

CERTIFICATE OF ANALYSIS

Work Order	: VA23B4177	Page	: 1 of 9
Client	: Northwest Research and Monitoring Ltd.	Laboratory	: Vancouver - Environmental
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Project	: MWM T 2023	Date Samples Received	: 21-Jun-2023 22:45
PO	: ----	Date Analysis Commenced	: 22-Jun-2023
C-O-C number	: 20-1014746	Issue Date	: 30-Jun-2023 15:36
Sampler	: ----		
Site	: ----		
Quote number	: Q72918		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Cecilia Zhang	Account Manager Assistant	Administration, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Delson Resende	Lab Assistant	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

Unit	Description
-	no units
%	percent
°C	degrees celsius
µS/cm	microsiemens per centimetre
mg/L	milligrams per litre
mV	millivolts
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
RRV	Reported result verified by repeat analysis.



Analytical Results

Sub-Matrix: Water				Client sample ID	Cutthroat Creek	Nanika River	McBride Creek	Field Blank	Nanika River Duplicate
(Matrix: Water)									
				Client sampling date / time	21-Jun-2023 12:45	21-Jun-2023 12:20	21-Jun-2023 11:30	21-Jun-2023 12:45	21-Jun-2023 12:20
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-001	VA23B4177-002	VA23B4177-003	VA23B4177-004	VA23B4177-005
					Result	Result	Result	Result	Result
Field Tests									
Conductivity, field	----	EF001/VA	0.10	µS/cm	35.100	39.400	37.000	----	39.400
Oxygen, dissolved saturation %, field	----	EF001/VA	0.1	%	70.1	103.4	97.2	----	103.4
Oxygen, dissolved, field	----	EF001/VA	0.01	mg/L	7.31	11.51	9.93	----	11.51
pH, field	----	EF001/VA	0.10	pH units	6.60	7.56	7.47	----	7.56
Temperature, field	----	EF001/VA	0.10	°C	13.5	9.10	14.2	----	9.10
Physical Tests									
Alkalinity, total (as CaCO3)	----	E290/VA	1.0	mg/L	14.1	13.7	16.0	1.0	13.3
Hardness (as CaCO3), dissolved	----	EC100/VA	0.50	mg/L	16.3	18.2	16.8	<0.50	18.3
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	383	387	391	486	396
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	30	32	48	<10	22
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0
Turbidity	----	E121/VA	0.10	NTU	0.70	0.86	0.31	<0.10	0.84
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	<0.0050	0.0078	<0.0050	<0.0050
Kjeldahl nitrogen, total [TKN]	----	EC318/VA	0.050	mg/L	0.134	<0.050	0.275	<0.050	<0.050
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	0.0144	<0.0050	<0.0050	0.0128
Nitrate + Nitrite (as N)	----	EC235.N+N/V A	0.0050	mg/L	<0.0051	0.0144	<0.0051	<0.0051	0.0128
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	0.134	0.048	0.275	<0.030	0.052
Nitrogen, total dissolved	----	E368/VA	0.030	mg/L	0.144	0.054	0.272	<0.030	0.053
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	0.0061	0.0027	0.0058	<0.0020	0.0024
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/VA	0.50	mg/L	4.60	1.76	11.4	<0.50	1.53
Total Metals									
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	0.0520	0.0884	0.0820	<0.0030	0.0992
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	0.00010	<0.00010



Analytical Results

Sub-Matrix: Water					Client sample ID	Cutthroat Creek	Nanika River	McBride Creek	Field Blank	Nanika River Duplicate
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-001	VA23B4177-002	VA23B4177-003	VA23B4177-004	VA23B4177-005	
					Result	Result	Result	Result	Result	
Total Metals										
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	0.00028	0.00024	0.00036	<0.00010	0.00021	
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	0.0116	0.0122	0.0122	<0.00010	0.0126	
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000050	0.0000221	<0.0000050	<0.0000050	0.0000219	
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	5.71	6.35	4.98	<0.050	6.40	
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	<0.000010	0.000014	<0.000010	<0.000010	0.000019	
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	<0.00050	0.00312	0.00081	<0.00050	0.00333	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	0.288	0.078	0.150	<0.010	0.087	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	0.000067	<0.000050	<0.000050	0.000076	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	0.511	0.622	1.09	<0.0050	0.637	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	0.0271	0.00845	0.0101	<0.00010	0.00909	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	0.000158	0.000493	0.000076	<0.000050	0.000501	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	0.114	0.178	0.313	<0.050	0.190	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	0.00021	0.00030	0.00048	<0.00020	0.00029	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	<0.000050	0.000054	<0.000050	<0.000050	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	1.29	1.61	2.27	<0.10	1.62	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	0.738	0.648	1.97	0.274	0.670	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	0.0200	0.0293	0.0430	<0.00020	0.0296	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	0.86	1.77	<0.50	<0.50	1.87	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	



Analytical Results

Sub-Matrix: Water					Client sample ID	Cutthroat Creek	Nanika River	McBride Creek	Field Blank	Nanika River Duplicate
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-001	VA23B4177-002	VA23B4177-003	VA23B4177-004	VA23B4177-005	
					Result	Result	Result	Result	Result	
Total Metals										
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	0.00056	<0.00180 ^{DLM}	0.00051	<0.00030	0.00139	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	<0.000010	0.000033	0.000018	<0.000010	0.000033	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	<0.00020	0.00025	<0.00020	<0.00020	
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/VA	0.0010	mg/L	0.0292	0.0201	0.0680	<0.0010	0.0203	
Antimony, dissolved	7440-36-0	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic, dissolved	7440-38-2	E421/VA	0.00010	mg/L	0.00025	0.00014	0.00034	<0.00010	0.00016	
Barium, dissolved	7440-39-3	E421/VA	0.00010	mg/L	0.0112	0.0116	0.0118	<0.00010	0.0117	
Beryllium, dissolved	7440-41-7	E421/VA	0.000020	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	
Bismuth, dissolved	7440-69-9	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Boron, dissolved	7440-42-8	E421/VA	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium, dissolved	7440-43-9	E421/VA	0.0000050	mg/L	<0.0000050	0.0000177	<0.0000050	<0.0000050	0.0000194	
Calcium, dissolved	7440-70-2	E421/VA	0.050	mg/L	5.68	6.25	4.95	<0.050	6.28	
Cesium, dissolved	7440-46-2	E421/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Chromium, dissolved	7440-47-3	E421/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Cobalt, dissolved	7440-48-4	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper, dissolved	7440-50-8	E421/VA	0.00020	mg/L	0.00036	0.00239	0.00072	0.00046 ^{RRV}	0.00240	
Iron, dissolved	7439-89-6	E421/VA	0.010	mg/L	0.147	0.018	0.115	<0.010	0.018	
Lead, dissolved	7439-92-1	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Lithium, dissolved	7439-93-2	E421/VA	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Magnesium, dissolved	7439-95-4	E421/VA	0.0050	mg/L	0.522	0.627	1.09	<0.0050	0.636	
Manganese, dissolved	7439-96-5	E421/VA	0.00010	mg/L	0.0240	0.00416	0.00575	<0.00010	0.00434	
Molybdenum, dissolved	7439-98-7	E421/VA	0.000050	mg/L	0.000141	0.000473	0.000066	<0.000050	0.000492	
Nickel, dissolved	7440-02-0	E421/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Phosphorus, dissolved	7723-14-0	E421/VA	0.050	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium, dissolved	7440-09-7	E421/VA	0.050	mg/L	0.100	0.163	0.309	<0.050	0.168	



Analytical Results

Sub-Matrix: Water					Client sample ID	Cutthroat Creek	Nanika River	McBride Creek	Field Blank	Nanika River Duplicate
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-001	VA23B4177-002	VA23B4177-003	VA23B4177-004	VA23B4177-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
Rubidium, dissolved	7440-17-7	E421/VA	0.00020	mg/L	0.00020	0.00021	0.00043	<0.00020		0.00021
Selenium, dissolved	7782-49-2	E421/VA	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050
Silicon, dissolved	7440-21-3	E421/VA	0.050	mg/L	1.23	1.48	2.21	<0.050		1.46
Silver, dissolved	7440-22-4	E421/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Sodium, dissolved	7440-23-5	E421/VA	0.050	mg/L	0.740	0.656	1.95	0.271 ^{RRV}		0.650
Strontium, dissolved	7440-24-6	E421/VA	0.00020	mg/L	0.0207	0.0294	0.0440	<0.00020		0.0293
Sulfur, dissolved	7704-34-9	E421/VA	0.50	mg/L	0.62	1.61	<0.50	<0.50		1.46
Tellurium, dissolved	13494-80-9	E421/VA	0.00020	mg/L	<0.00020	<0.00020	<0.00020	<0.00020		<0.00020
Thallium, dissolved	7440-28-0	E421/VA	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010
Thorium, dissolved	7440-29-1	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Tin, dissolved	7440-31-5	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Titanium, dissolved	7440-32-6	E421/VA	0.00030	mg/L	<0.00030	<0.00030	0.00036	<0.00030		<0.00030
Tungsten, dissolved	7440-33-7	E421/VA	0.00010	mg/L	<0.00010	<0.00010	<0.00010	<0.00010		<0.00010
Uranium, dissolved	7440-61-1	E421/VA	0.000010	mg/L	<0.000010	0.000026	0.000017	<0.000010		0.000028
Vanadium, dissolved	7440-62-2	E421/VA	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050		<0.00050
Zinc, dissolved	7440-66-6	E421/VA	0.0010	mg/L	<0.0010	0.0014	0.0024	<0.0010		0.0018
Zirconium, dissolved	7440-67-7	E421/VA	0.00030	mg/L	<0.00030	<0.00030	<0.00030	<0.00030		<0.00030
Dissolved metals filtration location	----	EP421/VA	-	-	Field	Field	Field	Field		Field

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



Analytical Results

Sub-Matrix: Water					Client sample ID	Travel Blank	----	----	----	----
(Matrix: Water)					Client sampling date / time	21-Jun-2023	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-006	Result	----	----	----	----
Physical Tests										
Alkalinity, total (as CaCO ₃)	----	E290/VA	1.0	mg/L	<1.0	----	----	----	----	----
Hardness (as CaCO ₃), from total Ca/Mg	----	EC100A/VA	0.50	mg/L	<0.50	----	----	----	----	----
Oxidation-reduction potential [ORP]	----	E125/VA	0.10	mV	492	----	----	----	----	----
Solids, total dissolved [TDS]	----	E162/VA	10	mg/L	<10	----	----	----	----	----
Solids, total suspended [TSS]	----	E160/VA	3.0	mg/L	<3.0	----	----	----	----	----
Turbidity	----	E121/VA	0.10	NTU	<0.10	----	----	----	----	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/VA	0.0050	mg/L	<0.0050	----	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	EC318/VA	0.050	mg/L	<0.050	----	----	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3-L/V A	0.0050	mg/L	<0.0050	----	----	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/V A	0.0050	mg/L	<0.0051	----	----	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2-L/V A	0.0010	mg/L	<0.0010	----	----	----	----	----
Nitrogen, total	7727-37-9	E366/VA	0.030	mg/L	<0.030	----	----	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/VA	0.0010	mg/L	<0.0010	----	----	----	----	----
Phosphorus, total	7723-14-0	E372-U/VA	0.0020	mg/L	<0.0020	----	----	----	----	----
Total Metals										
Aluminum, total	7429-90-5	E420/VA	0.0030	mg/L	<0.0030	----	----	----	----	----
Antimony, total	7440-36-0	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Arsenic, total	7440-38-2	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Barium, total	7440-39-3	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----
Beryllium, total	7440-41-7	E420/VA	0.000020	mg/L	<0.000020	----	----	----	----	----
Bismuth, total	7440-69-9	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	----
Boron, total	7440-42-8	E420/VA	0.010	mg/L	<0.010	----	----	----	----	----
Cadmium, total	7440-43-9	E420/VA	0.0000050	mg/L	<0.0000050	----	----	----	----	----
Calcium, total	7440-70-2	E420/VA	0.050	mg/L	<0.050	----	----	----	----	----
Cesium, total	7440-46-2	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	----
Chromium, total	7440-47-3	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	----
Cobalt, total	7440-48-4	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	----



Analytical Results

Sub-Matrix: Water					Client sample ID	Travel Blank	----	----	----	----
(Matrix: Water)										
					Client sampling date / time	21-Jun-2023	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B4177-006	-----	-----	-----	-----	
					Result	----	----	----	----	
Total Metals										
Copper, total	7440-50-8	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	
Iron, total	7439-89-6	E420/VA	0.010	mg/L	<0.010	----	----	----	----	
Lead, total	7439-92-1	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Lithium, total	7439-93-2	E420/VA	0.0010	mg/L	<0.0010	----	----	----	----	
Magnesium, total	7439-95-4	E420/VA	0.0050	mg/L	<0.0050	----	----	----	----	
Manganese, total	7439-96-5	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Molybdenum, total	7439-98-7	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Nickel, total	7440-02-0	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	
Phosphorus, total	7723-14-0	E420/VA	0.050	mg/L	<0.050	----	----	----	----	
Potassium, total	7440-09-7	E420/VA	0.050	mg/L	<0.050	----	----	----	----	
Rubidium, total	7440-17-7	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	
Selenium, total	7782-49-2	E420/VA	0.000050	mg/L	<0.000050	----	----	----	----	
Silicon, total	7440-21-3	E420/VA	0.10	mg/L	<0.10	----	----	----	----	
Silver, total	7440-22-4	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Sodium, total	7440-23-5	E420/VA	0.050	mg/L	<0.050	----	----	----	----	
Strontium, total	7440-24-6	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	
Sulfur, total	7704-34-9	E420/VA	0.50	mg/L	<0.50	----	----	----	----	
Tellurium, total	13494-80-9	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	
Thallium, total	7440-28-0	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Thorium, total	7440-29-1	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Tin, total	7440-31-5	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Titanium, total	7440-32-6	E420/VA	0.00030	mg/L	<0.00030	----	----	----	----	
Tungsten, total	7440-33-7	E420/VA	0.00010	mg/L	<0.00010	----	----	----	----	
Uranium, total	7440-61-1	E420/VA	0.000010	mg/L	<0.000010	----	----	----	----	
Vanadium, total	7440-62-2	E420/VA	0.00050	mg/L	<0.00050	----	----	----	----	
Zinc, total	7440-66-6	E420/VA	0.0030	mg/L	<0.0030	----	----	----	----	
Zirconium, total	7440-67-7	E420/VA	0.00020	mg/L	<0.00020	----	----	----	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.



QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: VA23B4177	Page	: 1 of 18
Client	: Northwest Research and Monitoring Ltd.	Laboratory	: Vancouver - Environmental
Contact	: Laura Guillon	Account Manager	: Sneha Sansare
Address	: PO Box 4357 Smithers BC Canada V0J 2N0	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: MWMT 2023	Date Samples Received	: 21-Jun-2023 22:45
PO	: ----	Issue Date	: 30-Jun-2023 15:37
C-O-C number	: 20-1014746		
Sampler	: ----		
Site	: ----		
Quote number	: Q72918		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Cutthroat Creek	E298	21-Jun-2023	24-Jun-2023	----	----		27-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Field Blank	E298	21-Jun-2023	24-Jun-2023	----	----		27-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) McBride Creek	E298	21-Jun-2023	24-Jun-2023	----	----		27-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Nanika River	E298	21-Jun-2023	24-Jun-2023	----	----		27-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Nanika River Duplicate	E298	21-Jun-2023	24-Jun-2023	----	----		27-Jun-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (lab preserved) Travel Blank	E298	21-Jun-2023	24-Jun-2023	3 days	3 days	✓	27-Jun-2023	28 days	3 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Cutthroat Creek	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Field Blank	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE McBride Creek	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Nanika River	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Nanika River Duplicate	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Travel Blank	E378-U	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	3 days	5 days	✖ EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Cutthroat Creek	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Field Blank	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✔



Matrix: **Water** Evaluation: **✖** = Holding time exceedance ; **✔** = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE McBride Creek	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Nanika River	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Nanika River Duplicate	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Travel Blank	E235.NO3-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Cutthroat Creek	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Field Blank	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE McBride Creek	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Nanika River	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Nanika River Duplicate	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Travel Blank	E235.NO2-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	3 days	3 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid) Cutthroat Creek	E368	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid) Field Blank	E368	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid) McBride Creek	E368	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid) Nanika River	E368	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid) Nanika River Duplicate	E368	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) Cutthroat Creek	E366	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) Field Blank	E366	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) McBride Creek	E366	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) Nanika River	E366	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid) Nanika River Duplicate	E366	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	28 days	5 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (lab preserved) Travel Blank	E366	21-Jun-2023	24-Jun-2023	3 days	3 days	✓	26-Jun-2023	28 days	2 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) Cutthroat Creek	E372-U	21-Jun-2023	24-Jun-2023	----	----		28-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) Field Blank	E372-U	21-Jun-2023	24-Jun-2023	----	----		28-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) McBride Creek	E372-U	21-Jun-2023	24-Jun-2023	----	----		28-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) Nanika River	E372-U	21-Jun-2023	24-Jun-2023	----	----		28-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (sulfuric acid) Nanika River Duplicate	E372-U	21-Jun-2023	24-Jun-2023	----	----		28-Jun-2023	28 days	7 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass total (lab preserved) Travel Blank	E372-U	21-Jun-2023	24-Jun-2023	3 days	3 days	✓	28-Jun-2023	28 days	4 days	✓



Matrix: **Water**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) Field Blank	E421	21-Jun-2023	25-Jun-2023	----	----		26-Jun-2023	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) Cutthroat Creek	E421	21-Jun-2023	25-Jun-2023	----	----		27-Jun-2023	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) McBride Creek	E421	21-Jun-2023	25-Jun-2023	----	----		27-Jun-2023	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) Nanika River	E421	21-Jun-2023	25-Jun-2023	----	----		27-Jun-2023	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) Nanika River Duplicate	E421	21-Jun-2023	25-Jun-2023	----	----		27-Jun-2023	180 days	6 days	✓
Field Tests : Field pH,EC,Salinity,Ci2,CiO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - dissolved (lab preserved) Cutthroat Creek	EF001	21-Jun-2023	----	----	----		22-Jun-2023	----	----	
Field Tests : Field pH,EC,Salinity,Ci2,CiO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - dissolved (lab preserved) McBride Creek	EF001	21-Jun-2023	----	----	----		22-Jun-2023	----	----	
Field Tests : Field pH,EC,Salinity,Ci2,CiO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - dissolved (lab preserved) Nanika River	EF001	21-Jun-2023	----	----	----		22-Jun-2023	----	----	
Field Tests : Field pH,EC,Salinity,Ci2,CiO2,ORP,DO, Turbidity,T,T-P,o-PO4,NH3,Chloramine										
HDPE - dissolved (lab preserved) Nanika River Duplicate	EF001	21-Jun-2023	----	----	----		22-Jun-2023	----	----	



Matrix: **Water** Evaluation: **✖** = Holding time exceedance ; **✔** = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Cutthroat Creek	E358-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Field Blank	E358-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) McBride Creek	E358-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Nanika River	E358-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Nanika River Duplicate	E358-L	21-Jun-2023	24-Jun-2023	----	----		24-Jun-2023	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Cutthroat Creek	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Field Blank	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE McBride Creek	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Nanika River	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓



Matrix: **Water** Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE Nanika River Duplicate	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Travel Blank	E290	21-Jun-2023	24-Jun-2023	----	----		26-Jun-2023	14 days	5 days	✓
Physical Tests : ORP by Electrode										
HDPE Travel Blank	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	184 hrs	✖ EHTR-FM
Physical Tests : ORP by Electrode										
HDPE Cutthroat Creek	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	186 hrs	✖ EHTR-FM
Physical Tests : ORP by Electrode										
HDPE Field Blank	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	186 hrs	✖ EHTR-FM
Physical Tests : ORP by Electrode										
HDPE Nanika River	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	187 hrs	✖ EHTR-FM
Physical Tests : ORP by Electrode										
HDPE Nanika River Duplicate	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	187 hrs	✖ EHTR-FM
Physical Tests : ORP by Electrode										
HDPE McBride Creek	E125	21-Jun-2023	----	----	----		29-Jun-2023	0.25 hrs	188 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE Cutthroat Creek	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE Field Blank	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE McBride Creek	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Nanika River	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Nanika River Duplicate	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Travel Blank	E162	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Cutthroat Creek	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Field Blank	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE McBride Creek	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Nanika River	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓



Matrix: **Water** Evaluation: **✖** = Holding time exceedance ; **✔** = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE Nanika River Duplicate	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE Travel Blank	E160	21-Jun-2023	----	----	----		28-Jun-2023	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE Cutthroat Creek	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE Field Blank	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE Nanika River	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE Nanika River Duplicate	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE Travel Blank	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	2 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE McBride Creek	E121	21-Jun-2023	----	----	----		24-Jun-2023	3 days	3 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) Cutthroat Creek	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓



Matrix: **Water** Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) Field Blank	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) McBride Creek	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) Nanika River	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) Nanika River Duplicate	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE - total (lab preserved) Travel Blank	E420	21-Jun-2023	23-Jun-2023	----	----		25-Jun-2023	180 days	4 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended
 Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Water** Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	1007213	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1006975	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1005503	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1006971	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1007221	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1007218	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1007219	1	20	5.0	5.0	✓
ORP by Electrode	E125	1015104	2	21	9.5	5.0	✓
TDS by Gravimetry	E162	1013842	2	40	5.0	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	1006977	1	11	9.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	1003520	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1006973	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1006979	1	13	7.6	5.0	✓
TSS by Gravimetry	E160	1013812	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	1006641	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	1007213	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1006975	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1005503	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1006971	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1007221	1	11	9.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1007218	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1007219	1	20	5.0	5.0	✓
ORP by Electrode	E125	1015104	2	21	9.5	5.0	✓
TDS by Gravimetry	E162	1013842	2	40	5.0	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	1006977	1	11	9.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	1003520	1	20	5.0	5.0	✓
Total Nitrogen by Colourimetry	E366	1006973	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1006979	1	13	7.6	5.0	✓
TSS by Gravimetry	E160	1013812	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	1006641	1	20	5.0	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	1007213	1	14	7.1	5.0	✓
Ammonia by Fluorescence	E298	1006975	1	15	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1005503	1	20	5.0	5.0	✓



Matrix: **Water**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1006971	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1007221	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1007218	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1007219	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	1013842	2	40	5.0	5.0	✔
Total Dissolved Nitrogen by Colourimetry	E368	1006977	1	11	9.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	1003520	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1006973	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1006979	1	13	7.6	5.0	✔
TSS by Gravimetry	E160	1013812	2	40	5.0	5.0	✔
Turbidity by Nephelometry	E121	1006641	1	20	5.0	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	1006975	1	15	6.6	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1005503	1	20	5.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1006971	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1007221	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1007218	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1007219	1	20	5.0	5.0	✔
Total Dissolved Nitrogen by Colourimetry	E368	1006977	1	11	9.0	5.0	✔
Total metals in Water by CRC ICPMS	E420	1003520	1	20	5.0	5.0	✔
Total Nitrogen by Colourimetry	E366	1006973	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1006979	1	13	7.6	5.0	✔



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Turbidity by Nephelometry	E121 Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
ORP by Electrode	E125 Vancouver - Environmental	Water	ASTM D1498 (mod)	Oxidation reduction potential is reported as the oxidation-reduction potential of the platinum metal-reference electrode employed, measured in mV. For high accuracy test results, it is recommended that this analysis be conducted in the field.
TSS by Gravimetry	E160 Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$, with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162 Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Nitrogen by Colourimetry	E366 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Total Nitrogen is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Dissolved Nitrogen by Colourimetry	E368 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Total Dissolved Nitrogen is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U Vancouver - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Vancouver - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Kjeldahl Nitrogen (Calculation)	EC318 Vancouver - Environmental	Water	BC MOE LABORATORY MANUAL (2005)	Total Kjeldahl Nitrogen is a calculated parameter. Total Kjeldahl Nitrogen (calc) = Total Nitrogen - [Nitrite (as N) + Nitrate (as N)].
Field pH,EC,Salinity,Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ ,Chloramine	EF001 Vancouver - Environmental	Water	Field Measurement (Client Supplied)	Field pH,EC,Salinity,Cl ₂ ,ClO ₂ ,ORP,DO, Turbidity,T,T-P,o-PO ₄ ,NH ₃ or Chloramine measurements provided by client and recorded on ALS report may affect the validity of results.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Nitrogen in water	EP366 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Samples are heated with a persulfate digestion reagent.
Digestion for Total Dissolved Nitrogen in water	EP368 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Samples are filtration through a 0.45 micron filter and then heated with a persulfate digestion reagent.
Digestion for Total Phosphorus in water	EP372 Vancouver - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .

QUALITY CONTROL REPORT

Work Order	: VA23B4177	Page	: 1 of 18
Client	: Northwest Research and Monitoring Ltd.	Laboratory	: Vancouver - Environmental
Contact	: Laura Guillon	Account Manager	: Sneha Sansare
Address	: PO Box 4357 Smithers BC Canada V0J 2N0	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	:	Telephone	: +1 604 253 4188
Project	: MWM T 2023	Date Samples Received	: 21-Jun-2023 22:45
PO	: ----	Date Analysis Commenced	: 22-Jun-2023
C-O-C number	: 20-1014746	Issue Date	: 30-Jun-2023 15:36
Sampler	: ----		
Site	: ----		
Quote number	: Q72918		
No. of samples received	: 6		
No. of samples analysed	: 6		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Cecilia Zhang	Account Manager Assistant	Vancouver Administration, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Delson Resende	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1006641)											
VA23B4089-013	Anonymous	Turbidity	----	E121	0.10	NTU	0.42	0.43	0.008	Diff <2x LOR	----
Physical Tests (QC Lot: 1007213)											
VA23B4147-003	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	101	105	4.02%	20%	----
Physical Tests (QC Lot: 1013812)											
FJ2301476-001	Anonymous	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1013813)											
VA23B4177-004	Field Blank	Solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1013842)											
FJ2301476-001	Anonymous	Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1013843)											
VA23B4177-004	Field Blank	Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	<10	0	Diff <2x LOR	----
Physical Tests (QC Lot: 1015104)											
VA23B4110-001	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	278	277	0.289%	15%	----
Physical Tests (QC Lot: 1015105)											
VA23B4177-006	Travel Blank	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	492	493	0.345%	15%	----
Anions and Nutrients (QC Lot: 1006973)											
VA23B4078-001	Anonymous	Nitrogen, total	7727-37-9	E366	0.030	mg/L	0.142	0.141	0.0007	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1006975)											
VA23B4108-015	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0565	0.0580	2.62%	20%	----
Anions and Nutrients (QC Lot: 1006977)											
VA23B4078-001	Anonymous	Nitrogen, total dissolved	----	E368	0.030	mg/L	0.130	0.134	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1006979)											
VA23B4108-015	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	0.0605	0.0591	2.31%	20%	----
Anions and Nutrients (QC Lot: 1007218)											
VA23B4147-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0500	mg/L	0.585	0.578	1.18%	20%	----
Anions and Nutrients (QC Lot: 1007219)											
VA23B4147-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1007221)											
VA23B4177-001	Cutthroat Creek	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1006971)											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Organic / Inorganic Carbon (QC Lot: 1006971) - continued											
VA23B4078-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.24	2.37	0.13	Diff <2x LOR	----
Total Metals (QC Lot: 1003520)											
KS2302135-001	Anonymous	Aluminum, total	7429-90-5	E420	0.0100	mg/L	0.341	0.319	6.65%	20%	----
		Antimony, total	7440-36-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00053	0.00054	0.000009	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.0200	mg/L	<0.0200	<0.0200	0	Diff <2x LOR	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, total	7440-42-8	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.000200	mg/L	<0.000200	<0.000200	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.100	mg/L	0.154	0.156	0.002	Diff <2x LOR	----
		Cesium, total	7440-46-2	E420	0.000010	mg/L	0.000042	0.000042	0.0000005	Diff <2x LOR	----
		Chromium, total	7440-47-3	E420	0.00200	mg/L	<0.00200	<0.00200	0	Diff <2x LOR	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00100	mg/L	0.00495	0.00498	0.00003	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.030	mg/L	0.366	0.366	0.263%	20%	----
		Lead, total	7439-92-1	E420	0.000500	mg/L	0.000612	0.000532	0.000080	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0014	0.0014	0.00002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Manganese, total	7439-96-5	E420	0.00200	mg/L	0.00216	0.00234	0.00018	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.00294	0.00297	1.18%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	0.00074	0.00072	0.00002	Diff <2x LOR	----
		Phosphorus, total	7723-14-0	E420	0.050	mg/L	0.054	0.054	0.00002	Diff <2x LOR	----
		Potassium, total	7440-09-7	E420	0.100	mg/L	11.1	11.1	0.0987%	20%	----
		Rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00074	0.00075	0.00001	Diff <2x LOR	----
		Selenium, total	7782-49-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		Silicon, total	7440-21-3	E420	0.10	mg/L	8.68	8.48	2.34%	20%	----
		Silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, total	7440-23-5	E420	2.00	mg/L	102	104	1.10%	20%	----
		Strontium, total	7440-24-6	E420	0.00020	mg/L	0.00076	0.00074	0.00001	Diff <2x LOR	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	10.6	10.7	1.26%	20%	----
		Tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	0.00021	0.00011	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 1003520) - continued											
KS2302135-001	Anonymous	Tin, total	7440-31-5	E420	0.00010	mg/L	0.00045	0.00046	0.000009	Diff <2x LOR	----
		Tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000100	mg/L	0.000435	0.000439	0.000004	Diff <2x LOR	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00159	0.00153	0.00006	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
		Zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1005503)											
FJ2301472-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0043	0.0039	0.0004	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00023	0.00023	0.000004	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00045	0.00042	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0738	0.0726	1.62%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.036	0.037	0.0004	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000191	0.0000173	0.0000018	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	171	169	0.920%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00051	0.00048	0.00003	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00053	0.00048	0.00005	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.133	0.130	2.42%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0281	0.0280	0.578%	20%	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	62.7	60.9	2.92%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.116	0.113	3.25%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00328	0.00328	0.132%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00732	0.00700	4.43%	20%	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	2.62	2.57	1.95%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00205	0.00192	0.00012	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000707	0.000732	3.48%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	1.96	1.93	1.54%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	13.5	13.1	2.83%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 1005503) - continued											
FJ2301472-001	Anonymous	Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.901	0.889	1.35%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	122	120	1.37%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000015	0.000014	0.0000006	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00544	0.00546	0.289%	20%	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1006641)						
Turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 1007213)						
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1013812)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1013813)						
Solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 1013842)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 1013843)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1006973)						
Nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1006975)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1006977)						
Nitrogen, total dissolved	----	E368	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 1006979)						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 1007218)						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1007219)						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1007221)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1006971)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 1003520)						
Aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
Barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 1003520) - continued						
Beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
Boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
Calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
Copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
Iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
Lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
Lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
Silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
Silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
Sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1005503)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 1005503) - continued						
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1006641)									
Turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 1007213)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 1013812)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.3	85.0	115	----
Physical Tests (QCLot: 1013813)									
Solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	99.7	85.0	115	----
Physical Tests (QCLot: 1013842)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	99.2	85.0	115	----
Physical Tests (QCLot: 1013843)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1006973)									
Nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1006975)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1006977)									
Nitrogen, total dissolved	----	E368	0.03	mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 1006979)									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.05 mg/L	94.2	80.0	120	----
Anions and Nutrients (QCLot: 1007218)									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1007219)									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 1007221)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1006971)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	108	80.0	120	----
Total Metals (QCLot: 1003520)									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	107	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 1003520) - continued									
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	110	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	104	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	104	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	104	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
Cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	106	80.0	120	----
Chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	104	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	100	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	102	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	106	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
Phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	111	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	109	80.0	120	----
Rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	99.8	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	102	80.0	120	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	106	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	106	80.0	120	----
Tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	95.4	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	96.5	80.0	120	----
Thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	101	80.0	120	----
Tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	94.7	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	101	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit					
Total Metals (QCLot: 1003520) - continued									
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	106	80.0	120	----
Zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	99.1	80.0	120	----
Dissolved Metals (QCLot: 1005503)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	109	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	110	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	118	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	110	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	107	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	105	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	103	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	109	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	110	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	110	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	107	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	112	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	107	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	106	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	118	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	111	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	113	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	112	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	115	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	112	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	111	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	112	80.0	120	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	111	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	109	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	96.0	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	109	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	110	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	106	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 1005503) - continued									
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	99.9	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	106	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	112	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	109	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	102	80.0	120	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1006973)										
VA23B4108-015	Anonymous	Nitrogen, total	7727-37-9	E366	2.07 mg/L	2 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 1006975)										
VA23B4108-016	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0989 mg/L	0.1 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 1006977)										
VA23B4177-001	Cutthroat Creek	Nitrogen, total dissolved	----	E368	0.423 mg/L	0.4 mg/L	106	70.0	130	----
Anions and Nutrients (QCLot: 1006979)										
VA23B4108-016	Anonymous	Phosphorus, total	7723-14-0	E372-U	ND mg/L	0.05 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 1007218)										
VA23B4147-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	26.3 mg/L	25 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1007219)										
VA23B4147-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	5.10 mg/L	5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1007221)										
VA23B4177-002	Nanika River	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0304 mg/L	0.03 mg/L	101	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1006971)										
VA23B4108-015	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 1003520)										
KS2302152-001	Anonymous	Aluminum, total	7429-90-5	E420	0.192 mg/L	0.2 mg/L	96.2	70.0	130	----
		Antimony, total	7440-36-0	E420	0.0186 mg/L	0.02 mg/L	93.1	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Barium, total	7440-39-3	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.00945 mg/L	0.01 mg/L	94.5	70.0	130	----
		Boron, total	7440-42-8	E420	0.091 mg/L	0.1 mg/L	90.8	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.00386 mg/L	0.004 mg/L	96.5	70.0	130	----
		Calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, total	7440-46-2	E420	0.00994 mg/L	0.01 mg/L	99.4	70.0	130	----
		Chromium, total	7440-47-3	E420	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.0191 mg/L	0.02 mg/L	95.3	70.0	130	----
		Copper, total	7440-50-8	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 1003520) - continued										
KS2302152-001	Anonymous	Iron, total	7439-89-6	E420	1.86 mg/L	2 mg/L	92.9	70.0	130	----
		Lead, total	7439-92-1	E420	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		Lithium, total	7439-93-2	E420	0.0959 mg/L	0.1 mg/L	95.9	70.0	130	----
		Magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, total	7439-96-5	E420	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.0188 mg/L	0.02 mg/L	93.8	70.0	130	----
		Nickel, total	7440-02-0	E420	0.0380 mg/L	0.04 mg/L	94.9	70.0	130	----
		Phosphorus, total	7723-14-0	E420	9.89 mg/L	10 mg/L	98.9	70.0	130	----
		Potassium, total	7440-09-7	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		Rubidium, total	7440-17-7	E420	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		Selenium, total	7782-49-2	E420	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		Silicon, total	7440-21-3	E420	ND mg/L	10 mg/L	ND	70.0	130	----
		Silver, total	7440-22-4	E420	0.00381 mg/L	0.004 mg/L	95.3	70.0	130	----
		Sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, total	7704-34-9	E420	20.2 mg/L	20 mg/L	101	70.0	130	----
		Tellurium, total	13494-80-9	E420	0.0362 mg/L	0.04 mg/L	90.4	70.0	130	----
		Thallium, total	7440-28-0	E420	0.00367 mg/L	0.004 mg/L	91.7	70.0	130	----
		Thorium, total	7440-29-1	E420	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		Tin, total	7440-31-5	E420	0.0192 mg/L	0.02 mg/L	96.1	70.0	130	----
		Titanium, total	7440-32-6	E420	0.0372 mg/L	0.04 mg/L	92.9	70.0	130	----
		Tungsten, total	7440-33-7	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		Uranium, total	7440-61-1	E420	ND mg/L	0.004 mg/L	ND	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.0995 mg/L	0.1 mg/L	99.5	70.0	130	----
		Zinc, total	7440-66-6	E420	0.374 mg/L	0.4 mg/L	93.6	70.0	130	----
		Zirconium, total	7440-67-7	E420	0.0388 mg/L	0.04 mg/L	97.0	70.0	130	----
Dissolved Metals (QCLot: 1005503)										
FJ2301472-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0211 mg/L	0.02 mg/L	106	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.0397 mg/L	0.04 mg/L	99.3	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.00836 mg/L	0.01 mg/L	83.6	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00399 mg/L	0.004 mg/L	99.8	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 1005503) - continued										
FJ2301472-002	Anonymous	Calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.0102 mg/L	0.01 mg/L	102	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0192 mg/L	0.02 mg/L	95.8	70.0	130	----
		Iron, dissolved	7439-89-6	E421	1.99 mg/L	2 mg/L	99.7	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0976 mg/L	0.1 mg/L	97.6	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0395 mg/L	0.04 mg/L	98.8	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	10.2 mg/L	10 mg/L	102	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	4.12 mg/L	4 mg/L	103	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.0207 mg/L	0.02 mg/L	103	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0434 mg/L	0.04 mg/L	109	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	9.32 mg/L	10 mg/L	93.2	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00403 mg/L	0.004 mg/L	101	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	20.1 mg/L	20 mg/L	101	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.0396 mg/L	0.04 mg/L	98.9	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0360 mg/L	0.04 mg/L	90.1	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.00389 mg/L	0.004 mg/L	97.2	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.390 mg/L	0.4 mg/L	97.6	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.0373 mg/L	0.04 mg/L	93.4	70.0	130	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Sub-Matrix:					Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method			Low	High	
Physical Tests (QCLot: 1015104)									
	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	100	95.0	105	----
Physical Tests (QCLot: 1015105)									
	RM	Oxidation-reduction potential [ORP]	----	E125	220 mV	100	95.0	105	----



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Report To Company: Northwest Research and Monitoring Contact: Laura Guillon Phone: 250 877 7858 Company address below will appear on the final report Street: PO Box 4357 City/Province: Smithers BC Postal Code: V0J 2N0		Reports / Recipients Select Report Format: <input type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL) Merge QC/QCI Reports with COA <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: laura.guillon@nwr.m.ca Email 2: info@nwr.m.ca Email 3:		Turnaround Time (TAT) Requested <input type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply <input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum <input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum <input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum <input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum <input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional may apply to rush requests on weekends, statutory holidays and non-routine Date and Time Required for all E&P TATs:	
Invoice To Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Company: Contact:		Invoice Recipients Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax: invoices@nwr.m.ca Email 2: Email 3:		Analysis Required Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) F P FP FP FP Total metals Dissolved metals TN, TKN TDN NO ₃ + NO ₂ - NH ₄ DOC TP Dissolved ORP TSS Alkalinity Hardness Turbidity TDS SAMPLES ON HOLD EXTENDED STORAGE REQUIRED SUSPECTED HAZARD (see note)	
Project Information ALS Account # / Quote #: VA 2020 NWRM1000001 Job #: MWM 2023 PO / AFE: LSD:		Oil and Gas Required Fields (client use) AFE/Cost Center: Major/Minor Code: Requisitioner: Location:			
ALS Lab Work Order # (ALS use only): 4177		ALS Contact:		Sampler:	
ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	
	Cuthroat Creek	21 June 23	12:45	water	
	Nanika River		12:20		
	McBride Creek		11:30		
	Field Blank		12:45		
	Nanika River Duplicate		12:20		
	Travel Blank				
Drinking Water (DW) Samples¹ (client use) Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) Phase - add field data to COA - upload to the CMS		SAMPLE RECEIPT DETAILS (ALS use only) Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A INITIAL COOLER TEMPERATURES °C: 8 FINAL COOLER TEMPERATURES °C: 8	
SHIPMENT RELEASE (client use) Released by: Laura Date: June 21 16:00		INITIAL SHIPMENT RECEPTION (ALS use only) Received by: Date:		FINAL SHIPMENT RECEPTION (ALS use only) Received by: DN Date: June 21 10:55am	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2021 EBC102

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

DN CL

Field Crew

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Water Quality Sampling Field Card					
Date	Jun 21 / 23		Water Stage	Water Colour	EMS #
Site	Cutthroat		L/M/H	light tan	
Field Parameters					QA/QC
Sp. Cond. (uS/cm)	35.1	DO (ppm) ^{mg} L	7.31	Regular Suite <input checked="" type="radio"/> Y/N	Duplicate <input checked="" type="radio"/> Y/N
Cond (uS/cmA) _{mmHg}	688.7	pH	6.60	Hydrocarbons <input checked="" type="radio"/> Y/N	Field Blank <input checked="" type="radio"/> Y/N
DO (%)	70.1	Water Temp	13.5	Ice Cover (cm)	# Sample Bottles
			N/A		10
Notes: water lvl low. pH was lower but may be influenced by upstream wetland					
pH mv - 18.8					
Time of Sample	12:45		Project		
Water Quality Sampling Field Card					
Date	June 21 / 23		Water Stage	Water Colour	EMS #
Site	Nanika		L/M/H	clear	
Field Parameters					QA/QC
Sp. Cond. (uS/cm)	39.4	DO (ppm) ^{mg} L	11.51	Regular Suite <input checked="" type="radio"/> Y/N	Duplicate <input checked="" type="radio"/> Y/N
Cond (uS/cmA) _{mmHg}	692.3	pH	7.56	Hydrocarbons <input checked="" type="radio"/> Y/N	Field Blank <input checked="" type="radio"/> Y/N
DO (%)	11.51	Water Temp	9.1	Ice Cover (cm)	# Sample Bottles
			N/A		10
Notes: No traffic, not busy. Site is clear. River medium water lvl, fast flow					
pH mv - 34					
Time of Sample	12:20		Project		
Water Quality Sampling Field Card					
Date	June 21 / 23		Water Stage	Water Colour	EMS #
Site	Mc Bride		L/M/H	Light tan	
Field Parameters					QA/QC
Sp. Cond. (uS/cm)	37.8	DO (ppm) ^{mg} L	9.93	Regular Suite <input checked="" type="radio"/> Y/N	Duplicate <input checked="" type="radio"/> Y/N
Cond (uS/cmA) _{mmHg}	695.7	pH	7.47	Hydrocarbons <input checked="" type="radio"/> Y/N	Field Blank <input checked="" type="radio"/> Y/N
DO (%)	97.2	Water Temp	14.2	Ice Cover (cm)	# Sample Bottles
			N/A		5
Notes: Trail is over grown. Water medium lvl slow flow. LWD in stream					
pH mv - -29.6					
Time of Sample	11:30		Project		