19/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Metals:

Method 6020B, 09/11/2025: The matrix spike recovery of Zinc for sample name was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential low bias in this matrix. No further corrective action was appropriate.

Method 6020B, 09/11/2025: The recovery of Lead in the Standard Reference Material (SRM) N.R.C.C. Dorm-5 was above the normal ALS/Kelso control limit (i.e. 0.078 mg/kg versus a control limit of 0.077 mg/kg). However, the concentration of Lead in the SRM is relatively low compared to the sensitivity of the analytical procedure. The associated QA/QC results (e.g. SRM N.R.C.C. Tort-3, matrix spike, method blank, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

Approved by



Date

09/12/2025



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

New Amalga Gold Mine Biomonitoring 2025
 Juvenile Fish for Whole Body Metals
 Basis, all samples: Dry Weight, Report %Solids
 Requested Analysis: Ag,Cd,Cu,Hg,Pb,Se,Zn

Sheet 2 of 2

12508260

Matrix	Date		Sample Name	Sample ID	Total Metals	FK Length	Weight
	Collected					(mm)	(g)
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 1	2025HRBPDV1	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	116	16
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 2	2025HRBPDV2	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	125	21.2
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 3	2025HRBPDV3	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	89	8.2
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 4	2025HRBPDV4	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	83	7.9
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 5	2025HRBPDV5	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	84	8.2
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 6	2025HRBPDV6	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	75	5.8
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 7	2025HRBPDV7	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	123	22.7
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 8	2025HRBPDV8	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	114	17.3
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 9	2025HRBPDV9	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	110	14.8
Whole Body	7/15/2025		Herbert River Beaver Pond DV Metals Fish 10	2025HRBPDV10	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	N/A	N/A
Whole Body	6/3/2025		Herbert River Beaver Lake DV Metals Fish 1	2025HRBLDV1	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	104	12.8
Whole Body	6/3/2025		Herbert River Beaver Lake DV Metals Fish 2	2025HRBLDV2	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	103	8.5
Whole Body	6/3/2025		Herbert River Beaver Lake DV Metals Fish 3	2025HRBLDV3	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	96	7.7
Whole Body	6/4/2025		Herbert River Beaver Lake DV Metals Fish 4	2025HRBLDV4	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	125	22.7
Whole Body	6/4/2025		Herbert River Beaver Lake DV Metals Fish 5	2025HRBLDV5	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	86	6.8
Whole Body	7/15/2025		Herbert River Beaver Lake DV Metals Fish 6	2025HRBLDV6	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	83	6.5
Whole Body	7/15/2025		Herbert River Beaver Lake DV Metals Fish 7	2025HRBLDV7	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	105	18.3
Whole Body	7/15/2025		Herbert River Beaver Lake DV Metals Fish 8	2025HRBLDV8	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	121	21.1
Whole Body	7/15/2025		Herbert River Beaver Lake DV Metals Fish 9	2025HRBLDV9	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	104	8.7
Whole Body	7/15/2025		Herbert River Beaver Lake DV Metals Fish 10	2025HRBLDV10	Ag, Cd, Cr, Cu, Hg, Ni, Pb, Se, Zn	85	6.9

Cooler Receipt and Preservation Form

Client Alaska Dept of Fish and Game Service Request K25 08260 PM Mark
 Received: 8/18/25 Opened: 8/18/25 By: pdp Unloaded: 8/18/25 By: pdp

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 2. Samples were received in: (circle) Cooler Box Envelope Other NA
 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / <u>NA</u>	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number <u>NA</u>	Filed
<u>1.7</u>	<u>2.6</u>	<u>1806</u>				<u>392238654005</u>	

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges? NA Y N

If no, were they received on ice and same day as collected? If not, note the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
 8. Were samples received in good condition (unbroken) NA Y N
 9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
 10. Did all sample labels and tags agree with custody papers? NA Y N
 11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
 12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
 13. Were VOA vials received without headspace? Indicate in the table below. NA Y N
 14. Was C12/Res negative? NA Y N
 15. Were samples received within method specified time limit? If not, note the error below and notify the PM. NA Y N
 16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Total Solids

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Analysis Method: Freeze Dry
Prep Method: None

Service Request: K2508260
Date Collected: 06/03/25 - 07/15/25
Date Received: 08/19/25
Units: Percent
Basis: Wet

Total Solids

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
2025 HRBPDV1	K2508260-001	24.5	-	-	1	08/29/25 11:37	
2025 HRBPDV2	K2508260-002	22.8	-	-	1	08/29/25 11:37	
2025 HRBPDV3	K2508260-003	22.6	-	-	1	08/29/25 11:37	
2025 HRBPDV4	K2508260-004	21.0	-	-	1	08/29/25 11:37	
2025 HRBPDV5	K2508260-005	23.8	-	-	1	08/29/25 11:37	
2025 HRBPDV6	K2508260-006	20.6	-	-	1	08/29/25 11:37	
2025 HRBPDV7	K2508260-007	26.4	-	-	1	08/29/25 11:37	
2025 HRBPDV8	K2508260-008	24.3	-	-	1	08/29/25 11:37	
2025 HRBPDV9	K2508260-009	23.6	-	-	1	08/29/25 11:37	
2025 HRBLDV1	K2508260-010	23.7	-	-	1	08/29/25 11:37	
2025 HRBLDV2	K2508260-011	20.5	-	-	1	08/29/25 11:37	
2025 HRBLDV3	K2508260-012	25.8	-	-	1	08/29/25 11:37	
2025 HRBLDV4	K2508260-013	22.0	-	-	1	08/29/25 11:37	
2025 HRBLDV5	K2508260-014	22.0	-	-	1	08/29/25 11:37	
2025 HRBLDV6	K2508260-015	22.1	-	-	1	08/29/25 11:37	
2025 HRBLDV7	K2508260-016	22.3	-	-	1	08/29/25 11:37	
2025 HRBLDV8	K2508260-017	23.9	-	-	1	08/29/25 11:37	
2025 HRBLDV9	K2508260-018	24.2	-	-	1	08/29/25 11:37	
2025 HRBLDV10	K2508260-019	21.1	-	-	1	08/29/25 11:37	



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal tissue

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25

Mercury, Total

Prep Method: METHOD
Analysis Method: 1631E
Test Notes:

Units: ng/g
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2025 HRBPDV1	K2508260-001	10.0	2.00	10	09/10/25	09/11/25	25.3	
2025 HRBPDV2	K2508260-002	10.0	1.99	10	09/10/25	09/11/25	68.4	
2025 HRBPDV3	K2508260-003	9.9	1.99	10	09/10/25	09/11/25	26.5	
2025 HRBPDV4	K2508260-004	9.9	1.98	10	09/10/25	09/11/25	32.0	
2025 HRBPDV5	K2508260-005	9.9	1.97	10	09/10/25	09/11/25	55.7	
2025 HRBPDV6	K2508260-006	9.9	1.98	10	09/10/25	09/11/25	73.7	
2025 HRBPDV7	K2508260-007	10.0	1.99	10	09/10/25	09/11/25	27.0	
2025 HRBPDV8	K2508260-008	9.9	1.97	10	09/10/25	09/11/25	27.4	
2025 HRBPDV9	K2508260-009	9.9	1.99	10	09/10/25	09/11/25	20.5	
2025 HRBLDV1	K2508260-010	9.9	1.99	10	09/10/25	09/11/25	46.6	
2025 HRBLDV2	K2508260-011	9.9	1.99	10	09/10/25	09/11/25	36.5	
2025 HRBLDV3	K2508260-012	10.0	2.00	10	09/10/25	09/11/25	67.2	
2025 HRBLDV4	K2508260-013	10.0	1.99	10	09/10/25	09/11/25	37.8	
2025 HRBLDV5	K2508260-014	9.9	1.99	10	09/10/25	09/11/25	56.1	
2025 HRBLDV6	K2508260-015	9.9	1.97	10	09/10/25	09/11/25	70.5	
2025 HRBLDV7	K2508260-016	9.9	1.99	10	09/10/25	09/11/25	42.5	
2025 HRBLDV8	K2508260-017	9.9	1.98	10	09/10/25	09/11/25	68.8	
2025 HRBLDV9	K2508260-018	9.9	1.99	10	9/10/2025	9/11/2025	66.9	
2025 HRBLDV10	K2508260-019	10.0	2.00	10	9/10/2025	9/11/2025	48.8	
Method Blank 1	K2508260-MB1	1.0	0.20	1	9/10/2025	9/11/2025	ND	
Method Blank 2	K2508260-MB2	1.0	0.20	1	9/10/2025	9/11/2025	ND	
Method Blank 3	K2508260-MB3	1.0	0.20	1	9/10/2025	9/11/2025	ND	

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal tissue

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals

Sample Name: 2025 HRBPDV7 Units: ng/g
Lab Code: K2508260-007MS, K2508260-007DMS Basis: Dry
Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Percent Recovery									Relative Percent Difference	Result Notes
				Spike Level		Sample Result	Spike Result		ALS Acceptance Limits					
				MS	DMS		MS	DMS	MS	DMS				
Mercury	METHOD	1631E	9.9	247	247	27.0	258	268	94	98	70-130	4		

ALS Group USA, Corp.
dba ALS Environmental
 QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal tissue

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Matrix Spike/Duplicate Matrix Spike Summary
 Total Metals

Sample Name: 2025 HRBLDV8 Units: ng/g
 Lab Code: K2508260-017MS, K2508260-017DMS Basis: Dry
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Spike Level		Sample Result	Spike Result		Percent Recovery		ALS Acceptance Limits	Relative Percent Difference	Result Notes
				MS	DMS		MS	DMS	MS	DMS			
Mercury	METHOD	1631E	9.9	249	247	68.8	305	291	95	90	70-130	5	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
LCS Matrix: Water

Service Request: K2508260
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Initial) **Units:** ng/g
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery	Result Notes
						Acceptance Limits	
Mercury	METHOD	1631E	5.00	4.96	99	70-130	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
LCS Matrix: Water

Service Request: K2508260
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Final) **Units:** ng/g
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery	Result Notes
						Acceptance Limits	
Mercury	METHOD	1631E	5.00	4.93	99	70-130	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
LCS Matrix: Animal tissue

Service Request: K2508260
Date Collected: NA
Date Received: NA
Date Extracted: 09/10/25
Date Analyzed: 09/11/25

Quality Control Sample (QCS) Summary
Total Metals

Sample Name: Quality Control Sample
Lab Code:
Test Notes: Tort-3 Solids = 97.4%

Units: ng/g
Basis: Dry

Source: TORT-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery	Result Notes
						Acceptance Limits	
Mercury	METHOD	1631E	292	240	82	70-130	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV1
Lab Code: K2508260-001

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.078	mg/Kg	0.020	0.004	5	09/11/25 13:17	09/09/25	
Chromium	6020B	0.34	mg/Kg	0.20	0.03	5	09/11/25 13:17	09/09/25	
Copper	6020B	6.42	mg/Kg	0.10	0.04	5	09/11/25 13:17	09/09/25	
Lead	6020B	0.050	mg/Kg	0.020	0.003	5	09/11/25 13:17	09/09/25	
Nickel	6020B	0.47	mg/Kg	0.20	0.01	5	09/11/25 13:17	09/09/25	
Selenium	6020B	2.08	mg/Kg	1.0	0.03	5	09/11/25 13:17	09/09/25	
Silver	6020B	0.005 J	mg/Kg	0.020	0.002	5	09/11/25 13:17	09/09/25	
Zinc	6020B	109	mg/Kg	0.50	0.16	5	09/11/25 13:17	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV2
Lab Code: K2508260-002

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.056	mg/Kg	0.020	0.004	5	09/11/25 13:27	09/09/25	
Chromium	6020B	0.13 J	mg/Kg	0.20	0.03	5	09/11/25 13:27	09/09/25	
Copper	6020B	3.92	mg/Kg	0.099	0.036	5	09/11/25 13:27	09/09/25	
Lead	6020B	0.050	mg/Kg	0.020	0.003	5	09/11/25 13:27	09/09/25	
Nickel	6020B	0.12 J	mg/Kg	0.20	0.01	5	09/11/25 13:27	09/09/25	
Selenium	6020B	2.24	mg/Kg	0.99	0.03	5	09/11/25 13:27	09/09/25	
Silver	6020B	0.003 J	mg/Kg	0.020	0.002	5	09/11/25 13:27	09/09/25	
Zinc	6020B	105	mg/Kg	0.49	0.16	5	09/11/25 13:27	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV3
Lab Code: K2508260-003

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.075	mg/Kg	0.020	0.004	5	09/11/25 13:34	09/09/25	
Chromium	6020B	0.11 J	mg/Kg	0.20	0.03	5	09/11/25 13:34	09/09/25	
Copper	6020B	3.30	mg/Kg	0.098	0.035	5	09/11/25 13:34	09/09/25	
Lead	6020B	0.041	mg/Kg	0.020	0.003	5	09/11/25 13:34	09/09/25	
Nickel	6020B	0.11 J	mg/Kg	0.20	0.01	5	09/11/25 13:34	09/09/25	
Selenium	6020B	1.79	mg/Kg	0.98	0.03	5	09/11/25 13:34	09/09/25	
Silver	6020B	0.002 J	mg/Kg	0.020	0.002	5	09/11/25 13:34	09/09/25	
Zinc	6020B	115	mg/Kg	0.49	0.16	5	09/11/25 13:34	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV4
Lab Code: K2508260-004

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.079	mg/Kg	0.020	0.004	5	09/11/25 13:36	09/09/25	
Chromium	6020B	0.24	mg/Kg	0.20	0.03	5	09/11/25 13:36	09/09/25	
Copper	6020B	4.04	mg/Kg	0.10	0.04	5	09/11/25 13:36	09/09/25	
Lead	6020B	0.050	mg/Kg	0.020	0.003	5	09/11/25 13:36	09/09/25	
Nickel	6020B	0.19 J	mg/Kg	0.20	0.01	5	09/11/25 13:36	09/09/25	
Selenium	6020B	1.83	mg/Kg	1.0	0.03	5	09/11/25 13:36	09/09/25	
Silver	6020B	0.006 J	mg/Kg	0.020	0.002	5	09/11/25 13:36	09/09/25	
Zinc	6020B	119	mg/Kg	0.50	0.16	5	09/11/25 13:36	09/09/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV5
Lab Code: K2508260-005

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.071	mg/Kg	0.020	0.004	5	09/11/25 13:38	09/09/25	
Chromium	6020B	0.16 J	mg/Kg	0.20	0.03	5	09/11/25 13:38	09/09/25	
Copper	6020B	3.69	mg/Kg	0.10	0.04	5	09/11/25 13:38	09/09/25	
Lead	6020B	0.032	mg/Kg	0.020	0.003	5	09/11/25 13:38	09/09/25	
Nickel	6020B	0.15 J	mg/Kg	0.20	0.01	5	09/11/25 13:38	09/09/25	
Selenium	6020B	1.92	mg/Kg	1.0	0.03	5	09/11/25 13:38	09/09/25	
Silver	6020B	0.004 J	mg/Kg	0.020	0.002	5	09/11/25 13:38	09/09/25	
Zinc	6020B	112	mg/Kg	0.50	0.16	5	09/11/25 13:38	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV6
Lab Code: K2508260-006

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.148	mg/Kg	0.019	0.004	5	09/11/25 13:40	09/09/25	
Chromium	6020B	0.32	mg/Kg	0.19	0.03	5	09/11/25 13:40	09/09/25	
Copper	6020B	4.61	mg/Kg	0.097	0.035	5	09/11/25 13:40	09/09/25	
Lead	6020B	0.025	mg/Kg	0.019	0.003	5	09/11/25 13:40	09/09/25	
Nickel	6020B	0.36	mg/Kg	0.19	0.01	5	09/11/25 13:40	09/09/25	
Selenium	6020B	2.79	mg/Kg	0.97	0.03	5	09/11/25 13:40	09/09/25	
Silver	6020B	0.006 J	mg/Kg	0.019	0.002	5	09/11/25 13:40	09/09/25	
Zinc	6020B	129	mg/Kg	0.49	0.16	5	09/11/25 13:40	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBPDV7
Lab Code: K2508260-007

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.057	mg/Kg	0.020	0.004	5	09/11/25 13:42	09/09/25	
Chromium	6020B	0.32	mg/Kg	0.20	0.03	5	09/11/25 13:42	09/09/25	
Copper	6020B	7.00	mg/Kg	0.099	0.036	5	09/11/25 13:42	09/09/25	
Lead	6020B	0.040	mg/Kg	0.020	0.003	5	09/11/25 13:42	09/09/25	
Nickel	6020B	0.50	mg/Kg	0.20	0.01	5	09/11/25 13:42	09/09/25	
Selenium	6020B	1.88	mg/Kg	0.99	0.03	5	09/11/25 13:42	09/09/25	
Silver	6020B	0.002 J	mg/Kg	0.020	0.002	5	09/11/25 13:42	09/09/25	
Zinc	6020B	90.4	mg/Kg	0.50	0.16	5	09/11/25 13:42	09/09/25	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Sample Name: 2025 HRBPDV8
Lab Code: K2508260-008

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.047	mg/Kg	0.020	0.004	5	09/11/25 13:44	09/09/25	
Chromium	6020B	0.11 J	mg/Kg	0.20	0.03	5	09/11/25 13:44	09/09/25	
Copper	6020B	3.42	mg/Kg	0.099	0.036	5	09/11/25 13:44	09/09/25	
Lead	6020B	0.026	mg/Kg	0.020	0.003	5	09/11/25 13:44	09/09/25	
Nickel	6020B	0.07 J	mg/Kg	0.20	0.01	5	09/11/25 13:44	09/09/25	
Selenium	6020B	1.62	mg/Kg	0.99	0.03	5	09/11/25 13:44	09/09/25	
Silver	6020B	ND U	mg/Kg	0.020	0.002	5	09/11/25 13:44	09/09/25	
Zinc	6020B	104	mg/Kg	0.50	0.16	5	09/11/25 13:44	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Sample Name: 2025 HRBPDV9
Lab Code: K2508260-009

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.047	mg/Kg	0.020	0.004	5	09/11/25 13:47	09/09/25	
Chromium	6020B	0.09 J	mg/Kg	0.20	0.03	5	09/11/25 13:47	09/09/25	
Copper	6020B	3.57	mg/Kg	0.099	0.036	5	09/11/25 13:47	09/09/25	
Lead	6020B	0.022	mg/Kg	0.020	0.003	5	09/11/25 13:47	09/09/25	
Nickel	6020B	0.08 J	mg/Kg	0.20	0.01	5	09/11/25 13:47	09/09/25	
Selenium	6020B	2.02	mg/Kg	0.99	0.03	5	09/11/25 13:47	09/09/25	
Silver	6020B	ND U	mg/Kg	0.020	0.002	5	09/11/25 13:47	09/09/25	
Zinc	6020B	129	mg/Kg	0.50	0.16	5	09/11/25 13:47	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV1
Lab Code: K2508260-010

Service Request: K2508260
Date Collected: 06/03/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.080	mg/Kg	0.020	0.004	5	09/11/25 13:49	09/09/25	
Chromium	6020B	0.24	mg/Kg	0.20	0.03	5	09/11/25 13:49	09/09/25	
Copper	6020B	3.47	mg/Kg	0.098	0.035	5	09/11/25 13:49	09/09/25	
Lead	6020B	0.016 J	mg/Kg	0.020	0.003	5	09/11/25 13:49	09/09/25	
Nickel	6020B	0.17 J	mg/Kg	0.20	0.01	5	09/11/25 13:49	09/09/25	
Selenium	6020B	4.19	mg/Kg	0.98	0.03	5	09/11/25 13:49	09/09/25	
Silver	6020B	0.007 J	mg/Kg	0.020	0.002	5	09/11/25 13:49	09/09/25	
Zinc	6020B	142	mg/Kg	0.49	0.16	5	09/11/25 13:49	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV2
Lab Code: K2508260-011

Service Request: K2508260
Date Collected: 06/03/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.126	mg/Kg	0.020	0.004	5	09/11/25 13:51	09/09/25	
Chromium	6020B	0.79	mg/Kg	0.20	0.03	5	09/11/25 13:51	09/09/25	
Copper	6020B	5.06	mg/Kg	0.099	0.036	5	09/11/25 13:51	09/09/25	
Lead	6020B	0.016 J	mg/Kg	0.020	0.003	5	09/11/25 13:51	09/09/25	
Nickel	6020B	0.51	mg/Kg	0.20	0.01	5	09/11/25 13:51	09/09/25	
Selenium	6020B	4.02	mg/Kg	0.99	0.03	5	09/11/25 13:51	09/09/25	
Silver	6020B	0.006 J	mg/Kg	0.020	0.002	5	09/11/25 13:51	09/09/25	
Zinc	6020B	169	mg/Kg	0.50	0.16	5	09/11/25 13:51	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV3
Lab Code: K2508260-012

Service Request: K2508260
Date Collected: 06/03/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.059	mg/Kg	0.020	0.004	5	09/11/25 13:53	09/09/25	
Chromium	6020B	0.37	mg/Kg	0.20	0.03	5	09/11/25 13:53	09/09/25	
Copper	6020B	3.72	mg/Kg	0.098	0.035	5	09/11/25 13:53	09/09/25	
Lead	6020B	0.023	mg/Kg	0.020	0.003	5	09/11/25 13:53	09/09/25	
Nickel	6020B	0.24	mg/Kg	0.20	0.01	5	09/11/25 13:53	09/09/25	
Selenium	6020B	3.41	mg/Kg	0.98	0.03	5	09/11/25 13:53	09/09/25	
Silver	6020B	0.005 J	mg/Kg	0.020	0.002	5	09/11/25 13:53	09/09/25	
Zinc	6020B	80.8	mg/Kg	0.49	0.16	5	09/11/25 13:53	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV4
Lab Code: K2508260-013

Service Request: K2508260
Date Collected: 06/04/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.131	mg/Kg	0.020	0.004	5	09/11/25 13:59	09/09/25	
Chromium	6020B	0.25	mg/Kg	0.20	0.03	5	09/11/25 13:59	09/09/25	
Copper	6020B	3.32	mg/Kg	0.10	0.04	5	09/11/25 13:59	09/09/25	
Lead	6020B	0.036	mg/Kg	0.020	0.003	5	09/11/25 13:59	09/09/25	
Nickel	6020B	0.31	mg/Kg	0.20	0.02	5	09/11/25 13:59	09/09/25	
Selenium	6020B	5.2	mg/Kg	1.0	0.03	5	09/11/25 13:59	09/09/25	
Silver	6020B	0.011 J	mg/Kg	0.020	0.002	5	09/11/25 13:59	09/09/25	
Zinc	6020B	134	mg/Kg	0.50	0.16	5	09/11/25 13:59	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV5
Lab Code: K2508260-014

Service Request: K2508260
Date Collected: 06/04/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.074	mg/Kg	0.020	0.004	5	09/11/25 14:01	09/09/25	
Chromium	6020B	0.24	mg/Kg	0.20	0.03	5	09/11/25 14:01	09/09/25	
Copper	6020B	2.87	mg/Kg	0.099	0.036	5	09/11/25 14:01	09/09/25	
Lead	6020B	0.068	mg/Kg	0.020	0.003	5	09/11/25 14:01	09/09/25	
Nickel	6020B	0.17 J	mg/Kg	0.20	0.01	5	09/11/25 14:01	09/09/25	
Selenium	6020B	2.04	mg/Kg	0.99	0.03	5	09/11/25 14:01	09/09/25	
Silver	6020B	ND U	mg/Kg	0.020	0.002	5	09/11/25 14:01	09/09/25	
Zinc	6020B	155	mg/Kg	0.50	0.16	5	09/11/25 14:01	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV6
Lab Code: K2508260-015

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.155	mg/Kg	0.020	0.004	5	09/11/25 14:04	09/09/25	
Chromium	6020B	0.60	mg/Kg	0.20	0.03	5	09/11/25 14:04	09/09/25	
Copper	6020B	3.94	mg/Kg	0.10	0.04	5	09/11/25 14:04	09/09/25	
Lead	6020B	0.094	mg/Kg	0.020	0.003	5	09/11/25 14:04	09/09/25	
Nickel	6020B	0.41	mg/Kg	0.20	0.01	5	09/11/25 14:04	09/09/25	
Selenium	6020B	3.34	mg/Kg	1.0	0.03	5	09/11/25 14:04	09/09/25	
Silver	6020B	0.006 J	mg/Kg	0.020	0.002	5	09/11/25 14:04	09/09/25	
Zinc	6020B	108	mg/Kg	0.50	0.16	5	09/11/25 14:04	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV7
Lab Code: K2508260-016

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.117	mg/Kg	0.020	0.004	5	09/11/25 14:06	09/09/25	
Chromium	6020B	1.42	mg/Kg	0.20	0.03	5	09/11/25 14:06	09/09/25	
Copper	6020B	5.21	mg/Kg	0.098	0.035	5	09/11/25 14:06	09/09/25	
Lead	6020B	0.133	mg/Kg	0.020	0.003	5	09/11/25 14:06	09/09/25	
Nickel	6020B	0.77	mg/Kg	0.20	0.01	5	09/11/25 14:06	09/09/25	
Selenium	6020B	3.21	mg/Kg	0.98	0.03	5	09/11/25 14:06	09/09/25	
Silver	6020B	0.007 J	mg/Kg	0.020	0.002	5	09/11/25 14:06	09/09/25	
Zinc	6020B	145	mg/Kg	0.49	0.16	5	09/11/25 14:06	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV8
Lab Code: K2508260-017

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.855	mg/Kg	0.020	0.004	5	09/11/25 14:08	09/09/25	
Chromium	6020B	0.37	mg/Kg	0.20	0.03	5	09/11/25 14:08	09/09/25	
Copper	6020B	14.6	mg/Kg	0.099	0.036	5	09/11/25 14:08	09/09/25	
Lead	6020B	0.061	mg/Kg	0.020	0.003	5	09/11/25 14:08	09/09/25	
Nickel	6020B	2.07	mg/Kg	0.20	0.01	5	09/11/25 14:08	09/09/25	
Selenium	6020B	3.59	mg/Kg	0.99	0.03	5	09/11/25 14:08	09/09/25	
Silver	6020B	0.007 J	mg/Kg	0.020	0.002	5	09/11/25 14:08	09/09/25	
Zinc	6020B	164	mg/Kg	0.50	0.16	5	09/11/25 14:08	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV9
Lab Code: K2508260-018

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.131	mg/Kg	0.020	0.004	5	09/11/25 14:10	09/09/25	
Chromium	6020B	0.94	mg/Kg	0.20	0.03	5	09/11/25 14:10	09/09/25	
Copper	6020B	3.77	mg/Kg	0.099	0.036	5	09/11/25 14:10	09/09/25	
Lead	6020B	0.138	mg/Kg	0.020	0.003	5	09/11/25 14:10	09/09/25	
Nickel	6020B	0.62	mg/Kg	0.20	0.01	5	09/11/25 14:10	09/09/25	
Selenium	6020B	3.55	mg/Kg	0.99	0.03	5	09/11/25 14:10	09/09/25	
Silver	6020B	0.008 J	mg/Kg	0.020	0.002	5	09/11/25 14:10	09/09/25	
Zinc	6020B	109	mg/Kg	0.50	0.16	5	09/11/25 14:10	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: 2025 HRBLDV10
Lab Code: K2508260-019

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25 16:05
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	0.421	mg/Kg	0.020	0.004	5	09/11/25 14:12	09/09/25	
Chromium	6020B	0.99	mg/Kg	0.20	0.03	5	09/11/25 14:12	09/09/25	
Copper	6020B	4.71	mg/Kg	0.099	0.036	5	09/11/25 14:12	09/09/25	
Lead	6020B	0.087	mg/Kg	0.020	0.003	5	09/11/25 14:12	09/09/25	
Nickel	6020B	0.56	mg/Kg	0.20	0.01	5	09/11/25 14:12	09/09/25	
Selenium	6020B	4.02	mg/Kg	0.99	0.03	5	09/11/25 14:12	09/09/25	
Silver	6020B	0.013 J	mg/Kg	0.020	0.002	5	09/11/25 14:12	09/09/25	
Zinc	6020B	156	mg/Kg	0.50	0.16	5	09/11/25 14:12	09/09/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue
Sample Name: Method Blank
Lab Code: KQ2515936-01

Service Request: K2508260
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Cadmium	6020B	ND U	mg/Kg	0.020	0.004	5	09/11/25 13:08	09/09/25	
Chromium	6020B	ND U	mg/Kg	0.20	0.03	5	09/11/25 13:08	09/09/25	
Copper	6020B	ND U	mg/Kg	0.10	0.04	5	09/11/25 13:08	09/09/25	
Lead	6020B	0.004 J	mg/Kg	0.020	0.003	5	09/11/25 13:08	09/09/25	
Nickel	6020B	ND U	mg/Kg	0.20	0.02	5	09/11/25 13:08	09/09/25	
Selenium	6020B	ND U	mg/Kg	1.0	0.03	5	09/11/25 13:08	09/09/25	
Silver	6020B	ND U	mg/Kg	0.020	0.002	5	09/11/25 13:08	09/09/25	
Zinc	6020B	ND U	mg/Kg	0.50	0.16	5	09/11/25 13:08	09/09/25	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Service Request: K2508260**Date Collected:** 07/15/25**Date Received:** 08/19/25**Date Analyzed:** 09/11/25**Replicate Sample Summary****Total Metals****Sample Name:** 2025 HRBPDV1**Units:** mg/Kg**Lab Code:** K2508260-001**Basis:** Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2515936-05	Average	RPD	RPD Limit
					Result			
Cadmium	6020B	0.020	0.004	0.078	0.069	0.074	12	20
Chromium	6020B	0.20	0.03	0.34	0.31	0.33	9	20
Copper	6020B	0.099	0.036	6.42	5.97	6.20	7	20
Lead	6020B	0.020	0.003	0.050	0.047	0.049	6	20
Nickel	6020B	0.20	0.01	0.47	0.47	0.47	<1	20
Selenium	6020B	0.99	0.03	2.08	2.03	2.06	2	20
Silver	6020B	0.020	0.002	0.005 J	0.003 J	0.004	50 #	20
Zinc	6020B	0.50	0.16	109	101	105	8	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Service Request: K2508260
Date Collected: 07/15/25
Date Received: 08/19/25
Date Analyzed: 09/11/25
Date Extracted: 09/9/25

Matrix Spike Summary
Total Metals

Sample Name: 2025 HRBPDV1
Lab Code: K2508260-001
Analysis Method: 6020B
Prep Method: PSEP Metals

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ2515936-06

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Cadmium	0.078	4.72	4.97	94	75-125
Chromium	0.34	18.9	19.9	93	75-125
Copper	6.42	28.5	24.8	89	75-125
Lead	0.050	45.6	49.7	92	75-125
Nickel	0.47	45.9	49.7	92	75-125
Selenium	2.08	18.4	16.6	99	75-125
Silver	0.005 J	4.55	4.97	91	75-125
Zinc	109	143	49.7	69 N	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Service Request: K2508260
Date Analyzed: 09/11/25

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ2515936-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cadmium	6020B	4.77	5.00	95	80-120
Chromium	6020B	19.7	20.0	99	80-120
Copper	6020B	24.9	25.0	100	80-120
Lead	6020B	48.9	50.0	98	80-120
Nickel	6020B	49.4	50.0	99	80-120
Selenium	6020B	16.5	16.7	99	80-120
Silver	6020B	4.75	5.00	95	80-120
Zinc	6020B	49.0	50.0	98	80-120

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
LCS Matrix: Tissue

Service Request: K2508260**Date Collected:** NA**Date Received:** NA**Date Extracted:** 09/09/25**Date Analyzed:** 09/11/25

Standard Reference Material Summary

Total Metals

Sample Name: Standard Reference Material**Lab Code:** KQ2515936-03**Test Notes:** Dorm-5 Solids = 95.8%**Units:** mg/Kg (ppm)**Basis:** Dry**Source:** N.R.C.C. Dorm-5

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Cadmium	PSEP Tissue	6020B	0.148	0.150	101	0.113 - 0.186	
Chromium	PSEP Tissue	6020B	0.515	0.496	96	0.358 - 0.700	
Copper	PSEP Tissue	6020B	3.30	3.24	98	2.58 - 4.04	
Lead	PSEP Tissue	6020B	0.058	0.078	134	0.042 - 0.077	x
Nickel	PSEP Tissue	6020B	0.44	0.35	80	0.33 - 0.56	
Selenium	PSEP Tissue	6020B	2.40	2.37	99	1.83 - 3.01	
Silver	PSEP Tissue	6020B	0.135	0.138	102	0.097 - 0.179	
Zinc	PSEP Tissue	6020B	28.7	27.7	97	22.2 - 35.6	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
LCS Matrix: Tissue

Service Request: K2508260
Date Collected: NA
Date Received: NA
Date Extracted: 9/9/2025
Date Analyzed: 9/11/2025

Standard Reference Material Summary
Total Metals

Sample Name: Standard Reference Material
Lab Code: KQ2515936-04
Test Notes: Tort-3 Solids = 97.4%

Units: mg/Kg (ppm)
Basis: Dry

Source: N.R.C.C. Tort-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	Control Limits	Result Notes
Cadmium	PSEP Tissue	6020B	42.3	37.7	89	32.4-52.9	
Chromium	PSEP Tissue	6020B	1.95	1.69	87	1.37-2.63	
Copper	PSEP Tissue	6020B	497	432	87	380-623	
Lead	PSEP Tissue	6020B	0.225	0.193	86	0.166-0.292	
Nickel	PSEP Tissue	6020B	5.3	4.7	89	4.05-6.65	
Selenium	PSEP Tissue	6020B	10.9	10.0	92	7.9-14.3	
Zinc	PSEP Tissue	6020B	136	119	88	104-170	

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Prep Summary Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025
Sample Matrix: Animal Tissue

Service Request:K2508260

Metals

Prep Method: PSEP Metals
Analytical Method: 6020B

Extraction Lot: 463826
Extraction Date: 09/09/25 17:05

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
2025 HRBPDV1	K2508260-001	7/15/25	8/19/25	0.30100 g	30 mL	
2025 HRBPDV2	K2508260-002	7/15/25	8/19/25	0.30400 g	30 mL	
2025 HRBPDV3	K2508260-003	7/15/25	8/19/25	0.30600 g	30 mL	
2025 HRBPDV4	K2508260-004	7/15/25	8/19/25	0.30100 g	30 mL	
2025 HRBPDV5	K2508260-005	7/15/25	8/19/25	0.30100 g	30 mL	
2025 HRBPDV6	K2508260-006	7/15/25	8/19/25	0.20600 g	20 mL	
2025 HRBPDV7	K2508260-007	7/15/25	8/19/25	0.30300 g	30 mL	
2025 HRBPDV8	K2508260-008	7/15/25	8/19/25	0.30200 g	30 mL	
2025 HRBPDV9	K2508260-009	7/15/25	8/19/25	0.30200 g	30 mL	
2025 HRBLDV1	K2508260-010	6/3/25	8/19/25	0.30600 g	30 mL	
2025 HRBLDV2	K2508260-011	6/3/25	8/19/25	0.30300 g	30 mL	
2025 HRBLDV3	K2508260-012	6/3/25	8/19/25	0.30500 g	30 mL	
2025 HRBLDV4	K2508260-013	6/4/25	8/19/25	0.30000 g	30 mL	
2025 HRBLDV5	K2508260-014	6/4/25	8/19/25	0.30300 g	30 mL	
2025 HRBLDV6	K2508260-015	7/15/25	8/19/25	0.20100 g	20 mL	
2025 HRBLDV7	K2508260-016	7/15/25	8/19/25	0.30500 g	30 mL	
2025 HRBLDV8	K2508260-017	7/15/25	8/19/25	0.30200 g	30 mL	
2025 HRBLDV9	K2508260-018	7/15/25	8/19/25	0.30200 g	30 mL	
2025 HRBLDV10	K2508260-019	7/15/25	8/19/25	0.30200 g	30 mL	
Method Blank	KQ2515936-01MB	NA	NA	0.30000 g	30 mL	
Lab Control Sample	KQ2515936-02LCS	NA	NA	0.30000 g	30 mL	
Standard Reference Material	KQ2515936-03SRM	7/15/25	8/19/25	0.30100 g	30 mL	
Standard Reference Material	KQ2515936-04SRM	7/15/25	8/19/25	0.30100 g	30 mL	
Duplicate	KQ2515936-05DUP	7/15/25	8/19/25	0.30300 g	30 mL	
Matrix Spike	KQ2515936-06MS	7/15/25	8/19/25	0.30200 g	30 mL	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 09/11/25 11:17	Cadmium	6020B	892891	12.6	12.5	101	90-110
	Chromium	6020B	892891	10.2	10.0	102	90-110
	Copper	6020B	892891	12.7	12.5	101	90-110
	Lead	6020B	892891	24.9	25.0	99	90-110
	Nickel	6020B	892891	24.6	25.0	99	90-110
	Selenium	6020B	892891	25.0	25.0	100	90-110
	Silver	6020B	892891	12.6	12.5	101	90-110
	Zinc	6020B	892891	25.0	25.0	100	90-110
CCV 09/11/25 11:19	Cadmium	6020B	892891	24.5	25.0	98	90-110
	Chromium	6020B	892891	24.7	25.0	99	90-110
	Copper	6020B	892891	24.6	25.0	98	90-110
	Lead	6020B	892891	24.8	25.0	99	90-110
	Nickel	6020B	892891	24.9	25.0	99	90-110
	Selenium	6020B	892891	24.9	25.0	99	90-110
	Silver	6020B	892891	12.5	12.5	100	90-110
	Zinc	6020B	892891	24.8	25.0	99	90-110
CCV 09/11/25 12:18	Cadmium	6020B	892891	24.6	25.0	98	90-110
	Chromium	6020B	892891	24.9	25.0	100	90-110
	Copper	6020B	892891	25.0	25.0	100	90-110
	Lead	6020B	892891	25.1	25.0	100	90-110
	Nickel	6020B	892891	25.2	25.0	101	90-110
	Selenium	6020B	892891	24.6	25.0	99	90-110
	Silver	6020B	892891	12.4	12.5	99	90-110
	Zinc	6020B	892891	24.9	25.0	100	90-110
CCV 09/11/25 12:43	Cadmium	6020B	892891	24.8	25.0	99	90-110
	Chromium	6020B	892891	24.7	25.0	99	90-110
	Copper	6020B	892891	24.8	25.0	99	90-110
	Lead	6020B	892891	25.0	25.0	100	90-110
	Nickel	6020B	892891	24.6	25.0	99	90-110
	Selenium	6020B	892891	25.2	25.0	101	90-110
	Silver	6020B	892891	12.3	12.5	98	90-110
	Zinc	6020B	892891	24.5	25.0	98	90-110

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 09/11/25 13:04	Cadmium	6020B	892891	24.7	25.0	99	90-110
	Chromium	6020B	892891	25.3	25.0	101	90-110
	Copper	6020B	892891	25.3	25.0	101	90-110
	Lead	6020B	892891	25.3	25.0	101	90-110
	Nickel	6020B	892891	25.2	25.0	101	90-110
	Selenium	6020B	892891	25.3	25.0	101	90-110
	Silver	6020B	892891	12.4	12.5	99	90-110
	Zinc	6020B	892891	25.1	25.0	100	90-110
CCV 09/11/25 13:30	Cadmium	6020B	892891	24.8	25.0	99	90-110
	Chromium	6020B	892891	24.7	25.0	99	90-110
	Copper	6020B	892891	25.4	25.0	102	90-110
	Lead	6020B	892891	25.3	25.0	101	90-110
	Nickel	6020B	892891	24.6	25.0	98	90-110
	Selenium	6020B	892891	24.9	25.0	99	90-110
	Silver	6020B	892891	12.4	12.5	99	90-110
	Zinc	6020B	892891	24.6	25.0	99	90-110
CCV 09/11/25 13:55	Cadmium	6020B	892891	24.7	25.0	99	90-110
	Chromium	6020B	892891	24.6	25.0	98	90-110
	Copper	6020B	892891	25.0	25.0	100	90-110
	Lead	6020B	892891	25.0	25.0	100	90-110
	Nickel	6020B	892891	24.8	25.0	99	90-110
	Selenium	6020B	892891	25.1	25.0	100	90-110
	Silver	6020B	892891	12.3	12.5	98	90-110
	Zinc	6020B	892891	24.5	25.0	98	90-110
CCV 09/11/25 14:14	Cadmium	6020B	892891	25.2	25.0	101	90-110
	Chromium	6020B	892891	25.0	25.0	100	90-110
	Copper	6020B	892891	25.2	25.0	101	90-110
	Lead	6020B	892891	25.1	25.0	100	90-110
	Nickel	6020B	892891	25.3	25.0	101	90-110
	Selenium	6020B	892891	25.5	25.0	102	90-110
	Silver	6020B	892891	12.5	12.5	100	90-110
	Zinc	6020B	892891	25.3	25.0	101	90-110

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
ICB 09/11/25 11:22				
Cadmium	6020B	892891	0.009	J
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.011	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.008	J
Zinc	6020B	892891	0.3	U
CCB 09/11/25 11:24				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.006	U
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.004	U
Zinc	6020B	892891	0.3	U
CCB 09/11/25 12:20				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.009	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.006	J
Zinc	6020B	892891	0.3	U
CCB 09/11/25 12:45				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.009	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.007	J
Zinc	6020B	892891	0.3	U

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
CCB 09/11/25 13:06				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.009	J
Nickel	6020B	892891	-0.0362	J
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.004	U
Zinc	6020B	892891	0.3	U
CCB 09/11/25 13:32				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.019	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.004	U
Zinc	6020B	892891	0.3	U
CCB 09/11/25 13:57				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.015	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.004	U
Zinc	6020B	892891	0.3	U
CCB 09/11/25 14:16				
Cadmium	6020B	892891	0.008	U
Chromium	6020B	892891	0.06	U
Copper	6020B	892891	0.07	U
Lead	6020B	892891	0.014	J
Nickel	6020B	892891	0.03	U
Selenium	6020B	892891	0.05	U
Silver	6020B	892891	0.004	U
Zinc	6020B	892891	0.3	U

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID							% Rec.	
Analyte	Method	Analysis Batch:	Result	True Value	% Rec	Limits	Analysis Date	
LLICVT								
Cadmium	6020B	892891	0.040	0.04	101	80-120	09/11/25 11:31	
Chromium	6020B	892891	0.39	0.4	97	80-120	09/11/25 11:31	
Copper	6020B	892891	0.19	0.2	97	80-120	09/11/25 11:31	
Lead	6020B	892891	0.042	0.04	104	80-120	09/11/25 11:31	
Nickel	6020B	892891	0.34	0.4	86	80-120	09/11/25 11:31	
Selenium	6020B	892891	2.0	2.0	100	80-120	09/11/25 11:31	
Silver	6020B	892891	0.038	0.04	95	80-120	09/11/25 11:31	
Zinc	6020B	892891	0.97	1.0	97	80-120	09/11/25 11:31	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	Analysis Date
						Limits	
Cadmium	6020B	892891	0.420	-	-	-	09/11/25 11:34
Chromium	6020B	892891	0.25	-	-	-	09/11/25 11:34
Copper	6020B	892891	0.55	-	-	-	09/11/25 11:34
Lead	6020B	892891	0.227	-	-	-	09/11/25 11:34
Nickel	6020B	892891	0.58	-	-	-	09/11/25 11:34
Selenium	6020B	892891	0.01	-	-	-	09/11/25 11:34
Silver	6020B	892891	0.012	-	-	-	09/11/25 11:34
Zinc	6020B	892891	0.7	-	-	-	09/11/25 11:34

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Cadmium	6020B	892891	25.3	25.0	101	80-120	09/11/25 11:36
Chromium	6020B	892891	50.9	50.0	102	80-120	09/11/25 11:36
Copper	6020B	892891	48.7	50.0	97	80-120	09/11/25 11:36
Lead	6020B	892891	0.227	-	-	-	09/11/25 11:36
Nickel	6020B	892891	48.4	50.0	97	80-120	09/11/25 11:36
Selenium	6020B	892891	25.3	25.0	101	80-120	09/11/25 11:36
Silver	6020B	892891	12.4	12.5	99	80-120	09/11/25 11:36
Zinc	6020B	892891	23.8	25.0	95	80-120	09/11/25 11:36

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K2508260-001A	Cadmium	6020B	892891	0.16 J	49.9	50.0	100	75-125	09/11/25 13:23
	Chromium	6020B	892891	0.7 J	50.3	50.0	99	75-125	09/11/25 13:23
	Copper	6020B	892891	12.9	62.8	50.0	100	75-125	09/11/25 13:23
	Lead	6020B	892891	0.10 J	48.9	50.0	98	75-125	09/11/25 13:23
	Nickel	6020B	892891	0.9 J	50.3	50.0	99	75-125	09/11/25 13:23
	Selenium	6020B	892891	4 J	56	50	104	75-125	09/11/25 13:23
	Silver	6020B	892891	0.02 U	4.92	5.00	98	75-125	09/11/25 13:23
	Zinc	6020B	892891	218	260	50.0	84 #	75-125	09/11/25 13:23

Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025

Service Request: K2508260

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID			Initial	Serial		% Diff.	
Analyte	Method	Analysis Batch:	Sample	Dilution	% Diff	Limit	Analysis Date
			Result	Result			
K2508260-001SDL							
Cadmium	6020B	892891	0.8	0.8 J	2	10	09/11/25 13:21
Chromium	6020B	892891	3	3 J	23	10	09/11/25 13:21
Copper	6020B	892891	64.4	63.8	1	10	09/11/25 13:21
Lead	6020B	892891	0.5	0.6 J	25	10	09/11/25 13:21
Nickel	6020B	892891	5	4 J	19	10	09/11/25 13:21
Selenium	6020B	892891	21	20 J	3	10	09/11/25 13:21
Silver	6020B	892891	0.05 J	0.07 U	56	10	09/11/25 13:21
Zinc	6020B	892891	1090	1060	3	10	09/11/25 13:21

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025/

Service Request: K2508260

Detection Limits

Instrument: K-ICP-MS-06

Matrix: Animal Tissue

Analyte	Mass	Units	MRL	MDL	Method
Cadmium	111	ug/L	0.04	0.0076	6020B
Chromium	52	ug/L	0.4	0.058	6020B
Copper	65	ug/L	0.2	0.072	6020B
Lead	208	ug/L	0.04	0.006	6020B
Nickel	60	ug/L	0.4	0.03	6020B
Selenium	78	ug/L	2	0.052	6020B
Silver	107	ug/L	0.04	0.0044	6020B
Zinc	66	ug/L	1	0.32	6020B

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: New Amalga Gold Mine Biomonitoring 2025/

Service Request: K2508260

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-06

Analyte	Concentration (ug/L)	Method
Cadmium 111	9000	6020B
Chromium 52	9000	6020B
Copper 65	4500	6020B
Lead 208	4500	6020B
Nickel 60	4500	6020B
Selenium 78	9000	6020B
Silver 107	450	6020B
Zinc 66	9000	6020B

**APPENDIX D: SEDIMENT DATA AND
LABORATORY REPORT**

Appendix D.1.–Lower Herbert River sediment element concentrations, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)										
		Ag	Al	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn
LHR S1	4/14/2025	<0.051	4570	2.07	<0.051	5.07	7.35	<0.028	3.42	0.62	<1.2	21.3
LHR S2	4/14/2025	<0.049	4560	1.98	<0.049	4.61	4.56	<0.027	3.4	0.58	<1.2	21.6
LHR S3	4/14/2025	0.054	5540	1.58	0.073	6.31	7.56	<0.025	4.64	0.74	<1.1	27.6

Appendix D.2.–Lower Herbert River percent total and volatile solids, and organic carbon, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)		
		Total Solids (%)	Total Volatile Solids (%)	Total Organic Carbon (%)
LHR S1	4/14/2025	69.8	0.2	0.1
LHR S2	4/14/2025	68.8	0.2	0.1
LHR S3	4/14/2025	69.6	0.4	0.1

Appendix D.3.–Middle Herbert River sediment element concentrations, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)										
		Ag	Al	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn
MHR S1	4/16/2025	0.083	6210	1.83	<0.047	7.66	7.91	<0.023	4.42	0.86	<1.1	30.8
MHR S2	4/16/2025	0.056	7150	5.06	0.143	9.58	10.4	<0.026	6.38	1.11	<1.2	40.3
MHR S3	4/16/2025	0.056	7350	2.32	0.076	8.68	8.84	<0.027	6.28	1.07	<1.2	35.5

Appendix D.4.–Middle Herbert River percent total and volatile solids, and organic carbon, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)		
		Total Solids (%)	Total Volatile Solids (%)	Total Organic Carbon (%)
MHR S1	4/16/2025	74.4	0.3	0.1
MHR S2	4/16/2025	68.3	0.3	0.1
MHR S3	4/16/2025	68.1	0.2	0.1

Appendix D.5.–Upper Herbert River sediment element concentrations, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)										
		Ag	Al	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn
UHR S1	4/16/2025	<0.045	6310	2.23	0.071	6.67	6.53	<0.027	4.46	0.8	<1	31.4
UHR S2	4/16/2025	<0.052	6310	3.36	<0.052	7.31	7.75	<0.028	5.19	0.84	<1.1	29.9
UHR S3	4/16/2025	0.045	8520	2.49	0.105	9.72	7.36	<0.028	5.9	1.01	<1.1	44.3

Appendix D.6.–Upper Herbert River percent total and volatile solids, and organic carbon, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)		
		Total Solids (%)	Total Volatile Solids (%)	Total Organic Carbon (%)
UHR S1	4/16/2025	70.5	0.2	0.1
UHR S2	4/16/2025	66.4	0.3	0.1
UHR S3	4/16/2025	70.1	0.2	0.1

Appendix D.7.–Lower Eagle River sediment element concentrations, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)										
		Ag	Al	As	Cd	Cr	Cu	Hg	Ni	Pb	Se	Zn
LER S1	4/15/2025	0.04	2690	1.23	<0.04	5.75	2.8	<0.023	1.94	0.56	<1	14.3
LER S2	4/15/2025	0.051	5940	2.53	<0.051	8.07	6.94	<0.029	3.77	0.99	<1.2	30.8
LER S3	4/15/2025	0.047	3760	1.16	<0.039	3.99	57.7	<0.021	1.89	0.508	<0.93	20.1

Appendix D.8.–Lower Eagle River percent total and volatile solids, and organic carbon, 2025.

Sample ID	Date Collected	Concentration (mg/kg dry weight)		
		Total Solids (%)	Total Volatile Solids (%)	Total Organic Carbon (%)
LER S1	4/15/2025	77.2	0.2	0.24
LER S2	4/15/2025	66.2	1.3	0.44
LER S3	4/15/2025	78.6	0.2	0.05

D.9.–New Amalga Gold Project sediment laboratory report.



ALS Environmental
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May 07, 2025

Analytical Report for Service Request No: K2504142
Revised Service Request No: K2504142.01

Greg Albrecht
Alaska Department of Fish and Game
802 3rd St.,
P.O. Box 110024
Juneau, AK 99811-0024

RE: 2025 New Amalga Gold Mine

Dear Greg,

Enclosed is the revised report for the sample(s) submitted to our laboratory April 22, 2025.
For your reference, these analyses have been assigned our service request number **K2504142**.
The metal results have been added.

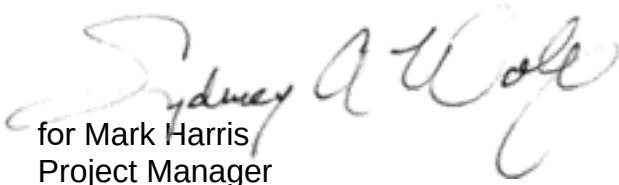
Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

We apologize for any inconvenience this may have created.

Please contact me if you have any questions. My extension is 3376. You may also contact me via email at Mark.Harris@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental


for Mark Harris
Project Manager



ALS Environmental
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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Received: 04/22/2025

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Twelve soil samples were received for analysis at ALS Environmental on 04/22/2025. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

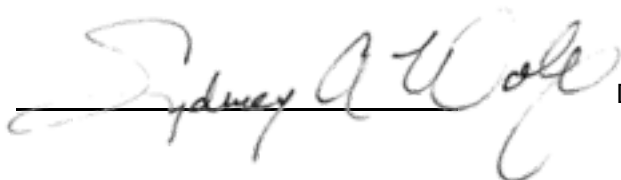
Metals:

Method 6020B, 05/01/2025: The Relative Percent Difference (RPD) for the replicate analysis of Arsenic in sample 2025NA6MLHRS1 was outside the normal ALS control limits. The variability in the results may be attributed to the heterogeneous character of this analyte in the sample.

General Chemistry:

Method 160.4 Modified, 04/23/2025: A number of samples in this delivery group were received past or with insufficient holding time remaining. The analysis was performed as soon as possible after receipt by the laboratory. The data was flagged to indicate the holding time violation.

Approved by



Date

05/01/2025



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



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CHAIN OF CUSTODY

144071

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K2504142

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Alaska Department of Fish and Game
2025 New Amalga Gold Mine

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068

www.alsglobal.com

Page 1 of 1

Project Name 2025 New Amalga Gold Mine		Project Number:	
Project Manager Greg Albrecht			
Company ADFG			
Address, City, State 802 3rd St. Douglas, AK 99823			
Phone # 907-465-6384	email greg.albrecht@alaska.gov		
Sampler Signature 		Sampler Printed Name Greg Albrecht	
NUMBER OF CONTAINERS			
7D			
14D			
28D			
180D			
999D			
160.4 Modified / TVS			
PSEP TOC / PSEP TOC T			
7471A / Hg			
3020B / Metals T			
160.3 Modified / TS			
1			
2			
3			
4			
5			
Remarks			
CLIENT SAMPLE ID	LABID	SAMPLING Date Time State	Matrix
1. 2025NAGM LHR S1, S2, S3	4114 11:45	Soil	3
2. 2025NAGM MHR S1, S2, S3	4116 11:00	Soil	3
3. 2025NAGM UHR S1, S2, S3	4116 13:00	Soil	3
4. 2025NAGM LER S1, S2, S3	4115 11:30	Soil	3
5.			
6.			
7.			
8.			
9.			
10.			

3 individual samples from this site, all labelled the same but with "S1", "S2", "S3" at the end

Report Requirements

☐ I. Routine Report: Method Blank, Surrogate, as required

☒ II. Report Dup., MS, MSD as required

☐ III. CLP Like Summary (no raw data)

☐ IV. Data Validation Report

☐ V. EDD

Invoice Information

P.O.#

Bill To: **Michele Pillon**
Grande Portage Resources
michele@grandeportage.com

Turnaround Requirements

☐ 24 hr. ☐ 48 hr.
☒ 5 Day Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: **Al As** Sb Ba Be B Ca **Co** **Cd** **Cu** Fe **Pb** Mg Mn Mo **Ni** K **Ag** Na **Se** Sr Ti Sn V **Zn** Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other (Circle One)

Please send lab report to **greg.albrecht@alaska.gov**Please send billing to Michele Pillon at **michele@grandeportage.com** and **ian@grandeportage.com**

Relinquished By:

Received By:

Relinquished By:

Received By:

Relinquished By:

Received By:

Signature 	Signature 	Signature	Signature	Signature	Signature
Printed Name ADFG	Printed Name M Pillon	Printed Name	Printed Name	Printed Name	Printed Name
Firm 4/21/25 0900	Firm ALS	Firm	Firm	Firm	Firm
Date/Time	Date/Time 4/21/25 0900	Date/Time	Date/Time	Date/Time	Date/Time

Cooler Receipt and Preservation Form

Client ADF & G Service Request K25 04142 PM 4H
Received: 4/22/25 Opened: 4/22/25 By: VM Unloaded: 4/22/25 By: VM

1. Samples were received via? USPS Red Ex UPS DHL PDX Courier Hand Delivered

2. Samples were received in: (circle) Cooler Box Envelope Other NA

3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp Indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
<u>4.7</u>	<u>---</u>	<u>IR000</u>	<u>---</u>			<u>287776085618</u>	

4. Was a Temperature Blank present in cooler? NA Y N If yes, note the temperature in the appropriate column below:

If no, take the temperature of a representative sample bottle contained within the cooler; note in the column "Sample Temp":

5. Were samples received within the method specified temperature ranges?

NA Y N
NA Y N

If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM.

If applicable, tissue samples were received: Frozen Partially Thawed Thawed

6. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves

7. Were custody papers properly filled out (ink, signed, etc.)?

NA Y N

8. Were samples received in good condition (unbroken)

NA Y N

9. Were all sample labels complete (ie, analysis, preservation, etc.)?

NA Y N

10. Did all sample labels and tags agree with custody papers?

NA Y N

11. Were appropriate bottles/containers and volumes received for the tests indicated?

NA Y N

12. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below

NA Y N

13. Were VOA vials received without headspace? Indicate in the table below.

NA Y N

14. Was C12/Res negative?

NA Y N

15. Were samples received within method specified time limit? If not, notate the error below and notify the PM.

NA Y N

16. Were 100mL sterile microbiology bottles filled exactly to the 100mL mark? NA Y N Underfilled Overfilled

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head- space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Total Solids

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil
Analysis Method: 160.3 Modified
Prep Method: None

Service Request: K2504142
Date Collected: 04/14/25 - 04/16/25
Date Received: 04/22/25
Units: Percent
Basis: As Received

Solids, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
2025NA6MLHRS1	K2504142-001	69.5	-	-	1	04/23/25 15:10	
2025NA6MLHRS2	K2504142-002	68.8	-	-	1	04/23/25 15:10	
2025NA6MLHRS3	K2504142-003	69.6	-	-	1	04/23/25 15:10	
2025NA6MMHRS1	K2504142-004	74.4	-	-	1	04/23/25 15:10	
2025NA6MMHRS2	K2504142-005	68.3	-	-	1	04/23/25 15:10	
2025NA6MMHRS3	K2504142-006	68.1	-	-	1	04/23/25 15:10	
2025NA6MUHRS1	K2504142-007	70.5	-	-	1	04/23/25 15:10	
2025NA6MUHRS2	K2504142-008	66.4	-	-	1	04/23/25 15:10	
2025NA6MUHRS3	K2504142-009	70.1	-	-	1	04/23/25 15:10	
2025NA6MLERS1	K2504142-010	77.2	-	-	1	04/23/25 15:10	
2025NA6MLERS2	K2504142-011	66.2	-	-	1	04/23/25 15:10	
2025NA6MLERS3	K2504142-012	78.5	-	-	1	04/23/25 15:10	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Analysis Method: 160.3 Modified
Prep Method: None

Service Request:K2504142
Date Collected:04/14/25 - 04/15/25
Date Received:04/22/25

Units:Percent
Basis:As Received

Replicate Sample Summary
Inorganic Parameters

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
2025NA6MLHRS1	K2504142-001DUP	-	-	69.5	70.0	69.8	<1	20	04/23/25
2025NA6MLERS3	K2504142-012DUP	-	-	78.5	78.7	78.6	<1	20	04/23/25

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil
Analysis Method: 160.4 Modified
Prep Method: None

Service Request: K2504142
Date Collected: 04/14/25 - 04/16/25
Date Received: 04/22/25
Units: Percent
Basis: Dry, per Method

Solids, Total Volatile

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
2025NA6MLHRS1	K2504142-001	0.20	0.10	-	1	04/23/25 15:10	*
2025NA6MLHRS2	K2504142-002	0.20	0.10	-	1	04/23/25 15:10	*
2025NA6MLHRS3	K2504142-003	0.40	0.10	-	1	04/23/25 15:10	*
2025NA6MMHRS1	K2504142-004	0.30	0.10	-	1	04/23/25 15:10	
2025NA6MMHRS2	K2504142-005	0.30	0.10	-	1	04/23/25 15:10	
2025NA6MMHRS3	K2504142-006	0.20	0.10	-	1	04/23/25 15:10	
2025NA6MUHRS1	K2504142-007	0.20	0.10	-	1	04/23/25 15:10	
2025NA6MUHRS2	K2504142-008	0.30	0.10	-	1	04/23/25 15:10	
2025NA6MUHRS3	K2504142-009	0.20	0.10	-	1	04/23/25 15:10	
2025NA6MLERS1	K2504142-010	0.20	0.10	-	1	04/23/25 15:10	*
2025NA6MLERS2	K2504142-011	1.30	0.10	-	1	04/23/25 15:10	*
2025NA6MLERS3	K2504142-012	0.20	0.10	-	1	04/23/25 15:10	*
Method Blank	K2504142-MB	ND U	0.10	-	1	04/23/25 15:10	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Analysis Method: 160.4 Modified
Prep Method: None

Service Request:K2504142
Date Collected:04/14/25 - 04/15/25
Date Received:04/22/25

Units:Percent
Basis:Dry, per Method

Replicate Sample Summary
Solids, Total Volatile

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
2025NA6MLHRS1	K2504142-001DUP	0.10	-	0.20	0.20	0.200	<1	20	04/23/25
2025NA6MLERS3	K2504142-012DUP	0.10	-	0.20	0.20	0.200	<1	20	04/23/25

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



General Chemistry

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www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil
Analysis Method: PSEP TOC
Prep Method: ALS SOP

Service Request: K2504142
Date Collected: 04/14/25 - 04/16/25
Date Received: 04/22/25
Units: Percent
Basis: Dry, per Method

Carbon, Total Organic (TOC)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2025NA6MLHRS1	K2504142-001	0.06 J	0.10	0.005	1	04/28/25 09:15	4/28/25	
2025NA6MLHRS2	K2504142-002	0.05 J	0.10	0.005	1	04/28/25 09:15	4/28/25	
2025NA6MLHRS3	K2504142-003	0.06 J	0.10	0.005	1	04/28/25 09:15	4/28/25	
2025NA6MMHRS1	K2504142-004	0.06 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MMHRS2	K2504142-005	0.06 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MMHRS3	K2504142-006	0.08 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MUHRS1	K2504142-007	0.05 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MUHRS2	K2504142-008	0.06 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MUHRS3	K2504142-009	0.08 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MLERS1	K2504142-010	0.24	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MLERS2	K2504142-011	0.44	0.10	0.005	1	04/28/25 13:08	4/28/25	
2025NA6MLERS3	K2504142-012	0.05 J	0.10	0.005	1	04/28/25 13:08	4/28/25	
Method Blank	K2504142-MB	ND U	0.10	0.005	1	04/28/25 09:15	4/28/25	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 04/28/25

Replicate Sample Summary
General Chemistry Parameters

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001

Units: Percent
Basis: Dry, per Method

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2504142-001DUP	Average	RPD	RPD Limit
					Result			
Carbon, Total Organic (TOC)	PSEP TOC	0.10	0.005	0.06 J	0.06 J	0.0560	4	27

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 04/28/25

Triplicate Sample Summary
General Chemistry Parameters

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001
Analysis Method: PSEP TOC
Prep Method: ALS SOP

Units: Percent
Basis: Dry, per Method

Analyte Name	MRL	MDL	Sample Result	Duplicate K2504142- 001DUP Result	Triplicate K2504142- 001TRP Result	Average	RSD	RSD Limit
Carbon, Total Organic (TOC)	0.10	0.005	0.06	0.06	0.05	0.0550	4	27

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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SuperSet Reference:25-0000730644 rev 00

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 04/28/25
Date Extracted: 04/28/25

Duplicate Matrix Spike Summary
Carbon, Total Organic (TOC)

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001
Analysis Method: PSEP TOC
Prep Method: ALS SOP

Units: Percent
Basis: Dry, per Method

Analyte Name	Sample Result	Matrix Spike K2504142-001MS			Duplicate Matrix Spike K2504142-001DMS			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Carbon, Total Organic (TOC)	0.06 J	2.43	2.44	97	2.41	2.43	97	69-123	<1	27

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Analyzed: 04/28/25
Date Extracted: 04/28/25

Lab Control Sample Summary
Carbon, Total Organic (TOC)

Analysis Method: PSEP TOC
Prep Method: ALS SOP

Units: Percent
Basis: Dry, per Method
Analysis Lot: 877329

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2504142-LCS	3.08	2.99	103	74-118

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QA/QC Report

Client: Alaska Department of Fish and Game**Service Request:** K2504142**Project:** 2025 New Amalga Gold Mine**Continuing Calibration Verification (CCV) Summary****Carbon, Total Organic (TOC)****Analysis Method:** PSEP TOC**Units:** Percent

	Analysis Lot	Lab Code	Date Analyzed	True Value	Measured Value	Percent Recovery	Acceptance Limits
CCV1	877329	KQ2506940-01	04/28/25 09:15	12.0	11.6	97	90-110
CCV2	877329	KQ2506940-02	04/28/25 09:15	12.0	11.7	98	90-110
CCV3	877387	KQ2506994-01	04/28/25 13:08	12.0	12.2	102	90-110
CCV4	877387	KQ2506994-02	04/28/25 13:08	12.0	12.3	102	90-110

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request:K2504142

Continuing Calibration Blank (CCB) Summary
Carbon, Total Organic (TOC)

Analysis Method: PSEP TOC

Units:Percent

	Analysis Lot	Lab Code	Date Analyzed	MRL	MDL	Result	Q
CCB1	877329	KQ2506940-04	04/28/25 09:15	0.10	0.005	ND	U
CCB2	877329	KQ2506940-05	04/28/25 09:15	0.10	0.005	ND	U
CCB3	877387	KQ2506994-03	04/28/25 13:08	0.10	0.005	0.008	J
CCB4	877387	KQ2506994-04	04/28/25 13:08	0.10	0.005	0.006	J



Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25 11:45
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	4570	mg/Kg	5.1	1.4	10	04/28/25 14:56	04/24/25	
Arsenic	6020B	2.07	mg/Kg	0.60	0.06	10	05/01/25 09:16	04/30/25	
Cadmium	6020B	0.030 J	mg/Kg	0.051	0.008	10	04/28/25 14:56	04/24/25	
Chromium	6020B	5.07	mg/Kg	0.51	0.09	10	04/28/25 14:56	04/24/25	
Copper	6020B	7.35	mg/Kg	0.51	0.16	10	04/28/25 14:56	04/24/25	
Lead	6020B	0.62	mg/Kg	0.13	0.02	10	04/28/25 14:56	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.028	0.003	1	04/24/25 10:54	04/23/25	
Nickel	6020B	3.42	mg/Kg	0.51	0.10	10	04/28/25 14:56	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.2	0.1	10	05/01/25 09:16	04/30/25	
Silver	6020B	0.037 J	mg/Kg	0.051	0.009	10	04/28/25 14:56	04/24/25	
Zinc	6020B	21.3	mg/Kg	1.3	0.2	10	04/28/25 14:56	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25 11:45
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLHRS2
Lab Code: K2504142-002

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	4560	mg/Kg	4.9	1.3	10	04/28/25 14:43	04/24/25	
Arsenic	6020B	1.98	mg/Kg	0.62	0.06	10	05/01/25 09:24	04/30/25	
Cadmium	6020B	0.028 J	mg/Kg	0.049	0.008	10	04/28/25 14:43	04/24/25	
Chromium	6020B	4.61	mg/Kg	0.49	0.08	10	04/28/25 14:43	04/24/25	
Copper	6020B	4.56	mg/Kg	0.49	0.16	10	04/28/25 14:43	04/24/25	
Lead	6020B	0.58	mg/Kg	0.12	0.02	10	04/28/25 14:43	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.027	0.003	1	04/24/25 11:00	04/23/25	
Nickel	6020B	3.40	mg/Kg	0.49	0.10	10	04/28/25 14:43	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.2	0.1	10	05/01/25 09:24	04/30/25	
Silver	6020B	0.033 J	mg/Kg	0.049	0.009	10	04/28/25 14:43	04/24/25	
Zinc	6020B	21.6	mg/Kg	1.2	0.2	10	04/28/25 14:43	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25 11:45
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLHRS3
Lab Code: K2504142-003

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	5540	mg/Kg	5.1	1.4	10	04/28/25 14:59	04/24/25	
Arsenic	6020B	1.58	mg/Kg	0.54	0.06	10	05/01/25 09:26	04/30/25	
Cadmium	6020B	0.073	mg/Kg	0.051	0.008	10	04/28/25 14:59	04/24/25	
Chromium	6020B	6.31	mg/Kg	0.51	0.09	10	04/28/25 14:59	04/24/25	
Copper	6020B	7.56	mg/Kg	0.51	0.17	10	04/28/25 14:59	04/24/25	
Lead	6020B	0.74	mg/Kg	0.13	0.02	10	04/28/25 14:59	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.025	0.003	1	04/24/25 11:02	04/23/25	
Nickel	6020B	4.64	mg/Kg	0.51	0.10	10	04/28/25 14:59	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.1	0.1	10	05/01/25 09:26	04/30/25	
Silver	6020B	0.054	mg/Kg	0.051	0.009	10	04/28/25 14:59	04/24/25	
Zinc	6020B	27.6	mg/Kg	1.3	0.2	10	04/28/25 14:59	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 11:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MMHRS1
Lab Code: K2504142-004

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	6210	mg/Kg	4.7	1.3	10	04/28/25 15:01	04/24/25	
Arsenic	6020B	1.83	mg/Kg	0.54	0.06	10	05/01/25 09:28	04/30/25	
Cadmium	6020B	0.046 J	mg/Kg	0.047	0.008	10	04/28/25 15:01	04/24/25	
Chromium	6020B	7.66	mg/Kg	0.47	0.08	10	04/28/25 15:01	04/24/25	
Copper	6020B	7.91	mg/Kg	0.47	0.15	10	04/28/25 15:01	04/24/25	
Lead	6020B	0.86	mg/Kg	0.12	0.02	10	04/28/25 15:01	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.023	0.002	1	04/24/25 11:04	04/23/25	
Nickel	6020B	4.42	mg/Kg	0.47	0.09	10	04/28/25 15:01	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.1	0.1	10	05/01/25 09:28	04/30/25	
Silver	6020B	0.083	mg/Kg	0.047	0.008	10	04/28/25 15:01	04/24/25	
Zinc	6020B	30.8	mg/Kg	1.2	0.2	10	04/28/25 15:01	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 11:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MMHRS2
Lab Code: K2504142-005

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	7150	mg/Kg	5.2	1.4	10	04/28/25 15:09	04/24/25	
Arsenic	6020B	5.06	mg/Kg	0.60	0.06	10	05/01/25 09:33	04/30/25	
Cadmium	6020B	0.143	mg/Kg	0.052	0.008	10	04/28/25 15:09	04/24/25	
Chromium	6020B	9.58	mg/Kg	0.52	0.09	10	04/28/25 15:09	04/24/25	
Copper	6020B	10.4	mg/Kg	0.52	0.17	10	04/28/25 15:09	04/24/25	
Lead	6020B	1.11	mg/Kg	0.13	0.02	10	04/28/25 15:09	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.026	0.003	1	04/24/25 11:05	04/23/25	
Nickel	6020B	6.38	mg/Kg	0.52	0.10	10	04/28/25 15:09	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.2	0.1	10	05/01/25 09:33	04/30/25	
Silver	6020B	0.056	mg/Kg	0.052	0.009	10	04/28/25 15:09	04/24/25	
Zinc	6020B	40.3	mg/Kg	1.3	0.2	10	04/28/25 15:09	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 11:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MMHRS3
Lab Code: K2504142-006

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	7350	mg/Kg	4.6	1.3	10	04/28/25 15:12	04/24/25	
Arsenic	6020B	2.32	mg/Kg	0.60	0.06	10	05/01/25 09:35	04/30/25	
Cadmium	6020B	0.076	mg/Kg	0.046	0.007	10	04/28/25 15:12	04/24/25	
Chromium	6020B	8.68	mg/Kg	0.46	0.08	10	04/28/25 15:12	04/24/25	
Copper	6020B	8.84	mg/Kg	0.46	0.15	10	04/28/25 15:12	04/24/25	
Lead	6020B	1.07	mg/Kg	0.11	0.02	10	04/28/25 15:12	04/24/25	
Mercury	7471A	0.003 J	mg/Kg	0.027	0.003	1	04/24/25 11:07	04/23/25	
Nickel	6020B	6.28	mg/Kg	0.46	0.09	10	04/28/25 15:12	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.2	0.1	10	05/01/25 09:35	04/30/25	
Silver	6020B	0.056	mg/Kg	0.046	0.008	10	04/28/25 15:12	04/24/25	
Zinc	6020B	35.5	mg/Kg	1.1	0.2	10	04/28/25 15:12	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 13:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MUHRS1
Lab Code: K2504142-007

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	6310	mg/Kg	4.5	1.2	10	04/28/25 15:14	04/24/25	
Arsenic	6020B	2.23	mg/Kg	0.52	0.05	10	05/01/25 09:36	04/30/25	
Cadmium	6020B	0.071	mg/Kg	0.045	0.007	10	04/28/25 15:14	04/24/25	
Chromium	6020B	6.67	mg/Kg	0.45	0.08	10	04/28/25 15:14	04/24/25	
Copper	6020B	6.53	mg/Kg	0.45	0.15	10	04/28/25 15:14	04/24/25	
Lead	6020B	0.80	mg/Kg	0.11	0.02	10	04/28/25 15:14	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.027	0.003	1	04/24/25 11:12	04/23/25	
Nickel	6020B	4.46	mg/Kg	0.45	0.09	10	04/28/25 15:14	04/24/25	
Selenium	6020B	0.1 J	mg/Kg	1.0	0.1	10	05/01/25 09:36	04/30/25	
Silver	6020B	0.038 J	mg/Kg	0.045	0.008	10	04/28/25 15:14	04/24/25	
Zinc	6020B	31.4	mg/Kg	1.1	0.2	10	04/28/25 15:14	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 13:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MUHRS2
Lab Code: K2504142-008

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	6310	mg/Kg	5.2	1.4	10	04/28/25 15:17	04/24/25	
Arsenic	6020B	3.36	mg/Kg	0.54	0.06	10	05/01/25 09:38	04/30/25	
Cadmium	6020B	0.042 J	mg/Kg	0.052	0.008	10	04/28/25 15:17	04/24/25	
Chromium	6020B	7.31	mg/Kg	0.52	0.09	10	04/28/25 15:17	04/24/25	
Copper	6020B	7.75	mg/Kg	0.52	0.17	10	04/28/25 15:17	04/24/25	
Lead	6020B	0.84	mg/Kg	0.13	0.02	10	04/28/25 15:17	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.028	0.003	1	04/24/25 11:13	04/23/25	
Nickel	6020B	5.19	mg/Kg	0.52	0.11	10	04/28/25 15:17	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.1	0.1	10	05/01/25 09:38	04/30/25	
Silver	6020B	0.036 J	mg/Kg	0.052	0.009	10	04/28/25 15:17	04/24/25	
Zinc	6020B	29.9	mg/Kg	1.3	0.2	10	04/28/25 15:17	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/16/25 13:00
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MUHRS3
Lab Code: K2504142-009

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	8520	mg/Kg	4.3	1.2	10	04/28/25 15:19	04/24/25	
Arsenic	6020B	2.49	mg/Kg	0.54	0.06	10	05/01/25 09:40	04/30/25	
Cadmium	6020B	0.105	mg/Kg	0.043	0.007	10	04/28/25 15:19	04/24/25	
Chromium	6020B	9.72	mg/Kg	0.43	0.07	10	04/28/25 15:19	04/24/25	
Copper	6020B	7.36	mg/Kg	0.43	0.14	10	04/28/25 15:19	04/24/25	
Lead	6020B	1.01	mg/Kg	0.11	0.02	10	04/28/25 15:19	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.028	0.003	1	04/24/25 11:15	04/23/25	
Nickel	6020B	5.90	mg/Kg	0.43	0.09	10	04/28/25 15:19	04/24/25	
Selenium	6020B	0.2 J	mg/Kg	1.1	0.1	10	05/01/25 09:40	04/30/25	
Silver	6020B	0.045	mg/Kg	0.043	0.008	10	04/28/25 15:19	04/24/25	
Zinc	6020B	44.3	mg/Kg	1.1	0.2	10	04/28/25 15:19	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/15/25 11:30
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLERS1
Lab Code: K2504142-010

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	2690	mg/Kg	4.0	1.1	10	04/28/25 15:22	04/24/25	
Arsenic	6020B	1.23	mg/Kg	0.50	0.05	10	05/01/25 09:42	04/30/25	
Cadmium	6020B	0.020 J	mg/Kg	0.040	0.007	10	04/28/25 15:22	04/24/25	
Chromium	6020B	5.75	mg/Kg	0.40	0.07	10	04/28/25 15:22	04/24/25	
Copper	6020B	2.80	mg/Kg	0.40	0.13	10	04/28/25 15:22	04/24/25	
Lead	6020B	0.56	mg/Kg	0.10	0.02	10	04/28/25 15:22	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.023	0.002	1	04/24/25 11:17	04/23/25	
Nickel	6020B	1.94	mg/Kg	0.40	0.08	10	04/28/25 15:22	04/24/25	
Selenium	6020B	ND U	mg/Kg	1.0	0.1	10	05/01/25 09:42	04/30/25	
Silver	6020B	0.024 J	mg/Kg	0.040	0.007	10	04/28/25 15:22	04/24/25	
Zinc	6020B	14.3	mg/Kg	1.0	0.2	10	04/28/25 15:22	04/24/25	

ALS Group USA, Corp.
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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/15/25 11:30
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLERS2
Lab Code: K2504142-011

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	5940	mg/Kg	5.1	1.4	10	04/28/25 15:24	04/24/25	
Arsenic	6020B	2.53	mg/Kg	0.59	0.06	10	05/01/25 10:13	04/30/25	
Cadmium	6020B	0.033 J	mg/Kg	0.051	0.008	10	04/28/25 15:24	04/24/25	
Chromium	6020B	8.07	mg/Kg	0.51	0.09	10	04/28/25 15:24	04/24/25	
Copper	6020B	6.94	mg/Kg	0.51	0.16	10	04/28/25 15:24	04/24/25	
Lead	6020B	0.99	mg/Kg	0.13	0.02	10	04/28/25 15:24	04/24/25	
Mercury	7471A	0.003 J	mg/Kg	0.029	0.003	1	04/24/25 11:18	04/23/25	
Nickel	6020B	3.77	mg/Kg	0.51	0.10	10	04/28/25 15:24	04/24/25	
Selenium	6020B	ND U	mg/Kg	1.2	0.1	10	05/01/25 10:13	04/30/25	
Silver	6020B	0.035 J	mg/Kg	0.051	0.009	10	04/28/25 15:24	04/24/25	
Zinc	6020B	30.8	mg/Kg	1.3	0.2	10	04/28/25 15:24	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/15/25 11:30
Date Received: 04/22/25 09:45

Sample Name: 2025NA6MLERS3
Lab Code: K2504142-012

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	3760	mg/Kg	3.9	1.1	10	04/28/25 15:27	04/24/25	
Arsenic	6020B	1.16	mg/Kg	0.47	0.05	10	05/01/25 09:45	04/30/25	
Cadmium	6020B	0.019 J	mg/Kg	0.039	0.006	10	04/28/25 15:27	04/24/25	
Chromium	6020B	3.99	mg/Kg	0.39	0.07	10	04/28/25 15:27	04/24/25	
Copper	6020B	57.7	mg/Kg	0.39	0.13	10	04/28/25 15:27	04/24/25	
Lead	6020B	0.508	mg/Kg	0.097	0.017	10	04/28/25 15:27	04/24/25	
Mercury	7471A	ND U	mg/Kg	0.021	0.002	1	04/24/25 11:20	04/23/25	
Nickel	6020B	1.89	mg/Kg	0.39	0.08	10	04/28/25 15:27	04/24/25	
Selenium	6020B	ND U	mg/Kg	0.93	0.10	10	05/01/25 09:45	04/30/25	
Silver	6020B	0.047	mg/Kg	0.039	0.007	10	04/28/25 15:27	04/24/25	
Zinc	6020B	20.1	mg/Kg	0.97	0.18	10	04/28/25 15:27	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Sample Name: Method Blank
Lab Code: KQ2506736-03

Service Request: K2504142
Date Collected: NA
Date Received: NA

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aluminum	6020B	1.5 J	mg/Kg	4.0	1.1	10	04/28/25 14:38	04/24/25	
Cadmium	6020B	ND U	mg/Kg	0.040	0.007	10	04/28/25 14:38	04/24/25	
Chromium	6020B	ND U	mg/Kg	0.40	0.07	10	04/28/25 14:38	04/24/25	
Copper	6020B	ND U	mg/Kg	0.40	0.13	10	04/28/25 14:38	04/24/25	
Lead	6020B	ND U	mg/Kg	0.10	0.02	10	04/28/25 14:38	04/24/25	
Nickel	6020B	ND U	mg/Kg	0.40	0.08	10	04/28/25 14:38	04/24/25	
Silver	6020B	ND U	mg/Kg	0.040	0.007	10	04/28/25 14:38	04/24/25	
Zinc	6020B	0.2 J	mg/Kg	1.0	0.2	10	04/28/25 14:38	04/24/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Sample Name: Method Blank
Lab Code: KQ2507171-01

Service Request: K2504142
Date Collected: NA
Date Received: NA

Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020B	ND U	mg/Kg	0.50	0.05	10	05/01/25 09:13	04/30/25	
Selenium	6020B	ND U	mg/Kg	1.0	0.1	10	05/01/25 09:13	04/30/25	

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Analytical Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil
Sample Name: Method Blank
Lab Code: KQ2506735-03

Service Request: K2504142
Date Collected: NA
Date Received: NA
Basis: Dry

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7471A	ND U	mg/Kg	0.02	0.002	1	04/24/25 10:47	04/23/25	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142**Date Collected:** 04/14/25**Date Received:** 04/22/25**Date Analyzed:** 04/28/25**Replicate Sample Summary****Total Metals****Sample Name:** 2025NA6MLHRS2**Units:** mg/Kg**Lab Code:** K2504142-002**Basis:** Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2506736-01	Average	RPD	RPD Limit
					Result			
Aluminum	6020B	4.9	1.4	4560	4730	4650	4	20
Cadmium	6020B	0.049	0.008	0.028 J	0.026 J	0.027	5	20
Chromium	6020B	0.49	0.08	4.61	4.87	4.74	6	20
Copper	6020B	0.49	0.16	4.56	4.22	4.39	8	20
Lead	6020B	0.12	0.02	0.58	0.58	0.58	<1	20
Nickel	6020B	0.49	0.10	3.40	3.22	3.31	6	20
Silver	6020B	0.049	0.009	0.033 J	0.025 J	0.029	24 #	20
Zinc	6020B	1.2	0.2	21.6	22.7	22.2	5	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142**Date Collected:** 04/14/25**Date Received:** 04/22/25**Date Analyzed:** 05/01/25**Replicate Sample Summary****Total Metals****Sample Name:** 2025NA6MLHRS1**Units:** mg/Kg**Lab Code:** K2504142-001**Basis:** Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
					KQ2507171-03 Result			
Arsenic	6020B	0.57	0.06	2.07	5.16	3.62	85 *	20
Selenium	6020B	1.1	0.1	0.2 J	0.1 J	0.2	33 #	20

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QA/QC Report

Client: Alaska Department of Fish and Game
Project 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142**Date Collected:** 04/14/25**Date Received:** 04/22/25**Date Analyzed:** 04/24/25**Replicate Sample Summary****Total Metals****Sample Name:** 2025NA6MLHRS1**Units:** mg/Kg**Lab Code:** K2504142-001**Basis:** Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample	Average	RPD	RPD Limit
					KQ2506735-01 Result			
Mercury	7471A	0.027	0.003	ND U	ND U	ND	-	20

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 04/28/25
Date Extracted: 04/24/25

Matrix Spike Summary
Total Metals

Sample Name: 2025NA6MLHRS2
Lab Code: K2504142-002
Analysis Method: 6020B
Prep Method: EPA 3050B

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ2506736-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	4560	5380	501	163 #	75-125
Cadmium	0.028 J	12.8	12.6	101	75-125
Chromium	4.61	55.4	50.1	101	75-125
Copper	4.56	69.9	62.8	104	75-125
Lead	0.58	131	126	104	75-125
Nickel	3.40	130	126	101	75-125
Silver	0.033 J	12.7	12.6	101	75-125
Zinc	21.6	153	126	105	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 05/1/25
Date Extracted: 04/30/25

Matrix Spike Summary
Total Metals

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001
Analysis Method: 6020B
Prep Method: EPA 3050B

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ2507171-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	2.07	122	119	101	75-125
Selenium	0.2 J	125	119	105	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Collected: 04/14/25
Date Received: 04/22/25
Date Analyzed: 04/24/25
Date Extracted: 04/23/25

Matrix Spike Summary
Total Metals

Sample Name: 2025NA6MLHRS1
Lab Code: K2504142-001
Analysis Method: 7471A
Prep Method: Method

Units: mg/Kg
Basis: Dry

Matrix Spike
KQ2506735-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	ND U	0.675	0.671	101	60-135

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Analyzed: 04/28/25

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ2506736-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Aluminum	6020B	419	400	105	80-120
Cadmium	6020B	10.5	10.0	105	80-120
Chromium	6020B	41.8	40.0	105	80-120
Copper	6020B	51.7	50.0	103	80-120
Lead	6020B	107	100	107	80-120
Nickel	6020B	107	100	107	80-120
Silver	6020B	10.5	10.0	105	80-120
Zinc	6020B	104	100	104	80-120

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142
Date Analyzed: 05/01/25

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis:Dry

Lab Control Sample
KQ2507171-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020B	104	100	104	80-120
Selenium	6020B	110	100	110	80-120

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QA/QC Report

Client: Alaska Department of Fish and Game

Project: 2025 New Amalga Gold Mine

Sample Matrix: Soil

Service Request: K2504142

Date Analyzed: 04/24/25

Lab Control Sample Summary

Total Metals

Units:mg/Kg

Basis:Dry

Lab Control Sample

KQ2506735-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7471A	0.509	0.500	102	83-117

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Prep Summary Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request:K2504142

Metals

Prep Method: EPA 3050B
Analytical Method: 6020B

Extraction Lot: 456004
Extraction Date: 04/24/25 11:45

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
2025NA6MLHRS1	K2504142-001	4/14/25	4/22/25	1.135 g	100 mL	
2025NA6MLHRS2	K2504142-002	4/14/25	4/22/25	1.190 g	100 mL	
2025NA6MLHRS3	K2504142-003	4/14/25	4/22/25	1.128 g	100 mL	
2025NA6MMHRS1	K2504142-004	4/16/25	4/22/25	1.156 g	100 mL	
2025NA6MMHRS2	K2504142-005	4/16/25	4/22/25	1.133 g	100 mL	
2025NA6MMHRS3	K2504142-006	4/16/25	4/22/25	1.283 g	100 mL	
2025NA6MUHRS1	K2504142-007	4/16/25	4/22/25	1.249 g	100 mL	
2025NA6MUHRS2	K2504142-008	4/16/25	4/22/25	1.156 g	100 mL	
2025NA6MUHRS3	K2504142-009	4/16/25	4/22/25	1.339 g	100 mL	
2025NA6MLERS1	K2504142-010	4/15/25	4/22/25	1.287 g	100 mL	
2025NA6MLERS2	K2504142-011	4/15/25	4/22/25	1.195 g	100 mL	
2025NA6MLERS3	K2504142-012	4/15/25	4/22/25	1.307 g	100 mL	
Duplicate	KQ2506736-01DUP	4/14/25	4/22/25	1.184 g	100 mL	
Matrix Spike	KQ2506736-02MS	4/14/25	4/22/25	1.158 g	100 mL	
Method Blank	KQ2506736-03MB	NA	NA	1.0000 g	100 mL	
Lab Control Sample	KQ2506736-04LCS	NA	NA	1.0000 g	100 mL	

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Prep Summary Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request:K2504142

Metals

Prep Method: EPA 3050B
Analytical Method: 6020B

Extraction Lot: 456364
Extraction Date: 04/30/25 00:02

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
2025NA6MLHRS1	K2504142-001	4/14/25	4/22/25	1.2090 g	100 mL	
2025NA6MLHRS2	K2504142-002	4/14/25	4/22/25	1.1740 g	100 mL	
2025NA6MLHRS3	K2504142-003	4/14/25	4/22/25	1.3390 g	100 mL	
2025NA6MMHRS1	K2504142-004	4/16/25	4/22/25	1.2510 g	100 mL	
2025NA6MMHRS2	K2504142-005	4/16/25	4/22/25	1.2250 g	100 mL	
2025NA6MMHRS3	K2504142-006	4/16/25	4/22/25	1.2140 g	100 mL	
2025NA6MUHRS1	K2504142-007	4/16/25	4/22/25	1.3750 g	100 mL	
2025NA6MUHRS2	K2504142-008	4/16/25	4/22/25	1.4050 g	100 mL	
2025NA6MUHRS3	K2504142-009	4/16/25	4/22/25	1.3320 g	100 mL	
2025NA6MLERS1	K2504142-010	4/15/25	4/22/25	1.2860 g	100 mL	
2025NA6MLERS2	K2504142-011	4/15/25	4/22/25	1.2700 g	100 mL	
2025NA6MLERS3	K2504142-012	4/15/25	4/22/25	1.3650 g	100 mL	
Method Blank	KQ2507171-01MB	NA	NA	1.0000 g	100 mL	
Lab Control Sample	KQ2507171-02LCS	NA	NA	1.0000 g	100 mL	
Duplicate	KQ2507171-03DUP	4/14/25	4/22/25	1.2650 g	100 mL	
Matrix Spike	KQ2507171-04MS	4/14/25	4/22/25	1.2070 g	100 mL	

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Prep Summary Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine
Sample Matrix: Soil

Service Request: K2504142

Metals

Prep Method: Method
Analytical Method: 7471A

Extraction Lot: 456003
Extraction Date: 04/23/25 15:00

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Amount	Percent Solids
2025NA6MLHRS1	K2504142-001	4/14/25	4/22/25	0.514 g	50 mL	
2025NA6MLHRS2	K2504142-002	4/14/25	4/22/25	0.530 g	50 mL	
2025NA6MLHRS3	K2504142-003	4/14/25	4/22/25	0.572 g	50 mL	
2025NA6MMHRS1	K2504142-004	4/16/25	4/22/25	0.590 g	50 mL	
2025NA6MMHRS2	K2504142-005	4/16/25	4/22/25	0.560 g	50 mL	
2025NA6MMHRS3	K2504142-006	4/16/25	4/22/25	0.534 g	50 mL	
2025NA6MUHRS1	K2504142-007	4/16/25	4/22/25	0.521 g	50 mL	
2025NA6MUHRS2	K2504142-008	4/16/25	4/22/25	0.534 g	50 mL	
2025NA6MUHRS3	K2504142-009	4/16/25	4/22/25	0.516 g	50 mL	
2025NA6MLERS1	K2504142-010	4/15/25	4/22/25	0.570 g	50 mL	
2025NA6MLERS2	K2504142-011	4/15/25	4/22/25	0.517 g	50 mL	
2025NA6MLERS3	K2504142-012	4/15/25	4/22/25	0.594 g	50 mL	
Duplicate	KQ2506735-01DUP	4/14/25	4/22/25	0.525 g	50 mL	
Matrix Spike	KQ2506735-02MS	4/14/25	4/22/25	0.536 g	50 mL	
Method Blank	KQ2506735-03MB	NA	NA	0.5 g	50 mL	
Lab Control Sample	KQ2506735-04LCS	NA	NA	0.5 g	50 mL	

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
ICV 04/24/25 10:05	Mercury	7471A	877079	5.05	5.00	101	90-110
CCV 04/24/25 10:10	Mercury	7471A	877079	5.00	5.00	100	90-110
CCV 04/24/25 10:30	Mercury	7471A	877079	4.96	5.00	99	90-110
CCV 04/24/25 10:49	Mercury	7471A	877079	4.99	5.00	100	90-110
CCV 04/24/25 11:08	Mercury	7471A	877079	5.01	5.00	100	90-110
CCV 04/24/25 11:24	Mercury	7471A	877079	5.02	5.00	100	90-110
ICV 04/28/25 14:13	Aluminum	6020B	877391	102	100	102	90-110
	Cadmium	6020B	877391	12.4	12.5	99	90-110
	Chromium	6020B	877391	9.77	10.0	98	90-110
	Copper	6020B	877391	12.1	12.5	97	90-110
	Lead	6020B	877391	24.0	25.0	96	90-110
	Nickel	6020B	877391	24.4	25.0	97	90-110
	Silver	6020B	877391	12.4	12.5	99	90-110
	Zinc	6020B	877391	24.4	25.0	98	90-110
CCV 04/28/25 14:15	Aluminum	6020B	877391	259	250	104	90-110
	Cadmium	6020B	877391	25.6	25.0	102	90-110
	Chromium	6020B	877391	25.0	25.0	100	90-110
	Copper	6020B	877391	25.3	25.0	101	90-110
	Lead	6020B	877391	25.0	25.0	100	90-110
	Nickel	6020B	877391	25.3	25.0	101	90-110
	Silver	6020B	877391	12.7	12.5	102	90-110
	Zinc	6020B	877391	25.4	25.0	102	90-110
CCV 04/28/25 15:04	Aluminum	6020B	877391	250	250	100	90-110
	Cadmium	6020B	877391	25.4	25.0	102	90-110
	Chromium	6020B	877391	25.6	25.0	102	90-110
	Copper	6020B	877391	25.4	25.0	102	90-110
	Lead	6020B	877391	25.0	25.0	100	90-110
	Nickel	6020B	877391	25.9	25.0	103	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits
CCV 04/28/25 15:04	Silver	6020B	877391	12.7	12.5	102	90-110
	Zinc	6020B	877391	25.5	25.0	102	90-110
CCV 04/28/25 15:31	Aluminum	6020B	877391	253	250	101	90-110
	Cadmium	6020B	877391	25.2	25.0	101	90-110
	Chromium	6020B	877391	25.0	25.0	100	90-110
	Copper	6020B	877391	25.2	25.0	101	90-110
	Lead	6020B	877391	24.7	25.0	99	90-110
	Nickel	6020B	877391	25.3	25.0	101	90-110
	Silver	6020B	877391	12.6	12.5	100	90-110
	Zinc	6020B	877391	25.5	25.0	102	90-110
ICV 05/01/25 08:49	Arsenic	6020B	877754	25.3	25.0	101	90-110
	Selenium	6020B	877754	25.3	25.0	101	90-110
CCV 05/01/25 08:51	Arsenic	6020B	877754	25.2	25.0	101	90-110
	Selenium	6020B	877754	25.8	25.0	103	90-110
CCV 05/01/25 09:30	Arsenic	6020B	877754	25.3	25.0	101	90-110
	Selenium	6020B	877754	25.5	25.0	102	90-110
CCV 05/01/25 10:14	Arsenic	6020B	877754	25.2	25.0	101	90-110
	Selenium	6020B	877754	25.9	25.0	104	90-110

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
ICB 04/24/25 10:07				
Mercury	7471A	877079	0.02	U
CCB 04/24/25 10:12				
Mercury	7471A	877079	0.02	U
CCB 04/24/25 10:31				
Mercury	7471A	877079	0.02	U
CCB 04/24/25 10:51				
Mercury	7471A	877079	0.02	U
CCB 04/24/25 11:10				
Mercury	7471A	877079	0.02	U
CCB 04/24/25 11:25				
Mercury	7471A	877079	0.02	U
ICB 04/28/25 14:18				
Aluminum	6020B	877391	1.1	U
Cadmium	6020B	877391	0.007	U
Chromium	6020B	877391	0.07	U
Copper	6020B	877391	0.13	U
Lead	6020B	877391	0.02	U
Nickel	6020B	877391	0.08	U
Silver	6020B	877391	0.007	U
Zinc	6020B	877391	0.2	U
CCB 04/28/25 14:20				
Aluminum	6020B	877391	1.1	U
Cadmium	6020B	877391	0.007	U
Chromium	6020B	877391	0.07	U
Copper	6020B	877391	0.13	U
Lead	6020B	877391	0.02	U
Nickel	6020B	877391	0.08	U
Silver	6020B	877391	0.007	U
Zinc	6020B	877391	0.2	U
CCB 04/28/25 15:07				
Aluminum	6020B	877391	1.1	U
Cadmium	6020B	877391	0.007	U
Chromium	6020B	877391	0.07	U
Copper	6020B	877391	0.13	U
Lead	6020B	877391	0.02	U
Nickel	6020B	877391	0.08	U

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

INITIAL AND CONTINUING CALIBRATION BLANKS

Concentration Units: ug/L

Sample ID

Analyte	Method	Analysis Batch:	Result	C
CCB 04/28/25 15:07				
Silver	6020B	877391	0.007	U
Zinc	6020B	877391	0.2	U
CCB 04/28/25 15:33				
Aluminum	6020B	877391	1.1	U
Cadmium	6020B	877391	0.007	U
Chromium	6020B	877391	0.07	U
Copper	6020B	877391	0.13	U
Lead	6020B	877391	0.02	U
Nickel	6020B	877391	0.08	U
Silver	6020B	877391	0.007	U
Zinc	6020B	877391	0.2	U
ICB 05/01/25 08:52				
Arsenic	6020B	877754	0.05	U
Selenium	6020B	877754	0.1	U
CCB 05/01/25 08:54				
Arsenic	6020B	877754	0.05	U
Selenium	6020B	877754	0.1	U
CCB 05/01/25 09:31				
Arsenic	6020B	877754	0.05	U
Selenium	6020B	877754	0.1	U
CCB 05/01/25 10:16				
Arsenic	6020B	877754	0.05	U
Selenium	6020B	877754	0.1	U

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

LOW LEVEL INITIAL AND LOW LEVEL CONTINUING CALIBRATION VERIFICATION

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
LLICV	Mercury	7471A	877079	0.19	0.2	94	70-130	04/24/25 10:09
LLICVS	Aluminum	6020B	877391	4.3	4.0	108	80-120	04/28/25 14:23
	Cadmium	6020B	877391	0.041	0.04	102	80-120	04/28/25 14:23
	Chromium	6020B	877391	0.40	0.4	100	80-120	04/28/25 14:23
	Copper	6020B	877391	0.40	0.4	101	80-120	04/28/25 14:23
	Lead	6020B	877391	0.096	0.1	96	80-120	04/28/25 14:23
	Nickel	6020B	877391	0.38	0.4	96	80-120	04/28/25 14:23
	Silver	6020B	877391	0.039	0.04	97	80-120	04/28/25 14:23
	Zinc	6020B	877391	1.1	1.0	113	80-120	04/28/25 14:23
LLICVS	Arsenic	6020B	877754	0.47	0.5	95	80-120	05/01/25 08:56
	Selenium	6020B	877754	0.99	1.0	99	80-120	05/01/25 08:56

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	Analysis Date
						Limits	
Aluminum	6020B	877391	20300	-	-	-	04/28/25 14:25
Cadmium	6020B	877391	0.415	-	-	-	04/28/25 14:25
Chromium	6020B	877391	0.23	-	-	-	04/28/25 14:25
Copper	6020B	877391	0.51	-	-	-	04/28/25 14:25
Lead	6020B	877391	0.24	-	-	-	04/28/25 14:25
Nickel	6020B	877391	0.52	-	-	-	04/28/25 14:25
Silver	6020B	877391	0.009	-	-	-	04/28/25 14:25
Zinc	6020B	877391	0.6	-	-	-	04/28/25 14:25

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Aluminum	6020B	877391	20300	-	-	-	04/28/25 14:28
Cadmium	6020B	877391	24.9	25.0	99	80-120	04/28/25 14:28
Chromium	6020B	877391	48.5	50.0	97	80-120	04/28/25 14:28
Copper	6020B	877391	46.4	50.0	93	80-120	04/28/25 14:28
Lead	6020B	877391	0.25	-	-	-	04/28/25 14:28
Nickel	6020B	877391	47.6	50.0	95	80-120	04/28/25 14:28
Silver	6020B	877391	12.3	12.5	98	80-120	04/28/25 14:28
Zinc	6020B	877391	23.8	25.0	95	80-120	04/28/25 14:28

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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSA

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec.	Analysis Date
						Limits	
Arsenic	6020B	877754	0.08	-	-	-	05/01/25 08:58
Selenium	6020B	877754	0.03	-	-	-	05/01/25 08:58

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

ICP INTERFERENCE CHECK SAMPLE

Sample ID ICSAB

Concentration Units: ug/L

Analyte	Method	Analysis Batch:	Result	True Value	% Rec	% Rec. Limits	Analysis Date
Arsenic	6020B	877754	25.2	25.0	101	80-120	05/01/25 08:59
Selenium	6020B	877754	24.4	25.0	98	80-120	05/01/25 08:59

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

POST SPIKE SAMPLE RECOVERY

Concentration Units: ug/L

Sample ID	Analyte	Method	Analysis Batch:	Initial Sample Result	Post Spike Result	True Value	% Rec	% Rec. Limits	Analysis Date
K2504142-001A	Mercury	7471A	877079	0.003 U	5.17	5.00	103	80-120	04/24/25 10:59
K2504142-002A	Aluminum	6020B	877391	3740	3650	50	-173 #	75-125	04/28/25 14:51
	Cadmium	6020B	877391	0.02 J	51.9	50.0	104	75-125	04/28/25 14:51
	Chromium	6020B	877391	3.8	54.0	50.0	100	75-125	04/28/25 14:51
	Copper	6020B	877391	3.7	54.1	50.0	101	75-125	04/28/25 14:51
	Lead	6020B	877391	0.5	53.5	50.0	106	75-125	04/28/25 14:51
	Nickel	6020B	877391	2.8	53.2	50.0	101	75-125	04/28/25 14:51
	Silver	6020B	877391	0.03 J	10.4	10.0	104	75-125	04/28/25 14:51
	Zinc	6020B	877391	18	68	50	100	75-125	04/28/25 14:51
K2504142-001A	Arsenic	6020B	877754	1.7	52.6	50.0	102	75-125	05/01/25 09:21
	Selenium	6020B	877754	0.2 J	53	50	106	75-125	05/01/25 09:21

Results flagged with a pound (#) indicate the control criteria is not applicable.

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine

Service Request: K2504142

ICP SERIAL DILUTIONS

Concentration Units: ug/L

Sample ID			Initial Sample Result	Serial Dilution Result	% Diff	% Diff. Limit	Analysis Date
Analyte	Method	Analysis Batch:					
K2504142-002SDL							
Aluminum	6020B	877391	37400	37900	1	10	04/28/25 14:49
Cadmium	6020B	877391	0.2	0.06 U	74	10	04/28/25 14:49
Chromium	6020B	877391	38	38	1	10	04/28/25 14:49
Copper	6020B	877391	37	38	2	10	04/28/25 14:49
Lead	6020B	877391	4.7	4.3 J	8	10	04/28/25 14:49
Nickel	6020B	877391	28	28	1	10	04/28/25 14:49
Silver	6020B	877391	0.3	0.2 U	31	10	04/28/25 14:49
Zinc	6020B	877391	177	191	8	10	04/28/25 14:49
K2504142-001SDL							
Arsenic	6020B	877754	17	18 J	2	10	05/01/25 09:19
Selenium	6020B	877754	2	4 U	168	10	05/01/25 09:19

ALS Group USA, Corp.
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QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine/

Service Request: K2504142

Detection Limits

Instrument: K-ICP-MS-05

Matrix: Soil

Analyte	Mass	Units	MRL	MDL	Method
Aluminum	27	ug/L	4	1.1	6020B
Arsenic	75	ug/L	0.5	0.052	6020B
Cadmium	111	ug/L	0.04	0.0065	6020B
Chromium	52	ug/L	0.4	0.068	6020B
Copper	65	ug/L	0.4	0.13	6020B
Lead	208	ug/L	0.1	0.017	6020B
Nickel	60	ug/L	0.4	0.081	6020B
Selenium	78	ug/L	1	0.11	6020B
Silver	107	ug/L	0.04	0.0071	6020B
Zinc	66	ug/L	1	0.18	6020B

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine/

Service Request: K2504142

Detection Limits

Instrument: K-CVAA-04

Matrix: Soil

Analyte	Wavelength (nm)	Units	MRL	MDL	Method
Mercury	253	ug/L	0.2	0.02	7471A

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Alaska Department of Fish and Game
Project: 2025 New Amalga Gold Mine/

Service Request: K2504142

ICP Linear Range (Quarterly)

Instrument: K-ICP-MS-05

Analyte	Concentration (ug/L)	Method
Aluminum 27	45000	6020B
Arsenic 75	3600	6020B
Cadmium 111	3600	6020B
Chromium 52	3600	6020B
Copper 65	9000	6020B
Lead 208	3600	6020B
Nickel 60	3600	6020B
Selenium 78	3600	6020B
Silver 107	180	6020B
Zinc 66	9000	6020B