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# Annual Water Systems Report

2023

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## 1. RDEK Water Systems Overview

The Regional District of East Kootenay (RDEK) strives to provide a safe and reliable water supply to all its customers. As required by the Drinking Water Protection Act, this Annual Water Report is intended to inform the public of the water systems owned and operated by the RDEK and provide details on water quality, system maintenance and improvements, water conservation tactics, and more. The RDEK employs certified water operators to ensure system operations comply with regulations set out by the BC Interior Health Authority (IHA).

<b>WATER SYSTEMS</b>	<b>EOCP #</b>	<b>2023 CONNECTIONS</b>
EAST SIDE LAKE WINDERMERE	1926 & 1927 & 1099	1625
HOLLAND CREEK	1866	403
EDGEWATER	649	474
RUSHMERE	1854	39
SPUR VALLEY	2421	73
MOYIE	2742	72
ELKO	2407	62

## 2. Systems at a Glance

Water System	Source Water	Supply Method	Disinfection/ Treatment Process	Pressure Reducing Stations	Reservoir & Capacity	Hydrants For Fire Protection
<b>East Side Lk Windermere</b>	Lake Windermere	Pumped/ Gravity	Flocculation & Filtration, Chlorine & UV disinfection	8	Concrete 962m <sup>3</sup> , 1250m <sup>3</sup> & 1600m <sup>3</sup>	Yes
<b>Edgewater</b>	Lake Baptiste	Gravity	Chlorine & UV disinfection	3	Steel 800m <sup>3</sup> & 400m <sup>3</sup>	Yes
<b>Holland Creek</b>	Groundwater Well	Pumped/ Gravity	Chlorine disinfection	2	Supplied by Kinbasket Water and Sewer	Yes
<b>Rushmere</b>	Lake Windermere	Pumped	Ultra-filtration and Chlorine disinfection	0	Polyurethane 17m <sup>3</sup>	No <sup>1</sup>
<b>Spur Valley</b>	Groundwater Well	Pumped/ Gravity	Chlorine disinfection	0	Concrete 125m <sup>3</sup> & 222m <sup>3</sup>	No <sup>2</sup>
<b>Moyie</b>	Groundwater Well	Pumped/ Gravity	No treatment or disinfection	0	Concrete 71m <sup>3</sup>	No
<b>Elko</b>	Groundwater Well	Pumped	No treatment or disinfection	0	No storage	No

<sup>1</sup>Fire protection by tender only

<sup>2</sup>Insufficient fire flows through hydrants. Fire Protection by tender only

### 3. Water Quality Performance

Parameters	Quality Standards	Frequency	Water Systems	Performance
Total Coliform, E.Coli	Less than one E.Coli and total coliform bacteria detectable per 100mL samples	Weekly	East Side Lake Windermere	100%
			Edgewater	100%
			Holland Creek	100%
			Rushmere	100%
			Spur Valley	100%
		Monthly	Moyie	100%
			Elko	100%
Free Chlorine Residual	Free chlorine residual minimum of 0.5mg/L entering the system after no less than 20 minutes contact time. Minimum of 0.2mg/L at any/all end points of the distribution system.	Daily	East Side Lake Windermere	100% $\geq$ 0.5mg/L
		Five days/week	Edgewater	100% $\geq$ 0.5mg/L
			Holland Creek Distribution	100 $\geq$ 0.5 mg/L
		Three days/week	Rushmere	100% $\geq$ 0.5 mg/L
			Spur Valley	100% $\geq$ 0.5mg/L
Turbidity	Disinfected water shall not be higher than 1 NTU. Between 1 NTU and under 5 NTU a water quality advisory must be issued. Above 5 NTU a boil water notice is issued.	Daily	East Side Lake Windermere	100% $\leq$ 1.0 NTU 100% $<$ 0.3 NTU
		Five days/week	Edgewater	100% $<$ 1.0 NTU 24.1% $\leq$ 0.3 NTU
			Holland Creek	100% $\leq$ 0.3 NTU
		Three days/week	Rushmere	100% $\leq$ 0.3 NTU
			Spur Valley	100% $\leq$ 0.3 NTU
Total Trihalomethanes	Maximum Allowable Annual Average of 0.1mg/L	Quarterly	East Side Lake Windermere	100%
			Edgewater	100%
			Holland Creek	N/A (Groundwater)
			Rushmere	N/A (Small System)
			Spur Valley	N/A (Groundwater)

Parameters	Quality Standards	Frequency	Water Systems	Performance
Haloacetic Acids	Maximum Allowable Annual Average of 0.08mg/L	Quarterly	East Side Lake Windermere	100%
			Edgewater	100%
			Holland Creek	N/A (Groundwater)
			Rushmere Spur Valley	N/A (small system) N/A (Groundwater)
Edgewater Raw Water Monitoring for Filtration Deferral	<u>E. Coli</u> : <10% of samples may exceed 20/100 in any 6-month period	Weekly	Edgewater	97.96% < 20/100mL <sup>1</sup>
	<u>Total Coliform</u> : <10% of samples may exceed 100/100mL in any 6-month period		Edgewater-Raw Water	61.23% < 100/100mL <sup>2</sup>

<sup>1</sup>1/49 = 2.04% untreated raw water samples >20/100ml E.Coli coliforms

<sup>2</sup>19/49 = 38.77% untreated raw water samples >100/100ml total coliforms

**Please see Appendix A for monthly turbidity, chlorine residual, and consumption data graphed over time for each system.**

**Please see Appendix B for full spectrum analysis results.**

## 4. Water Systems in Detail

### 4.1 East Side Lake Windermere Water System:

East Side Lake Windermere's raw water is drawn from Lake Windermere and pumped from the Low Lift Pumping Station to the East Side Lake Windermere Water Treatment Plant (WTP) located on Windermere Loop Road. It passes through coagulation, flocculation, settling and filtration treatment stages and the filtered water is then disinfected using UV and chlorine before being fed to the reservoir and distribution system. The entire process is monitored via Supervisory Control and Data Acquisition (SCADA) instrumentation and auto-dialer alarms as well as being verified and documented by operators daily. The Windermere water distribution system is part of the East Side Lake Windermere Water System.

2023 Events and System improvements:

- AWI upgrade to water treatment underdrains to maximize plant performance completed
- Adsorption Clarifier beads and air diffusers cleaned
- New Blower installed at plant for media filter backwashes
- Maintenance on Low Lift Pumping Station pumps
- Timber Ridge phase 3 pumphouse decommissioned
- Timber Ridge water main replacement on Ridge Way
- Completion of Control Philosophy and Drawings
- Service Pressure Reducing Valves
- Leak Detection

**2024 Plans:**

- SCADA/PLC upgrades
- Service Pressure Reducing Valves
- Continue with leak detection
- Initiate design of 895 reservoir fill main
- Initiate design of 940 reservoir distribution main
- Decommission Windermere Pumphouse (TBA)

**4.2 Edgewater Water System:**

The source water intake for Edgewater is located at Baptiste Lake, approximately two kilometers southeast of the community. Edgewater water is disinfected with both UV and chlorine and is stored at the Hewitt Road reservoirs, which provide 1200m<sup>3</sup> of treated storage. The RDEK has the capability to fully monitor the entire process through Edgewater's SCADA system, which alerts the operators of any potential problems.

**2023 Events and System Improvements:**

- Replace failed Program Logic Controller components and SCADA upgrades?
- Clean Reservoirs
- Inspected siphon line and ARVs from Baptiste
- Inspected and lifted intake screen at Baptiste
- Weir cleaned at Baptiste Reservoir
- Hewitt Pressure Reducing Valve Repair
- Columbia and Macaulay PRV Inspections
- Boil Water Advisory July 25-27

**2024 Plans:**

- Intake upgrades (TBA)
- Water system Master Plan
- Siphon Line weed control & brush clearing
- Rebuild ARVs in Baptiste siphon line

**4.3 Holland Creek Water System:**

Kinbasket Water & Sewer Company (KWSC) supplies the community with bulk potable water. The well-sourced water is chlorinated to protect against contamination within the distribution system. The Holland Creek distribution system has no reservoirs – all storage is provided by KWSC.

**2023 Events and System Improvements:**

- Lakeview Drive PRV repairs, cracked pilot valve
- Commissioning of Athalmer PRV for McDonald's, Shell and Lordco

**2024 Plans:**

- PrairieWIND planned extension to eastern boundary

#### 4.4 Rushmere Water System:

The Rushmere Water System draws raw water from Lake Windermere and is treated by way of a small membrane filtration treatment plant. Treated water is stored within the plant and pumped to the community using two variable frequency-drive distribution pumps. The plant is highly automated and operators maintain remote monitoring and control capability via SCADA. The plant is attended a minimum of 3 times per week and can alert staff when problems occur. The Rushmere Water System is used primarily for domestic purposes with some lawn and garden irrigation. There is no fire protection via fire hydrants.

#### 2023 Events and System Improvements:

- Replaced distribution check valves due to failure
- SCADA upgrades
- Clean in Place of membrane filters completed
- Install new hot water tank

#### 2024 Plans:

- Lake intake cleaning
- SCADA Upgrades for Distribution Pump VFD (Variable Frequency Drive)
- Check valve replacement
- Clean membrane filters (Clean in Place)
- Distribution Pump Maintenance
- Pneumatic System Maintenance

#### 4.5 Spur Valley Water System:

The community of Spur Valley is supplied with water from a groundwater well situated just south of the community. The water is chlorinated as it leaves the well and then pumped to two reservoirs before being distributed to residents. The RDEK has the capability to monitor the entire process through Spur Valley's SCADA system, which alerts the operators of any potential problems. Operators are on site a minimum of 3 times per week.

#### 2023 Events and System Improvements:

- Conducted leak detection and no major leaks discovered

#### 2024 Plans:

- Continue with leak detection
- New well pump (TBA)
- Hypo shock well (TBA)

#### 4.6 Moyie Water System:

Moyie water is pumped from a groundwater well to a reservoir that maintains the pressure in the distribution system. The water is not chlorinated. RDEK operators are on site twice per week to ensure proper operation and perform monthly bacteriological sampling. The pumphouse is also outfitted with automatic alarm dialers to alert operators of any problems.

##### 2023 Events and System Improvements:

- Major leak repaired
- Failed service line to residence detected and repaired
- Well shock chlorinated and flushed

##### 2024 Plans:

- Valve repair at reservoir
- Relocate blow-off
- Remove dead trees at pumphouse

#### 4.7 Elko Water System:

The community of Elko receives raw water from a well located near the pumphouse. The well is located in a confined aquifer and water is pumped directly to the distribution system. Because there is no storage reservoir in Elko, the water system relies solely on the continuous operation of the pump to maintain pressure and keep up with demand. There is no chlorination in Elko.

RDEK operators are on site 2 times per week to ensure proper operation and perform bacteriological sampling monthly as required. The pumphouse is also outfitted with automatic alarm dialers to alert staff when regular operations are compromised.

##### 2023 Events and System Improvements:

- Cross Connection assessment
- Curb stops and valves exercised
- VFD setting adjusted to facilitate self-recovery - after-hours call-outs significantly reduced
- Well shock chlorinated and flushed

##### 2024 Plans:

- Pressure tank and exhaust fan replacement (pumphouse)
- Cross Connection risks from old hydrants to be addressed
- Install VFD failure alarm
- Weed control
- Solar array installation

## 5. Operator Certification

EOCP Certifications		
Employee	Certification #	Level
Krista Goodman	7969	WT-II, WD-II, MWWT-II, WWC-II, CH
Forrest Manser	1001141	WT-III, WD-II, MWWT-III, WWC-II, CH
Christina Bucci	8972	WT-III, WD-II, MWWT-I, CH
Chad Cochrane	1000063	WT-II, WD-I, MWWT-II
Aaron Bose	9550	WT-II, WD – II, MWWT - II
Dave Berger	7040	SWS
Brian De Paoli	8973	SWS
Jeff Nicolajsen	141754	SWS
Bryan Grasdal	7757	WT-I, WD-II, WWC MU-II, CH
Tom Altmann	1000038	SWS, SSS, CH

- WT: Water Treatment
- WD: Water Distribution
- MWWT: Municipal Wastewater Treatment
- WWC: Wastewater Collection
- CH: Chlorine Handling
- SWS: Small Water Systems
- SSS: Small Sewer Systems
- MU: Multi Utility

## 6. Water Conservation

The RDEK has several components to its water conservation strategy. We have adopted scheduled watering hours for most of the RDEK owned and operated water systems (see examples below). We encourage the use of low-flow fixtures in new construction. Our operators diligently monitor our systems for problems and routinely check for unaccounted-for consumption like leaks or unmetered use.



## 7. Water Treatment Objectives

The Canadian Drinking Water Guidelines, developed by Health Canada, are designed to protect the health of community members and those most vulnerable: children, the elderly, and individuals with compromised immune systems. The parameters set out in those guidelines are the performance goals every water system should strive to achieve to provide the cleanest, safest and most reliable drinking water possible.

A Maximum Acceptable Concentration (MAC) level has been established by Health Canada for microbiological criteria. Each MAC has been designed to safeguard health, assuming a lifelong consumption of drinking water containing the substances at the maximum concentration level.

Aesthetic Objectives (AO) apply to characteristics of drinking water that can affect its acceptance by consumers. These would include such criteria as taste, odour, and appearance. Some AOs like turbidity could pose a health risk to some at-risk consumers if the MAC levels are exceeded.

In the East Kootenay, IHA acts as the water quality regulator by issuing Operating Permits and placing conditions on those permits. Those conditions are generally found in the BC Drinking Water Protection Act and the Canadian Drinking Water Guidelines.

IHA employs the 4-3-2-1-0 treatment objectives to ensure water-borne illnesses are not jeopardizing the public's health:

Based on Canadian Drinking Water Quality Guidelines:

- 4 log (99.99%) inactivation of viruses
- 3 log (99.9%) inactivation of or removal of Giardia and Cryptosporidium
- 2 treatment processes for surface water (typically this includes filtration and disinfection)
- 1 for <1 Nephelometric Turbidity Units (NTU) of turbidity (with a target of 0.1 NTU)
- 0 fecal coliform and E. coli

## 8. Water Quality Monitoring

Monitoring programs are established as required by IHA regulations, the water system's Operating Permit, and the Drinking Water Officer. Bacteriological testing is a major requirement and is performed routinely in every RDEK water system. Samples are submitted to an approved lab where they are tested for total coliform and E. coli bacteria.

### Coliforms:

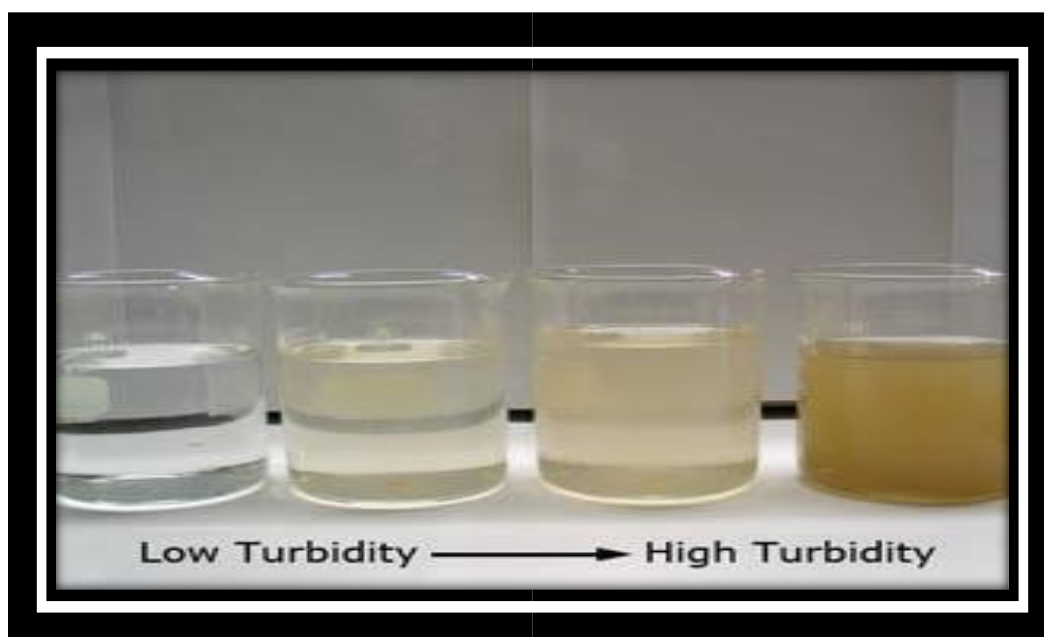
The presence of total coliforms in the water system is an indicator that the system is experiencing a regrowth of pathogens, that infiltration has occurred, or that it has not been properly treated at the source. It is an indication that the potential exists for bacteria to cause adverse health effects. The MAC for total coliform in all RDEK operated water systems is 0 per 100ml. If a sample comes back positive for coliform, operators review sampling practices, system operations anomalies, and a resample is conducted. If that result is positive, the main is flushed, monitored, and tested again. If the third result is positive, the main is taken out of service, chlorinated, flushed, and remains out of service until acceptable results are obtained.

E. coli:

Escherichia coli is one species in the fecal coliform group and is a definite indicator of the presence of feces in the distribution system. The MAC for E. coli is 0 per 100 ml. An unacceptable MAC test for E. coli triggers an immediate boil water order by the Medical Health Officer, which remains in effect until the problem is identified, isolated, resolved, and acceptable test results are obtained.

Turbidity:

Turbidity is a measure of water clarity. Turbid water can look cloudy or opaque and can also affect the colour of the water. Turbidity is measured in Nephelometric Turbidity Units, or NTU. The instrument used for measuring is called nephelometer or turbidimeter, which measures the intensity of light scattered at 90 degrees as a beam of light passes through a water sample.



For all its surface-sourced water systems, the RDEK monitors turbidity with continuous monitoring instrumentation and verifies values with daily grab samples, using this as a basis for determining general water quality. Water quality advisories are issued when turbidity levels are greater than 1 NTU. Boil water notices are issued at or above 5 NTU. Depending on the treatment system, Health Canada recommends different turbidity level objectives; however, if it is above 1 NTU, a water quality advisory is issued.

Chlorine Disinfection:

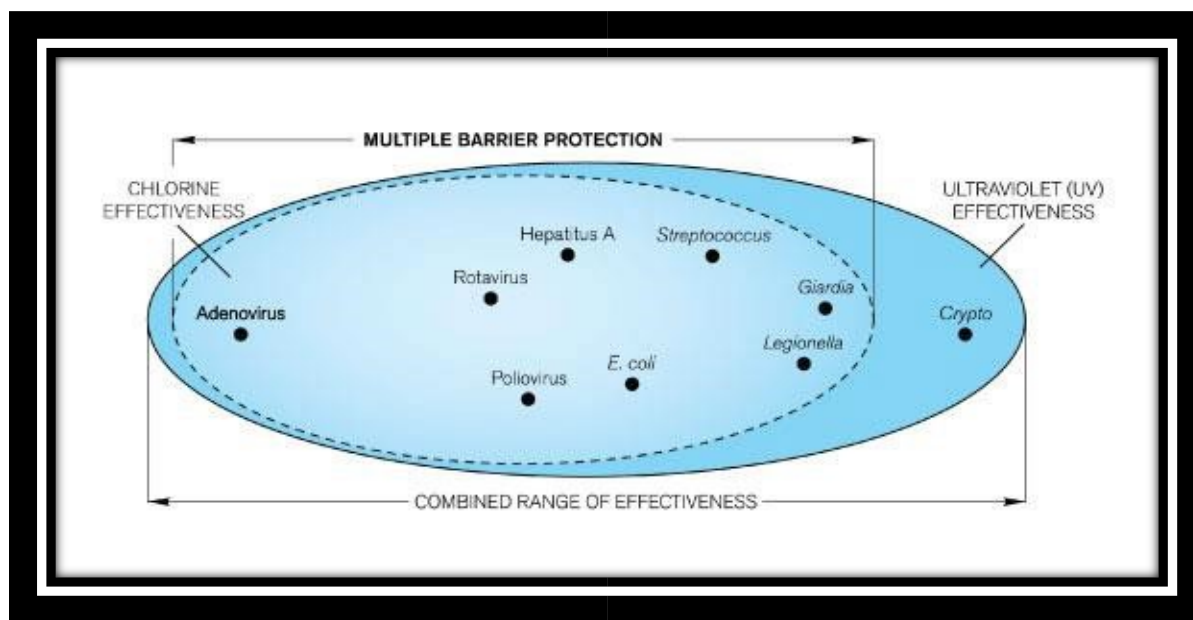
Most RDEK water systems use chlorine to disinfect the water prior to sending it through the distribution system. Maintaining free chlorine residual in all parts of the system is important in keeping the water safe from bacteriological growth and other disease-causing organisms.

To ensure adequate chlorine levels exist, the RDEK has several online chlorine analyzers that monitor residuals and will alert an operator should a residual fall below a desired point. Testing at remote points of distribution systems is also done routinely.

### Ultraviolet Light Disinfection:

Ultraviolet light (UV) destroys harmful organisms by causing a molecular change in their DNA makeup that prevents them from multiplying. This process destroys the ability of the organism to spread disease. When pathogens cannot multiply, they are no longer considered to be harmful.

UV is often used in conjunction with chlorination for added protection and to combat organisms such as cryptosporidium. Cryptosporidium is a chlorine-resistant protozoan, but it can easily be inactivated by UV. Another advantage of UV disinfection is that it does not produce any disinfection byproducts. The East Side Lake Windermere and Edgewater water systems are equipped with UV disinfection systems.



### Disinfection Byproducts:

Disinfection byproducts are formed when disinfectants used in water treatment react with bromide and/or natural organic matter (i.e., decaying vegetation) present in the source water. Different disinfectants produce different types or amounts of disinfection byproducts. Disinfection byproducts, for which MAC's have been established, have been identified in drinking water, including trihalomethanes and haloacetic acids.

- Trihalomethanes (THM) are a group of four chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The THMs are chloroform, bromodichloromethane, dibromochloromethane, and bromoform. The Canadian Drinking Water Guidelines have established a MAC to regulate total THMs (TTHM) at a maximum allowable annual average level of 0.1mg/L.
- Haloacetic Acids (HAA) are a group of chemicals that are formed along with other disinfection byproducts when chlorine or other disinfectants used to control microbial contaminants in drinking water react with naturally occurring organic and inorganic matter in water. The Canadian Drinking Water Guidelines has established the MAC for haloacetic acids at 0.08 mg/L based on a location's running annual average of quarterly samples taken in the distribution system.

The RDEK samples for both THMs and HAAs on a quarterly basis<sup>1</sup>. Of these samples, there was one result exceeding the Canadian Drinking Water thresholds for THMs in Edgewater in 2022. RDEK operators increased the frequency of distribution system flushing to further reduce THMs and continue to monitor the situation closely. All other tests met the required thresholds.

For more information on specific water quality parameters please contact the RDEK or visit *The Province of BC's Ministry of Health* website to find the *Drinking Water Protection Act and Regulation* <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/drinking-water-quality/legislation> or the Health Canada website to find the *Guidelines for Canadian Drinking Water Quality*. <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/canadian-drinking-water-guidelines.html>

<sup>1</sup>As per IHA standards, Spur Valley, Moyie, Elko, and Holland Creek are groundwater-sourced systems and do not require THM or HAA testing.

### Filtration:

Filtration is part of the treatment process in the Rushmere and East Side Lake Windermere water systems. In Rushmere, filtration is performed by an ultra-filter cartridge system.

The filtration system for East Side Lake Windermere consists of the following steps:

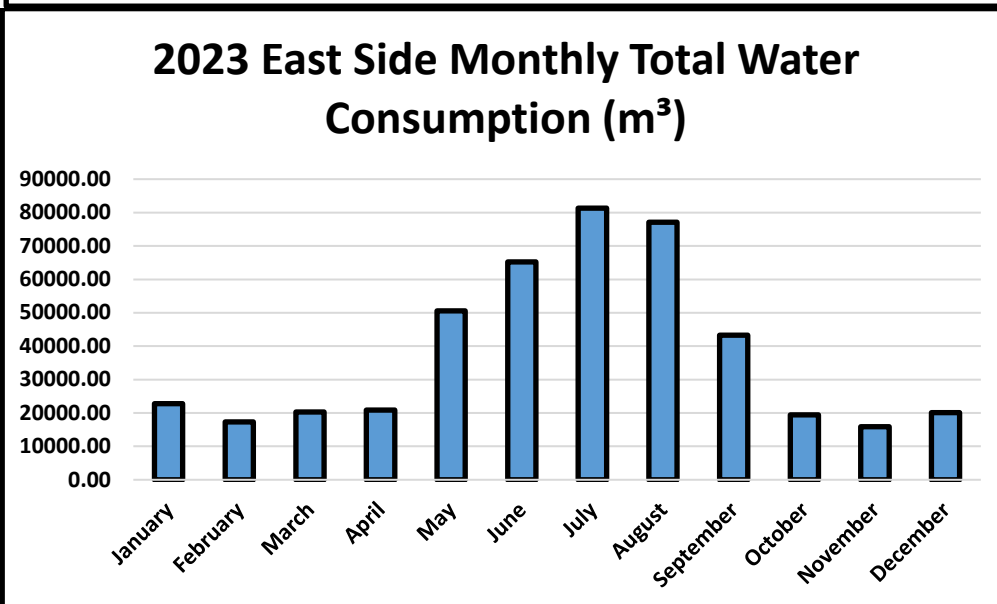
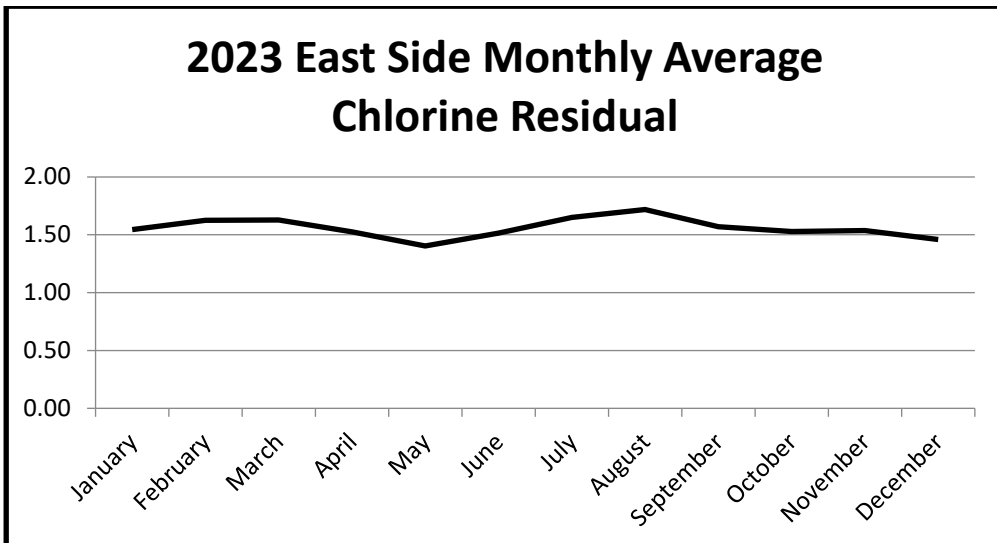
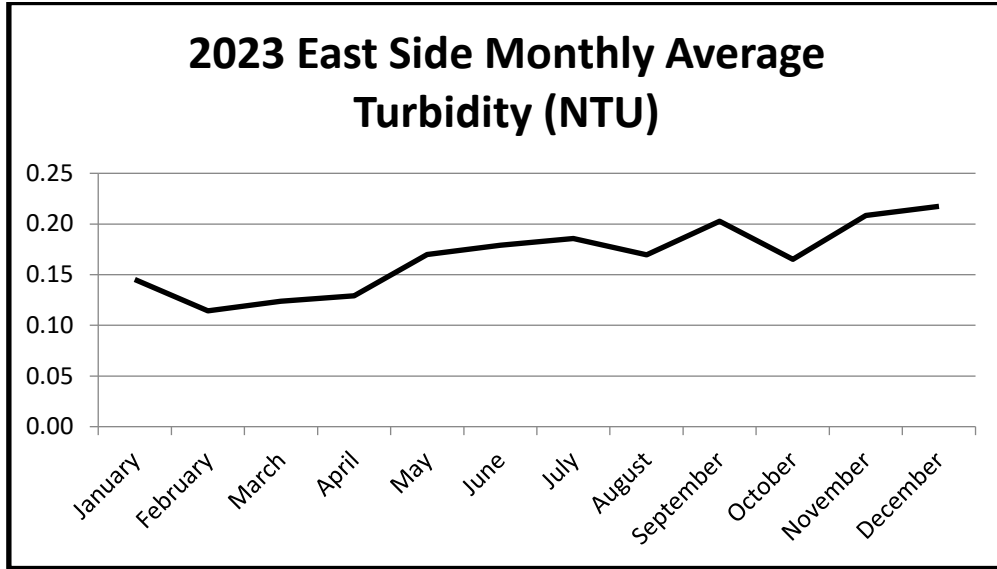
- Coagulation: Polyaluminum Chloride, a primary coagulant, is used to destabilize colloidal (particles that do not settle out) substances.
- Flocculation: A polymer is added to clump the destabilized particles together into aggregates that can be more easily separated from the water.
- Settling: The water is sent through up-flow tube settlers, slowing down the flow to allow the floc to settle. This first step removes the majority of the solids.
- Filtration: The water is passed through a mixed-media adsorption clarifier, which removes non-settleable solids using buoyant media. The final filtration process removes any remaining solids creating a very low turbidity product.

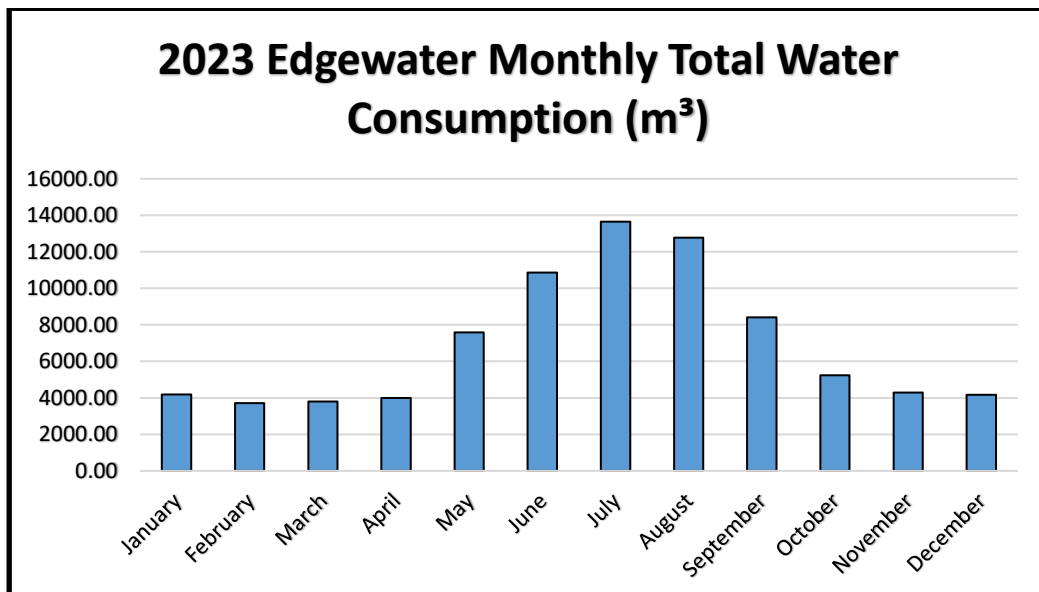
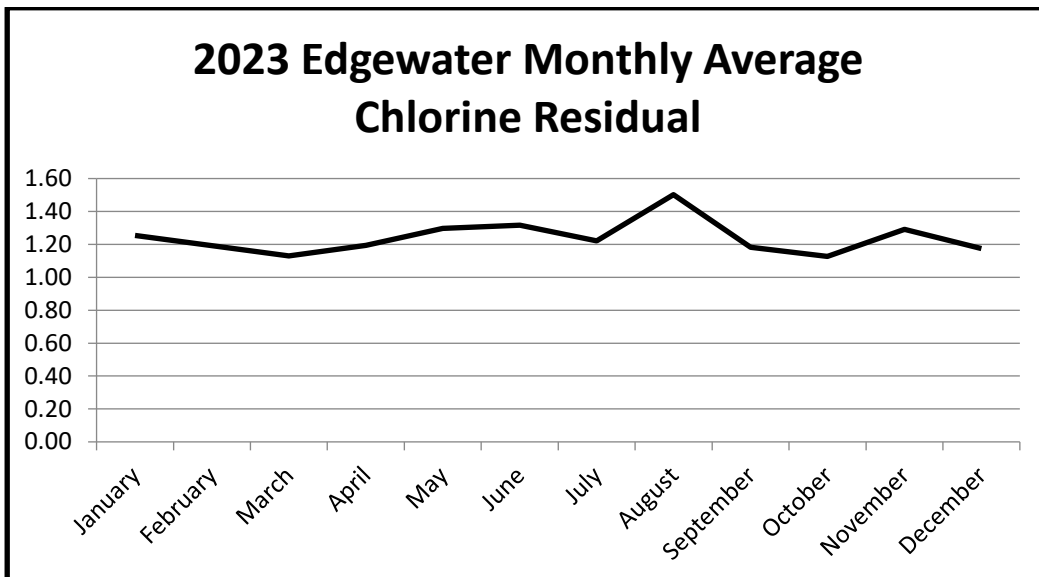
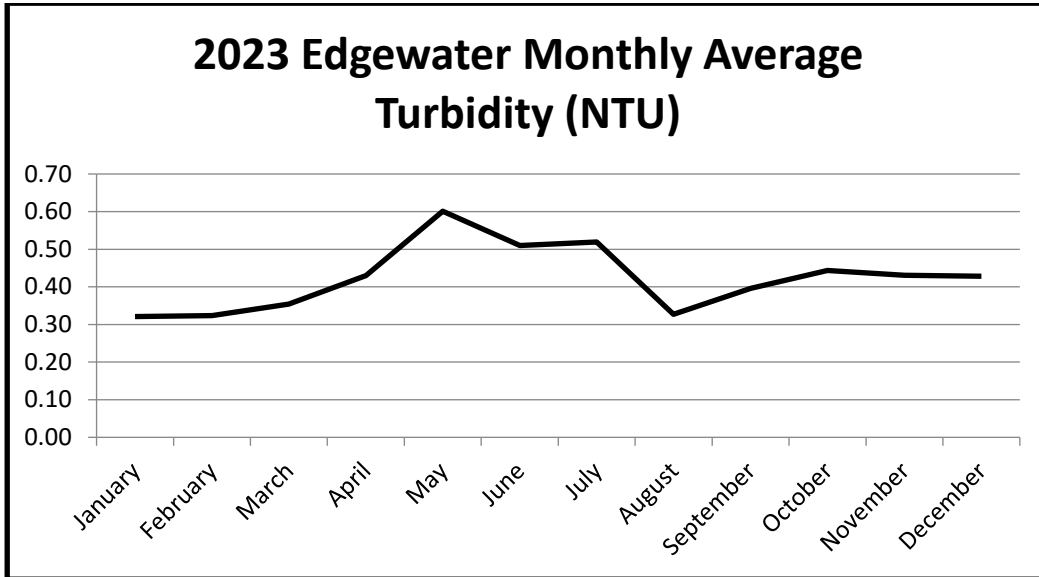
## Summary

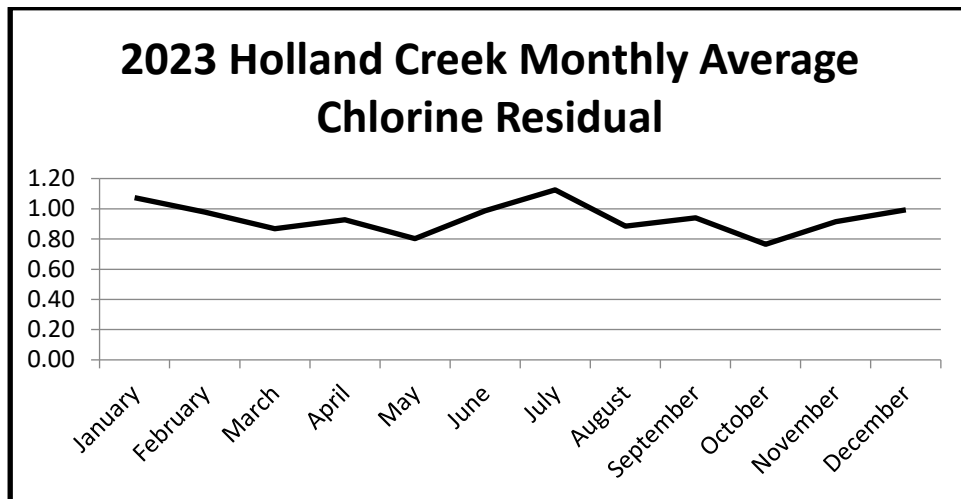
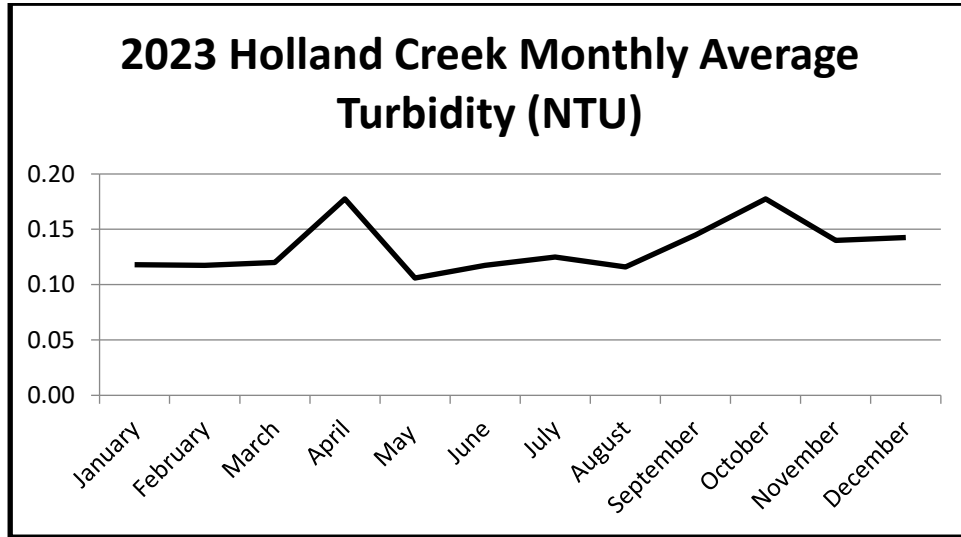
The RDEK is committed to providing safe, potable water to the public by working with IHA and maintaining standards set by Canadian Drinking Water Guidelines. This report represents a way of communicating facts and keeping the public apprised of the operational processes of the RDEK's water systems in the East Kootenay.

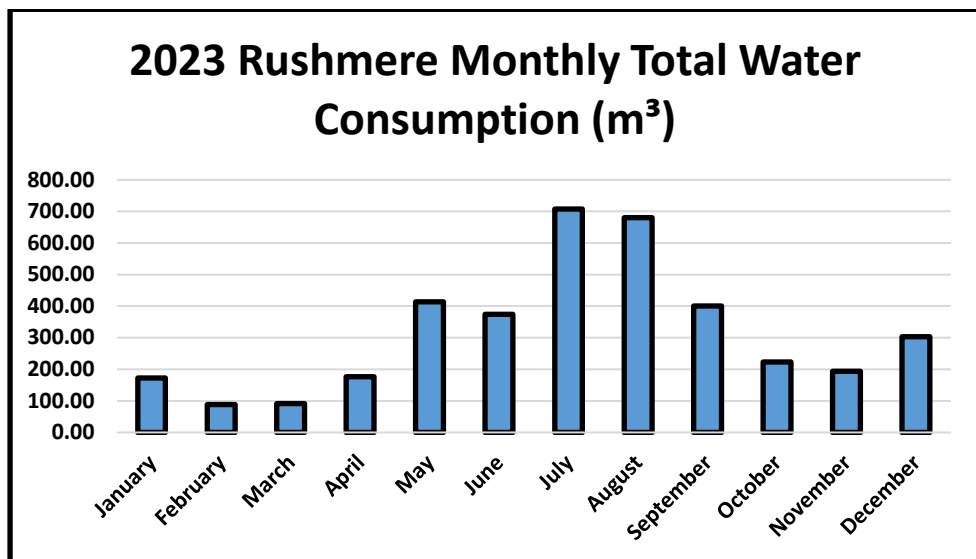
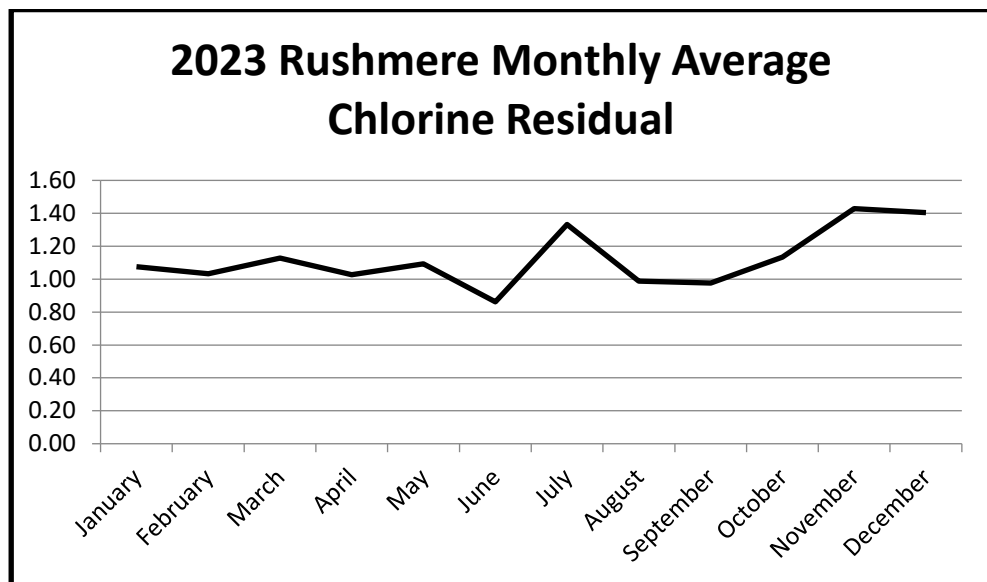
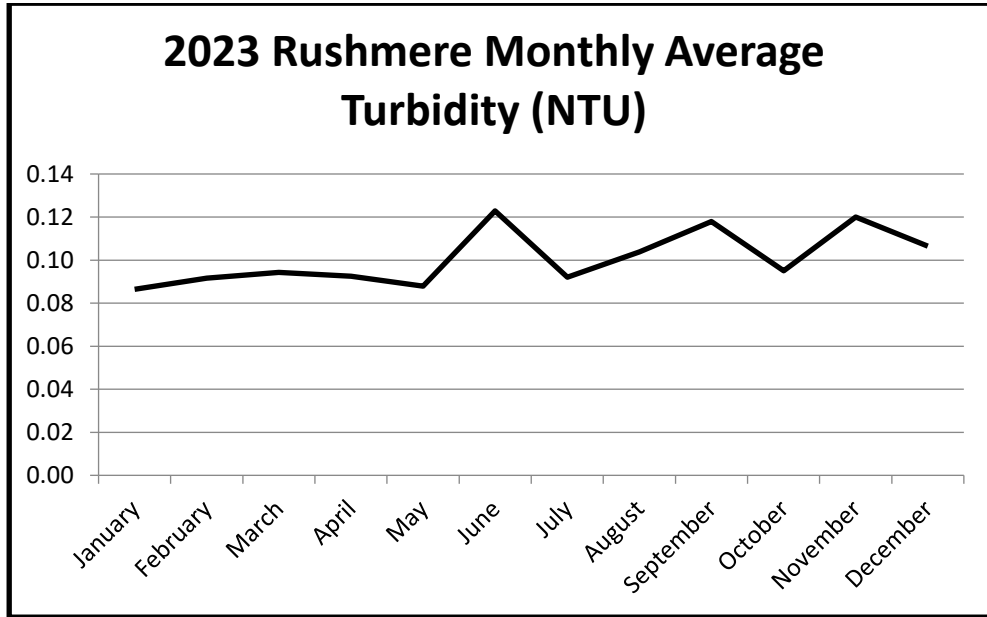


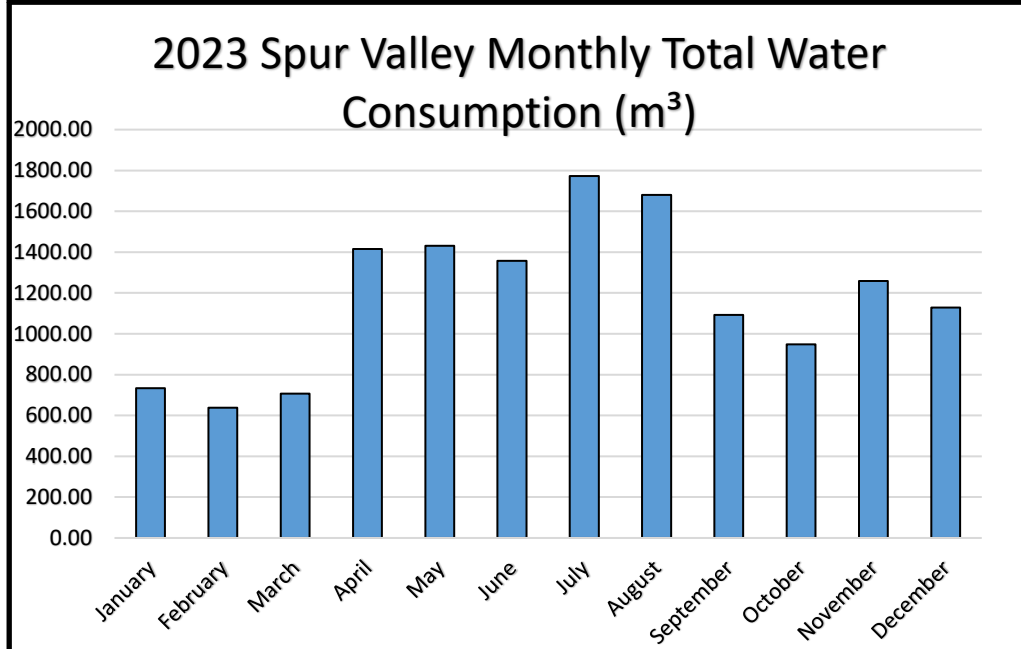
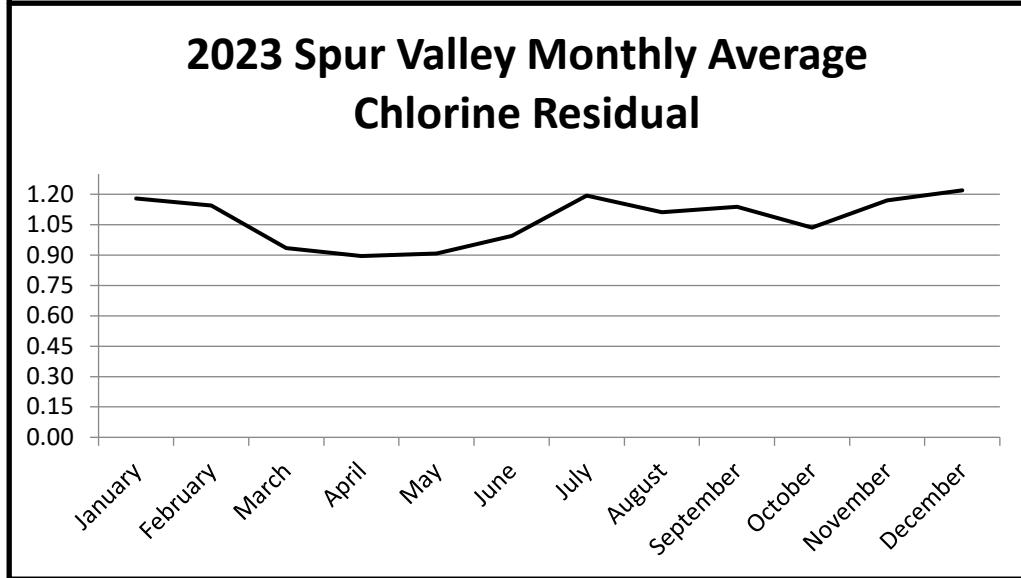
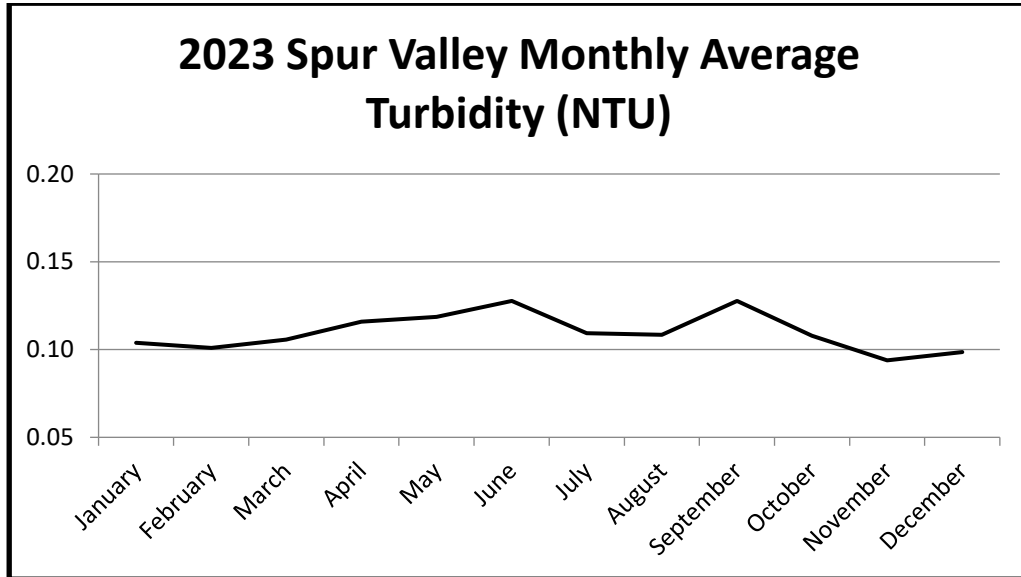
### Appendix A: Monitoring Data

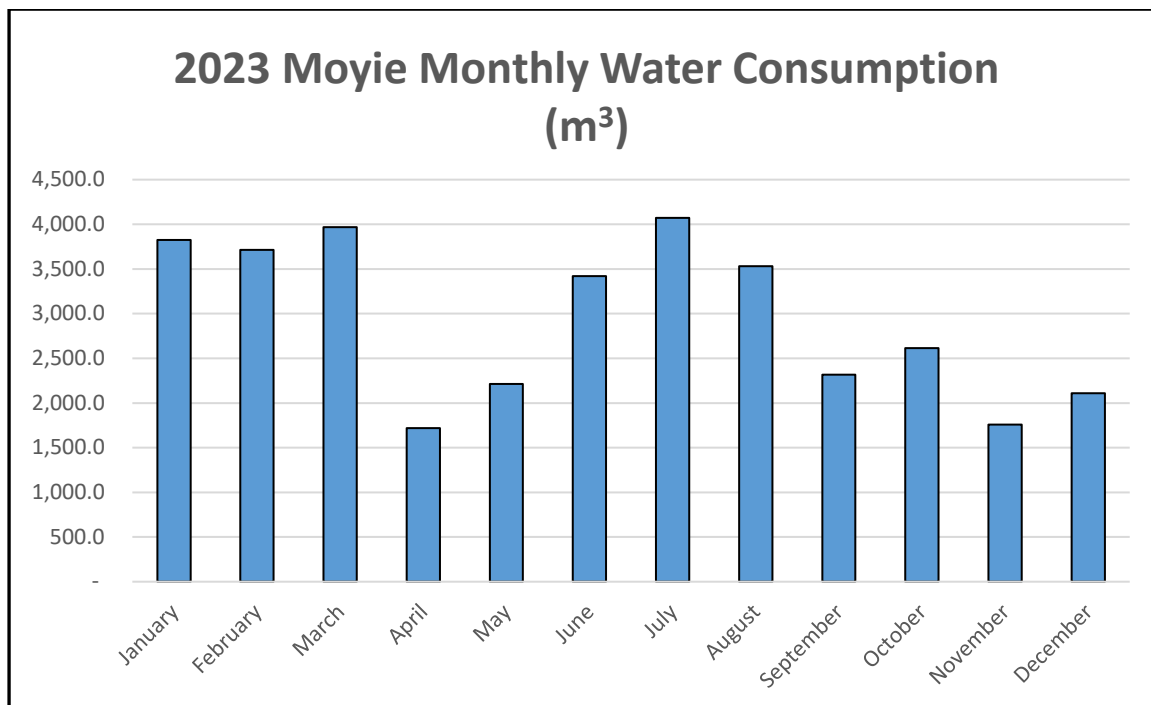
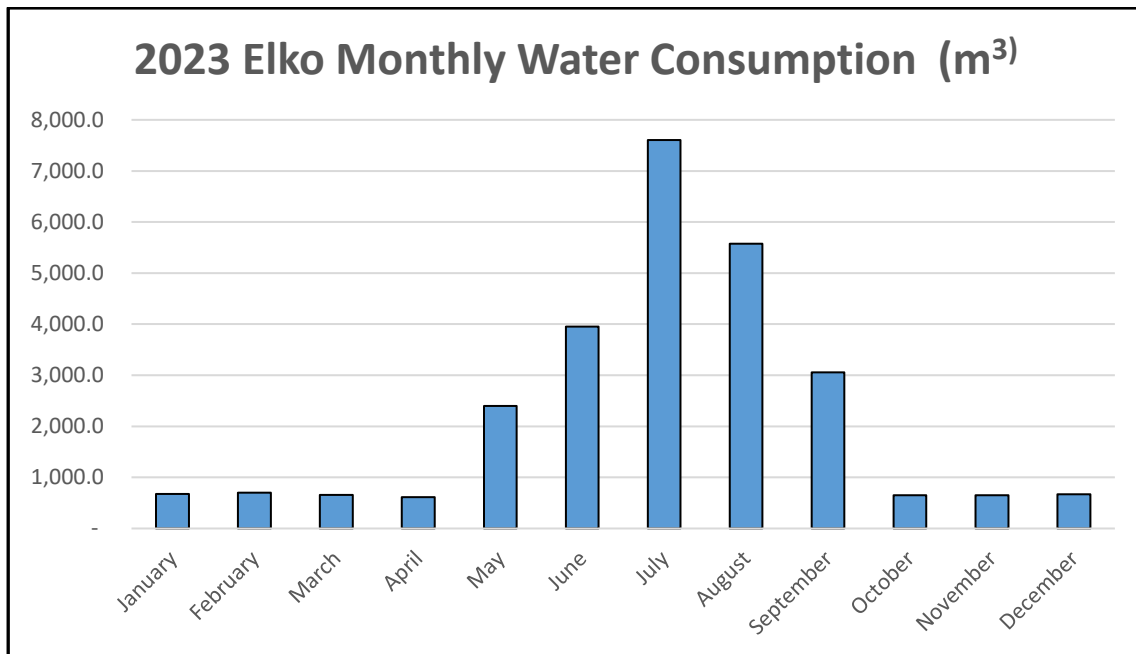












## **Appendix B: Full Spectrum Analysis Data**

### **CARO Certificate of Analysis – sampled Sept. 5, 2023**

East Side Distribution

East Side RAW\*

Holland Creek Distribution

Edgewater Distribution

Edgewater RAW\*\*

### **CARO Certificate of Analysis – sampled June 19, 2023**

Moyie Community Water System

### **ALS Environmental Certificate of Analysis – sampled Oct. 25, 2023**

Teck Coal Limited Regional Effects Program

\*Raw water direct from Lake Windermere prior to treatment.

\*\*Raw water direct from Lake Baptiste prior to treatment.



## CERTIFICATE OF ANALYSIS

<b>REPORTED TO</b>	Regional District of East Kootenay 1164 Windermere Loop Rd Invermere, BC V0A 1K3	<b>WORK ORDER</b>	2310671
<b>ATTENTION</b>	Brian Funke	<b>RECEIVED / TEMP REPORTED</b>	2023-09-06 14:40 / 12.8°C 2023-09-13 14:41
<b>PO NUMBER</b>		<b>COC NUMBER</b>	No Number
<b>PROJECT</b>	Full Spectrum Report		
<b>PROJECT INFO</b>			

**Introduction:**

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

*Big Picture Sidekicks*



You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

*We've Got Chemistry*



It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

*Ahead of the Curve*



Through research, regulation knowledge, and instrumentation, we are your analytical centre for the technical knowledge you need, BEFORE you need it, so you can stay up to date and in the know.

By engaging our services, you are agreeing to CARO Analytical Service's Standard Terms and Conditions outlined here: <https://www.caro.ca/terms-conditions>

If you have any questions or concerns, please contact me at [bwhitehead@caro.ca](mailto:bwhitehead@caro.ca)

**Authorized By:**

Brent Whitehead  
Account Manager

1-888-311-8846 | [www.caro.ca](http://www.caro.ca)

#110 4011 Viking Way Richmond, BC V6V 2K9 | #102 3677 Highway 97N Kelowna, BC V1X 5C3 | 17225 109 Avenue Edmonton, AB T5S 1H7 | #108 4475 Wayburne Drive Burnaby, BC V5G 4X4



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**Edgewater Distribution (2310671-01) | Matrix: Water | Sampled: 2023-09-05 11:10**

**Anions**

Chloride	3.26	AO ≤ 250	0.10 mg/L	2023-09-08	
Fluoride	0.11	MAC = 1.5	0.10 mg/L	2023-09-08	
Nitrate (as N)	0.041	MAC = 10	0.010 mg/L	2023-09-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-09-08	
Sulfate	33.7	AO ≤ 500	1.0 mg/L	2023-09-08	

**Calculated Parameters**

Hardness, Total (as CaCO3)	196	None Required	0.500 mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	172	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Bicarbonate (as CaCO3)	172	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Carbon, Total Organic	2.06	N/A	0.50 mg/L	2023-09-08	
Solids, Total Dissolved	186	AO ≤ 500	15 mg/L	2023-09-08	
Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-09-08	

**Total Metals**

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2023-09-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-09-10	
Arsenic, total	0.00065	MAC = 0.01	0.00050 mg/L	2023-09-10	
Barium, total	0.0665	MAC = 2	0.0050 mg/L	2023-09-10	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-09-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010 mg/L	2023-09-10	
Calcium, total	44.6	None Required	0.20 mg/L	2023-09-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Copper, total	0.111	MAC = 2	0.00040 mg/L	2023-09-10	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2023-09-10	
Lead, total	0.00102	MAC = 0.005	0.00020 mg/L	2023-09-10	
Lithium, total	0.00305	N/A	0.00010 mg/L	2023-09-10	
Magnesium, total	20.6	None Required	0.010 mg/L	2023-09-10	
Manganese, total	0.00106	MAC = 0.12	0.00020 mg/L	2023-09-10	
Molybdenum, total	0.00082	N/A	0.00010 mg/L	2023-09-10	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2023-09-10	
Phosphorus, total	< 0.050	N/A	0.050 mg/L	2023-09-10	
Potassium, total	0.84	N/A	0.10 mg/L	2023-09-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Silicon, total	3.5	N/A	1.0 mg/L	2023-09-10	
Silver, total	< 0.000050	None Required	0.000050 mg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**Edgewater Distribution (2310671-01) | Matrix: Water | Sampled: 2023-09-05 11:10, Continued**

**Total Metals, Continued**

Sodium, total	4.11	AO ≤ 200	0.10 mg/L	2023-09-10	
Strontium, total	0.182	MAC = 7	0.0010 mg/L	2023-09-10	
Sulfur, total	11.2	N/A	3.0 mg/L	2023-09-10	
Tellurium, total	< 0.00050	N/A	0.00050 mg/L	2023-09-10	
Thallium, total	< 0.000020	N/A	0.000020 mg/L	2023-09-10	
Thorium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Tin, total	< 0.00020	N/A	0.00020 mg/L	2023-09-10	
Titanium, total	< 0.0050	N/A	0.0050 mg/L	2023-09-10	
Tungsten, total	< 0.0010	N/A	0.0010 mg/L	2023-09-10	
Uranium, total	0.000559	MAC = 0.02	0.000020 mg/L	2023-09-10	
Vanadium, total	< 0.0050	N/A	0.0050 mg/L	2023-09-10	
Zinc, total	0.0068	AO ≤ 5	0.0040 mg/L	2023-09-10	
Zirconium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5 µg/L	2023-09-10	
Bromodichloromethane	1.7	N/A	1.0 µg/L	2023-09-10	
Bromoform	< 1.0	N/A	1.0 µg/L	2023-09-10	
Carbon tetrachloride	< 0.5	MAC = 2	0.5 µg/L	2023-09-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0 µg/L	2023-09-10	
Chloroethane	< 2.0	N/A	2.0 µg/L	2023-09-10	
Chloroform	75.5	N/A	1.0 µg/L	2023-09-10	
Dibromochloromethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,2-Dibromoethane	< 0.3	N/A	0.3 µg/L	2023-09-10	
Dibromomethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5 µg/L	2023-09-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0 µg/L	2023-09-10	
1,1-Dichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0 µg/L	2023-09-10	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0 µg/L	2023-09-10	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
Dichloromethane	25.9	MAC = 50	3.0 µg/L	2023-09-10	
1,2-Dichloropropane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0 µg/L	2023-09-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0 µg/L	2023-09-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0 µg/L	2023-09-10	
Styrene	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5 µg/L	2023-09-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0 µg/L	2023-09-10	
Toluene	< 1.0	MAC = 60	1.0 µg/L	2023-09-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>Edgewater Distribution (2310671-01)   Matrix: Water   Sampled: 2023-09-05 11:10, Continued</b>					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,1,2-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Trichloroethylene	< 1.0	MAC = 5	1.0 µg/L	2023-09-10	
Trichlorofluoromethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Vinyl chloride	< 1.0	MAC = 2	1.0 µg/L	2023-09-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0 µg/L	2023-09-10	
Surrogate: Toluene-d8	102		70-130 %	2023-09-10	
Surrogate: 4-Bromofluorobenzene	85		70-130 %	2023-09-10	
Surrogate: 1,4-Dichlorobenzene-d4	80		70-130 %	2023-09-10	

**Edgewater RAW (2310671-02) | Matrix: Water | Sampled: 2023-09-05 10:35**

**Anions**

Chloride	0.19	AO ≤ 250	0.10 mg/L	2023-09-08	
Fluoride	0.10	MAC = 1.5	0.10 mg/L	2023-09-08	
Nitrate (as N)	0.047	MAC = 10	0.010 mg/L	2023-09-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-09-08	
Sulfate	34.0	AO ≤ 500	1.0 mg/L	2023-09-08	

**Calculated Parameters**

Hardness, Total (as CaCO3)	194	None Required	0.500 mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	173	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Bicarbonate (as CaCO3)	173	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Carbon, Total Organic	2.34	N/A	0.50 mg/L	2023-09-08	
Solids, Total Dissolved	182	AO ≤ 500	15 mg/L	2023-09-08	
Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-09-08	

**Total Metals**

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2023-09-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-09-10	
Arsenic, total	0.00073	MAC = 0.01	0.00050 mg/L	2023-09-10	
Barium, total	0.0683	MAC = 2	0.0050 mg/L	2023-09-10	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-09-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010 mg/L	2023-09-10	
Calcium, total	43.1	None Required	0.20 mg/L	2023-09-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Copper, total	< 0.00040	MAC = 2	0.00040 mg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**Edgewater RAW (2310671-02) | Matrix: Water | Sampled: 2023-09-05 10:35, Continued**

**Total Metals, Continued**

Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2023-09-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2023-09-10	
Lithium, total	<b>0.00297</b>	N/A	0.00010	mg/L	2023-09-10	
Magnesium, total	<b>21.0</b>	None Required	0.010	mg/L	2023-09-10	
Manganese, total	<b>0.00213</b>	MAC = 0.12	0.00020	mg/L	2023-09-10	
Molybdenum, total	<b>0.00074</b>	N/A	0.00010	mg/L	2023-09-10	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2023-09-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2023-09-10	
Potassium, total	<b>0.85</b>	N/A	0.10	mg/L	2023-09-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-09-10	
Silicon, total	<b>3.5</b>	N/A	1.0	mg/L	2023-09-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2023-09-10	
Sodium, total	<b>1.62</b>	AO ≤ 200	0.10	mg/L	2023-09-10	
Strontium, total	<b>0.181</b>	MAC = 7	0.0010	mg/L	2023-09-10	
Sulfur, total	<b>11.3</b>	N/A	3.0	mg/L	2023-09-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2023-09-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2023-09-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2023-09-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2023-09-10	
Uranium, total	<b>0.000543</b>	MAC = 0.02	0.000020	mg/L	2023-09-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2023-09-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5	µg/L	2023-09-10	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Bromoform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2023-09-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2023-09-10	
Chloroethane	< 2.0	N/A	2.0	µg/L	2023-09-10	
Chloroform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2023-09-10	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2023-09-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2023-09-10	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2023-09-10	

# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>Edgewater RAW (2310671-02)   Matrix: Water   Sampled: 2023-09-05 10:35, Continued</b>					
<i>Volatile Organic Compounds (VOC), Continued</i>					
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
Dichloromethane	<b>22.4</b>	MAC = 50	3.0 µg/L	2023-09-10	
1,2-Dichloropropane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0 µg/L	2023-09-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0 µg/L	2023-09-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0 µg/L	2023-09-10	
Styrene	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5 µg/L	2023-09-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0 µg/L	2023-09-10	
Toluene	< 1.0	MAC = 60	1.0 µg/L	2023-09-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,1,2-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Trichloroethylene	< 1.0	MAC = 5	1.0 µg/L	2023-09-10	
Trichlorofluoromethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Vinyl chloride	< 1.0	MAC = 2	1.0 µg/L	2023-09-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0 µg/L	2023-09-10	
Surrogate: Toluene-d8	90		70-130 %	2023-09-10	
Surrogate: 4-Bromofluorobenzene	75		70-130 %	2023-09-10	
Surrogate: 1,4-Dichlorobenzene-d4	75		70-130 %	2023-09-10	

**East Side Distribution (2310671-03) | Matrix: Water | Sampled: 2023-09-05 10:50**

**Anions**

Chloride	<b>7.82</b>	AO ≤ 250	0.10 mg/L	2023-09-08	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2023-09-08	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2023-09-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-09-08	
Sulfate	<b>38.1</b>	AO ≤ 500	1.0 mg/L	2023-09-08	

**BCMOE Aggregate Hydrocarbons**

EPHw10-19	< 250	N/A	250 µg/L	2023-09-12	
EPHw19-32	< 250	N/A	250 µg/L	2023-09-12	
LEPHw	< 250	N/A	250 µg/L	N/A	
HEPHw	< 250	N/A	250 µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	86		60-140 %	2023-09-12	

**Calculated Parameters**

Hardness, Total (as CaCO3)	<b>161</b>	None Required	0.500 mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	<b>129</b>	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Bicarbonate (as CaCO3)	<b>129</b>	N/A	1.0 mg/L	2023-09-08	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**East Side Distribution (2310671-03) | Matrix: Water | Sampled: 2023-09-05 10:50, Continued**

**General Parameters, Continued**

Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Carbon, Total Organic	<b>1.75</b>	N/A	0.50 mg/L	2023-09-08	
Solids, Total Dissolved	<b>160</b>	AO ≤ 500	15 mg/L	2023-09-10	
Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-09-08	

**Polycyclic Aromatic Hydrocarbons (PAH)**

Acenaphthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Acenaphthylene	< 0.200	N/A	0.200 µg/L	2023-09-12	
Acridine	< 0.050	N/A	0.050 µg/L	2023-09-12	
Anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Benz(a)anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010 µg/L	2023-09-12	
Benzo(b+j)fluoranthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Benzo(g,h,i)perylene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Benzo(k)fluoranthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
2-Chloronaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Chrysene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Dibenz(a,h)anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Fluoranthene	< 0.030	N/A	0.030 µg/L	2023-09-12	
Fluorene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Indeno(1,2,3-cd)pyrene	< 0.050	N/A	0.050 µg/L	2023-09-12	
1-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
2-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Naphthalene	< 0.200	N/A	0.200 µg/L	2023-09-12	
Phenanthrene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Pyrene	< 0.020	N/A	0.020 µg/L	2023-09-12	
Quinoline	< 0.050	N/A	0.050 µg/L	2023-09-12	
Surrogate: Acridine-d9	112		50-140 %	2023-09-12	
Surrogate: Naphthalene-d8	98		50-140 %	2023-09-12	
Surrogate: Perylene-d12	122		50-140 %	2023-09-12	

**Total Metals**

Aluminum, total	<b>0.301</b>	OG < 0.1	0.0050 mg/L	2023-09-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-09-10	
Arsenic, total	<b>0.00102</b>	MAC = 0.01	0.00050 mg/L	2023-09-10	
Barium, total	<b>0.0767</b>	MAC = 2	0.0050 mg/L	2023-09-10	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-09-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010 mg/L	2023-09-10	
Calcium, total	<b>35.1</b>	None Required	0.20 mg/L	2023-09-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**East Side Distribution (2310671-03) | Matrix: Water | Sampled: 2023-09-05 10:50, Continued**

**Total Metals, Continued**

Copper, total	0.00060	MAC = 2	0.00040	mg/L	2023-09-10	
Iron, total	< 0.010	AO ≤ 0.3	0.010	mg/L	2023-09-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2023-09-10	
Lithium, total	0.00234	N/A	0.00010	mg/L	2023-09-10	
Magnesium, total	17.7	None Required	0.010	mg/L	2023-09-10	
Manganese, total	0.00135	MAC = 0.12	0.00020	mg/L	2023-09-10	
Molybdenum, total	0.00081	N/A	0.00010	mg/L	2023-09-10	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2023-09-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2023-09-10	
Potassium, total	0.62	N/A	0.10	mg/L	2023-09-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-09-10	
Silicon, total	3.2	N/A	1.0	mg/L	2023-09-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2023-09-10	
Sodium, total	5.40	AO ≤ 200	0.10	mg/L	2023-09-10	
Strontium, total	0.180	MAC = 7	0.0010	mg/L	2023-09-10	
Sulfur, total	12.9	N/A	3.0	mg/L	2023-09-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2023-09-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2023-09-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2023-09-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2023-09-10	
Uranium, total	0.000945	MAC = 0.02	0.000020	mg/L	2023-09-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2023-09-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5	µg/L	2023-09-10	
Bromodichloromethane	2.2	N/A	1.0	µg/L	2023-09-10	
Bromoform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2023-09-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2023-09-10	
Chloroethane	< 2.0	N/A	2.0	µg/L	2023-09-10	
Chloroform	45.1	N/A	1.0	µg/L	2023-09-10	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2023-09-10	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2023-09-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2023-09-10	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
<b>East Side Distribution (2310671-03)   Matrix: Water   Sampled: 2023-09-05 10:50, Continued</b>					
<i>Volatile Organic Compounds (VOC), Continued</i>					
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0 µg/L	2023-09-10	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-09-10	
Dichloromethane	<b>15.6</b>	MAC = 50	3.0 µg/L	2023-09-10	
1,2-Dichloropropane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0 µg/L	2023-09-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0 µg/L	2023-09-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0 µg/L	2023-09-10	
Styrene	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5 µg/L	2023-09-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0 µg/L	2023-09-10	
Toluene	< 1.0	MAC = 60	1.0 µg/L	2023-09-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
1,1,2-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Trichloroethylene	< 1.0	MAC = 5	1.0 µg/L	2023-09-10	
Trichlorofluoromethane	< 1.0	N/A	1.0 µg/L	2023-09-10	
Vinyl chloride	< 1.0	MAC = 2	1.0 µg/L	2023-09-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0 µg/L	2023-09-10	
Surrogate: Toluene-d8	78		70-130 %	2023-09-10	
Surrogate: 4-Bromofluorobenzene	75		70-130 %	2023-09-10	
Surrogate: 1,4-Dichlorobenzene-d4	72		70-130 %	2023-09-10	

**East Side RAW (2310671-04) | Matrix: Water | Sampled: 2023-09-05 10:00**

**Anions**

Chloride	<b>1.75</b>	AO ≤ 250	0.10 mg/L	2023-09-08	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2023-09-08	
Nitrate (as N)	< 0.010	MAC = 10	0.010 mg/L	2023-09-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-09-08	
Sulfate	<b>38.5</b>	AO ≤ 500	1.0 mg/L	2023-09-08	

**BCMOE Aggregate Hydrocarbons**

EPHw10-19	< 250	N/A	250 µg/L	2023-09-13	
EPHw19-32	< 250	N/A	250 µg/L	2023-09-13	
LEPHw	< 250	N/A	250 µg/L	N/A	
HEPHw	< 250	N/A	250 µg/L	N/A	
Surrogate: 2-Methylnonane (EPH/F2-4)	83		60-140 %	2023-09-13	

**Calculated Parameters**

Hardness, Total (as CaCO3)	<b>161</b>	None Required	0.500 mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	<b>128</b>	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	



# TEST RESULTS

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Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**East Side RAW (2310671-04) | Matrix: Water | Sampled: 2023-09-05 10:00, Continued**

**General Parameters, Continued**

Alkalinity, Bicarbonate (as CaCO3)	128	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-09-08	
Carbon, Total Organic	4.27	N/A	0.50 mg/L	2023-09-08	
Solids, Total Dissolved	166	AO ≤ 500	15 mg/L	2023-09-10	
Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-09-08	

**Polycyclic Aromatic Hydrocarbons (PAH)**

Acenaphthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Acenaphthylene	< 0.200	N/A	0.200 µg/L	2023-09-12	
Acridine	< 0.050	N/A	0.050 µg/L	2023-09-12	
Anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Benz(a)anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Benzo(a)pyrene	< 0.010	MAC = 0.04	0.010 µg/L	2023-09-12	
Benzo(b+j)fluoranthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Benzo(g,h,i)perylene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Benzo(k)fluoranthene	< 0.050	N/A	0.050 µg/L	2023-09-12	
2-Chloronaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Chrysene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Dibenz(a,h)anthracene	< 0.010	N/A	0.010 µg/L	2023-09-12	
Fluoranthene	< 0.030	N/A	0.030 µg/L	2023-09-12	
Fluorene	< 0.050	N/A	0.050 µg/L	2023-09-12	
Indeno(1,2,3-cd)pyrene	< 0.050	N/A	0.050 µg/L	2023-09-12	
1-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
2-Methylnaphthalene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Naphthalene	< 0.200	N/A	0.200 µg/L	2023-09-12	
Phenanthrene	< 0.100	N/A	0.100 µg/L	2023-09-12	
Pyrene	< 0.020	N/A	0.020 µg/L	2023-09-12	
Quinoline	< 0.050	N/A	0.050 µg/L	2023-09-12	
Surrogate: Acridine-d9	107		50-140 %	2023-09-12	
Surrogate: Naphthalene-d8	43		50-140 %	2023-09-12	S02
Surrogate: Perylene-d12	127		50-140 %	2023-09-12	

**Total Metals**

Aluminum, total	0.0091	OG < 0.1	0.0050 mg/L	2023-09-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-09-10	
Arsenic, total	0.00120	MAC = 0.01	0.00050 mg/L	2023-09-10	
Barium, total	0.0789	MAC = 2	0.0050 mg/L	2023-09-10	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-09-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010 mg/L	2023-09-10	
Calcium, total	35.8	None Required	0.20 mg/L	2023-09-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**East Side RAW (2310671-04) | Matrix: Water | Sampled: 2023-09-05 10:00, Continued**

**Total Metals, Continued**

Cobalt, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	
Copper, total	<b>0.00582</b>	MAC = 2	0.00040	mg/L	2023-09-10	
Iron, total	<b>0.017</b>	AO ≤ 0.3	0.010	mg/L	2023-09-10	
Lead, total	< 0.00020	MAC = 0.005	0.00020	mg/L	2023-09-10	
Lithium, total	<b>0.00233</b>	N/A	0.00010	mg/L	2023-09-10	
Magnesium, total	<b>17.5</b>	None Required	0.010	mg/L	2023-09-10	
Manganese, total	<b>0.0202</b>	MAC = 0.12	0.00020	mg/L	2023-09-10	
Molybdenum, total	<b>0.00077</b>	N/A	0.00010	mg/L	2023-09-10	
Nickel, total	< 0.00040	N/A	0.00040	mg/L	2023-09-10	
Phosphorus, total	< 0.050	N/A	0.050	mg/L	2023-09-10	
Potassium, total	<b>0.61</b>	N/A	0.10	mg/L	2023-09-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050	mg/L	2023-09-10	
Silicon, total	<b>3.5</b>	N/A	1.0	mg/L	2023-09-10	
Silver, total	< 0.000050	None Required	0.000050	mg/L	2023-09-10	
Sodium, total	<b>2.75</b>	AO ≤ 200	0.10	mg/L	2023-09-10	
Strontium, total	<b>0.179</b>	MAC = 7	0.0010	mg/L	2023-09-10	
Sulfur, total	<b>12.7</b>	N/A	3.0	mg/L	2023-09-10	
Tellurium, total	< 0.00050	N/A	0.00050	mg/L	2023-09-10	
Thallium, total	< 0.000020	N/A	0.000020	mg/L	2023-09-10	
Thorium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	
Tin, total	< 0.00020	N/A	0.00020	mg/L	2023-09-10	
Titanium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Tungsten, total	< 0.0010	N/A	0.0010	mg/L	2023-09-10	
Uranium, total	<b>0.000956</b>	MAC = 0.02	0.000020	mg/L	2023-09-10	
Vanadium, total	< 0.0050	N/A	0.0050	mg/L	2023-09-10	
Zinc, total	< 0.0040	AO ≤ 5	0.0040	mg/L	2023-09-10	
Zirconium, total	< 0.00010	N/A	0.00010	mg/L	2023-09-10	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5	µg/L	2023-09-10	
Bromodichloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Bromoform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2023-09-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2023-09-10	
Chloroethane	< 2.0	N/A	2.0	µg/L	2023-09-10	
Chloroform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2023-09-10	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2023-09-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2023-09-10	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
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**East Side RAW (2310671-04) | Matrix: Water | Sampled: 2023-09-05 10:00, Continued**

**Volatile Organic Compounds (VOC), Continued**

1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2023-09-10	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2023-09-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2023-09-10	
Dichloromethane	<b>9.9</b>	MAC = 50	3.0	µg/L	2023-09-10	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2023-09-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2023-09-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2023-09-10	
Styrene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,1,1,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2023-09-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2023-09-10	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2023-09-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2023-09-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2023-09-10	
Surrogate: Toluene-d8	78		70-130	%	2023-09-10	
Surrogate: 4-Bromofluorobenzene	72		70-130	%	2023-09-10	
Surrogate: 1,4-Dichlorobenzene-d4	65		70-130	%	2023-09-10	S02

**Holland Creek Distribution (2310671-05) | Matrix: Water | Sampled: 2023-09-05 10:30**

**Anions**

Chloride	<b>1.98</b>	AO ≤ 250	0.10	mg/L	2023-09-08	
Fluoride	< 0.10	MAC = 1.5	0.10	mg/L	2023-09-08	
Nitrate (as N)	<b>0.181</b>	MAC = 10	0.010	mg/L	2023-09-08	
Nitrite (as N)	< 0.010	MAC = 1	0.010	mg/L	2023-09-08	
Sulfate	<b>60.2</b>	AO ≤ 500	1.0	mg/L	2023-09-08	

**Calculated Parameters**

Hardness, Total (as CaCO3)	<b>237</b>	None Required	0.500	mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	<b>180</b>	N/A	1.0	mg/L	2023-09-08	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-09-08	
Alkalinity, Bicarbonate (as CaCO3)	<b>180</b>	N/A	1.0	mg/L	2023-09-08	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-09-08	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0	mg/L	2023-09-08	
Carbon, Total Organic	<b>2.43</b>	N/A	0.50	mg/L	2023-09-08	
Solids, Total Dissolved	<b>233</b>	AO ≤ 500	15	mg/L	2023-09-10	



# TEST RESULTS

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**WORK ORDER REPORTED** 2310671  
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Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**Holland Creek Distribution (2310671-05) | Matrix: Water | Sampled: 2023-09-05 10:30, Continued**

**General Parameters, Continued**

Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-09-08	
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**Total Metals**

Aluminum, total	< 0.0050	OG < 0.1	0.0050 mg/L	2023-09-10	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-09-10	
Arsenic, total	<b>0.00117</b>	MAC = 0.01	0.00050 mg/L	2023-09-10	
Barium, total	<b>0.115</b>	MAC = 2	0.0050 mg/L	2023-09-10	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-09-10	
Cadmium, total	< 0.000010	MAC = 0.007	0.000010 mg/L	2023-09-10	
Calcium, total	<b>61.9</b>	None Required	0.20 mg/L	2023-09-10	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Copper, total	<b>0.0569</b>	MAC = 2	0.00040 mg/L	2023-09-10	
Iron, total	< 0.010	AO ≤ 0.3	0.010 mg/L	2023-09-10	
Lead, total	<b>0.00028</b>	MAC = 0.005	0.00020 mg/L	2023-09-10	
Lithium, total	<b>0.00252</b>	N/A	0.00010 mg/L	2023-09-10	
Magnesium, total	<b>20.0</b>	None Required	0.010 mg/L	2023-09-10	
Manganese, total	< 0.00020	MAC = 0.12	0.00020 mg/L	2023-09-10	
Molybdenum, total	<b>0.00127</b>	N/A	0.00010 mg/L	2023-09-10	
Nickel, total	< 0.00040	N/A	0.00040 mg/L	2023-09-10	
Phosphorus, total	< 0.050	N/A	0.050 mg/L	2023-09-10	
Potassium, total	<b>0.58</b>	N/A	0.10 mg/L	2023-09-10	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-09-10	
Silicon, total	<b>3.0</b>	N/A	1.0 mg/L	2023-09-10	
Silver, total	< 0.000050	None Required	0.000050 mg/L	2023-09-10	
Sodium, total	<b>2.24</b>	AO ≤ 200	0.10 mg/L	2023-09-10	
Strontium, total	<b>0.262</b>	MAC = 7	0.0010 mg/L	2023-09-10	
Sulfur, total	<b>19.4</b>	N/A	3.0 mg/L	2023-09-10	
Tellurium, total	< 0.00050	N/A	0.00050 mg/L	2023-09-10	
Thallium, total	< 0.000020	N/A	0.000020 mg/L	2023-09-10	
Thorium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	
Tin, total	< 0.00020	N/A	0.00020 mg/L	2023-09-10	
Titanium, total	< 0.0050	N/A	0.0050 mg/L	2023-09-10	
Tungsten, total	< 0.0010	N/A	0.0010 mg/L	2023-09-10	
Uranium, total	<b>0.000830</b>	MAC = 0.02	0.000020 mg/L	2023-09-10	
Vanadium, total	< 0.0050	N/A	0.0050 mg/L	2023-09-10	
Zinc, total	<b>0.0100</b>	AO ≤ 5	0.0040 mg/L	2023-09-10	
Zirconium, total	< 0.00010	N/A	0.00010 mg/L	2023-09-10	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5 µg/L	2023-09-10	
Bromodichloromethane	<b>1.3</b>	N/A	1.0 µg/L	2023-09-10	



# TEST RESULTS

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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
<b>Holland Creek Distribution (2310671-05)   Matrix: Water   Sampled: 2023-09-05 10:30, Continued</b>						
<i>Volatile Organic Compounds (VOC), Continued</i>						
Bromoform	< 1.0	N/A	1.0	µg/L	2023-09-10	
Carbon tetrachloride	< 0.5	MAC = 2	0.5	µg/L	2023-09-10	
Chlorobenzene	< 1.0	AO ≤ 30	1.0	µg/L	2023-09-10	
Chloroethane	< 2.0	N/A	2.0	µg/L	2023-09-10	
Chloroform	<b>4.2</b>	N/A	1.0	µg/L	2023-09-10	
Dibromochloromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dibromoethane	< 0.3	N/A	0.3	µg/L	2023-09-10	
Dibromomethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5	µg/L	2023-09-10	
1,3-Dichlorobenzene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0	µg/L	2023-09-10	
1,1-Dichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0	µg/L	2023-09-10	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2023-09-10	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0	µg/L	2023-09-10	
Dichloromethane	<b>27.2</b>	MAC = 50	3.0	µg/L	2023-09-10	
1,2-Dichloropropane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0	µg/L	2023-09-10	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0	µg/L	2023-09-10	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0	µg/L	2023-09-10	
Styrene	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,1,1,2-Tetrachloroethane	< 0.5	N/A	0.5	µg/L	2023-09-10	
Tetrachloroethylene	< 1.0	MAC = 10	1.0	µg/L	2023-09-10	
Toluene	< 1.0	MAC = 60	1.0	µg/L	2023-09-10	
1,1,1-Trichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2023-09-10	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2023-09-10	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2023-09-10	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2023-09-10	
Surrogate: Toluene-d8	81		70-130	%	2023-09-10	
Surrogate: 4-Bromofluorobenzene	70		70-130	%	2023-09-10	
Surrogate: 1,4-Dichlorobenzene-d4	68		70-130	%	2023-09-10	S02

**Sample Qualifiers:**

S02 Surrogate recovery outside of control limits. Data accepted based on acceptable recovery of other surrogates.



## APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2021)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2022)	Combustion, Infrared CO2 Detection	✓	Kelowna
EPH in Water	EPA 3511* / BCMOE EPHw	Hexane MicroExtraction (Base/Neutral) / Gas Chromatography (GC-FID)	✓	Richmond
Hardness in Water	SM 2340 B* (2021)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	✓	N/A
HEPHw in Water	BCMOE LEPH/HEPH	Calculation		N/A
LEPHw in Water	BCMOE LEPH/HEPH	Calculation		N/A
Polycyclic Aromatic Hydrocarbons in Water	EPA 3511* / EPA 8270D	Hexane MicroExtraction (Base/Neutral) / GC-MSD (SIM)	✓	Richmond
Solids, Total Dissolved in Water	Solids in Water, Filtered / SM 2540 C* (2020)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	Kelowna
Solids, Total Suspended in Water	Solids in Water, Filtered / SM 2540 D* (2020)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond

*Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method*

### Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
OG	Operational Guideline (treated water)
µg/L	Micrograms per litre
BCMOE	British Columbia Environmental Laboratory Manual, British Columbia Ministry of Environment
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

### Guidelines Referenced in this Report:

[Guidelines for Canadian Drinking Water Quality \(Health Canada, September 2022\)](#)

*Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user*



## APPENDIX 1: SUPPORTING INFORMATION

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**General Comments:**

The results in this report apply to the received samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager: [bwhitehead@caro.ca](mailto:bwhitehead@caro.ca)

*Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.*



## APPENDIX 2: QUALITY CONTROL RESULTS

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Anions, Batch B3I0568</b>									
<b>Blank (B3I0568-BLK1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							
<b>Blank (B3I0568-BLK2)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							
<b>LCS (B3I0568-BS1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Chloride	16.0	0.10 mg/L	16.0		100	90-110			
Fluoride	4.01	0.10 mg/L	4.00		100	88-108			
Nitrate (as N)	3.96	0.010 mg/L	4.00		99	90-110			
Nitrite (as N)	2.00	0.010 mg/L	2.00		100	85-115			
Sulfate	15.9	1.0 mg/L	16.0		100	90-110			
<b>LCS (B3I0568-BS2)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Chloride	16.1	0.10 mg/L	16.0		101	90-110			
Fluoride	4.02	0.10 mg/L	4.00		101	88-108			
Nitrate (as N)	3.99	0.010 mg/L	4.00		100	90-110			
Nitrite (as N)	2.03	0.010 mg/L	2.00		101	85-115			
Sulfate	15.9	1.0 mg/L	16.0		99	90-110			
<b>Duplicate (B3I0568-DUP1)</b>			Source: 2310671-01		Prepared: 2023-09-08, Analyzed: 2023-09-08				
Chloride	3.27	0.10 mg/L		3.26			< 1	10	
Fluoride	0.11	0.10 mg/L		0.11				10	
Nitrate (as N)	0.041	0.010 mg/L		0.041				10	
Nitrite (as N)	< 0.010	0.010 mg/L		< 0.010				15	
Sulfate	33.6	1.0 mg/L		33.7			< 1	10	
<b>Matrix Spike (B3I0568-MS1)</b>			Source: 2310671-01		Prepared: 2023-09-08, Analyzed: 2023-09-08				
Chloride	19.3	0.10 mg/L	16.0	3.26	100	75-125			
Fluoride	4.31	0.10 mg/L	4.00	0.11	105	75-125			
Nitrate (as N)	4.03	0.010 mg/L	4.00	0.041	100	75-125			



## APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Anions, Batch B310568, Continued**

**Matrix Spike (B310568-MS1), Continued** Source: 2310671-01 Prepared: 2023-09-08, Analyzed: 2023-09-08

Nitrite (as N)	1.98	0.010 mg/L	2.00	< 0.010	99	80-120			
Sulfate	48.9	1.0 mg/L	16.0	33.7	95	75-125			

**BCMOE Aggregate Hydrocarbons, Batch B310995**

**Blank (B310995-BLK1)** Prepared: 2023-09-12, Analyzed: 2023-09-12

EPHw10-19	< 250	250 µg/L							
EPHw19-32	< 250	250 µg/L							
Surrogate: 2-Methylnonane (EPH/F2-4)	3720	µg/L	4410		84	60-140			

**LCS (B310995-BS2)** Prepared: 2023-09-12, Analyzed: 2023-09-12

EPHw10-19	17100	250 µg/L	15400		111	70-130			
EPHw19-32	25800	250 µg/L	22200		116	70-130			
Surrogate: 2-Methylnonane (EPH/F2-4)	3050	µg/L	4410		69	60-140			

**LCS Dup (B310995-BSD2)** Prepared: 2023-09-12, Analyzed: 2023-09-12

EPHw10-19	18600	250 µg/L	15400		120	70-130	8	20	
EPHw19-32	28000	250 µg/L	22200		126	70-130	8	20	
Surrogate: 2-Methylnonane (EPH/F2-4)	3170	µg/L	4410		72	60-140			

**General Parameters, Batch B310316**

**Blank (B310316-BLK1)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	< 0.50	0.50 mg/L							
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**Blank (B310316-BLK2)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	< 0.50	0.50 mg/L							
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**Blank (B310316-BLK3)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	< 0.50	0.50 mg/L							
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**LCS (B310316-BS1)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	9.84	0.50 mg/L	10.0		98	78-116			
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**LCS (B310316-BS2)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	9.72	0.50 mg/L	10.0		97	78-116			
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**LCS (B310316-BS3)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Carbon, Total Organic	9.96	0.50 mg/L	10.0		100	78-116			
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**General Parameters, Batch B310614**

**Blank (B310614-BLK1)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Solids, Total Suspended	< 2.0	2.0 mg/L							
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**Blank (B310614-BLK2)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Solids, Total Suspended	< 2.0	2.0 mg/L							
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**LCS (B310614-BS1)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Solids, Total Suspended	93.0	10.0 mg/L	100		93	85-115			
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**LCS (B310614-BS2)** Prepared: 2023-09-08, Analyzed: 2023-09-08

Solids, Total Suspended	89.0	10.0 mg/L	100		89	85-115			
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**General Parameters, Batch B310650**



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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**General Parameters, Batch B310650, Continued**

<b>Blank (B310650-BLK1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Solids, Total Dissolved	< 15	15 mg/L							
<b>LCS (B310650-BS1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Solids, Total Dissolved	221	15 mg/L	240		92	85-115			

**General Parameters, Batch B310694**

<b>Blank (B310694-BLK1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
<b>LCS (B310694-BS1)</b>			Prepared: 2023-09-08, Analyzed: 2023-09-08						
Alkalinity, Total (as CaCO3)	107	1.0 mg/L	100		107	80-120			

**General Parameters, Batch B310857**

<b>Blank (B310857-BLK1)</b>			Prepared: 2023-09-10, Analyzed: 2023-09-10						
Solids, Total Dissolved	< 15	15 mg/L							
<b>LCS (B310857-BS1)</b>			Prepared: 2023-09-10, Analyzed: 2023-09-10						
Solids, Total Dissolved	230	15 mg/L	240		96	85-115			

**Polycyclic Aromatic Hydrocarbons (PAH), Batch B310995**

<b>Blank (B310995-BLK1)</b>			Prepared: 2023-09-12, Analyzed: 2023-09-12						
Acenaphthene	< 0.050	0.050 µg/L							
Acenaphthylene	< 0.200	0.200 µg/L							
Acridine	< 0.050	0.050 µg/L							
Anthracene	< 0.010	0.010 µg/L							
Benz(a)anthracene	< 0.010	0.010 µg/L							
Benzo(a)pyrene	< 0.010	0.010 µg/L							BLK
Benzo(b+)fluoranthene	< 0.050	0.050 µg/L							
Benzo(g,h,i)perylene	< 0.050	0.050 µg/L							
Benzo(k)fluoranthene	< 0.050	0.050 µg/L							
2-Chloronaphthalene	< 0.100	0.100 µg/L							
Chrysene	< 0.050	0.050 µg/L							BLK
Dibenz(a,h)anthracene	< 0.010	0.010 µg/L							
Fluoranthene	< 0.030	0.030 µg/L							
Fluorene	< 0.050	0.050 µg/L							
Indeno(1,2,3-cd)pyrene	< 0.050	0.050 µg/L							
1-Methylnaphthalene	< 0.100	0.100 µg/L							
2-Methylnaphthalene	< 0.100	0.100 µg/L							
Naphthalene	< 0.200	0.200 µg/L							
Phenanthrene	< 0.100	0.100 µg/L							
Pyrene	< 0.020	0.020 µg/L							
Quinoline	< 0.050	0.050 µg/L							
Surrogate: Acridine-d9	0.847	µg/L	0.898		94	50-140			
Surrogate: Naphthalene-d8	21.3	µg/L	22.2		96	50-140			
Surrogate: Perylene-d12	27.5	µg/L	22.2		124	50-140			
<b>LCS (B310995-BS1)</b>			Prepared: 2023-09-12, Analyzed: 2023-09-12						
Acenaphthene	14.6	0.050 µg/L	22.1		66	50-140			



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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Polycyclic Aromatic Hydrocarbons (PAH), Batch B310995, Continued**

**LCS (B310995-BS1), Continued**

Prepared: 2023-09-12, Analyzed: 2023-09-12

Acenaphthylene	15.3	0.200 µg/L	21.9		70	50-140			
Acridine	14.6	0.050 µg/L	22.0		67	50-140			
Anthracene	18.7	0.010 µg/L	22.1		85	50-140			
Benzo(a)anthracene	16.9	0.010 µg/L	22.1		77	50-140			
Benzo(a)pyrene	16.9	0.010 µg/L	21.9		77	50-140			
Benzo(b+)fluoranthene	42.0	0.050 µg/L	43.8		96	50-140			
Benzo(g,h,i)perylene	18.9	0.050 µg/L	21.9		86	50-140			
Benzo(k)fluoranthene	13.8	0.050 µg/L	22.0		63	50-140			
2-Chloronaphthalene	17.8	0.100 µg/L	21.9		81	50-140			
Chrysene	18.6	0.050 µg/L	21.8		85	50-140			
Dibenz(a,h)anthracene	17.9	0.010 µg/L	22.2		81	50-140			
Fluoranthene	22.8	0.030 µg/L	22.2		102	50-140			
Fluorene	14.3	0.050 µg/L	22.7		63	50-140			
Indeno(1,2,3-cd)pyrene	19.3	0.050 µg/L	21.9		88	50-140			
1-Methylnaphthalene	14.4	0.100 µg/L	22.0		65	50-140			
2-Methylnaphthalene	17.1	0.100 µg/L	22.0		78	50-140			
Naphthalene	17.1	0.200 µg/L	22.0		78	50-140			
Phenanthrene	16.1	0.100 µg/L	21.9		73	50-140			
Pyrene	22.0	0.020 µg/L	22.2		99	50-140			
Quinoline	22.7	0.050 µg/L	22.2		102	50-140			
Surrogate: Acridine-d9	0.900	µg/L	0.898		100	50-140			
Surrogate: Naphthalene-d8	22.0	µg/L	22.2		99	50-140			
Surrogate: Perylene-d12	24.7	µg/L	22.2		111	50-140			

**LCS Dup (B310995-BSD1)**

Prepared: 2023-09-12, Analyzed: 2023-09-12

Acenaphthene	14.8	0.050 µg/L	22.1		67	50-140	1	30	
Acenaphthylene	15.4	0.200 µg/L	21.9		70	50-140	< 1	30	
Acridine	15.1	0.050 µg/L	22.0		69	50-140	3	30	
Anthracene	19.0	0.010 µg/L	22.1		86	50-140	1	30	
Benzo(a)anthracene	16.8	0.010 µg/L	22.1		76	50-140	< 1	30	
Benzo(a)pyrene	16.5	0.010 µg/L	21.9		75	50-140	2	30	
Benzo(b+)fluoranthene	40.6	0.050 µg/L	43.8		93	50-140	3	30	
Benzo(g,h,i)perylene	15.7	0.050 µg/L	21.9		72	50-140	19	30	
Benzo(k)fluoranthene	14.2	0.050 µg/L	22.0		64	50-140	2	30	
2-Chloronaphthalene	17.8	0.100 µg/L	21.9		81	50-140	< 1	30	
Chrysene	18.7	0.050 µg/L	21.8		86	50-140	< 1	30	
Dibenz(a,h)anthracene	18.0	0.010 µg/L	22.2		81	50-140	< 1	30	
Fluoranthene	23.2	0.030 µg/L	22.2		104	50-140	2	30	
Fluorene	14.5	0.050 µg/L	22.7		64	50-140	< 1	30	
Indeno(1,2,3-cd)pyrene	19.1	0.050 µg/L	21.9		87	50-140	< 1	30	
1-Methylnaphthalene	17.1	0.100 µg/L	22.0		78	50-140	17	30	
2-Methylnaphthalene	17.3	0.100 µg/L	22.0		79	50-140	< 1	30	
Naphthalene	17.3	0.200 µg/L	22.0		78	50-140	1	30	
Phenanthrene	16.2	0.100 µg/L	21.9		74	50-140	< 1	30	
Pyrene	22.4	0.020 µg/L	22.2		101	50-140	2	30	
Quinoline	23.5	0.050 µg/L	22.2		106	50-140	3	30	
Surrogate: Acridine-d9	0.897	µg/L	0.898		100	50-140			
Surrogate: Naphthalene-d8	21.5	µg/L	22.2		97	50-140			
Surrogate: Perylene-d12	24.2	µg/L	22.2		109	50-140			

**Total Metals, Batch B310841**

**Blank (B310841-BLK1)**

Prepared: 2023-09-10, Analyzed: 2023-09-10

Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Total Metals, Batch B310841, Continued**

**Blank (B310841-BLK1), Continued**

Prepared: 2023-09-10, Analyzed: 2023-09-10

Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0500	0.0500 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0050	0.0050 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							

**LCS (B310841-BS1)**

Prepared: 2023-09-10, Analyzed: 2023-09-10

Aluminum, total	4.01	0.0050 mg/L	4.00		100	80-120			
Antimony, total	0.0414	0.00020 mg/L	0.0400		103	80-120			
Arsenic, total	0.404	0.00050 mg/L	0.400		101	80-120			
Barium, total	0.0414	0.0050 mg/L	0.0400		104	80-120			
Beryllium, total	0.0397	0.00010 mg/L	0.0400		99	80-120			
Bismuth, total	0.0399	0.00010 mg/L	0.0400		100	80-120			
Boron, total	0.409	0.0500 mg/L	0.400		102	80-120			
Cadmium, total	0.0410	0.000010 mg/L	0.0400		102	80-120			
Calcium, total	3.96	0.20 mg/L	4.00		99	80-120			
Chromium, total	0.0404	0.00050 mg/L	0.0400		101	80-120			
Cobalt, total	0.0406	0.00010 mg/L	0.0400		102	80-120			
Copper, total	0.0405	0.00040 mg/L	0.0400		101	80-120			
Iron, total	4.06	0.010 mg/L	4.00		101	80-120			
Lead, total	0.0400	0.00020 mg/L	0.0400		100	80-120			
Lithium, total	0.0392	0.00010 mg/L	0.0400		98	80-120			
Magnesium, total	4.17	0.010 mg/L	4.00		104	80-120			
Manganese, total	0.0404	0.00020 mg/L	0.0400		101	80-120			
Molybdenum, total	0.0402	0.00010 mg/L	0.0400		101	80-120			
Nickel, total	0.0401	0.00040 mg/L	0.0400		100	80-120			
Phosphorus, total	4.03	0.050 mg/L	4.00		101	80-120			



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B310841, Continued</b>									
<b>LCS (B310841-BS1), Continued</b>					Prepared: 2023-09-10, Analyzed: 2023-09-10				
Potassium, total	3.90	0.10 mg/L	4.00		98	80-120			
Selenium, total	0.400	0.00050 mg/L	0.400		100	80-120			
Silicon, total	4.3	1.0 mg/L	4.00		106	80-120			
Silver, total	0.0409	0.000050 mg/L	0.0400		102	80-120			
Sodium, total	4.09	0.10 mg/L	4.00		102	80-120			
Strontium, total	0.0415	0.0010 mg/L	0.0400		104	80-120			
Sulfur, total	40.9	3.0 mg/L	40.0		102	80-120			
Tellurium, total	0.0403	0.00050 mg/L	0.0400		101	80-120			
Thallium, total	0.0404	0.000020 mg/L	0.0400		101	80-120			
Thorium, total	0.0398	0.00010 mg/L	0.0400		100	80-120			
Tin, total	0.0416	0.00020 mg/L	0.0400		104	80-120			
Titanium, total	0.0407	0.0050 mg/L	0.0400		102	80-120			
Tungsten, total	0.0417	0.0010 mg/L	0.0400		104	80-120			
Uranium, total	0.0413	0.000020 mg/L	0.0400		103	80-120			
Vanadium, total	0.0403	0.0050 mg/L	0.0400		101	80-120			
Zinc, total	0.400	0.0040 mg/L	0.400		100	80-120			
Zirconium, total	0.0422	0.00010 mg/L	0.0400		105	80-120			

### Volatile Organic Compounds (VOC), Batch B310846

<b>Blank (B310846-BLK1)</b>			Prepared: 2023-09-10, Analyzed: 2023-09-10						
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropane (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	25.3	µg/L	25.0		101	70-130			
Surrogate: 4-Bromofluorobenzene	23.3	µg/L	24.9		93	70-130			



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 2310671  
2023-09-13 14:41

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Volatile Organic Compounds (VOC), Batch B310846, Continued</b>									
<b>Blank (B310846-BLK1), Continued</b>					Prepared: 2023-09-10, Analyzed: 2023-09-10				
Surrogate: 1,4-Dichlorobenzene-d4	22.1	µg/L	25.0		88	70-130			

**QC Qualifiers:**

BLK Analyte concentration in the Method Blank is above the Reporting Limit (RL).



## CERTIFICATE OF ANALYSIS

<b>REPORTED TO</b>	Regional District of East Kootenay 1164 Windermere Loop Rd Invermere, BC V0A 1K3	<b>WORK ORDER</b>	23F2989
<b>ATTENTION</b>	Brian Funke	<b>RECEIVED / TEMP REPORTED</b>	2023-06-21 09:15 / 13.5°C 2023-06-28 17:32
<b>PO NUMBER</b>		<b>COC NUMBER</b>	B133949
<b>PROJECT</b>	Full Spectrum Report		
<b>PROJECT INFO</b>	Moyie Community Water System		

### Introduction:

CARO Analytical Services is a testing laboratory full of smart, engaged scientists driven to make the world a safer and healthier place. Through our clients' projects we become an essential element for a better world. We employ methods conducted in accordance with recognized professional standards using accepted testing methodologies and quality control efforts. CARO is accredited by the Canadian Association for Laboratories Accreditation (CALA) to ISO/IEC 17025:2017 for specific tests listed in the scope of accreditation approved by CALA.

#### *Big Picture Sidekicks*



You know that the sample you collected after snowshoeing to site, digging 5 meters, and racing to get it on a plane so you can submit it to the lab for time sensitive results needed to make important and expensive decisions (whew) is VERY important. We know that too.

#### *We've Got Chemistry*



It's simple. We figure the more you enjoy working with our fun and engaged team members; the more likely you are to give us continued opportunities to support you.

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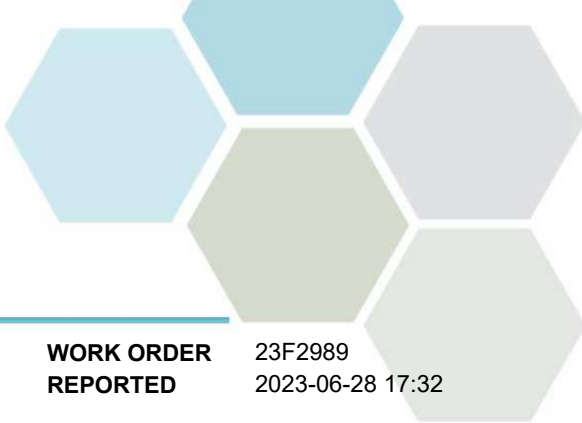
If you have any questions or concerns, please contact me at [bwhitehead@caro.ca](mailto:bwhitehead@caro.ca)

#### Authorized By:

Brent Whitehead  
Account Manager

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# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 23F2989  
2023-06-28 17:32

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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**Moyie Community Water System (23F2989-01) | Matrix: Water | Sampled: 2023-06-19 10:30**

**Anions**

Chloride	3.09	AO ≤ 250	0.10 mg/L	2023-06-23	
Fluoride	< 0.10	MAC = 1.5	0.10 mg/L	2023-06-23	
Nitrate (as N)	0.839	MAC = 10	0.010 mg/L	2023-06-23	HT1
Nitrite (as N)	< 0.010	MAC = 1	0.010 mg/L	2023-06-23	HT1
Sulfate	2.9	AO ≤ 500	1.0 mg/L	2023-06-23	

**Calculated Parameters**

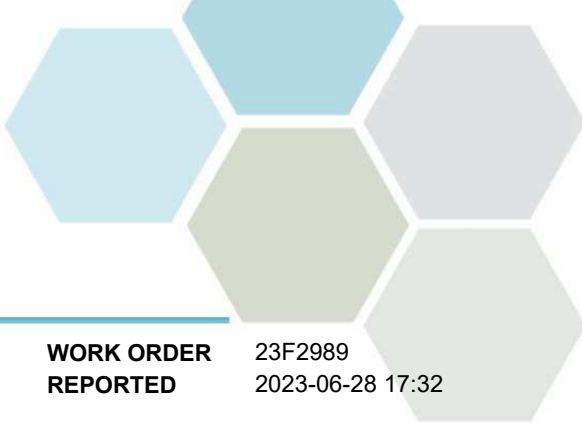
Hardness, Total (as CaCO3)	26.5	None Required	0.500 mg/L	N/A	
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**General Parameters**

Alkalinity, Total (as CaCO3)	23.8	N/A	1.0 mg/L	2023-06-23	
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-06-23	
Alkalinity, Bicarbonate (as CaCO3)	23.8	N/A	1.0 mg/L	2023-06-23	
Alkalinity, Carbonate (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-06-23	
Alkalinity, Hydroxide (as CaCO3)	< 1.0	N/A	1.0 mg/L	2023-06-23	
Carbon, Total Organic	1.81	N/A	0.50 mg/L	2023-06-23	
Solids, Total Dissolved	44	AO ≤ 500	15 mg/L	2023-06-22	
Solids, Total Suspended	< 2.0	N/A	2.0 mg/L	2023-06-23	

**Total Metals**

Aluminum, total	0.0132	OG < 0.1	0.0050 mg/L	2023-06-27	
Antimony, total	< 0.00020	MAC = 0.006	0.00020 mg/L	2023-06-25	
Arsenic, total	< 0.00050	MAC = 0.01	0.00050 mg/L	2023-06-25	
Barium, total	0.0051	MAC = 2	0.0050 mg/L	2023-06-25	
Beryllium, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	
Bismuth, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	
Boron, total	< 0.0500	MAC = 5	0.0500 mg/L	2023-06-25	
Cadmium, total	0.000024	MAC = 0.007	0.000010 mg/L	2023-06-27	
Calcium, total	7.73	None Required	0.20 mg/L	2023-06-25	
Chromium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-06-25	
Cobalt, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	
Copper, total	0.101	MAC = 2	0.00040 mg/L	2023-06-25	
Iron, total	0.127	AO ≤ 0.3	0.010 mg/L	2023-06-25	
Lead, total	0.00045	MAC = 0.005	0.00020 mg/L	2023-06-27	
Lithium, total	0.00074	N/A	0.00010 mg/L	2023-06-25	
Magnesium, total	1.73	None Required	0.010 mg/L	2023-06-25	
Manganese, total	0.00140	MAC = 0.12	0.00020 mg/L	2023-06-25	
Molybdenum, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	
Nickel, total	0.00247	N/A	0.00040 mg/L	2023-06-25	
Phosphorus, total	< 0.050	N/A	0.050 mg/L	2023-06-25	
Potassium, total	0.68	N/A	0.10 mg/L	2023-06-25	
Selenium, total	< 0.00050	MAC = 0.05	0.00050 mg/L	2023-06-25	
Silicon, total	6.2	N/A	1.0 mg/L	2023-06-25	
Silver, total	< 0.000050	None Required	0.000050 mg/L	2023-06-25	



# TEST RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 23F2989  
2023-06-28 17:32

Analyte	Result	Guideline	RL Units	Analyzed	Qualifier
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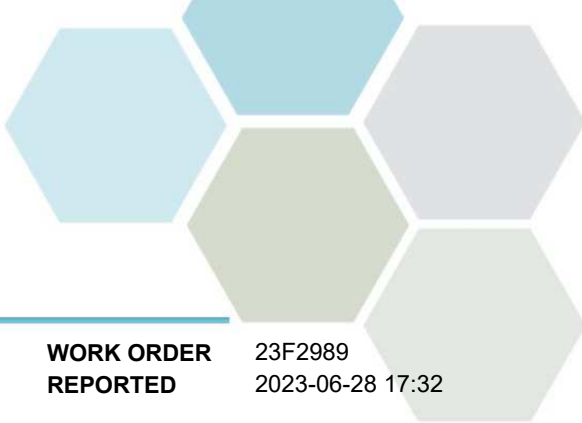
**Moyie Community Water System (23F2989-01) | Matrix: Water | Sampled: 2023-06-19 10:30, Continued**

**Total Metals, Continued**

Sodium, total	3.76	AO ≤ 200	0.10 mg/L	2023-06-25	
Strontium, total	0.0330	MAC = 7	0.0010 mg/L	2023-06-25	
Sulfur, total	< 3.0	N/A	3.0 mg/L	2023-06-25	
Tellurium, total	< 0.00050	N/A	0.00050 mg/L	2023-06-25	
Thallium, total	< 0.000020	N/A	0.000020 mg/L	2023-06-25	
Thorium, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	
Tin, total	0.00033	N/A	0.00020 mg/L	2023-06-25	
Titanium, total	< 0.0050	N/A	0.0050 mg/L	2023-06-25	
Tungsten, total	< 0.0010	N/A	0.0010 mg/L	2023-06-25	
Uranium, total	0.000048	MAC = 0.02	0.000020 mg/L	2023-06-25	
Vanadium, total	< 0.0050	N/A	0.0050 mg/L	2023-06-25	
Zinc, total	0.0571	AO ≤ 5	0.0040 mg/L	2023-06-25	
Zirconium, total	< 0.00010	N/A	0.00010 mg/L	2023-06-25	

**Volatile Organic Compounds (VOC)**

Benzene	< 0.5	MAC = 5	0.5 µg/L	2023-06-27	
Bromodichloromethane	< 1.0	N/A	1.0 µg/L	2023-06-27	
Bromoform	< 1.0	N/A	1.0 µg/L	2023-06-27	
Carbon tetrachloride	< 0.5	MAC = 2	0.5 µg/L	2023-06-27	
Chlorobenzene	< 1.0	AO ≤ 30	1.0 µg/L	2023-06-27	
Chloroethane	< 2.0	N/A	2.0 µg/L	2023-06-27	
Chloroform	< 1.0	N/A	1.0 µg/L	2023-06-27	
Dibromochloromethane	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,2-Dibromoethane	< 0.3	N/A	0.3 µg/L	2023-06-27	
Dibromomethane	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,2-Dichlorobenzene	< 0.5	AO ≤ 3	0.5 µg/L	2023-06-27	
1,3-Dichlorobenzene	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,4-Dichlorobenzene	< 1.0	AO ≤ 1	1.0 µg/L	2023-06-27	
1,1-Dichloroethane	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,2-Dichloroethane	< 1.0	MAC = 5	1.0 µg/L	2023-06-27	
1,1-Dichloroethylene	< 1.0	MAC = 14	1.0 µg/L	2023-06-27	
cis-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-06-27	
trans-1,2-Dichloroethylene	< 1.0	N/A	1.0 µg/L	2023-06-27	
Dichloromethane	< 3.0	MAC = 50	3.0 µg/L	2023-06-27	
1,2-Dichloropropane	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,3-Dichloropropene (cis + trans)	< 1.0	N/A	1.0 µg/L	2023-06-27	
Ethylbenzene	< 1.0	AO ≤ 1.6	1.0 µg/L	2023-06-27	
Methyl tert-butyl ether	< 1.0	AO ≤ 15	1.0 µg/L	2023-06-27	
Styrene	< 1.0	N/A	1.0 µg/L	2023-06-27	
1,1,2,2-Tetrachloroethane	< 0.5	N/A	0.5 µg/L	2023-06-27	
Tetrachloroethylene	< 1.0	MAC = 10	1.0 µg/L	2023-06-27	
Toluene	< 1.0	MAC = 60	1.0 µg/L	2023-06-27	
1,1,1-Trichloroethane	< 1.0	N/A	1.0 µg/L	2023-06-27	



# TEST RESULTS

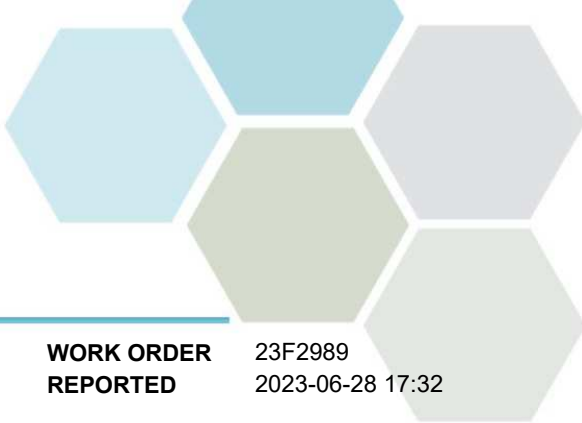
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Analyte	Result	Guideline	RL	Units	Analyzed	Qualifier
<b>Moyie Community Water System (23F2989-01)   Matrix: Water   Sampled: 2023-06-19 10:30, Continued</b>						
<i>Volatile Organic Compounds (VOC), Continued</i>						
1,1,2-Trichloroethane	< 1.0	N/A	1.0	µg/L	2023-06-27	
Trichloroethylene	< 1.0	MAC = 5	1.0	µg/L	2023-06-27	
Trichlorofluoromethane	< 1.0	N/A	1.0	µg/L	2023-06-27	
Vinyl chloride	< 1.0	MAC = 2	1.0	µg/L	2023-06-27	
Xylenes (total)	< 2.0	AO ≤ 20	2.0	µg/L	2023-06-27	
<i>Surrogate: Toluene-d8</i>	113		70-130	%	2023-06-27	
<i>Surrogate: 4-Bromofluorobenzene</i>	93		70-130	%	2023-06-27	
<i>Surrogate: 1,4-Dichlorobenzene-d4</i>	94		70-130	%	2023-06-27	

**Sample Qualifiers:**

HT1 The sample was prepared and/or analyzed past the recommended holding time.



## APPENDIX 1: SUPPORTING INFORMATION

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Analysis Description	Method Ref.	Technique	Accredited	Location
Alkalinity in Water	SM 2320 B* (2021)	Titration with H2SO4	✓	Kelowna
Anions in Water	SM 4110 B (2020)	Ion Chromatography	✓	Kelowna
Carbon, Total Organic in Water	SM 5310 B (2022)	Combustion, Infrared CO2 Detection	✓	Kelowna
Hardness in Water	SM 2340 B* (2021)	Calculation: 2.497 [total Ca] + 4.118 [total Mg] (Est)	✓	N/A
Solids, Total Dissolved in Water	Solids in Water, Filtered / SM 2540 C* (2020)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	Kelowna
Solids, Total Suspended in Water	Solids in Water, Filtered / SM 2540 D* (2020)	Solids in Water, Filtered / Gravimetry (Dried at 103-105C)	✓	Kelowna
Total Metals in Water	EPA 200.2 / EPA 6020B	HNO3+HCl Hot Block Digestion / Inductively Coupled Plasma-Mass Spectroscopy (ICP-MS)	✓	Richmond
Volatile Organic Compounds in Water	EPA 5030B / EPA 8260D	Purge&Trap / GC-MSD (SIM)	✓	Richmond

*Note: An asterisk in the Method Reference indicates that the CARO method has been modified from the reference method*

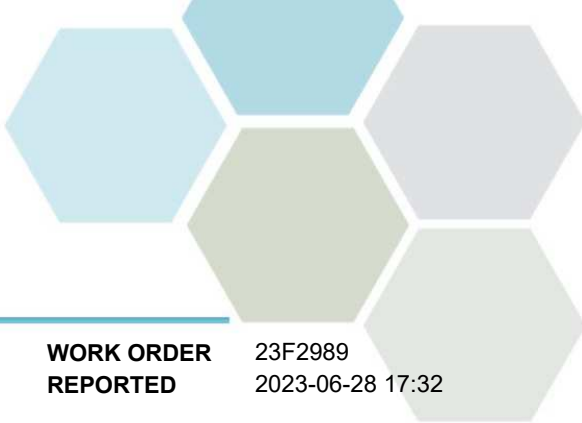
### Glossary of Terms:

RL	Reporting Limit (default)
<	Less than the specified Reporting Limit (RL) - the actual RL may be higher than the default RL due to various factors
AO	Aesthetic Objective
MAC	Maximum Acceptable Concentration (health based)
mg/L	Milligrams per litre
OG	Operational Guideline (treated water)
µg/L	Micrograms per litre
EPA	United States Environmental Protection Agency Test Methods
SM	Standard Methods for the Examination of Water and Wastewater, American Public Health Association

### Guidelines Referenced in this Report:

[Guidelines for Canadian Drinking Water Quality \(Health Canada, September 2022\)](#)

*Note: In some cases, the values displayed on the report represent the lowest guideline and are to be verified by the end user*



## APPENDIX 1: SUPPORTING INFORMATION

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**General Comments:**

The results in this report apply to the received samples analyzed in accordance with the Chain of Custody document. This analytical report must be reproduced in its entirety. CARO is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Caro will dispose of all samples within 30 days of sample receipt, unless otherwise agreed.

Results in **Bold** indicate values that are above CARO's method reporting limits. Any results that are above regulatory limits are highlighted **red**. Please note that results will only be highlighted red if the regulatory limits are included on the CARO report. Any Bold and/or highlighted results do not take into account method uncertainty. If you would like method uncertainty or regulatory limits to be included on your report, please contact your Account Manager: [bwhitehead@caro.ca](mailto:bwhitehead@caro.ca)

*Please note any regulatory guidelines applied to this report are added as a convenience to the client, at their request, to help provide some initial context to analytical results obtained. Although CARO makes every effort to ensure accuracy of the associated regulatory guideline(s) applied, the guidelines applied cannot be assumed to be correct due to a variety of factors and as such CARO Analytical Services assumes no liability or responsibility for the use of those guidelines to make any decisions. The original source of the regulation should be verified and a review of the guideline(s) should be validated as correct in order to make any decisions arising from the comparison of the analytical data obtained to the relevant regulatory guideline for one's particular circumstances. Further, CARO Analytical Services assumes no liability or responsibility for any loss attributed from the use of these guidelines in any way.*



## APPENDIX 2: QUALITY CONTROL RESULTS

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The following section displays the quality control (QC) data that is associated with your sample data. Groups of samples are prepared in "batches" and analyzed in conjunction with QC samples that ensure your data is of the highest quality. Common QC types include:

- **Method Blank (Blk):** A blank sample that undergoes sample processing identical to that carried out for the test samples. Method blank results are used to assess contamination from the laboratory environment and reagents.
- **Duplicate (Dup):** An additional or second portion of a randomly selected sample in the analytical run carried through the entire analytical process. Duplicates provide a measure of the analytical method's precision (reproducibility).
- **Blank Spike (BS):** A sample of known concentration which undergoes processing identical to that carried out for test samples, also referred to as a laboratory control sample (LCS). Blank spikes provide a measure of the analytical method's accuracy.
- **Matrix Spike (MS):** A second aliquot of sample is fortified with a known concentration of target analytes and carried through the entire analytical process. Matrix spikes evaluate potential matrix effects that may affect the analyte recovery.
- **Reference Material (SRM):** A homogenous material of similar matrix to the samples, certified for the parameter(s) listed. Reference Materials ensure that the analytical process is adequate to achieve acceptable recoveries of the parameter(s) tested.

Each QC type is analyzed at a 5-10% frequency, i.e. one blank/duplicate/spike for every 10-20 samples. For all types of QC, the specified recovery (% Rec) and relative percent difference (RPD) limits are derived from long-term method performance averages and/or prescribed by the reference method.

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Anions, Batch B3F2622**

<b>Blank (B3F2622-BLK1)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							

<b>Blank (B3F2622-BLK2)</b>			Prepared: 2023-06-24, Analyzed: 2023-06-24						
Chloride	< 0.10	0.10 mg/L							
Fluoride	< 0.10	0.10 mg/L							
Nitrate (as N)	< 0.010	0.010 mg/L							
Nitrite (as N)	< 0.010	0.010 mg/L							
Sulfate	< 1.0	1.0 mg/L							

<b>LCS (B3F2622-BS1)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Chloride	15.8	0.10 mg/L	16.0		99	90-110			
Fluoride	3.94	0.10 mg/L	4.00		99	88-108			
Nitrate (as N)	3.88	0.010 mg/L	4.00		97	90-110			
Nitrite (as N)	2.09	0.010 mg/L	2.00		105	85-115			
Sulfate	15.7	1.0 mg/L	16.0		98	90-110			

<b>LCS (B3F2622-BS2)</b>			Prepared: 2023-06-24, Analyzed: 2023-06-24						
Chloride	15.8	0.10 mg/L	16.0		99	90-110			
Fluoride	3.84	0.10 mg/L	4.00		96	88-108			
Nitrate (as N)	3.86	0.010 mg/L	4.00		97	90-110			
Nitrite (as N)	2.03	0.010 mg/L	2.00		101	85-115			
Sulfate	16.0	1.0 mg/L	16.0		100	90-110			

**General Parameters, Batch B3F2457**

<b>Blank (B3F2457-BLK1)</b>			Prepared: 2023-06-21, Analyzed: 2023-06-23						
Carbon, Total Organic	< 0.50	0.50 mg/L							

<b>Blank (B3F2457-BLK2)</b>			Prepared: 2023-06-21, Analyzed: 2023-06-23						
Carbon, Total Organic	< 0.50	0.50 mg/L							



## APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>General Parameters, Batch B3F2457, Continued</b>									
<b>Blank (B3F2457-BLK3)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-23						
Carbon, Total Organic	< 0.50	0.50 mg/L							
<b>Blank (B3F2457-BLK4)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-23						
Carbon, Total Organic	< 0.50	0.50 mg/L							
<b>LCS (B3F2457-BS1)</b>			Prepared: 2023-06-21, Analyzed: 2023-06-23						
Carbon, Total Organic	9.69	0.50 mg/L	10.0		97	78-116			
<b>LCS (B3F2457-BS2)</b>			Prepared: 2023-06-21, Analyzed: 2023-06-23						
Carbon, Total Organic	9.43	0.50 mg/L	10.0		94	78-116			
<b>LCS (B3F2457-BS3)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-23						
Carbon, Total Organic	9.39	0.50 mg/L	10.0		94	78-116			
<b>LCS (B3F2457-BS4)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-23						
Carbon, Total Organic	9.10	0.50 mg/L	10.0		91	78-116			
<b>General Parameters, Batch B3F2593</b>									
<b>Blank (B3F2593-BLK1)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-22						
Solids, Total Dissolved	< 15	15 mg/L							
<b>LCS (B3F2593-BS1)</b>			Prepared: 2023-06-22, Analyzed: 2023-06-22						
Solids, Total Dissolved	228	15 mg/L	240		95	85-115			
<b>General Parameters, Batch B3F2675</b>									
<b>Blank (B3F2675-BLK1)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
<b>Blank (B3F2675-BLK2)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
<b>Blank (B3F2675-BLK3)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Alkalinity, Total (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Phenolphthalein (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Bicarbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Carbonate (as CaCO3)	< 1.0	1.0 mg/L							
Alkalinity, Hydroxide (as CaCO3)	< 1.0	1.0 mg/L							
<b>LCS (B3F2675-BS1)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Alkalinity, Total (as CaCO3)	90.2	1.0 mg/L	100		90	80-120			
Alkalinity, Phenolphthalein (as CaCO3)	41.5	1.0 mg/L	50.0		83	0-200			
<b>LCS (B3F2675-BS2)</b>			Prepared: 2023-06-23, Analyzed: 2023-06-23						
Alkalinity, Total (as CaCO3)	90.2	1.0 mg/L	100		90	80-120			
Alkalinity, Phenolphthalein (as CaCO3)	26.4	1.0 mg/L	50.0		53	0-200			



## APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**General Parameters, Batch B3F2675, Continued**

**LCS (B3F2675-BS3)**

Prepared: 2023-06-23, Analyzed: 2023-06-23

Alkalinity, Total (as CaCO <sub>3</sub> )	91.1	1.0 mg/L	100		91	80-120			
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	20.5	1.0 mg/L	50.0		41	0-200			

**General Parameters, Batch B3F2676**

**Blank (B3F2676-BLK1)**

Prepared: 2023-06-23, Analyzed: 2023-06-23

Solids, Total Suspended	< 2.0	2.0 mg/L							
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**LCS (B3F2676-BS1)**

Prepared: 2023-06-23, Analyzed: 2023-06-23

Solids, Total Suspended	101	10.0 mg/L	100		101	85-115			
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**Total Metals, Batch B3F2811**

**Blank (B3F2811-BLK1)**

Prepared: 2023-06-24, Analyzed: 2023-06-27

Aluminum, total	< 0.0050	0.0050 mg/L							
Antimony, total	< 0.00020	0.00020 mg/L							
Arsenic, total	< 0.00050	0.00050 mg/L							
Barium, total	< 0.0050	0.0050 mg/L							
Beryllium, total	< 0.00010	0.00010 mg/L							
Bismuth, total	< 0.00010	0.00010 mg/L							
Boron, total	< 0.0500	0.0500 mg/L							
Cadmium, total	< 0.000010	0.000010 mg/L							
Calcium, total	< 0.20	0.20 mg/L							
Chromium, total	< 0.00050	0.00050 mg/L							
Cobalt, total	< 0.00010	0.00010 mg/L							
Copper, total	< 0.00040	0.00040 mg/L							
Iron, total	< 0.010	0.010 mg/L							
Lead, total	< 0.00020	0.00020 mg/L							
Lithium, total	< 0.00010	0.00010 mg/L							
Magnesium, total	< 0.010	0.010 mg/L							
Manganese, total	< 0.00020	0.00020 mg/L							
Molybdenum, total	< 0.00010	0.00010 mg/L							
Nickel, total	< 0.00040	0.00040 mg/L							
Phosphorus, total	< 0.050	0.050 mg/L							
Potassium, total	< 0.10	0.10 mg/L							
Selenium, total	< 0.00050	0.00050 mg/L							
Silicon, total	< 1.0	1.0 mg/L							
Silver, total	< 0.000050	0.000050 mg/L							
Sodium, total	< 0.10	0.10 mg/L							
Strontium, total	< 0.0010	0.0010 mg/L							
Sulfur, total	< 3.0	3.0 mg/L							
Tellurium, total	< 0.00050	0.00050 mg/L							
Thallium, total	< 0.000020	0.000020 mg/L							
Thorium, total	< 0.00010	0.00010 mg/L							
Tin, total	< 0.00020	0.00020 mg/L							
Titanium, total	< 0.0050	0.0050 mg/L							
Tungsten, total	< 0.0010	0.0010 mg/L							
Uranium, total	< 0.000020	0.000020 mg/L							
Vanadium, total	< 0.0050	0.0050 mg/L							
Zinc, total	< 0.0040	0.0040 mg/L							
Zirconium, total	< 0.00010	0.00010 mg/L							

**LCS (B3F2811-BS1)**

Prepared: 2023-06-24, Analyzed: 2023-06-25

Aluminum, total	3.86	0.0050 mg/L	4.00		96	80-120			
Antimony, total	0.0389	0.00020 mg/L	0.0400		97	80-120			
Arsenic, total	0.388	0.00050 mg/L	0.400		97	80-120			



## APPENDIX 2: QUALITY CONTROL RESULTS

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Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
<b>Total Metals, Batch B3F2811, Continued</b>									
<b>LCS (B3F2811-BS1), Continued</b>					Prepared: 2023-06-24, Analyzed: 2023-06-25				
Barium, total	0.0386	0.0050 mg/L	0.0400		96	80-120			
Beryllium, total	0.0386	0.00010 mg/L	0.0400		96	80-120			
Bismuth, total	0.0380	0.00010 mg/L	0.0400		95	80-120			
Boron, total	0.400	0.0500 mg/L	0.400		100	80-120			
Cadmium, total	0.0385	0.000010 mg/L	0.0400		96	80-120			
Calcium, total	3.87	0.20 mg/L	4.00		97	80-120			
Chromium, total	0.0397	0.00050 mg/L	0.0400		99	80-120			
Cobalt, total	0.0391	0.00010 mg/L	0.0400		98	80-120			
Copper, total	0.0398	0.00040 mg/L	0.0400		99	80-120			
Iron, total	3.94	0.010 mg/L	4.00		99	80-120			
Lead, total	0.0392	0.00020 mg/L	0.0400		98	80-120			
Lithium, total	0.0377	0.00010 mg/L	0.0400		94	80-120			
Magnesium, total	4.03	0.010 mg/L	4.00		101	80-120			
Manganese, total	0.0395	0.00020 mg/L	0.0400		99	80-120			
Molybdenum, total	0.0383	0.00010 mg/L	0.0400		96	80-120			
Nickel, total	0.0398	0.00040 mg/L	0.0400		100	80-120			
Phosphorus, total	3.84	0.050 mg/L	4.00		96	80-120			
Potassium, total	3.82	0.10 mg/L	4.00		96	80-120			
Selenium, total	0.411	0.00050 mg/L	0.400		103	80-120			
Silicon, total	4.2	1.0 mg/L	4.00		106	80-120			
Silver, total	0.0390	0.000050 mg/L	0.0400		98	80-120			
Sodium, total	3.94	0.10 mg/L	4.00		98	80-120			
Strontium, total	0.0387	0.0010 mg/L	0.0400		97	80-120			
Sulfur, total	39.4	3.0 mg/L	40.0		99	80-120			
Tellurium, total	0.0381	0.00050 mg/L	0.0400		95	80-120			
Thallium, total	0.0377	0.000020 mg/L	0.0400		94	80-120			
Thorium, total	0.0412	0.00010 mg/L	0.0400		103	80-120			
Tin, total	0.0467	0.00020 mg/L	0.0400		117	80-120			
Titanium, total	0.0387	0.0050 mg/L	0.0400		97	80-120			
Tungsten, total	0.0402	0.0010 mg/L	0.0400		101	80-120			
Uranium, total	0.0408	0.000020 mg/L	0.0400		102	80-120			
Vanadium, total	0.0385	0.0050 mg/L	0.0400		96	80-120			
Zinc, total	0.397	0.0040 mg/L	0.400		99	80-120			
Zirconium, total	0.0399	0.00010 mg/L	0.0400		100	80-120			

### Volatile Organic Compounds (VOC), Batch B3F2937

<b>Blank (B3F2937-BLK1)</b>			Prepared: 2023-06-27, Analyzed: 2023-06-27						
Benzene	< 0.5	0.5 µg/L							
Bromodichloromethane	< 1.0	1.0 µg/L							
Bromoform	< 1.0	1.0 µg/L							
Carbon tetrachloride	< 0.5	0.5 µg/L							
Chlorobenzene	< 1.0	1.0 µg/L							
Chloroethane	< 2.0	2.0 µg/L							
Chloroform	< 1.0	1.0 µg/L							
Dibromochloromethane	< 1.0	1.0 µg/L							
1,2-Dibromoethane	< 0.3	0.3 µg/L							
Dibromomethane	< 1.0	1.0 µg/L							
1,2-Dichlorobenzene	< 0.5	0.5 µg/L							
1,3-Dichlorobenzene	< 1.0	1.0 µg/L							
1,4-Dichlorobenzene	< 1.0	1.0 µg/L							
1,1-Dichloroethane	< 1.0	1.0 µg/L							
1,2-Dichloroethane	< 1.0	1.0 µg/L							
1,1-Dichloroethylene	< 1.0	1.0 µg/L							
cis-1,2-Dichloroethylene	< 1.0	1.0 µg/L							
trans-1,2-Dichloroethylene	< 1.0	1.0 µg/L							



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 23F2989  
2023-06-28 17:32

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**Volatile Organic Compounds (VOC), Batch B3F2937, Continued**

**Blank (B3F2937-BLK1), Continued**

Prepared: 2023-06-27, Analyzed: 2023-06-27

Dichloromethane	< 3.0	3.0 µg/L							
1,2-Dichloropropane	< 1.0	1.0 µg/L							
1,3-Dichloropropene (cis + trans)	< 1.0	1.0 µg/L							
Ethylbenzene	< 1.0	1.0 µg/L							
Methyl tert-butyl ether	< 1.0	1.0 µg/L							
Styrene	< 1.0	1.0 µg/L							
1,1,2,2-Tetrachloroethane	< 0.5	0.5 µg/L							
Tetrachloroethylene	< 1.0	1.0 µg/L							
Toluene	< 1.0	1.0 µg/L							
1,1,1-Trichloroethane	< 1.0	1.0 µg/L							
1,1,2-Trichloroethane	< 1.0	1.0 µg/L							
Trichloroethylene	< 1.0	1.0 µg/L							
Trichlorofluoromethane	< 1.0	1.0 µg/L							
Vinyl chloride	< 1.0	1.0 µg/L							
Xylenes (total)	< 2.0	2.0 µg/L							
Surrogate: Toluene-d8	26.6	µg/L	25.0		107	70-130			
Surrogate: 4-Bromofluorobenzene	23.0	µg/L	24.9		92	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	23.4	µg/L	25.0		93	70-130			

**LCS (B3F2937-BS1)**

Prepared: 2023-06-27, Analyzed: 2023-06-27

Benzene	20.1	0.5 µg/L	20.1		100	70-130			
Bromodichloromethane	20.6	1.0 µg/L	20.1		102	70-130			
Bromoform	20.0	1.0 µg/L	20.1		99	70-130			
Carbon tetrachloride	17.1	0.5 µg/L	20.1		85	70-130			
Chlorobenzene	18.6	1.0 µg/L	20.1		92	70-130			
Chloroethane	46.0	2.0 µg/L	20.1		229	60-140			SPK
Chloroform	21.4	1.0 µg/L	20.1		107	70-130			
Dibromochloromethane	19.6	1.0 µg/L	20.1		97	70-130			
1,2-Dibromoethane	22.5	0.3 µg/L	20.1		112	70-130			
Dibromomethane	21.1	1.0 µg/L	20.1		105	70-130			
1,2-Dichlorobenzene	20.1	0.5 µg/L	20.1		100	70-130			
1,3-Dichlorobenzene	19.2	1.0 µg/L	20.1		95	70-130			
1,4-Dichlorobenzene	19.9	1.0 µg/L	20.1		99	70-130			
1,1-Dichloroethane	21.0	1.0 µg/L	20.1		104	70-130			
1,2-Dichloroethane	22.2	1.0 µg/L	20.1		111	70-130			
1,1-Dichloroethylene	22.3	1.0 µg/L	20.1		111	70-130			
cis-1,2-Dichloroethylene	21.7	1.0 µg/L	20.1		108	70-130			
trans-1,2-Dichloroethylene	20.2	1.0 µg/L	20.1		101	70-130			
Dichloromethane	21.9	3.0 µg/L	20.1		109	70-130			
1,2-Dichloropropane	22.3	1.0 µg/L	20.1		111	70-130			
1,3-Dichloropropene (cis + trans)	40.3	1.0 µg/L	40.2		100	70-130			
Ethylbenzene	17.9	1.0 µg/L	20.1		89	70-130			
Methyl tert-butyl ether	21.9	1.0 µg/L	20.0		109	70-130			
Styrene	18.7	1.0 µg/L	20.1		93	70-130			
1,1,2,2-Tetrachloroethane	24.1	0.5 µg/L	20.1		120	70-130			
Tetrachloroethylene	18.6	1.0 µg/L	20.1		93	70-130			
Toluene	20.3	1.0 µg/L	20.1		101	70-130			
1,1,1-Trichloroethane	19.2	1.0 µg/L	20.1		95	70-130			
1,1,2-Trichloroethane	23.6	1.0 µg/L	20.1		118	70-130			
Trichloroethylene	17.7	1.0 µg/L	20.1		88	70-130			
Trichlorofluoromethane	36.6	1.0 µg/L	20.1		182	60-140			SPK
Vinyl chloride	17.1	1.0 µg/L	20.1		85	60-140			
Xylenes (total)	56.9	2.0 µg/L	60.3		94	70-130			
Surrogate: Toluene-d8	28.9	µg/L	25.0		116	70-130			
Surrogate: 4-Bromofluorobenzene	26.0	µg/L	24.9		105	70-130			
Surrogate: 1,4-Dichlorobenzene-d4	27.4	µg/L	25.0		110	70-130			



## APPENDIX 2: QUALITY CONTROL RESULTS

**REPORTED TO PROJECT** Regional District of East Kootenay  
Full Spectrum Report

**WORK ORDER REPORTED** 23F2989  
2023-06-28 17:32

Analyte	Result	RL Units	Spike Level	Source Result	% REC	REC Limit	% RPD	RPD Limit	Qualifier
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**QC Qualifiers:**

SPK The recovery of this analyte was outside of established control limits.



**Teck Coal Limited**

Sparwood Communities Office  
P.O. Box 1777 116 Centennial Street +1 855 806 6854 Tel  
Sparwood, B.C. Canada V0B 2G0 www.teck.com

December 13, 2023

8710 Main Street  
Elko, BC V0B 1T3

**Attention: Regional District of East Kootenay**

**Reference: Results of Quarter 4 2023 Drinking Water Monitoring at the Municipality of Elko Well**

Thank you for participating in Teck Coal Limited's (Teck) *Regional Drinking Water Monitoring Program* (RDWMP) as part of the implementation of the *Elk Valley Water Quality Plan* (EVWQP). This letter summarizes the analytical results of the October 24, 2023 drinking water monitoring conducted at the Municipality of Elko Well (Attachment 1).

Teck has compared the analytical results to the applicable *British Columbia Source Drinking Water Quality Guidelines* (BCSDWQG)<sup>1</sup> for drinking water and livestock watering. This comparison is not a complete screen of all constituents that may affect water quality, but instead, is limited to mine-related constituents determined through Teck's Regional Groundwater Monitoring Program.

The results indicate that no concentrations of mine-related constituents were above the BCSDWQG for drinking water or livestock watering (Table 1).

For further information regarding health-related drinking water concerns, please visit Interior Health's Drinking Water webpage at: [www.interiorhealth.ca/health-and-wellness/environmental-health-and-hazards/drinking-water](http://www.interiorhealth.ca/health-and-wellness/environmental-health-and-hazards/drinking-water) or contact the Cranbrook Health Unit at (250) 420-2220.

For questions or more information regarding the RDWMP, please contact the Teck Communities Office's toll-free line at 1-855-806-6854 and leave a message, or email [feedbackteckcoal@teck.com](mailto:feedbackteckcoal@teck.com) and a Teck representative will respond. Information about Teck's EVWQP is available online at [www.teck.com/elkvalley](http://www.teck.com/elkvalley).

Sincerely,

Rory O'Connor  
Manager, Social Responsibility  
Teck Coal Limited

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<sup>1</sup> *British Columbia Source Drinking Water Quality Guidelines*, <http://www2.gov.bc.ca>

**Table 1: Summary of Analytical Results of Samples Obtained from the Municipality of Elko Well on October 24, 2023**

Sample ID	Constituent	Well Results	Drinking Water Guideline	Livestock Watering Guideline
RG_DW-08-01_WP_2023_10_24_NP	Antimony (Sb, Total) (µg/L)	ND	6	NG
	Cadmium (Cd, Total) (µg/L)	ND	5	80
	Cobalt (Co, Total) (µg/L)	ND	1	1000
	Molybdenum (Mo, Total) (µg/L)	0.822	88	50
	Nickel (Ni, Total) (µg/L)	ND	80	1000
	Nitrate (N-NO3) (mg/L)	1.12	10	100
	Nitrite (N-NO2) (mg/L)	ND	1	10
	Selenium (Se, Dissolved) (µg/L)	5.60	10	30
	Selenium (Se, Total) (µg/L)	4.86	10	30
	Sulphate (SO4) (mg/L)	46.2	500*	1000
	Total Dissolved Solids (TDS) (mg/L)	273	NG	3000
	Uranium (U, Total) (µg/L)	0.871	20	200

\*The sulphate drinking water guideline is an Aesthetic Objective (AO), which affects water quality based on smell, taste, or colour rather than possible negative human health effects.

ND – Non-Detect - Result below laboratory detection limit

NG – No Guideline for constituent in BCSDWQG

SHADED	Results greater than BCSDWQG Drinking Water
UNDERLINED	Results greater than BCSDWQG Livestock Watering

**ATTACHMENTS**

1. Laboratory Report

cc:

Nathaniel Barnes, Senior Lead, Water, Teck



## CERTIFICATE OF ANALYSIS

<p><b>Work Order</b> : <b>CG2315220</b></p> <p>Client : <b>Teck Coal Limited</b></p> <p>Contact : Sabrina Gilmore</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B 2G0</p> <p>Telephone : ----</p> <p>Project : REGIONAL EFFECT PROGRAM</p> <p>PO : VPO00890272</p> <p>C-O-C number : COC_2023_Q4</p> <p>Sampler : SABRINA GILMORE</p> <p>Site : ----</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 6</p> <p>Laboratory : ALS Environmental - Calgary</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary AB Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 26-Oct-2023 09:20</p> <p>Date Analysis Commenced : 26-Oct-2023</p> <p>Issue Date : 02-Nov-2023 14:17</p>
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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.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Anthony Calero	Supervisor - Inorganic	Inorganics, Calgary, Alberta
Elke Tabora		Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Katarzyna Glinka	Analyst	Inorganics, Calgary, Alberta
Katrina Tang		Metals, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Inorganics, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Inorganics, Calgary, Alberta



## 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).

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
meq/L	milliequivalents per litre
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.



## Analytical Results

Sub-Matrix: Water					Client sample ID	RG_DW-08-01_	---	---	---	---
(Matrix: Water)					WP_2023_10_2					
Client sampling date / time					25-Oct-2023	---	---	---	---	---
					09:36					
Analyte	CAS Number	Method/Lab	LOR	Unit	CG2315220-001	-----	-----	-----	-----	-----
					Result	---	---	---	---	---
<b>Physical Tests</b>										
Acidity (as CaCO3)	---	E283/CG	2.0	mg/L	<2.0	---	---	---	---	---
Alkalinity, bicarbonate (as CaCO3)	---	E290/CG	1.0	mg/L	165	---	---	---	---	---
Alkalinity, bicarbonate (as HCO3)	71-52-3	E290/CG	1.0	mg/L	201	---	---	---	---	---
Alkalinity, carbonate (as CaCO3)	---	E290/CG	1.0	mg/L	18.6	---	---	---	---	---
Alkalinity, carbonate (as CO3)	3812-32-6	E290/CG	1.0	mg/L	11.2	---	---	---	---	---
Alkalinity, hydroxide (as CaCO3)	---	E290/CG	1.0	mg/L	<1.0	---	---	---	---	---
Alkalinity, hydroxide (as OH)	14280-30-9	E290/CG	1.0	mg/L	<1.0	---	---	---	---	---
Alkalinity, total (as CaCO3)	---	E290/CG	1.0	mg/L	184	---	---	---	---	---
Conductivity	---	E100/CG	2.0	µS/cm	333	---	---	---	---	---
Hardness (as CaCO3), dissolved	---	EC100/CG	0.50	mg/L	223	---	---	---	---	---
Oxidation-reduction potential [ORP]	---	E125/CG	0.10	mV	368	---	---	---	---	---
pH	---	E108/CG	0.10	pH units	8.51	---	---	---	---	---
Solids, total dissolved [TDS]	---	E162/CG	10	mg/L	273	---	---	---	---	---
Solids, total suspended [TSS]	---	E160-L/CG	1.0	mg/L	9.3	---	---	---	---	---
Turbidity	---	E121/CG	0.10	NTU	<0.10	---	---	---	---	---
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	7664-41-7	E298/CG	0.0050	mg/L	<0.0050	---	---	---	---	---
Bromide	24959-67-9	E235.Br-L/CG	0.050	mg/L	<0.050	---	---	---	---	---
Chloride	16887-00-6	E235.Cl-L/CG	0.10	mg/L	9.56	---	---	---	---	---
Fluoride	16984-48-8	E235.F/CG	0.020	mg/L	0.157	---	---	---	---	---
Kjeldahl nitrogen, total [TKN]	---	E318/CG	0.050	mg/L	0.202	---	---	---	---	---
Nitrate (as N)	14797-55-8	E235.NO3-L/C G	0.0050	mg/L	1.12	---	---	---	---	---
Nitrite (as N)	14797-65-0	E235.NO2-L/C G	0.0010	mg/L	<0.0010	---	---	---	---	---
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/CG	0.0010	mg/L	<0.0010	---	---	---	---	---
Phosphorus, total	7723-14-0	E372-U/CG	0.0020	mg/L	<0.0020	---	---	---	---	---
Sulfate (as SO4)	14808-79-8	E235.SO4/CG	0.30	mg/L	46.2	---	---	---	---	---
<b>Organic / Inorganic Carbon</b>										



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_DW-08-01_	----	----	----	----
					WP_2023_10_2					
					4_NP					
Client sampling date / time					25-Oct-2023 09:36	----	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	CG2315220-001	-----	-----	-----	-----	
					Result	----	----	----	----	
<b>Organic / Inorganic Carbon</b>										
Carbon, dissolved organic [DOC]	----	E358-L/CG	0.50	mg/L	<0.50	----	----	----	----	
Carbon, total organic [TOC]	----	E355-L/CG	0.50	mg/L	<0.50	----	----	----	----	
<b>Ion Balance</b>										
Anion sum	----	EC101/CG	0.10	meq/L	5.00	----	----	----	----	
Cation sum	----	EC101/CG	0.10	meq/L	4.72	----	----	----	----	
Ion balance (cations/anions)	----	EC101/CG	0.010	%	94.4	----	----	----	----	
Ion balance (APHA)	----	EC101/CG	0.01	%	-2.88	----	----	----	----	
<b>Total Metals</b>										
Aluminum, total	7429-90-5	E420/CG	0.0030	mg/L	<0.0030	----	----	----	----	
Antimony, total	7440-36-0	E420/CG	0.00010	mg/L	<0.00010	----	----	----	----	
Arsenic, total	7440-38-2	E420/CG	0.00010	mg/L	<0.00010	----	----	----	----	
Barium, total	7440-39-3	E420/CG	0.00010	mg/L	0.153	----	----	----	----	
Beryllium, total	7440-41-7	E420/CG	0.020	µg/L	<0.020	----	----	----	----	
Bismuth, total	7440-69-9	E420/CG	0.000050	mg/L	<0.000050	----	----	----	----	
Boron, total	7440-42-8	E420/CG	0.010	mg/L	<0.010	----	----	----	----	
Cadmium, total	7440-43-9	E420/CG	0.0050	µg/L	<0.0050	----	----	----	----	
Calcium, total	7440-70-2	E420/CG	0.050	mg/L	58.5	----	----	----	----	
Chromium, total	7440-47-3	E420.Cr-L/CG	0.00010	mg/L	0.00024	----	----	----	----	
Cobalt, total	7440-48-4	E420/CG	0.10	µg/L	<0.10	----	----	----	----	
Copper, total	7440-50-8	E420/CG	0.00050	mg/L	0.00184	----	----	----	----	
Iron, total	7439-89-6	E420/CG	0.010	mg/L	<0.010	----	----	----	----	
Lead, total	7439-92-1	E420/CG	0.000050	mg/L	0.000054	----	----	----	----	
Lithium, total	7439-93-2	E420/CG	0.0010	mg/L	0.0053	----	----	----	----	
Magnesium, total	7439-95-4	E420/CG	0.0050	mg/L	20.1	----	----	----	----	
Manganese, total	7439-96-5	E420/CG	0.00010	mg/L	0.00047	----	----	----	----	
Molybdenum, total	7439-98-7	E420/CG	0.000050	mg/L	0.000822	----	----	----	----	
Nickel, total	7440-02-0	E420/CG	0.00050	mg/L	<0.00050	----	----	----	----	
Potassium, total	7440-09-7	E420/CG	0.050	mg/L	0.753	----	----	----	----	
Selenium, total	7782-49-2	E420/CG	0.050	µg/L	4.86	----	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	RG_DW-08-01_	----	----	----	----
(Matrix: Water)					WP_2023_10_2					
					4_NP					
Client sampling date / time					25-Oct-2023 09:36	----	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	CG2315220-001	-----	-----	-----	-----	-----
					Result	----	----	----	----	----
<b>Total Metals</b>										
Silicon, total	7440-21-3	E420/CG	0.10	mg/L	3.30	----	----	----	----	----
Silver, total	7440-22-4	E420/CG	0.000010	mg/L	<0.000010	----	----	----	----	----
Sodium, total	7440-23-5	E420/CG	0.050	mg/L	5.59	----	----	----	----	----
Strontium, total	7440-24-6	E420/CG	0.00020	mg/L	0.193	----	----	----	----	----
Sulfur, total	7704-34-9	E420/CG	0.50	mg/L	16.9	----	----	----	----	----
Thallium, total	7440-28-0	E420/CG	0.000010	mg/L	<0.000010	----	----	----	----	----
Tin, total	7440-31-5	E420/CG	0.00010	mg/L	<0.00010	----	----	----	----	----
Titanium, total	7440-32-6	E420/CG	0.00030	mg/L	<0.00030	----	----	----	----	----
Uranium, total	7440-61-1	E420/CG	0.000010	mg/L	0.000871	----	----	----	----	----
Vanadium, total	7440-62-2	E420/CG	0.00050	mg/L	<0.00050	----	----	----	----	----
Zinc, total	7440-66-6	E420/CG	0.0030	mg/L	0.135	----	----	----	----	----
<b>Dissolved Metals</b>										
Aluminum, dissolved	7429-90-5	E421/CG	0.0010	mg/L	<0.0010	----	----	----	----	----
Antimony, dissolved	7440-36-0	E421/CG	0.00010	mg/L	<0.00010	----	----	----	----	----
Arsenic, dissolved	7440-38-2	E421/CG	0.00010	mg/L	<0.00010	----	----	----	----	----
Barium, dissolved	7440-39-3	E421/CG	0.00010	mg/L	0.159	----	----	----	----	----
Beryllium, dissolved	7440-41-7	E421/CG	0.020	µg/L	<0.020	----	----	----	----	----
Bismuth, dissolved	7440-69-9	E421/CG	0.000050	mg/L	<0.000050	----	----	----	----	----
Boron, dissolved	7440-42-8	E421/CG	0.010	mg/L	<0.010	----	----	----	----	----
Cadmium, dissolved	7440-43-9	E421/CG	0.0050	µg/L	<0.0050	----	----	----	----	----
Calcium, dissolved	7440-70-2	E421/CG	0.050	mg/L	57.0	----	----	----	----	----
Chromium, dissolved	7440-47-3	E421.Cr-L/CG	0.00010	mg/L	0.00017	----	----	----	----	----
Cobalt, dissolved	7440-48-4	E421/CG	0.10	µg/L	<0.10	----	----	----	----	----
Copper, dissolved	7440-50-8	E421/CG	0.00020	mg/L	0.00171	----	----	----	----	----
Iron, dissolved	7439-89-6	E421/CG	0.010	mg/L	<0.010	----	----	----	----	----
Lead, dissolved	7439-92-1	E421/CG	0.000050	mg/L	<0.000050	----	----	----	----	----
Lithium, dissolved	7439-93-2	E421/CG	0.0010	mg/L	0.0050	----	----	----	----	----
Magnesium, dissolved	7439-95-4	E421/CG	0.0050	mg/L	19.7	----	----	----	----	----
Manganese, dissolved	7439-96-5	E421/CG	0.00010	mg/L	0.00045	----	----	----	----	----



**Analytical Results**

Sub-Matrix: Water (Matrix: Water)					Client sample ID	RG_DW-08-01_ WP_2023_10_2 4_NP	----	----	----	----
Client sampling date / time					25-Oct-2023 09:36	----	----	----	----	
Analyte	CAS Number	Method/Lab	LOR	Unit	CG2315220-001	-----	-----	-----	-----	
					Result	----	----	----	----	
<b>Dissolved Metals</b>										
Molybdenum, dissolved	7439-98-7	E421/CG	0.000050	mg/L	0.000814	----	----	----	----	
Nickel, dissolved	7440-02-0	E421/CG	0.000050	mg/L	<0.00050	----	----	----	----	
Potassium, dissolved	7440-09-7	E421/CG	0.050	mg/L	0.741	----	----	----	----	
Selenium, dissolved	7782-49-2	E421/CG	0.050	µg/L	5.60	----	----	----	----	
Silicon, dissolved	7440-21-3	E421/CG	0.050	mg/L	3.22	----	----	----	----	
Silver, dissolved	7440-22-4	E421/CG	0.000010	mg/L	<0.000010	----	----	----	----	
Sodium, dissolved	7440-23-5	E421/CG	0.050	mg/L	5.35	----	----	----	----	
Strontium, dissolved	7440-24-6	E421/CG	0.000020	mg/L	0.197	----	----	----	----	
Sulfur, dissolved	7704-34-9	E421/CG	0.50	mg/L	16.5	----	----	----	----	
Thallium, dissolved	7440-28-0	E421/CG	0.000010	mg/L	<0.000010	----	----	----	----	
Tin, dissolved	7440-31-5	E421/CG	0.00010	mg/L	<0.00010	----	----	----	----	
Titanium, dissolved	7440-32-6	E421/CG	0.00030	mg/L	<0.00030	----	----	----	----	
Uranium, dissolved	7440-61-1	E421/CG	0.000010	mg/L	0.000834	----	----	----	----	
Vanadium, dissolved	7440-62-2	E421/CG	0.000050	mg/L	<0.00050	----	----	----	----	
Zinc, dissolved	7440-66-6	E421/CG	0.0010	mg/L	0.148	----	----	----	----	
Dissolved metals filtration location	----	EP421/CG	-	-	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.



## QUALITY CONTROL INTERPRETIVE REPORT

<p><b>Work Order</b> : <b>CG2315220</b></p> <p><b>Client</b> : <b>Teck Coal Limited</b></p> <p><b>Contact</b> : Sabrina Gilmore</p> <p><b>Address</b> : 421 Pine Avenue Sparwood BC Canada V0B 2G0</p> <p><b>Telephone</b> : ----</p> <p><b>Project</b> : REGIONAL EFFECT PROGRAM</p> <p><b>PO</b> : VPO00890272</p> <p><b>C-O-C number</b> : COC_2023_Q4</p> <p><b>Sampler</b> : SABRINA GILMORE</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : Teck Coal Master Quote</p> <p><b>No. of samples received</b> : 1</p> <p><b>No. of samples analysed</b> : 1</p>	<p><b>Page</b> : 1 of 12</p> <p><b>Laboratory</b> : ALS Environmental - Calgary</p> <p><b>Account Manager</b> : Lyudmyla Shvets</p> <p><b>Address</b> : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p><b>Telephone</b> : +1 403 407 1800</p> <p><b>Date Samples Received</b> : 26-Oct-2023 09:20</p> <p><b>Issue Date</b> : 02-Nov-2023 14:17</p>
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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 : Analytical Method 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	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
<b>Amber glass total (sulfuric acid)</b> RG_DW-08-01_WP_2023_10_24_NP	E298	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	26-Oct-2023	28 days	1 days	✔
<b>Anions and Nutrients : Bromide in Water by IC (Low Level)</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E235.Br-L	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	26-Oct-2023	28 days	1 days	✔
<b>Anions and Nutrients : Chloride in Water by IC (Low Level)</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E235.Cl-L	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	26-Oct-2023	28 days	1 days	✔
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E378-U	25-Oct-2023	27-Oct-2023	3 days	2 days	✔	27-Oct-2023	3 days	2 days	✔
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E235.F	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	26-Oct-2023	28 days	1 days	✔
<b>Anions and Nutrients : Nitrate in Water by IC (Low Level)</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E235.NO3-L	25-Oct-2023	26-Oct-2023	3 days	1 days	✔	26-Oct-2023	3 days	1 days	✔
<b>Anions and Nutrients : Nitrite in Water by IC (Low Level)</b>										
<b>HDPE</b> RG_DW-08-01_WP_2023_10_24_NP	E235.NO2-L	25-Oct-2023	26-Oct-2023	3 days	1 days	✔	26-Oct-2023	3 days	1 days	✔



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

Analyte Group : Analytical Method 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	
<b>Anions and Nutrients : Sulfate in Water by IC</b>										
HDPE RG_DW-08-01_WP_2023_10_24_NP	E235.SO4	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	26-Oct-2023	28 days	1 days	✔
<b>Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)</b>										
Amber glass total (sulfuric acid) RG_DW-08-01_WP_2023_10_24_NP	E318	25-Oct-2023	28-Oct-2023	28 days	3 days	✔	28-Oct-2023	28 days	3 days	✔
<b>Anions and Nutrients : Total Phosphorus by Colourimetry (0.002 mg/L)</b>										
Amber glass total (sulfuric acid) RG_DW-08-01_WP_2023_10_24_NP	E372-U	25-Oct-2023	27-Oct-2023	28 days	2 days	✔	28-Oct-2023	28 days	3 days	✔
<b>Dissolved Metals : Dissolved Chromium in Water by CRC ICPMS (Low Level)</b>										
HDPE - dissolved (lab preserved) RG_DW-08-01_WP_2023_10_24_NP	E421.Cr-L	25-Oct-2023	30-Oct-2023	180 days	5 days	✔	31-Oct-2023	180 days	6 days	✔
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>										
HDPE - dissolved (lab preserved) RG_DW-08-01_WP_2023_10_24_NP	E421	25-Oct-2023	30-Oct-2023	180 days	5 days	✔	31-Oct-2023	180 days	6 days	✔
<b>Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)</b>										
Amber glass dissolved (sulfuric acid) RG_DW-08-01_WP_2023_10_24_NP	E358-L	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	28-Oct-2023	28 days	3 days	✔
<b>Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)</b>										
Amber glass total (sulfuric acid) RG_DW-08-01_WP_2023_10_24_NP	E355-L	25-Oct-2023	26-Oct-2023	28 days	1 days	✔	28-Oct-2023	28 days	3 days	✔
<b>Physical Tests : Acidity by Titration</b>										
HDPE RG_DW-08-01_WP_2023_10_24_NP	E283	25-Oct-2023	27-Oct-2023	14 days	2 days	✔	27-Oct-2023	14 days	2 days	✔
<b>Physical Tests : Alkalinity Species by Titration</b>										
HDPE RG_DW-08-01_WP_2023_10_24_NP	E290	25-Oct-2023	29-Oct-2023	14 days	4 days	✔	29-Oct-2023	14 days	4 days	✔



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

Analyte Group : Analytical Method 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		
<b>Physical Tests : Conductivity in Water</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E100	25-Oct-2023	29-Oct-2023	28 days	4 days	✓	29-Oct-2023	28 days	4 days	✓	
<b>Physical Tests : ORP by Electrode</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E125	25-Oct-2023	----	----	----		01-Nov-2023	0.25 hrs	172 hrs	* EHTR-FM	
<b>Physical Tests : pH by Meter</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E108	25-Oct-2023	29-Oct-2023	0.25 hrs	95 hrs	* EHTR-FM	29-Oct-2023	0.25 hrs	95 hrs	* EHTR-FM	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E162	25-Oct-2023	----	----	----		31-Oct-2023	7 days	6 days	✓	
<b>Physical Tests : TSS by Gravimetry (Low Level)</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E160-L	25-Oct-2023	----	----	----		01-Nov-2023	7 days	7 days	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE RG_DW-08-01_WP_2023_10_24_NP	E121	25-Oct-2023	----	----	----		26-Oct-2023	3 days	1 days	✓	
<b>Total Metals : Total Chromium in Water by CRC ICPMS (Low Level)</b>											
HDPE - total (lab preserved) RG_DW-08-01_WP_2023_10_24_NP	E420.Cr-L	25-Oct-2023	30-Oct-2023	180 days	5 days	✓	31-Oct-2023	180 days	6 days	✓	
<b>Total Metals : Total Metals in Water by CRC ICPMS</b>											
HDPE - total (lab preserved) RG_DW-08-01_WP_2023_10_24_NP	E420	25-Oct-2023	30-Oct-2023	180 days	5 days	✓	31-Oct-2023	180 days	6 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	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Acidity by Titration	E283	1209794	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1212205	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1207767	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1208445	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1208450	1	12	8.3	5.0	✓
Conductivity in Water	E100	1212206	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1212880	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1212879	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1208619	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1209026	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1208443	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1208446	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	1208447	1	18	5.5	5.0	✓
ORP by Electrode	E125	1217964	1	20	5.0	5.0	✓
pH by Meter	E108	1212204	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1208448	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	1213655	1	20	5.0	5.0	✓
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1212878	1	5	20.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1207785	1	20	5.0	5.0	✓
Total Metals in Water by CRC ICPMS	E420	1212877	1	8	12.5	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1208620	1	20	5.0	5.0	✓
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1209160	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1207984	1	20	5.0	5.0	✓
<b>Laboratory Control Samples (LCS)</b>							
Acidity by Titration	E283	1209794	1	20	5.0	5.0	✓
Alkalinity Species by Titration	E290	1212205	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	1207767	1	20	5.0	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	1208445	1	13	7.6	5.0	✓
Chloride in Water by IC (Low Level)	E235.Cl-L	1208450	1	12	8.3	5.0	✓
Conductivity in Water	E100	1212206	1	20	5.0	5.0	✓
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1212880	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1212879	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1208619	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1209026	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1208443	1	18	5.5	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	1208446	1	18	5.5	5.0	✓



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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Nitrite in Water by IC (Low Level)	E235.NO2-L	1208447	1	18	5.5	5.0	✔
ORP by Electrode	E125	1217964	1	20	5.0	5.0	✔
pH by Meter	E108	1212204	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1208448	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	1213655	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1212878	1	5	20.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1207785	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1212877	1	8	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1208620	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1209160	1	20	5.0	5.0	✔
TSS by Gravimetry (Low Level)	E160-L	1213653	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1207984	1	20	5.0	5.0	✔
<b>Method Blanks (MB)</b>							
Acidity by Titration	E283	1209794	1	20	5.0	5.0	✔
Alkalinity Species by Titration	E290	1212205	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	1207767	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1208445	1	13	7.6	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	1208450	1	12	8.3	5.0	✔
Conductivity in Water	E100	1212206	1	20	5.0	5.0	✔
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1212880	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1212879	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1208619	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1209026	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1208443	1	18	5.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1208446	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1208447	1	18	5.5	5.0	✔
Sulfate in Water by IC	E235.SO4	1208448	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	1213655	1	20	5.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1212878	1	5	20.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1207785	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1212877	1	8	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1208620	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1209160	1	20	5.0	5.0	✔
TSS by Gravimetry (Low Level)	E160-L	1213653	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1207984	1	20	5.0	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1207767	1	20	5.0	5.0	✔
Bromide in Water by IC (Low Level)	E235.Br-L	1208445	1	13	7.6	5.0	✔
Chloride in Water by IC (Low Level)	E235.Cl-L	1208450	1	12	8.3	5.0	✔



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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Dissolved Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L	1212880	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1212879	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1208619	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1209026	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1208443	1	18	5.5	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	1208446	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	1208447	1	18	5.5	5.0	✔
Sulfate in Water by IC	E235.SO4	1208448	1	10	10.0	5.0	✔
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L	1212878	1	5	20.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	1207785	1	20	5.0	5.0	✔
Total Metals in Water by CRC ICPMS	E420	1212877	1	8	12.5	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	1208620	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.002 mg/L)	E372-U	1209160	1	20	5.0	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
Conductivity in Water	E100 ALS Environmental - Calgary	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 ALS Environmental - Calgary	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 ALS Environmental - Calgary	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 ALS Environmental - Calgary	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 (Low Level)	E160-L ALS Environmental - Calgary	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 ± 1°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 ALS Environmental - Calgary	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 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC (Low Level)	E235.Br-L ALS Environmental - Calgary	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC (Low Level)	E235.Cl-L ALS Environmental - Calgary	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Calgary	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Nitrite in Water by IC (Low Level)	E235.NO2-L ALS Environmental - Calgary	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 ALS Environmental - Calgary	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Calgary	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Acidity by Titration	E283 ALS Environmental - Calgary	Water	APHA 2310 B (mod)	Acidity is determined by potentiometric titration to pH endpoint of 8.3
Alkalinity Species by Titration	E290 ALS Environmental - Calgary	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 ALS Environmental - Calgary	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)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Calgary	Water	Method Fialab 100, 2018	TKN 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).
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L ALS Environmental - Calgary	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Calgary	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 <sub>2</sub> . 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 Phosphorus by Colourimetry (0.002 mg/L)	E372-U ALS Environmental - Calgary	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 ALS Environmental - Calgary	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 ALS Environmental - Calgary	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.
Total Chromium in Water by CRC ICPMS (Low Level)	E420.Cr-L ALS Environmental - Calgary	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Calgary	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 Chromium in Water by CRC ICPMS (Low Level)	E421.Cr-L ALS Environmental - Calgary	Water	APHA 3030 B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Calgary	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> 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.
Ion Balance using Dissolved Metals	EC101 ALS Environmental - Calgary	Water	APHA 1030E	Cation Sum, Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.  Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Calgary	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Digestion for TKN in water	EP318 ALS Environmental - Calgary	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355 ALS Environmental - Calgary	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Calgary	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372 ALS Environmental - Calgary	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Calgary	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

## QUALITY CONTROL REPORT

<p><b>Work Order</b> : <b>CG2315220</b></p> <p>Client : Teck Coal Limited</p> <p>Contact : Sabrina Gilmore</p> <p>Address : 421 Pine Avenue Sparwood BC Canada V0B 2G0</p> <p>Telephone :</p> <p>Project : REGIONAL EFFECT PROGRAM</p> <p>PO : VPO00890272</p> <p>C-O-C number : COC_2023_Q4</p> <p>Sampler : SABRINA GILMORE</p> <p>Site : ---</p> <p>Quote number : Teck Coal Master Quote</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</p>	<p>Page : 1 of 17</p> <p>Laboratory : ALS Environmental - Calgary</p> <p>Account Manager : Lyudmyla Shvets</p> <p>Address : 2559 29th Street NE Calgary, Alberta Canada T1Y 7B5</p> <p>Telephone : +1 403 407 1800</p> <p>Date Samples Received : 26-Oct-2023 09:20</p> <p>Date Analysis Commenced : 26-Oct-2023</p> <p>Issue Date : 02-Nov-2023 14:17</p>
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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
- 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>
Anthony Calero	Supervisor - Inorganic	Calgary Inorganics, Calgary, Alberta
Elke Tabora		Calgary Inorganics, Calgary, Alberta
Harpreet Chawla	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Katarzyna Glinka	Analyst	Calgary Inorganics, Calgary, Alberta
Katrina Tang		Calgary Metals, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Calgary Inorganics, Calgary, Alberta
Kevin Baxter	Team Leader - Inorganics	Calgary Metals, Calgary, Alberta
Ruifang Zheng	Analyst	Calgary Inorganics, Calgary, Alberta



## 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

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

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### 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: <b>Water</b>					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
<b>Physical Tests (QC Lot: 1207984)</b>											
CG2315214-001	Anonymous	Turbidity	----	E121	0.10	NTU	1.40	1.26	0.14	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1209794)</b>											
CG2315215-001	Anonymous	Acidity (as CaCO3)	----	E283	2.0	mg/L	<2.0	<2.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1212204)</b>											
CG2315219-001	Anonymous	pH	----	E108	0.10	pH units	8.05	8.07	0.248%	4%	----
<b>Physical Tests (QC Lot: 1212205)</b>											
CG2315219-001	Anonymous	Alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	461	472	2.25%	20%	----
		Alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	461	472	2.25%	20%	----
<b>Physical Tests (QC Lot: 1212206)</b>											
CG2315219-001	Anonymous	Conductivity	----	E100	2.0	µS/cm	2310	2300	0.434%	10%	----
<b>Physical Tests (QC Lot: 1213655)</b>											
CG2315219-003	Anonymous	Solids, total dissolved [TDS]	----	E162	40	mg/L	1440	1620	11.8%	20%	----
<b>Physical Tests (QC Lot: 1217964)</b>											
CG2315219-010	Anonymous	Oxidation-reduction potential [ORP]	----	E125	0.10	mV	314	314	0.0637%	15%	----
<b>Anions and Nutrients (QC Lot: 1207767)</b>											
CG2315215-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1207785)</b>											
CG2315204-012	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1208443)</b>											
CG2315192-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.072	0.071	0.001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1208445)</b>											
CG2315192-001	Anonymous	Bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1208446)</b>											
CG2315192-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.207	0.206	0.582%	20%	----
<b>Anions and Nutrients (QC Lot: 1208447)</b>											
CG2315192-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1208448)</b>											
CG2315192-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	82.9	82.2	0.837%	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
<b>Anions and Nutrients (QC Lot: 1208450)</b>											
CG2315200-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	0.50	mg/L	256	258	0.626%	20%	----
<b>Anions and Nutrients (QC Lot: 1209026)</b>											
CG2315219-008	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1209160)</b>											
CG2315215-003	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1208619)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 1208620)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 1212877)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Aluminum, total	7429-90-5	E420	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, total	7440-38-2	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, total	7440-39-3	E420	0.00010	mg/L	0.153	0.146	4.43%	20%	----
		Beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.020 µg/L	<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	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, total	7440-43-9	E420	0.000050	mg/L	<0.0050 µg/L	<0.000050	0	Diff <2x LOR	----
		Calcium, total	7440-70-2	E420	0.050	mg/L	58.5	58.5	0.122%	20%	----
		Cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		Copper, total	7440-50-8	E420	0.00050	mg/L	0.00184	0.00179	0.00005	Diff <2x LOR	----
		Iron, total	7439-89-6	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, total	7439-92-1	E420	0.000050	mg/L	0.000054	0.000050	0.000004	Diff <2x LOR	----
		Lithium, total	7439-93-2	E420	0.0010	mg/L	0.0053	0.0051	0.0002	Diff <2x LOR	----
		Magnesium, total	7439-95-4	E420	0.0050	mg/L	20.1	19.7	1.98%	20%	----
		Manganese, total	7439-96-5	E420	0.00010	mg/L	0.00047	0.00047	0.000002	Diff <2x LOR	----
		Molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000822	0.000789	3.99%	20%	----
		Nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Potassium, total	7440-09-7	E420	0.050	mg/L	0.753	0.738	2.08%	20%	----		
Selenium, total	7782-49-2	E420	0.000050	mg/L	4.86 µg/L	0.00490	0.850%	20%	----		
Silicon, total	7440-21-3	E420	0.10	mg/L	3.30	3.25	1.41%	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	0.050	mg/L	5.59	5.52	1.25%	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
<b>Total Metals (QC Lot: 1212877) - continued</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Strontium, total	7440-24-6	E420	0.00020	mg/L	0.193	0.190	1.77%	20%	----
		Sulfur, total	7704-34-9	E420	0.50	mg/L	16.9	16.8	0.547%	20%	----
		Thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, total	7440-32-6	E420	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Uranium, total	7440-61-1	E420	0.000010	mg/L	0.000871	0.000849	2.52%	20%	----
		Vanadium, total	7440-62-2	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, total	7440-66-6	E420	0.0030	mg/L	0.135	0.134	1.21%	20%	----
<b>Total Metals (QC Lot: 1212878)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Chromium, total	7440-47-3	E420.Cr-L	0.00010	mg/L	0.00024	0.00024	0.000009	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1212879)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.159	0.152	4.65%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.020 µg/L	<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	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0050 µg/L	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	57.0	57.5	0.987%	20%	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.10 µg/L	<0.00010	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00171	0.00176	0.00004	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		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	0.0050	0.0049	0.0001	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	19.7	19.6	0.778%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00045	0.00043	0.00002	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000814	0.000807	0.847%	20%	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.741	0.739	0.287%	20%	----		
Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	5.60 µg/L	0.00556	0.672%	20%	----		
Silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.22	3.18	1.07%	20%	----		
Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----		



Sub-Matrix: <b>Water</b>					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
<b>Dissolved Metals (QC Lot: 1212879) - continued</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Sodium, dissolved	7440-23-5	E421	0.050	mg/L	5.35	5.34	0.0641%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.197	0.193	1.90%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	16.5	16.4	0.885%	20%	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	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	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000834	0.000846	1.45%	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	0.148	0.149	0.808%	20%	----		
<b>Dissolved Metals (QC Lot: 1212880)</b>											
CG2315220-001	RG_DW-08-01_WP_2023_10_24_NP	Chromium, dissolved	7440-47-3	E421.Cr-L	0.00010	mg/L	0.00017	0.00020	0.00003	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
<b>Physical Tests (QCLot: 1207984)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1209794)</b>						
Acidity (as CaCO3)	---	E283	2	mg/L	<2.0	---
<b>Physical Tests (QCLot: 1212205)</b>						
Alkalinity, bicarbonate (as CaCO3)	---	E290	1	mg/L	1.6	---
Alkalinity, carbonate (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, hydroxide (as CaCO3)	---	E290	1	mg/L	<1.0	---
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	1.6	---
<b>Physical Tests (QCLot: 1212206)</b>						
Conductivity	---	E100	1	µS/cm	<1.0	---
<b>Physical Tests (QCLot: 1213653)</b>						
Solids, total suspended [TSS]	---	E160-L	1	mg/L	<1.0	---
<b>Physical Tests (QCLot: 1213655)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Anions and Nutrients (QCLot: 1207767)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1207785)</b>						
Kjeldahl nitrogen, total [TKN]	---	E318	0.05	mg/L	<0.050	---
<b>Anions and Nutrients (QCLot: 1208443)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1208445)</b>						
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	---
<b>Anions and Nutrients (QCLot: 1208446)</b>						
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1208447)</b>						
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	---
<b>Anions and Nutrients (QCLot: 1208448)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
<b>Anions and Nutrients (QCLot: 1208450)</b>						
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	<0.10	---
<b>Anions and Nutrients (QCLot: 1209026)</b>						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 1209160)</b>						
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	<0.0020	---
<b>Organic / Inorganic Carbon (QCLot: 1208619)</b>						
Carbon, dissolved organic [DOC]	---	E358-L	0.5	mg/L	<0.50	---
<b>Organic / Inorganic Carbon (QCLot: 1208620)</b>						
Carbon, total organic [TOC]	---	E355-L	0.5	mg/L	<0.50	---
<b>Total Metals (QCLot: 1212877)</b>						
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	---
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	---
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	---
Potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	---
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	---
Thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	---
Tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	---
Titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	---
Uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	---



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (QCLot: 1212877) - continued</b>						
Vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	---
Zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	---
<b>Total Metals (QCLot: 1212878)</b>						
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	<0.00010	---
<b>Dissolved Metals (QCLot: 1212879)</b>						
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	---
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	---
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	---
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	---
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	---
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	---
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	---
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	---
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	---



Sub-Matrix: **Water**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
<b>Dissolved Metals (QCLot: 1212879) - continued</b>						
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
<b>Dissolved Metals (QCLot: 1212880)</b>						
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	<0.00010	----



## 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

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	
<b>Physical Tests (QCLot: 1207984)</b>									
Turbidity	----	E121	0.1	NTU	200 NTU	95.0	85.0	115	----
<b>Physical Tests (QCLot: 1209794)</b>									
Acidity (as CaCO3)	----	E283	2	mg/L	50 mg/L	99.7	85.0	115	----
<b>Physical Tests (QCLot: 1212204)</b>									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
<b>Physical Tests (QCLot: 1212205)</b>									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	98.9	85.0	115	----
<b>Physical Tests (QCLot: 1212206)</b>									
Conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
<b>Physical Tests (QCLot: 1213653)</b>									
Solids, total suspended [TSS]	----	E160-L	1	mg/L	150 mg/L	100	85.0	115	----
<b>Physical Tests (QCLot: 1213655)</b>									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	90.9	85.0	115	----
<b>Physical Tests (QCLot: 1217964)</b>									
Oxidation-reduction potential [ORP]	----	E125	----	mV	220 mV	96.9	95.4	104	----
<b>Anions and Nutrients (QCLot: 1207767)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
<b>Anions and Nutrients (QCLot: 1207785)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208443)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	106	90.0	110	----
<b>Anions and Nutrients (QCLot: 1208445)</b>									
Bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
<b>Anions and Nutrients (QCLot: 1208446)</b>									
Nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
<b>Anions and Nutrients (QCLot: 1208447)</b>									
Nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.3	90.0	110	----
<b>Anions and Nutrients (QCLot: 1208448)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
<b>Anions and Nutrients (QCLot: 1208450)</b>									
Chloride	16887-00-6	E235.Cl-L	0.1	mg/L	100 mg/L	102	90.0	110	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1209026)</b>									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	101	80.0	120	----
<b>Anions and Nutrients (QCLot: 1209160)</b>									
Phosphorus, total	7723-14-0	E372-U	0.002	mg/L	0.03 mg/L	97.4	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 1208619)</b>									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	88.8	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 1208620)</b>									
Carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	93.5	80.0	120	----
<b>Total Metals (QCLot: 1212877)</b>									
Aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	101	80.0	120	----
Antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	97.1	80.0	120	----
Arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	101	80.0	120	----
Barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	98.6	80.0	120	----
Beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	95.0	80.0	120	----
Bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	95.3	80.0	120	----
Boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	91.5	80.0	120	----
Cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	97.3	80.0	120	----
Calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	98.6	80.0	120	----
Cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	100	80.0	120	----
Copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	96.0	80.0	120	----
Iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	116	80.0	120	----
Lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	99.0	80.0	120	----
Lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.0	80.0	120	----
Magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	97.5	80.0	120	----
Manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	99.9	80.0	120	----
Molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	98.2	80.0	120	----
Nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	98.5	80.0	120	----
Potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
Selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	94.6	80.0	120	----
Silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	103	60.0	140	----
Silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	93.8	80.0	120	----
Sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
Strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	101	80.0	120	----
Sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	98.0	80.0	120	----
Thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	94.9	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
<b>Total Metals (QCLot: 1212877) - continued</b>									
Tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	98.7	80.0	120	----
Titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	99.2	80.0	120	----
Uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	98.4	80.0	120	----
Vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	96.7	80.0	120	----
<b>Total Metals (QCLot: 1212878)</b>									
Chromium, total	7440-47-3	E420.Cr-L	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
<b>Dissolved Metals (QCLot: 1212879)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	104	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.9	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	102	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	98.4	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	97.6	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	94.1	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	95.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	97.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.7	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.5	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	97.0	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	117	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	98.7	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	98.9	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	102	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	98.2	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	98.8	80.0	120	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	99.3	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	95.7	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	105	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	93.6	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	98.4	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	95.4	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	97.7	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
<b>Dissolved Metals (QCLot: 1212879) - continued</b>									
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	98.8	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	99.9	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	96.7	80.0	120	----
<b>Dissolved Metals (QCLot: 1212880)</b>									
Chromium, dissolved	7440-47-3	E421.Cr-L	0.0001	mg/L	0.25 mg/L	104	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
<b>Anions and Nutrients (QCLot: 1207767)</b>										
CG2315215-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.106 mg/L	0.1 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 1207785)</b>										
CG2315204-013	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.66 mg/L	2.5 mg/L	106	70.0	130	----
<b>Anions and Nutrients (QCLot: 1208443)</b>										
CG2315192-002	Anonymous	Fluoride	16984-48-8	E235.F	1.08 mg/L	1 mg/L	108	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208445)</b>										
CG2315192-002	Anonymous	Bromide	24959-67-9	E235.Br-L	0.549 mg/L	0.5 mg/L	110	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208446)</b>										
CG2315192-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3-L	2.76 mg/L	2.5 mg/L	110	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208447)</b>										
CG2315192-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2-L	0.444 mg/L	0.5 mg/L	88.7	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208448)</b>										
CG2315192-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	104 mg/L	100 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 1208450)</b>										
CG2315215-001	Anonymous	Chloride	16887-00-6	E235.Cl-L	102 mg/L	100 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 1209026)</b>										
CG2315219-009	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0527 mg/L	0.05 mg/L	105	70.0	130	----
<b>Anions and Nutrients (QCLot: 1209160)</b>										
CG2315219-001	Anonymous	Phosphorus, total	7723-14-0	E372-U	0.0477 mg/L	0.05 mg/L	95.4	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1208619)</b>										
CG2315220-001	RG_DW-08-01_WP_2023_1 0_24_NP	Carbon, dissolved organic [DOC]	----	E358-L	5.07 mg/L	5 mg/L	101	70.0	130	----
<b>Organic / Inorganic Carbon (QCLot: 1208620)</b>										
CG2315220-001	RG_DW-08-01_WP_2023_1 0_24_NP	Carbon, total organic [TOC]	----	E355-L	5.62 mg/L	5 mg/L	112	70.0	130	----
<b>Total Metals (QCLot: 1212877)</b>										
CG2315221-001	Anonymous	Aluminum, total	7429-90-5	E420	2.02 mg/L	2 mg/L	101	70.0	130	----
		Antimony, total	7440-36-0	E420	0.198 mg/L	0.2 mg/L	99.2	70.0	130	----
		Arsenic, total	7440-38-2	E420	0.197 mg/L	0.2 mg/L	98.5	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
<b>Total Metals (QCLot: 1212877) - continued</b>										
CG2315221-001	Anonymous	Barium, total	7440-39-3	E420	0.190 mg/L	0.2 mg/L	95.0	70.0	130	----
		Beryllium, total	7440-41-7	E420	0.402 mg/L	0.4 mg/L	100	70.0	130	----
		Bismuth, total	7440-69-9	E420	0.0986 mg/L	0.1 mg/L	98.6	70.0	130	----
		Boron, total	7440-42-8	E420	0.973 mg/L	1 mg/L	97.3	70.0	130	----
		Cadmium, total	7440-43-9	E420	0.0391 mg/L	0.04 mg/L	97.6	70.0	130	----
		Calcium, total	7440-70-2	E420	39.9 mg/L	40 mg/L	99.7	70.0	130	----
		Cobalt, total	7440-48-4	E420	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		Copper, total	7440-50-8	E420	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		Iron, total	7439-89-6	E420	19.7 mg/L	20 mg/L	98.4	70.0	130	----
		Lead, total	7439-92-1	E420	0.199 mg/L	0.2 mg/L	99.4	70.0	130	----
		Lithium, total	7439-93-2	E420	0.997 mg/L	1 mg/L	99.7	70.0	130	----
		Magnesium, total	7439-95-4	E420	9.96 mg/L	10 mg/L	99.6	70.0	130	----
		Manganese, total	7439-96-5	E420	0.199 mg/L	0.2 mg/L	99.5	70.0	130	----
		Molybdenum, total	7439-98-7	E420	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		Nickel, total	7440-02-0	E420	0.405 mg/L	0.4 mg/L	101	70.0	130	----
		Potassium, total	7440-09-7	E420	39.7 mg/L	40 mg/L	99.3	70.0	130	----
		Selenium, total	7782-49-2	E420	0.396 mg/L	0.4 mg/L	99.0	70.0	130	----
		Silicon, total	7440-21-3	E420	89.1 mg/L	100 mg/L	89.1	70.0	130	----
		Silver, total	7440-22-4	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		Sodium, total	7440-23-5	E420	20.9 mg/L	20 mg/L	104	70.0	130	----
		Strontium, total	7440-24-6	E420	0.200 mg/L	0.2 mg/L	100	70.0	130	----
		Sulfur, total	7704-34-9	E420	195 mg/L	200 mg/L	97.5	70.0	130	----
		Thallium, total	7440-28-0	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		Tin, total	7440-31-5	E420	0.196 mg/L	0.2 mg/L	98.2	70.0	130	----
		Titanium, total	7440-32-6	E420	0.401 mg/L	0.4 mg/L	100	70.0	130	----
		Uranium, total	7440-61-1	E420	0.0397 mg/L	0.04 mg/L	99.4	70.0	130	----
		Vanadium, total	7440-62-2	E420	0.988 mg/L	1 mg/L	98.8	70.0	130	----
		Zinc, total	7440-66-6	E420	3.97 mg/L	4 mg/L	99.2	70.0	130	----
<b>Total Metals (QCLot: 1212878)</b>										
CG2315221-001	Anonymous	Chromium, total	7440-47-3	E420.Cr-L	0.416 mg/L	0.4 mg/L	104	70.0	130	----
<b>Dissolved Metals (QCLot: 1212879)</b>										
CG2315224-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	2.03 mg/L	2 mg/L	102	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.195 mg/L	0.2 mg/L	97.5	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.202 mg/L	0.2 mg/L	101	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
<b>Dissolved Metals (QCLot: 1212879) - continued</b>										
CG2315224-001	Anonymous	Beryllium, dissolved	7440-41-7	E421	0.385 mg/L	0.4 mg/L	96.4	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.904 mg/L	1 mg/L	90.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	40 mg/L	ND	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.203 mg/L	0.2 mg/L	102	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Iron, dissolved	7439-89-6	E421	20.4 mg/L	20 mg/L	102	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.950 mg/L	1 mg/L	95.0	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	10 mg/L	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.204 mg/L	0.2 mg/L	102	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.191 mg/L	0.2 mg/L	95.3	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.417 mg/L	0.4 mg/L	104	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	40.7 mg/L	40 mg/L	102	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.398 mg/L	0.4 mg/L	99.5	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	85.9 mg/L	100 mg/L	85.9	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	21.2 mg/L	20 mg/L	106	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	171 mg/L	200 mg/L	85.4	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0407 mg/L	0.04 mg/L	102	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.193 mg/L	0.2 mg/L	96.5	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.410 mg/L	0.4 mg/L	102	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	1.04 mg/L	1 mg/L	104	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	4.11 mg/L	4 mg/L	103	70.0	130	----
<b>Dissolved Metals (QCLot: 1212880)</b>										
CG2315224-001	Anonymous	Chromium, dissolved	7440-47-3	E421.Cr-L	0.432 mg/L	0.4 mg/L	108	70.0	130	----

