Water Resources Audit Report

Silver Hart

Water Resources Branch
January 3, 2024

Preface

The Water Resource Branch (WRB) strives for water stewardship in Yukon and is committed to responsible and collaborative management, and the protection and conservation of the territory's valuable water. As technical scientific experts in water resources, we provide advice for compliance and inspection purposes, and conduct reviews of projects undergoing water licensing and environmental assessment processes.

One of WRB's responsibilities is to conduct audits of various undertakings that use or deposit waste to water. Audits are undertaken to improve our knowledge and understanding of a project's effects on the receiving water environment, with the intention of identifying emerging issues and sharing enhanced understanding of existing water quality and quantity conditions to support technical advice and input into assessment, licensing, and post-licensing processes. The opinions and recommendations expressed in this report are based on relevant data, reports, field observations, interpretation/analyses of scientific information available to WRB. Such opinions and recommendations are subject to evolve as further information becomes available.

While this report is necessarily scientific, we strive to also recognize diverse ways of knowing. Alongside objectivity, we are open to inclusion of storytelling and Indigenous ways of knowing and being: distinct and side-by-side we create space for the benefits of both perspectives.

While WRB provides support to inspectors on enforcement and compliance matters related to water licences, it is not WRB's role to determine or enforce compliance. As such, the findings of this report should not be considered as a determination of compliance with any existing permit or licence.

Executive summary

The Water Resources Branch visited the Silver Hart site in September 2022 to conduct a site water quality audit. The objectives of this audit were the following:

- Expand the water data records by summarizing relevant site history and generate a snapshot of water quantity and quality conditions on site to enable future comparison.
- Assess potential impacts from the site to the receiving water environment from ongoing activities or historic infrastructure.
- Evaluate whether there are areas that would benefit from continued monitoring.

Surface water samples were collected from across the site as well as surface water located in the surrounding area. This included the three established McCrory Creek sites, the adit flow emerging from the adit, as well as adit flow immediately before entering McCrory Creek, various ponded surface water in and around site and other seeping or emergent water.

Samples were analyzed for a suite of parameters using ALS Laboratories, as well as stable water isotopes analyzed at the University of Waterloo Environmental Isotopes Laboratory. These parameters were chosen to improve understanding of potential surface and groundwater flow paths in and around the site, and results were compared against various relevant water quality guidelines.

The key findings of the September 2022 audit are as follows:

- Adit water quality in recent years has generally been similar to, or to some degree improved, from sampling results in the late 1980's and late 2000's.
- Cadmium and zinc are the most elevated contaminants in the adit water and have the highest potential to impact water quality in McCrory Creek.
- There were no exceedances of CCME guidelines in McCrory Creek during the September 2022 visit; in the past there have been exceedances of aluminum, cadmium, and copper at the downstream-most McCrory station CMC-M2.

- During this visit, site impacted water originating from the adit was likely contributing to increased cadmium concentrations in McCrory Creek, but concentrations in McCrory Creek were below relevant guidelines for protection of aquatic life.

Based on these key findings, it is recommended that the water monitoring plan required under the mining land use authorization to be implemented by the proponent and should include:

A. Monitor flow from the adit (CMC-11) and where water enters McCrory Creek (CMC-99.5) using a low-flow method such as salt dilution gauging or volumetric method when flow levels allow.
B. Analyze samples for physical parameters (conductivity, turbidity, pH, alkalinity, hardness, dissolved oxygen), total suspended solids (TSS), total dissolved solids (TDS), total and dissolved metals, sulphate, ammonia, nitrogen-nitrite, nitrate, phosphorus and dissolved organic carbon, as well as field parameters twice annually (spring high-water and fall low-water) from the following stations:
    i. the adit (CMC-11),
    ii. the 'west' pond (CMC-WP),
    iii. the inflow to McCrory Creek (CMC-99.5, documenting any changes to channel location),
    iv. McCrory Creek upstream (CMC-M1), and
    v. McCrory Creek downstream (CMC-M1.5) of the adit influenced inflow.

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1 Introduction/background

The Silver Hart site is in southern Yukon, approximately halfway between Teslin and Watson Lake on the Alaska Highway (Figure 1). Access to the site is via a small, unmaintained road on the east side of the Rancheria River and follows the river north until turning east toward the site. The site is located at a high-grade silver, lead and zinc deposit in the Cassiar Mountains and the current operation includes exploration only, which is permitted under a class 4 quartz mining land use approval. There is also legacy infrastructure on site, including a flowing underground adit. WRB visited the site to collect field data and bolster water quality data to support future decision-making related to water management on site.

The primary objectives of the audit are as follows:

- Expand the water data records by summarizing relevant site history and generating a snapshot of water quantity and quality conditions on site to enable future comparison.
- Assess potential impacts from the site to the receiving water environment from ongoing exploration activities or historic infrastructure.
- Evaluate whether there are areas that would benefit from continued monitoring.

These objectives were achieved by WRB personnel visiting the Silver Hart site in September 2022 and collecting water quality samples at locations that have been sampled in the past, as well as newly identified water sources and water bodies on and around the site. WRB also attempted to collect flow measurements at as many locations around site as possible; however, flows at all locations were too low to be accurately measured with conventional methods except for in McCrory Creek. Within this report, all existing data and records available have been assessed and included wherever possible to develop the most complete understanding of site water chemistry.

This report will occasionally refer to the site location as a ‘mine site’; however, at no time in the past has production mining occurred at Silver Hart. All activity on site, including underground development, occurred under exploration permits.

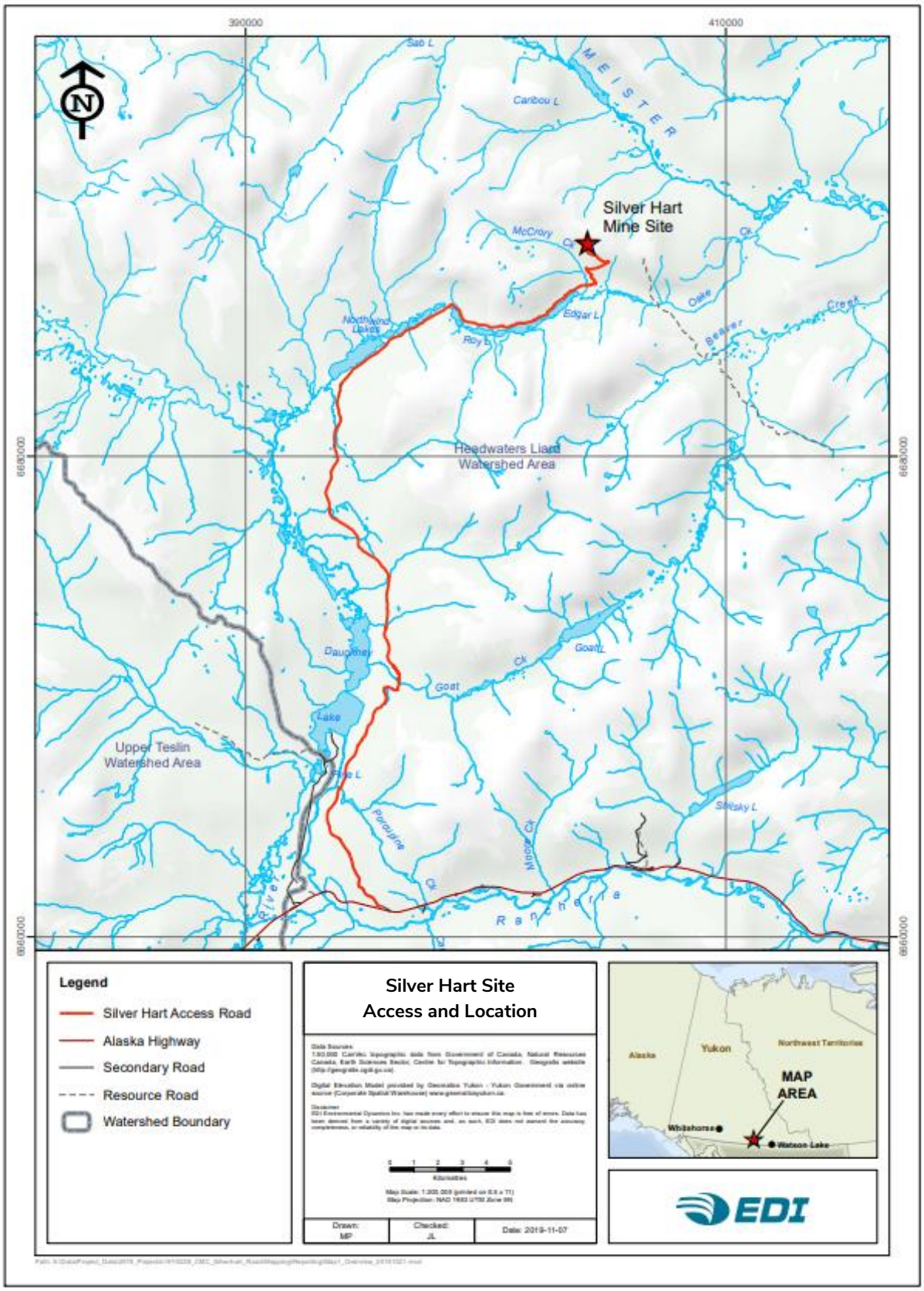

Figure 1. Silver Hart Site Access and Location (EDI, 2019)

1.1 Site history

Work began on site in 1947 with the discovery of minerals and was followed by soil sampling, geochemical sampling, drilling and trenching over the subsequent decades until significant exploration efforts took place between 1986-87 (PWGSC, 1997). These efforts included the drilling of 50 holes, 673 m of underground development including a 3x3 m adit and two raises, improvement of the site access road and construction of the trailer camp. A portion of this adit was driven in 1986 to explore an area of mineralization known as the 'T zone' and obtain a bulk sample (Norecol, 1987). During this time waste rock and subgrade ore was deposited on the surface near the adit. The amount of waste rock produced from the underground work was estimated to be 17,000 tonnes (PWGSC, 1997). Mine development plans were produced in the late 1980's (Norecol, 1987); however, the site was never put into production. Mine development plans were again proposed in late 2000's; however, the project did not receive approval because the YESAB designated office referred the project to an executive committee screening (YESAB 2007-0206 Evaluation Report). This project was resubmitted for executive committee screening in 2010 (YESAB 2010-0034) but was subsequently withdrawn. CMC Metals had a technical report prepared for the site in 2005, which included a detailed timeline of work completed at the site that is summarized in Table 1 below.

Table 1. Summary of Prior Work (CMC 2005)

Year	Description of Work
1970's	Detailed mapping and sampling located skarn-hosted vein and replacement lead and zinc mineralization, now known as the S zone.
1982	The claims were optioned to BRX Mining and Petroleum Ltd. Geophysical work was conducted and two holes were drilled.
1983 & 1984	T. McCrory and B. Preston discovered two additional zones of silver lead-zinc mineralization, the F and T zones.
1985	Shakwak Exploration Company Limited and Silver Hart Mines Ltd. gained interest in the property. To test the continuity of the zones along strike and down dip, 50 diamond drill holes were completed totalling 3644 m. Preliminary grid geophysical (VLF) and geochemical surveys (collection of 455 soil samples) were conducted. A road was constructed from the Alaska Highway to the campsite.

Year	Description of Work
Winter 1985-86	The T-zone was explored underground just above 1400 m elevation. The new portable camp and steel Quonset machine shop was installed.
Summer-Fall 1986	Extensive work completed, involving line cutting and grid extension, geological mapping, detailed surveying, soil sampling (2,394 samples), geophysical testing, and deep trenching of veins with excavator and bulldozer, along with diamond drilling (16 holes totalling 932 m), percussion drilling (11 holes totalling 463.6 m), and road extension and improvement.
1987	Silver Hart drilled 4 holes for 609.6 on the main showing and bulldozer trenched on the surrounding claims.
1988	Following a feasibility study in 1988, a $10 million deal was signed with Morgan-Gundy to put the property into production; however a drop in silver prices led to the project's eventual cancellation.
1992	Trenching and environmental reclamation was carried out in July and August 1992.
1993	A two-phase surface program included overburden stripping, bedrock ripping and road construction. Phase 2 was environmental reclamation and restoration of waste berms and stockpiles.
1999	Magnetometer and VLF survey with grid rehabilitation and extension of the grid.
2000	Environmental reclamation work, road construction and bedrock stripping.

1.2 Previous water monitoring

Past water quality sampling at Silver Hart has occurred in advance of two YESAB applications, and as part of various other one-off sampling events. Table 2 summarizes the known sampling events, which have largely focused on the flowing adit and McCrory Creek.

Table 2. Known water quality sampling at Silver Hart

Year	Sampling Party	Effort
1985-1987	Water Resources (INAC)	Individual sampling events in Sep 1985 and Sep 1987. Data reported by Norecol (1987), original source of data not found.
1986-1987	Norecol Environmental (consultant for CMC)	Three sampling events over two years including the adit, McCrory Creek baseline, and other nearby reference creeks (Norecol, 1987).
1996	Environmental Services, Public	Single sampling event associated with the Phase II environmental assessment; however, all surface water samples

Year	Sampling Party	Effort
	Works and Government Services Canada (INAC)	collected either lost in shipping or improperly stored, data is suspect (PWGSC, 1997).
2005-2009	Access Consulting (consultant for CMC)	Baseline data collection at several creeks in the area, submitted as part of YESAB 2007-0206 and 2010-0034. Monitoring occurred through the year, mostly in spring through fall initially at 15 locations that was reduced to 6 in 2007 (CMC Metals, 2010).
2008	Water Resources Branch (YG)	Single event sampling in August of adit and downstream McCrory Creek.
2008	Environment Canada	Single event sampling in October from six locations including the adit, the west pond, and other ponds and seepages.
2019-2020	EDI (consultant for CMC)	Two sampling events for adit, adit drainage, and multiple sites on McCrory Creek. Additionally, sampling of drinking water well.
2021	Compliance Monitoring and Inspections Branch (YG)	Single event sampling in June of the adit and sites on McCrory Creek.

As part of the federal phase II environmental assessment, the report recommended "*every five years a monitoring program be undertaken to obtain water quality data for spring freshet, middle summer and late fall conditions for mine seepage as well as receiving waters*" (PWGSC, 1997). More recently, the YESAB 2020-0044 decision document contained a term that a "*water quality-monitoring plan shall be submitted, along with annual sampling results, to the Regulator to ensure that reclamation efforts on legacy works, as well as proposed activities, do not contribute to contamination of the water resources*".

Flow measurements associated with the underground adit were obtained sporadically over time. Generally, reports have noted the high degree of uncertainty in the measured flow given the relatively low flows and methods used. WRB is aware of the following measurements or observations of adit discharge:

- 1996: <5 L/s (PWGSC, 1997), visual observation

- Aug or Sept 2006: 0.55 L/s (CMC, 2021), avg. 4 bucket measurements
- August 19, 2008: 0.8 L/s (WRB database), 'flow cross-section' method
- October 2008: 4.4 L/s (EC, 2008), area-velocity measurement
- May 20, 2009: 1.1 L/s (CMC, 2021), avg. 6 bucket measurements

1.3 Current site activity

Exploration activities are currently conducted under a class 4 Quartz Mining Land Use Approval (permit LQ00522c). At the time of the September 2022 site visit, there were no site staff present. Details of specific exploration efforts in recent years are unknown to WRB.

1.4 ARD-ML potential

Acid Rock Drainage and Metal Leaching (ARD-ML) is a risk associated with mining and results from minerals containing sulphide or elemental sulphur becoming exposed to water and oxygen. Mining exploration and development can create these conditions either when rock previously underground and isolated from the atmosphere is excavated and brought to the surface, or through the creation of adits or altered flow paths.

Historic exploration activities at Silver Hart included the construction of an adit into the mineralized rock of the T-zone. An estimated 17,000 tonnes of wasterock (SRK, 2008) was produced from the underground development and placed to the south and west of the adit on a 0.7 hectare wasterock pad on which ore and subgrade ore were dumped (PWC, 2008).

A 1987 summary of ARD potential (Norecol, 1987) described the T-zone vein material as showing 'high acid producing potential due to its high sulphur content', while T-zone granodiorite and schist were described as "not likely to be acid generating."

A 1997 report by Public Works Canada included results of paste pH and ABA tests of waste rock and determined that the material was not generating acid at the time but that it had potential to become acidic in the future.

In 2008 ARD-ML potential was further assessed for planned development areas at the site (SGS Lakefield, 2008).

2 Methods and equipment for sampling and field monitoring

To support audit objectives, WRB collected 12 surface water samples on September 21, 2022 at previously sampled locations within the site footprint and newly identified water sources in and around the site (Figure 2). Sample collection was completed by WRB staff using best practices for water sampling (Government of Yukon 2021) and followed the requirements from the commercial lab conducting the analyses. In-situ water quality field parameters were measured using a YSI ProDSS Handheld Multimeter, and the instrument was calibrated before going in the field as per manufacturer specifications and best practices.

Samples collected during the September 2022 site visit were analyzed for a suite of analytical parameters (Table 4). These parameters were selected to support site audit objectives and to allow for comparison with the Guidelines for Protection of Aquatic Life published by the Canadian Council of Ministers of the Environment (CCME-PAL). It should be noted that there is no associated Water Use Licence (WUL) for the Silver Hart site. For the sake of this report, all locations sampled during the September 2022 site audit were analyzed for all parameters in Table 4 except CMC-99.5 which had an additional acute toxicity LC-50 analysis. Complete results from sample analysis and field measurements can be found in Appendix A.

Samples for analysis of stable water isotopes were filtered in the field (0.45 micron) and collected in new, clean, 30 mL HDPE plastic bottles filled to the top with no head space and air-tight to prevent evaporation. The samples were submitted to the University of Waterloo-Environmental Isotope Laboratory (UWEIL). UWEIL measured the isotopic ratios using a Los Gatos Research, Liquid Water Isotope Analyser, model T-LWIA-45-EP instrument with a precision (2σ) of $\delta^{2}H$ = ± 0.8 ‰ and $\delta^{18}O$ = ± 0.2 ‰. UWEIL's

methods measure variations in stable isotope concentrations, rather than actual abundances of stable water isotopes. In this case, water samples collected during the September 2022 sampling event were compared to the international reference material VSMOW (Vienna Standard Mean Ocean Water). The variations in isotope concentrations are relatively small and so are expressed in δ-values as the parts per thousand (permil; ‰) difference between the sample and VSMOW, as follows:

$$\delta^{18}O = \left(\frac{\left({}^{18}O/_{16}O \right)_{\text{sample}}}{\left({}^{18}O/_{16}O \right)_{\text{reference}}} - 1 \right) \cdot 1{,}000‰ \text{ VSMOW}$$

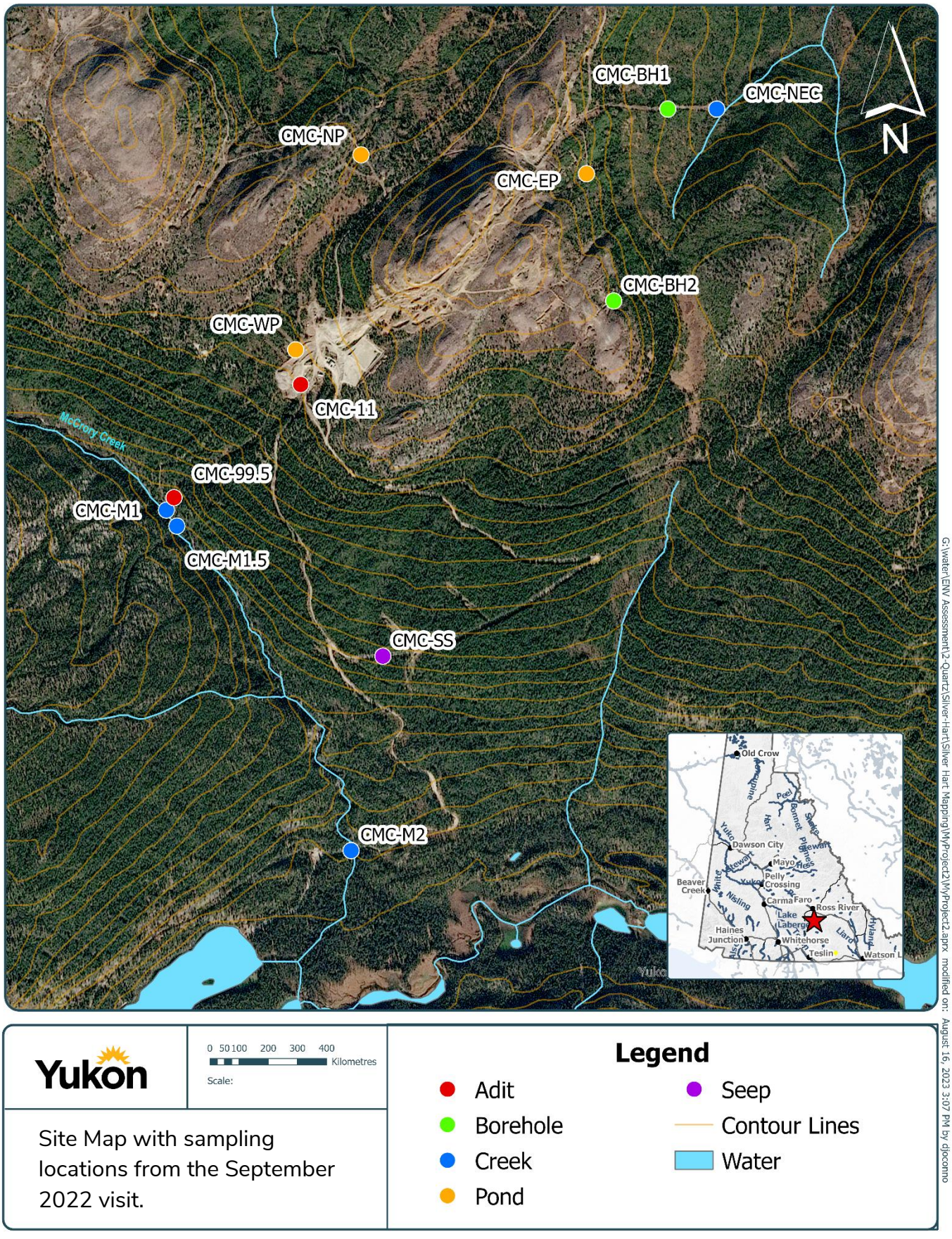

Figure 2. Site is surrounded by creeks that are either unnamed or whose name is unknown to WRB.

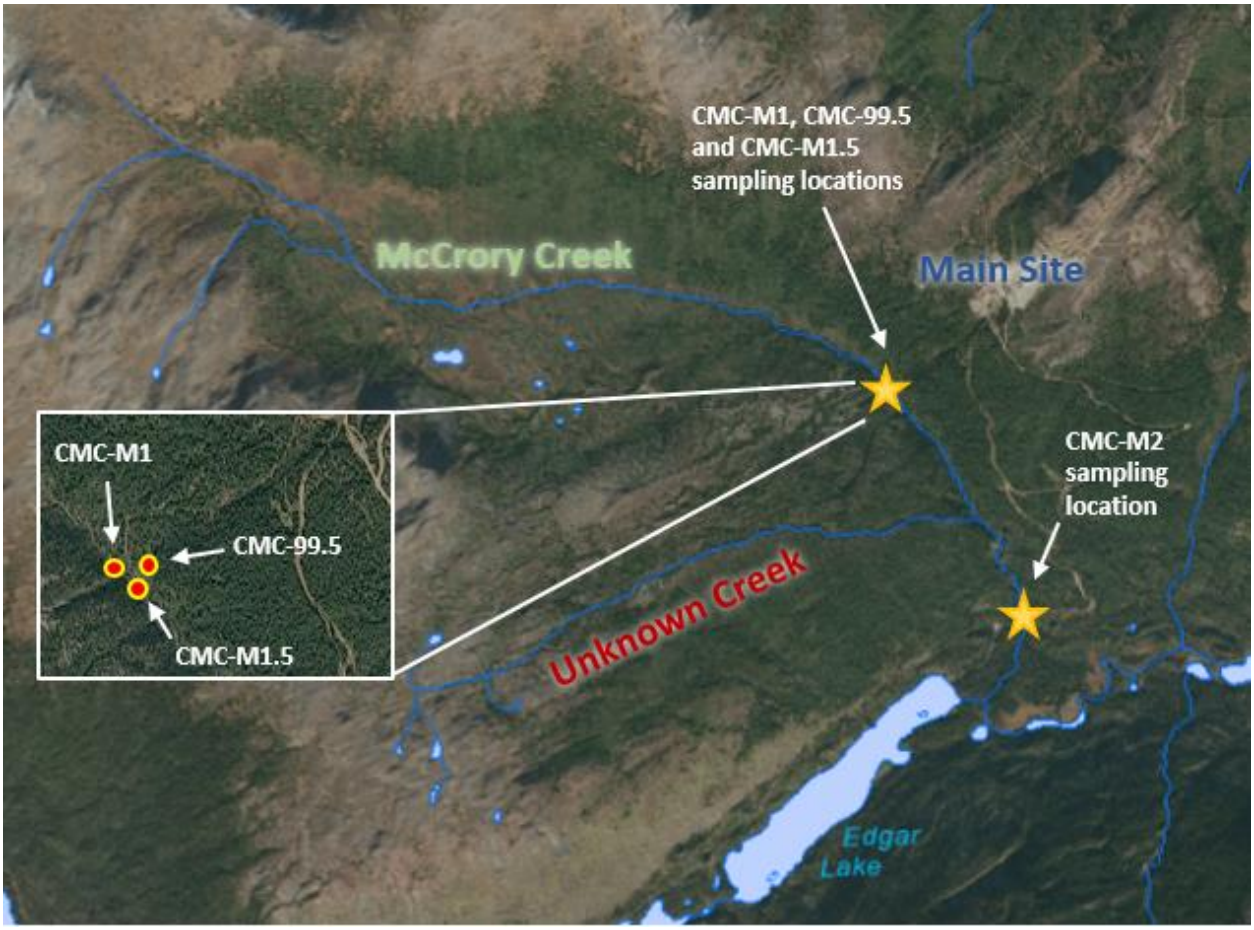

Figure 3. Unknown creek flowing into McCrory Creek approximately halfway between the upstream cluster of McCrory stations and the downstream CMC-M2 station.

Table 3. Surface water samples collected during the September 2022 site audit.

Station Code	Location	Date & Time	Coordinates		Rationale
			Lat	Long	
CMC-EP	East pond adjacent to site	21-Sep-2022 10:05	60.330552	-130.7173	Understanding regional and site water chemistry
CMC-NP	North pond adjacent to site	21-Sep-2022 09:00	60.331357	-130.7317	Understanding regional and site water chemistry
CMC-NEC	Headwater of unknown creek, northeast of site	21-Sep-2022 09:25	60.332498	-130.7089	Understanding regional and site water chemistry
CMC-WP	West pond on site	21-Sep-2022 11:30	60.325212	-130.7363	Understanding regional and site water chemistry
CMC-M1	McCrory Creek 50 m upstream of CMC-11 influence	21-Sep-2022 16:35	60.320227	-130.7448	McCrory Creek background sampling location
CMC-M1.5	McCrory Creek 80 m downstream of CMC-11 influence	21-Sep-2022 16:00	60.319250	-130.7341	McCrory Creek location receiving water from CMC-11

Station Code	Location	Date & Time	Coordinates		Rationale
			Lat	Long	
CMC-M2	McCrory Creek upstream of bridge crossing at main site access road	21-Sep-2022 12:50	60.309237	-130.7336	Downstream-most McCrory Creek sampling location
CMC-11	Adit discharge	21-Sep-2022 15:10	60.324105	-130.7360	Adit water characterization
CMC-BH2	Seeping borehole east of site	21-Sep-2022 10:20	60.326486	-130.7158	Understanding regional and site water chemistry
CMC-BH1	Seeping borehole northeast of site	21-Sep-2022 13:30	60.332539	-130.7120	Understanding regional and site water chemistry
CMC-99.5	CMC-11 flow immediately upstream of McCrory Creek	21-Sep-2022 16:40	60.320617	-130.7443	Adit discharge flow path prior to reaching McCrory Creek
CMC-SS	Groundwater seep south of site downgradient on access road	21-Sep-2022 12:20	60.320780	-130.7294	Understanding regional and site water chemistry

Table 4. Analyses performed for samples collected during the September 2022 audit.

Parameter	
- Stable Water Isotopes	- Hardness
- Total & Dissolved Metals	- Alkalinity
- WAD/SAD Cyanide	- Ammonia
- Cyanate	- TSS/TDS
- Sulphate/Sulphite	- Chlorite
- Nitrate/Nitrogen/Nitrite	- LC-50 Bioassay (CMC-99.5 only)
- pH	

In addition to standard samples collected from site, WRB completed three Quality Assurance/Quality Control (QA/QC) samples as described in Table 5.

Table 5. QA/QC samples completed during the July 2021 site audit.

QA/QC Sample Type Collected	Procedure	Purpose
Travel Blank	Lab that is providing sample bottle sets provides an additional set filled with lab grade deionized water and sealed. This sample is carried for the duration of the sampling event, returned to the lab, and never opened until analysis.	Identifies if any contaminants were introduced into the sample during or because of the transportation process.

QA/QC Sample Type Collected	Procedure	Purpose
Field Blank	A sample bottle set is filled with lab grade deionized water in the field by sampling staff following all the standard protocols and procedures of a normal sample.	Identifies if any contaminants were introduced into the sample from the atmosphere at the sampling location or from sampling staff handling.
Replicate	A regular sample is collected followed immediately by an identical replicate sample being collected adhering to all of the same standard protocols and procedures. One replicate is collected for every ten samples, rounded up to the nearest ten samples. Analytical results are compared and Relative Percent Difference (RPD) is calculated.	Identifies the precision of the sampling methods and provides an estimate of sampling and analytical error.

A salt dilution gauging method was used to measure discharge in McCrory Creek where channel conditions were unsuitable for the velocity-area method of discharge measurement. Field crew used selection criteria and calculation methods provided by Gabe Sentlinger (2015). Criteria analyzed when selecting sites for salt dilution discharge gauging included: turbulent flows, steep gradients, minimal pools and other backwater areas, no tributary inflows in the gauging reach, ability to perform a clean injection at a point that favours mixing, and brine slug fully mixed with the flow at the point where electric conductivity is measured in the channel.

A Fathom Scientific Ltd. QiQuac salt dilution specific conductivity meter was used to collect salt dilution measurements. The QiQuac uses two very high-resolution conductivity probes, reducing background noise and allowing the use of smaller quantities of salt and measurement of greater discharges compared to other conductivity meters. Calibration of the conductivity probes was conducted at the measurement locations before each reading. Given the assumption of complete mixing, the location of the probe in the stream is irrelevant. However, the location of each measurement, or each probe in the case of the QiQuac, should be on opposite sides of the stream as well as different distances along the reach to confirm complete mixing. The distance moved, or

between probes, will be based on the size of the creek; 5 to 10 % of the overall distance is a good rule of thumb.

Dry salt was mixed in a 20L pail with 5-10L of water from the creek, stirred in a random fashion to keep the mixing turbulent and prevent the salt sludge concentration at the bottom of the pail. The QiQuac was set up to log in 5 second intervals. Mass of salt used at McCrory Creek location CMC-M2 was 200 g of Sifto Pool NaCl. Where flows were too low to measure (i.e. seeping boreholes or trickling groundwater seeps) values were visually estimated at <1 L/s and documented with photos.

3 Results and analysis

3.1 QA/QC results

Replicate results were compared to determine Relative Percent Difference (RPD) while factoring in the Practical Qualifying Limit (PQL), which takes into account how close the result is to the Reported Detection Limit (RDL). RPD's greater than 25% are flagged in Table 6 below. In-situ field data was also compared against lab data as another check of field data collection. All RPDs were low and within tolerable ranges.

Table 6. Results of replicate QA/QC analysis from September 2022 replicate sample at CMC-11.

Parameter	Units	RDL	CMC-11	CMC-11-R	RDP Should be below 25%	PQL1 Must be above 5	PQL2 Must be above 5
Aluminum (Total)	mg/L	0.003	0.0253	0.0374	39%	8.4	12.5
Lead (Total)	mg/L	0.00005	0.000541	0.000763	34%	10.8	15.3

3.2 Field parameters and observations

In-situ parameters including conductivity, dissolved oxygen (DO), pH, temperature, turbidity and flow measurements (where possible) were collected at all sampled locations and this data is displayed in Table 7 below. Weather conditions across all three days were mostly overcast with no precipitation during the visit and no known

precipitation at site for the week preceding the visit. Air temperatures ranged from a low of 5°C through the night and a high of 16°C through the day.

Table 7. In-situ parameters, field notes and discharge values from September 2022 site audit locations. All flows reported as <1 L/s were visually estimated.

Site	Conductivity (µs/cm)	DO (mg/L)	DO (% Saturation)	pH (pH Units)	Temperature (°C)	Turbidity (NTU)	Flow (L/s)
CMC-11	530	10.34	86.2	7.93	7.4	0.1	<1
	Adit flow sampled downstream of road crossing, upstream of holding pond. <1 L/s flow, cannot salt gauge. Replicate sample collected.						
CMC-99.5	103.6	10.91	88.8	7.29	6.5	0.1	<1
	Sample collected immediately upstream of confluence with McCrory Creek. Sampled location where flow was most consolidated, used YSI calibration cup to further consolidate flow. Sediment allowed to flush before sampling. Upstream channel braided through heavy equipment tracks and frequently goes to and from ground.						
CMC-BH1	261.6	2.58	18.9	7.71	4.2	2.19	<1
	Seeping borehole northeast of site, flow <1 L/s across surface for approximately 10 m before going to ground.						
CMC-BH2	439	3.24	25	7.68	3.3	21.69	<1
	Seeping borehole east of site, extremely low flow, sampled delicately to avoid stirring sediment.						
CMC-EP	287.9	11.09	84.8	7.49	4.1	2.48	<1
	Small pond east of site with small trickling flow <1 L/s entering from upgradient. Very silty substrate and moderately clear water, no outflow.						
CMC-M1	43.3	11.02	87.8	7.18	5.7	0.1	*Not Measured*
	Collected at location established by EDI 50 m upstream of adit influence upstream of suspected adit input.						
CMC-M1.5	47	11.17	88.9	7.38	5.6	0.1	*Not Measured*
	Collected at location established by EDI 80 m downstream of suspected adit input.						
CMC-M2	53.2	11.51	90.1	7.3	5	0.1	51.9
	Sample collected upstream of bridge, salt dilution gauging injected upstream, sensors placed downstream approximately 20 m. Field blank completed. DO conducts discharge measurement, AB & BI leave to sample CMC-BH1.						
CMC-NEC	133.9	11.29	84.9	7.05	3.4	0.1	<1
	Headwater of creek (unsure name) northeast of site, coming from ground. Small pool with <1 L/s flow, clear water.						
CMC-NP	43.9	9.49	76.1	6.84	5.9	1.09	*None*
	Pond north of site at road past height of land from McCrory headwater. Small emergent channel flowing north of roadway from pond, no surface connectivity.						
CMC-SS	178.3	9.94	83.8	7.31	7.9	1.37	<1

Site	Conductivity (µs/cm)	DO (mg/L)	DO (% Saturation)	pH (pH Units)	Temperature (°C)	Turbidity (NTU)	Flow (L/s)
	Small seeping channel emerging from steep bank slope beside road. <1 L/s flow along ditch, crosses road and disappears back to ground. Dug small hole to fill bottles, will carry on sampling other sites while stirred sediment flushes. Will return. (1HR later) Return to location, sediment settled out, sample collected.						
CMC-WP	101.9	10.41	83.7	7.53	6	33.16	<1
	Large pond adjacent to camp with no visible input and very small outflow <1 L/s flowing southwest, downgradient before disappearing to ground approximately 20 m downstream. Highly turbid, foggy green/brown colour.						

3.3 Comparison to relevant guidelines

To date, there has not been a Water Use Licence associated with the Silver Hart site, and as such there has been no established Effluent Quality Standards (EQS), Water Quality Objectives (WQO), or identification of Contaminants of Potential Concern (COPCs). As such, WRB has no directly applicable standards to compare water quality data with.

Selection of COPCs is in part informed by comparing data with relevant aquatic life water quality guidelines (Yukon Government, 2021b). For this audit, data was compared broadly with guidelines including Canadian Council of Ministers of the Environment guidelines for Protection of Aquatic Life (CCME PAL) both short and long-term, British Columbia Ministers of Environment (BCMOE) guideline for aquatic life, and the Yukon Contaminated Sites Regulation (CSR). Many of these guideline values are calculated based on in-situ parameters such as temperature or pH, or other analytical parameters such as hardness, and the actual guideline values have been displayed only as "*Calculated*" in Table 8. Table 8 outlines concentrations in samples collected during the September 2022 site audit that exceed an existing guideline. For the reasons mentioned above, it is important to note that exceedances listed in Table 8 do not represent any form of non-compliance and are used for reference only.

Table 8. Concentrations exceeding established guidelines in samples collected during the September 2022 site audit. Information below is for comparison only and does not represent non-compliance.

Site	Parameter	Concentration (mg/L)	Guideline Value (mg/L)	Guideline Source
CMC-11	Cadmium (Dissolved)	**0.0072**	*Both calculated*	BCMOE & CCME PAL
	Cadmium (Total)	**0.00743**	*Calculated*	CCME PAL

Site	Parameter	Concentration (mg/L)	Guideline Value (mg/L)	Guideline Source
	Fluoride	**0.209**	0.12	CCME PAL
	Sulphate	**148**	100	Yukon CSR
	Uranium (Dissolved)	**0.0216**	0.015	CCME PAL
	Uranium (Total)	**0.0242**	0.015	CCME PAL
	Zinc (Total)	**4.61**	*Both calculated*	BCMOE & Yukon CSR
CMC-99.5	Aluminum (Total)	**0.111**	*Calculated*	CCME PAL
	Cadmium (Total)	**0.0000520**	*Calculated*	Yukon CSR
	Zinc (Total)	**0.0122**	*Both calculated*	BCMOE & Yukon CSR
CMC-BH1	Aluminum (Total)	**0.104**	*Calculated*	CCME PAL
	Iron (Total)	**0.335**	0.3	CCME PAL
	Fluoride	**0.238**	0.12	CCME PAL
CMC-BH2	Aluminum (Total)	**0.187**	*Calculated*	CCME PAL
	Fluoride	**0.927**	0.12 *Calculated*	CCME PAL BC MOE
	Sulphate	**130**	100	Yukon CSR
CMC-EP	Aluminum (Total)	**0.175**	*Calculated*	CCME PAL
	Cadmium (Dissolved)	**0.000353**	*Both calculated*	BCMOE & CCME PAL
	Cadmium (Total)	**0.000374**	*Both calculated*	CCME PAL & Yukon CSR
	Zinc (Total)	**0.175**	*Both calculated*	BCMOE & Yukon CSR
CMC-M1	*None*			
CMC-M1.5	*None*			
CMC-M2	*None*			
CMC-NEC	Aluminum (Dissolved)	**1.68**	*Both calculated*	BCMOE & CCME PAL
CMC-NP	Iron (Total)	**0.355**	0.3	CCME PAL
CMC-SS	*None*			
CMC-WP	Silver (Dissolved)	**0.000345**	0.00025	CCME PAL
	Silver (Total)	**0.00366**	0.00025 *Calculated* *Calculated*	CCME PAL BC MOE Yukon CSR
	Aluminum (Total)	**2.65**	*Calculated*	CCME PAL
	Arsenic (Dissolved)	**0.0061**	0.005	CCME PAL
	Arsenic (Total)	**0.0217**	0.005	CCME PAL & Yukon CSR
	Cadmium (Dissolved)	**0.000713**	*Both calculated*	BCMOE & CCME PAL
	Cadmium (Total)	**0.000989**	*Both calculated*	CCME PAL & Yukon CSR
	Copper (Total)	**0.0118**	*Calculated*	Yukon CSR
	Iron (Total)	**2.01**	0.3	CCME PAL

Site	Parameter	Concentration (mg/L)	Guideline Value (mg/L)	Guideline Source
	Lead (Dissolved)	**0.00403**	*Calculated*	CCME PAL
	Lead (Total)	**0.0803**	*All calculated*	BCMOE, CCME PAL & Yukon CSR
	Zinc (Total)	**0.299**	*Calculated*	BCMOE & CCME PAL

Based on the concentrations of the parameters outlined above, McCrory Creek was examined to determine if water discharging from CMC-11 was having any notable impact on water chemistry in McCrory Creek. Given that visible adit flows were <1 L/s and McCrory Creek was discharging 51.9 L/s at CMC-M2 during the time of the audit, it is expected that dilution potential would be high.

3.4 Stable water isotopes

Isotopes are atoms of the same element that have different numbers of neutrons but the same number of protons. Stable isotopes have nuclei that do not decay to other isotopes on geologic timescales but may themselves be produced by the decay of radioactive isotopes. Two stable isotopes of hydrogen (^{1}H and ^{2}H) and three of oxygen (^{16}O, ^{17}O and ^{18}O) occur naturally in waters. We use the phrase "stable water isotopes" to refer to (^{1}H, ^{2}H, ^{16}O, and ^{18}O), which are relatively abundant and can be easily measured by mass spectrometry.

According to Kendall & Doctor (2005), stable water isotopes can be used as tracers of waters in shallow, low-temperature environments because:

i. Waters that were recharged at different times, were recharged in different locations, or that followed different flow paths are often isotopically distinct; in other words, they have distinctive "fingerprints."
ii. Unlike most chemical tracers, stable water isotopes are relatively conservative, retaining their distinctive fingerprints until they mix with other waters.

Figure 4 shows $\delta^{2}H$ and $\delta^{18}O$ ratios for surface water samples (solid circles) collected during the September 2022 monitoring event and precipitation (hollow circles) collected in Whitehorse from 1960-1990 via the Global Network of Isotopes in Precipitation (GNIP; IAEA 2021). Precipitation that fell between May and September is inferred to be

rain (red hollow circles), whereas precipitation that fell between October and April is inferred to be snow (blue hollow circles). A local meteoric water line (LMWL) was generated based on the stable water isotope ratios for precipitation samples collected from the Whitehorse GNIP station. The LMWL is a line of best fit (R^2 = 0.93) that represents the site-specific long-term covariation of hydrogen and oxygen stable isotope ratios. The yellow diamond represents the average δ^2H and $\delta^{18}O$ ratios measured in precipitation at Whitehorse, weighted based on the amount of precipitation recorded for each sample (IAEA 2021).

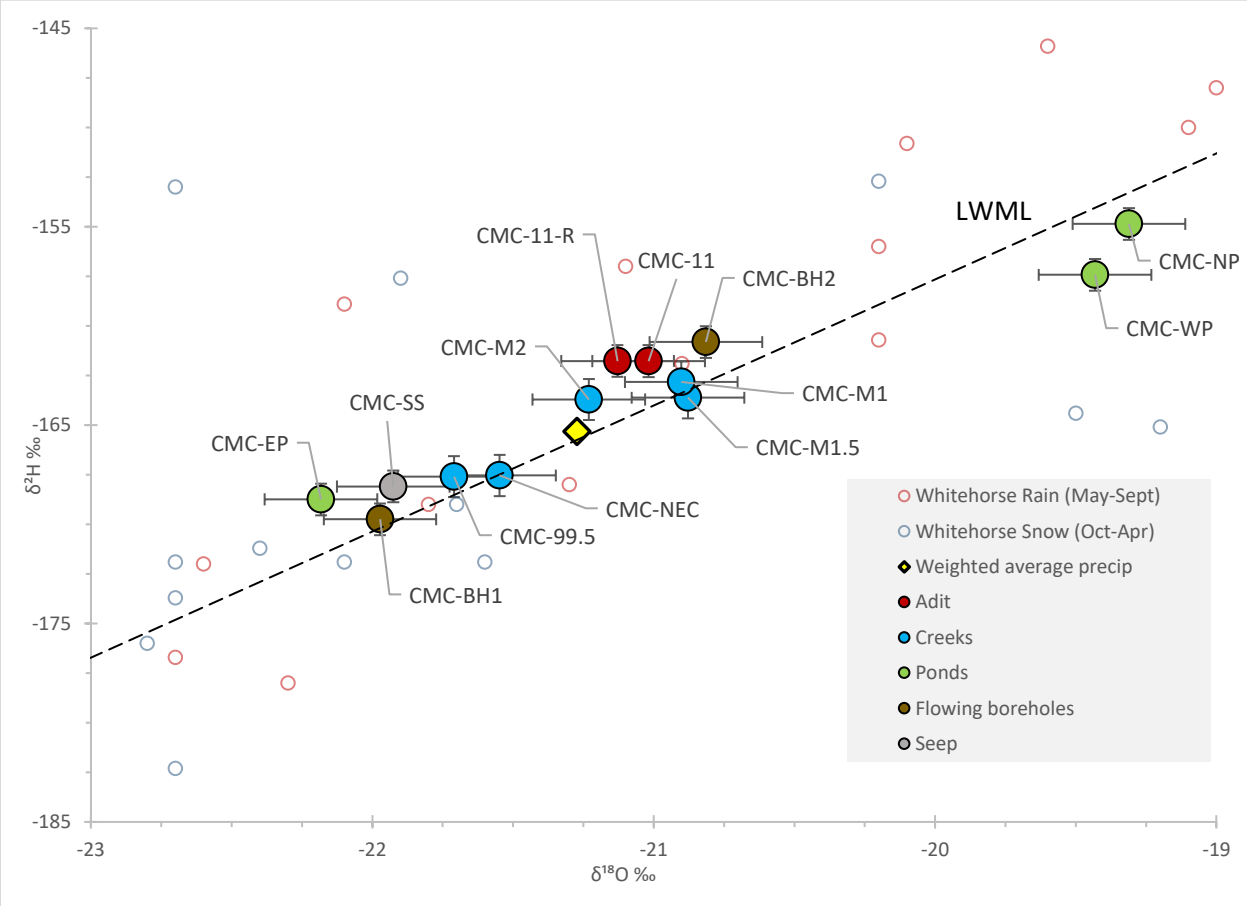

Figure 4. Stable water isotope composition for samples collected during the Silver Hart September 2022 site audit.

Figure 4 shows that samples from the September 2022 event cluster in three groups of isotopic compositions:

1. The first, grouped to the lower left of the plot, is likely influenced by groundwater recharged predominantly by snowmelt and includes CMC-EP, CMC-BH1,

CMC SS, CMC-99.5 and CMC-NEC. This groundwater source is potentially older and/or deeper than the groundwater influencing the second cluster (see below).

2. The second, grouped in the center of the plot, is likely influenced by groundwater recharged by a mixture of rain and snowmelt and includes CMC-11 (and the replicate CMC-11-R), CMC-BH2, CMC-M1, CMC-1.5, and CMC-M2. This groundwater source is potentially younger and/or shallower than the groundwater influencing the first cluster (see above).
3. The third, comprising the two points in the upper right of the plot (CMC-NP and CMC-WP), appears to resemble rain. This suggests that the north and west ponds are dominated by runoff from recent rain events, whereas the east pond appears to be fed by groundwater recharged predominantly by snowmelt.

Figure 5 is a Piper plot, which is a way of visualizing the major ion chemistry of a water sample. Piper plots comprise the following elements:

1. a ternary diagram in the lower left that represents the cations: calcium, sodium + potassium, and magnesium;
2. a ternary diagram in the lower right that represents the anions: chloride, carbonate + bicarbonate, and sulphate; and
3. a diamond plot that is a matrix transformation of the cation and anion ternary plots.

Figure 5 illustrates that all the samples collected during the September 2022 event are calcium-type waters. Most of the samples collected during that event are bicarbonate-type waters; however, some are sulphate-type waters (CMC-11 and CMC-BH2). The source of the sulphate is likely the oxidation of sulphide minerals (YGS' occurrence details for the Silver Hart-TM Zone mention various sulphide minerals including galena and minor chalcopyrite, molybdenite, sphalerite; https://data.geology.gov.yk.ca/Occurrence/12609#InfoTab). Sulphate-type waters are expected in areas where oxic groundwater is interacting with sulphide minerals, so it is unsurprising that the adit discharge (CMC-11) has sulphate as the dominant anion. CMC-99.5 has an intermediate anionic composition and likely represents a mixture of the sulphate-type adit discharge and bicarbonate-type shallow groundwater.

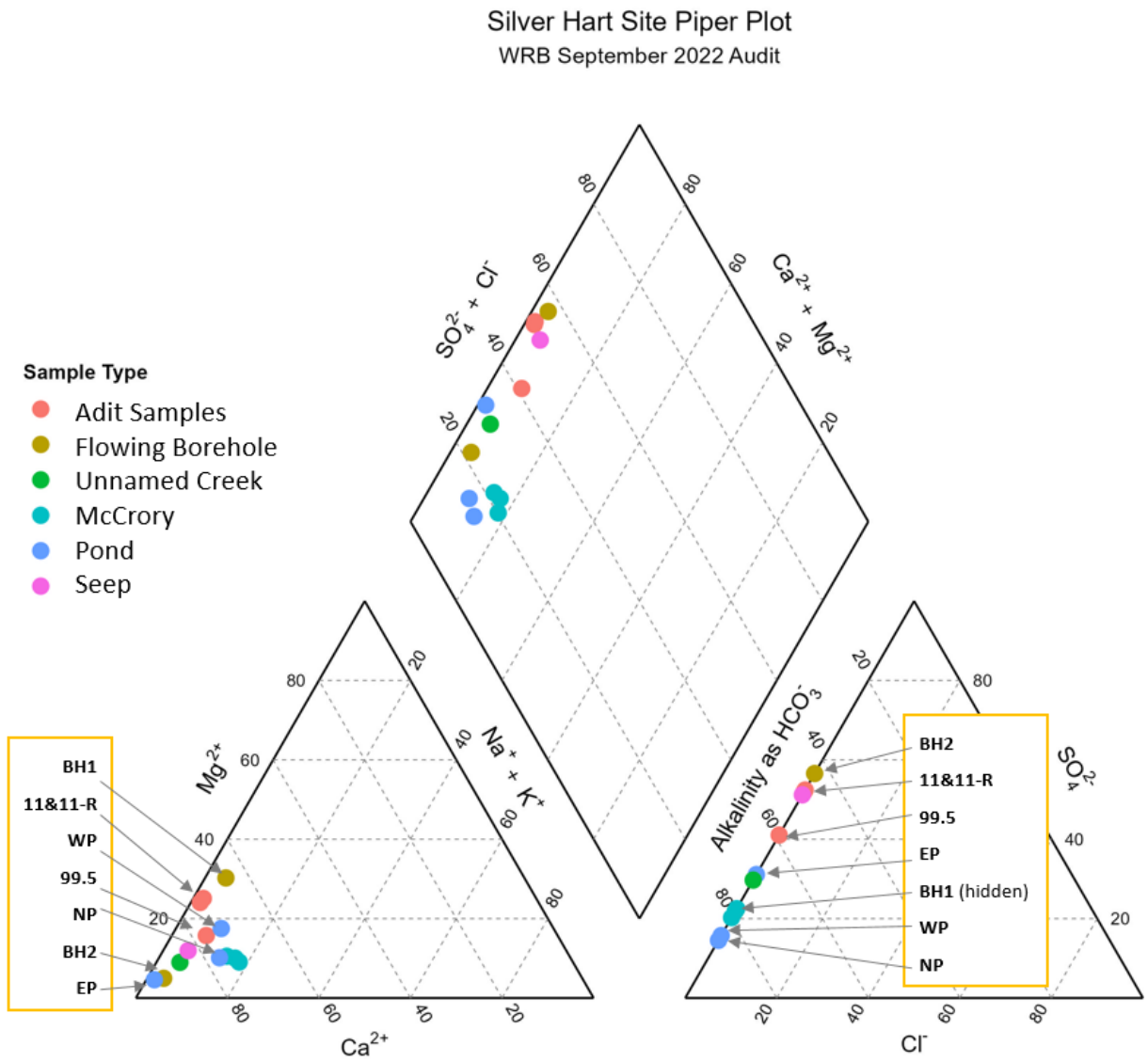

Figure 5. Piper Plot for samples collected during the Silver Hart September 2022 site audit.

3.5 Comparison with past monitoring

As discussed in section 1.2, historical water quality sampling from various sources generally groups into three time periods: late 1980's, late 2000's, and early 2020's. These data are plotted for select parameters in Figure 6 and Figure 7 for the adit (CMC-11) and the furthest downstream McCrory Creek location (CMC-M2). For context, results are shown with CCME aquatic life guidelines and MDMER standards 'Table 1 Monthly', which are the most stringent MDMER standards. MDMER does not apply at Silver Hart because the site has never been a producing mine.

Given the inconsistent sampling history, care should be taken with interpretations; however, the following key takeaways can be observed from these data:

1) Total arsenic appears to be decreasing in the adit.
    - Results from recent years are around an order of magnitude less than oldest data; such declines are consistent with predictions based on humidity cell test results (YESAB, 2009).
2) Adit water is consistently highly elevated in zinc and cadmium.
    - Cd and Zn are 1-2+ orders of magnitude above CCME water quality guidelines and therefore are likely have the highest potential to influence McCrory Creek.
3) Zinc in the adit water is largely in the dissolved form.
    - On average, dissolved zinc is 99.8% of total zinc
4) Although based on very limited data, there is some indication that adit concentrations may be higher in the winter.
    - Aluminum, arsenic, copper, and iron all contain spikes in samples between October and December during which there were relatively low TSS concentrations.
    - This suggests the adit discharge is more dominated by groundwater in the winter months and diluted by meteoric water in the summer months.
5) Parameters that are close to, or have exceeded CCME guidelines in McCrory Creek include aluminum, cadmium, copper, and zinc.

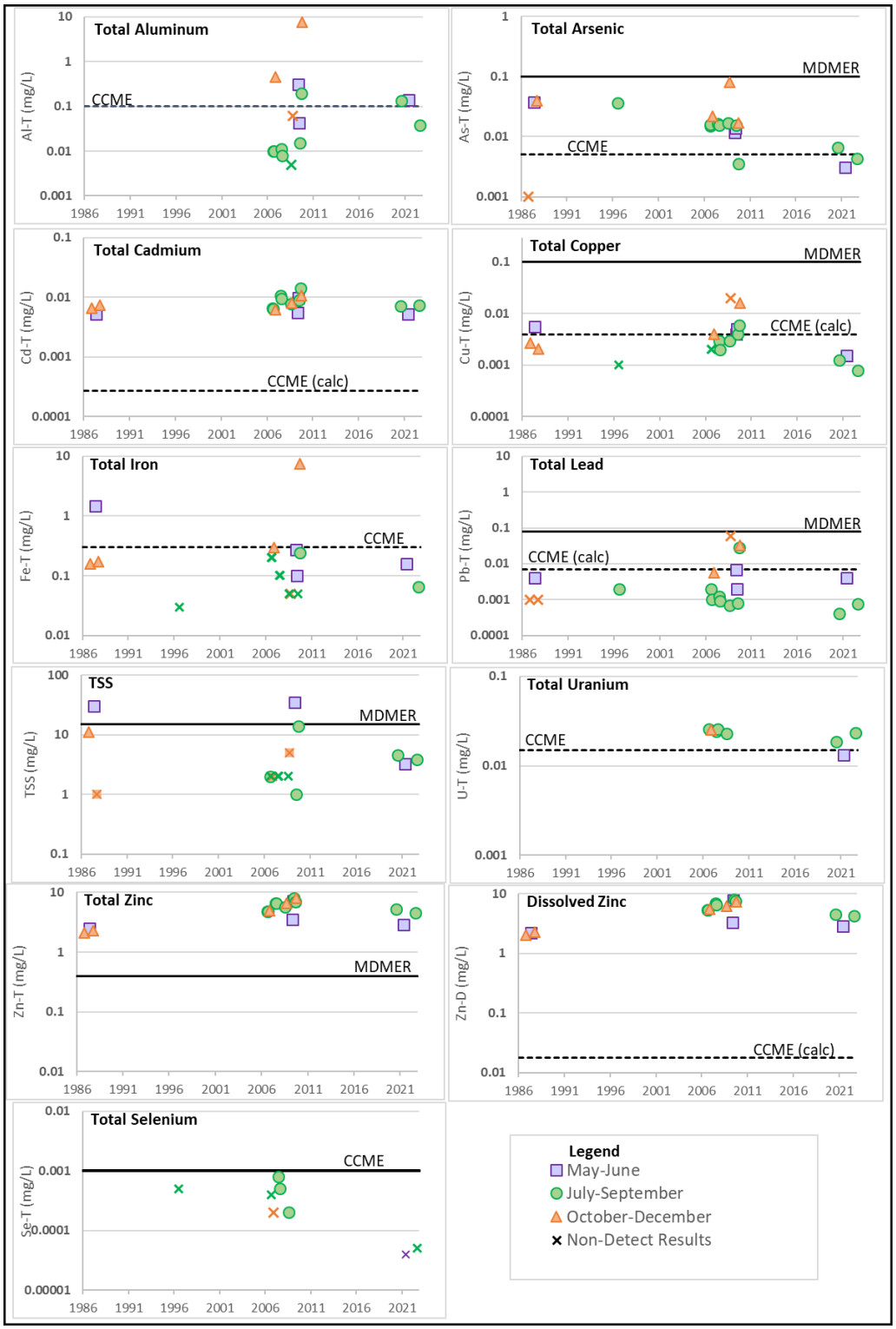

Figure 6. Adit (CMC-11) water chemistry over time using data in WRB's database from a variety of sources. Note that parameters needed for calculated standards is not available for all sampling events, as such an average is shown in graphs.

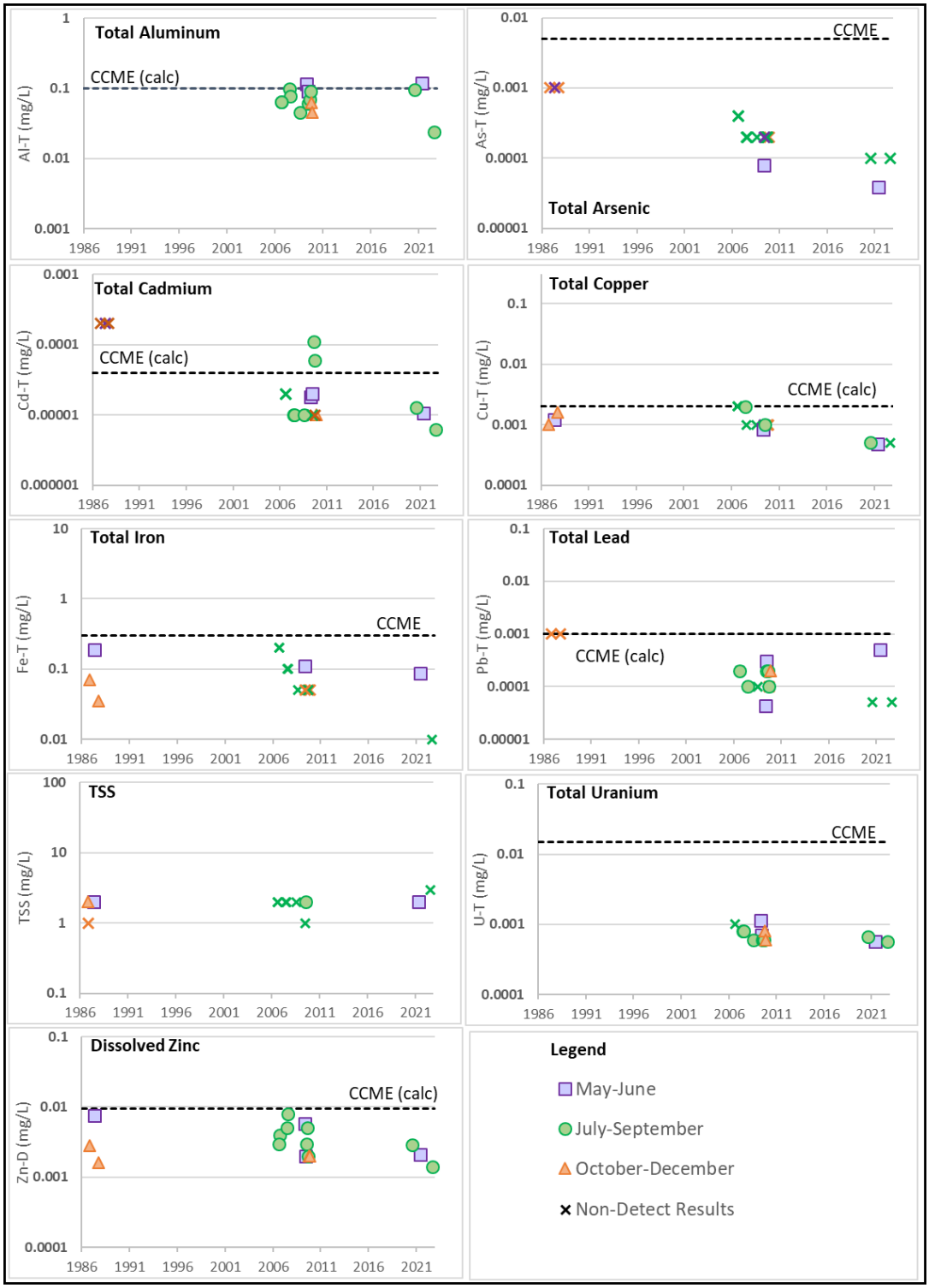

Figure 7. McCrory Creek furthest downstream site (CMC-M2) water chemistry. Note that parameters needed for calculated standards is not available for all sampling events, as such an average is shown in graphs.

4 Discussion

4.1 McCrory Creek

McCrory Creek was sampled in three locations to align with past sampling efforts and allow for temporal analysis. These locations included CMC-M1 (background 50 m above CMC-99.5 influence), M1.5 (approximately 80 meters downstream of CMC-99.5 influence) and CMC-M2 (approximately 1500 meters downstream of CMC-99.5 influence). During the September 2022 visit, McCrory Creek water chemistry had no exceedance of any relevant guidelines.

A substantial portion of analytes were undetectable in McCrory Creek. Those that were detected in at least one of the McCrory Creek samples have been outlined in Table 9. Results for the two downstream locations are expressed as a percentage change from the upstream site (CMC-M1).

The upstream to downstream comparison shows several analytes with either increasing or decreasing concentrations (Table 9). To investigate these further, parameters with changes >10% were compared to modeled concentrations at CMC-M1.5, based on a loading calculation between CMC-M1 and CMC-99.5. Modelled concentrations are based on the measured flow at CMC-M1 (51.9 L/s) and an approximated flow of 0.5 L/s from CMC-99.5 (Table 10). This 'expected change' was calculated by the following:

$$\%\ Expected\ Change = \frac{[CMC\text{-}M1] - [CMC - M1.5]_{calculated}}{[CMC\text{-}M1]}$$

$$[CMC - M1.5]_{calculated} = \frac{[CMC\text{-}M1] \cdot Flow_{CMC\text{-}M1} + [CMC\text{-}99.5] \cdot Flow_{CMC\text{-}99.5}}{Flow_{CMC\text{-}99.5} + Flow_{CMC\text{-}M1}}$$

where [ ] indicate a concentration observed at CMC-M1 and CMC-99.5, and calculated at downstream site CMC-M1.5. Note this calculation only considers inputs from the CMC-99.5 surface flow pathway.

There was insufficient flow at CMC-99.5 to have significant dilution potential in McCrory Creek. As shown in
Table 10, many analytes that were observed to be decreasing at CMC-M1.5, would not have been expected to decrease based on loadings from CMC-99.5, unless the flow estimation was substantially underestimated. The likely cause is that these are a result of lab error, as several analytes were only slightly above the lab detection limit. Extending this to the increasing concentrations observed, it is likely that these were also a result of lab error.

The one exception is that the increase in cadmium concentration observed at CMC-M1.5 is likely a result of input from site-impacted (CMC-99.5) flow. For instance, total cadmium was non-detect (<5 ng/L) at the upstream site, whereas it was an order of magnitude greater than the Reported Detection Limit at CMC-99.5 (52 ng/L). This resulted in a detectable downstream concentration at CMC-M1.5 of around 6 ng/L. The increased concentration remained relatively low in this case; however, it is worth noting that this sampling event was the lowest observed concentration of cadmium in the creek when compared to previous sampling.

Zinc in site-impacted water also has some potential to produce detectable changes in McCrory Creek. The dissolved zinc concentration was 7 µg/L at CMC-99.5, compared to non-detect (<1 µg/L) at the upstream McCrory site. Similar to cadmium, zinc concentrations were low in the creek relative to past results.

Table 9. Change in observed concentration from up to downstream expressed as a percentage change. Parameters listed are those that were detected in at least one McCrory Creek sample during the September 2022 site audit. Red values indicate increasing concentration downstream (by 10% or more); green values indicate decreasing concentrations downstream (10% or more); 'ND' labels indicate where parameters were detected in one location but not the other). Full water quality results are provided in Appendix A.

Parameter	CMC-M1 (mg/L)	CMC-M1.5 % change from CMC-M1	CMC-M2 % change from CMC-M1	Parameter	CMC-M1 (mg/L)	CMC-M1.5 % change from CMC-M1	CMC-M2 % change from CMC-M1
Al-D	0.0381	-6 %	**-38 %**	Na-D	1.72	-3%	-2 %
Al-T	0.0558	-19 %	**-57 %**	Na-T	1.56	+2%	+4 %
Ba-D	0.00682	0 %.	+1 %	N-D	0.076	-1%	-3 %
Ba-T	0.00776	-0 %	-5 %	N-NH4	0.0107	**- ND**	**- ND**
Ca-D	6.46	+6 %	**+25 %**	N-NO3	0.0058	**-10%**	**+72 %**
Ca-T	6.48	**+10 %**	**+25 %**	Tot-N	0.102	**-10%**	**-21 %**

Parameter	CMC-M1 (mg/L)	CMC-M1.5 % change from CMC-M1	CMC-M2 % change from CMC-M1	Parameter	CMC-M1 (mg/L)	CMC-M1.5 % change from CMC-M1	CMC-M2 % change from CMC-M1
Cd-D	<0.0000050	+ ND	+ ND	Pb-D	<0.000050	na	+ ND
Cd-T	<0.0000050	+ ND	+ ND	TDP	0.0061	-59%	- ND
Cs-D	0.000034	+3 %	+32 %	S-D	1.17	+18%	+8 %
Cs-T	0.000044	-9 %	+11 %	Si-D	3.54	+2%	+1 %
Cu-D	0.00035	-20 %	-3 %	Si-T	3.63	+1%	-1 %
Cu-T	0.00071	-21 %	- ND	Sn-T	0.0004	- ND	- ND
Fe-D	0.015	-7 %	- ND	SO4	4	+21%	+29 %
Fe-T	0.030	-30 %	- ND	Sr-D	0.075	+1%	+19 %
K-D	0.197	+2 %	+6 %	Sr-T	0.0719	+7%	+22 %
K-T	0.204	+6 %	+6 %	S-T	0.98	+37%	+36 %
Mg-D	0.487	+17 %	+41 %	TDS	36	+11%	+6 %
Mg-T	0.505	+18 %	+38 %	Ti-D	0.00039	-18%	- ND
Mn-D	0.00032	-16 %	-50 %	Ti-T	0.00104	-34%	- ND
Mn-T	0.00094	-47 %	-80 %	U-D	0.000355	+13%	+24 %
Mo-D	0.000743	-3 %	+28 %	U-T	0.000451	+13%	+25 %
Mo-T	0.000828	-4 %	+27 %	Zn-D	<0.0010	na	+ ND
T = Total D = Dissolved							

Table 10. Comparison of the observed change between CMC-M1 and CMC-M1.5 to the expected change based on the loading from CMC-99.5. Parameters listed are those that had at least a 10% observed change. Red values indicate increasing concentration downstream; green values indicate decreasing concentrations downstream; 'ND' labels indicate where one of the locations contained a non-detection.

Parameter	CMC-M1.5 % change from CMC-M1	Expected change based on CMC-99.5 Load	Parameter	CMC-M1.5 % change from CMC-M1	Expected change based on CMC-99.5 Load
Cd-D	+ ND	+ ND	TDP	-59 %	-0.6 %
Cd-T	+ ND	+ ND	Mn-T	-47 %	+4 %
S-T	+37 %	+5 %	Ti-T	-34 %	+3 %
SO4	+21 %	+4 %	Fe-T	-30 %	+2 %
Mg-T	+18 %	+3 %	Cu-T	-21 %	0 %
S-D	+18 %	+4 %	Cu-D	-20 %	0 %
Mg-D	+17 %	+3 %	Al-T	-19 %	+1 %
U-T	+13 %	+0.8 %	Ti-D	-18 %	-ND
U-D	+13 %	+0.4 %	Mn-D	-16 %	0 %
TDS	+11 %	+0.9 %	N-NO3	-10 %	+3 %
Ca-T	+10 %	+1 %	Tot-N	-10 %	+0.5 %
			N-NH4	- ND	-ND
			Sn-T	- ND	+3 %

Photo 1. CMC-M1. Sample collected upstream of visible surface adit influence. Looking upstream.

Photo 2. CMC-M2. Sample Collected upstream of bridge and ford crossing.

4.2 Ponds

WRB sampled a pond on the west edge of the main site (CMC-WP), which appeared mostly stagnant with visible flow leaving the pond at <1L/s. This flow disappeared to ground shortly downgradient of the pond, beginning to braid and go to and from ground approximately 20 metres downstream of the pond. Water was highly turbid and required multiple filters for each dissolved parameter.

Photo 3. CMC-WP. Sample collected from highly turbid pond on west edge of main site. No visible surface input and <1 L/s flow leaving pond.

Photo 4. CMC-WP. Looking downstream from CMC-WP at flow leaving pond, <1 L/s.

CMC-WP had been identified and sampled by Environment Canada in 2008, and this data showed that water quality was similar during that sampling event, with copper, uranium and zinc values being nearly identical between the two sampling events. These changes in key parameters have been outlined in Table 11 below.

Table 11. Key parameters at CMC-WP and their concentrations between 2008 and 2022 sampling events. EC (2008) referred to the west pond as 'Pond 1'.

Parameter	2008 Sample (mg/L)	2022 Sample (mg/L)
Total Aluminum	4.24	2.65
Total Arsenic	0.01	0.0217
Total Cadmium	0.00046	0.000989
Total Copper	0.0101	0.0118
Total Iron	4.26	2.01
Total Lead	0.0396	0.0803
Total Uranium	0.00193	0.00156
Total Zinc	0.251	0.299

WRB also opportunistically sampled two other ponds identified on the north and east sides of the site. Both of these ponds were in different catchments from CMC-WP; however, both were adjacent to, and in close proximity of, the site footprint. These sites were sampled in order to gain a better understanding of site and regional geochemistry.

Photo 5. CMC-NP. Pond at height of land on north side of site catchment. Small trickling flow leaving pond flowing north.

Photo 6. CMC-EP. Suspected drilling supply pond as evident by section of pipe leaving pond headed up slope towards site proper. <1L/s entering pond, no visible flow leaving pond.

Water chemistry varied significantly between each of the sampled ponds (CMC-WP, CMC-EP and CMC-NP). Each of the sampled ponds had exceedances of a relevant guideline, which are outlined in Table 12 below. Each of the three ponds were calcium-bicarbonate type waters (Figure 5); however, isotopically (Figure 4), they showed very different compositions. The WP and NP isotopes suggest influence from evaporation and rainfall, whereas the EP signal suggests a deeper groundwater influence not significantly influenced by evaporation. The significant increase in pH (8.2%) from field to lab for the sample collected from EP is additional evidence that EP is a groundwater discharge feature. The pH of groundwater samples frequently increases between the field and lab because of the degassing of carbon dioxide and precipitation of carbonate minerals in unacidified sample bottles. Given the combination of high metal concentrations and strong precipitation-evaporation signal in the west pond, this suggests the water could be influenced by reactions close to the surface, such as with waste materials in the vicinity that were placed at surface following development of the underground adit.

Table 12. Relative comparison of West, East and North ponds sampled during the September 2022 sampling event.

Guideline Source	CMC-WP	CMC-EP	CMC-NP
BC-MOE	Total Arsenic Total Iron Total Lead	Total Zinc	None

Guideline Source	CMC-WP	CMC-EP	CMC-NP
	Total Zinc		
CCME	Total Aluminum Total Arsenic Total Iron Total Lead	Total Aluminum Total Cadmium	Total Iron
Yukon CSR	Total Arsenic Total Cadmium Total Copper Total Lead Total Zinc	Total Cadmium Total Zinc	*None*

4.3 Flowing boreholes

During the site visit, WRB and CMI staff identified and opportunistically sampled two seeping boreholes identified as CMC-BH1 (Photo 7) and CMC-BH2 (Photo 8) Both borehole locations had visible flow originating from the hole, though flow was nearly undetectable and was visually estimated to be well below 1 L/s. These locations had some form of lumber or wood seemingly acting as a drill post though there were no clear markings on either post.

The two boreholes showed distinct isotopic signatures and water types from each other. The seep had a similar isotope signature to BH1, but a more similar water type to BH2. Only BH2 had aquatic life guideline exceedances (aluminum, iron, fluoride). BH2 also had elevated sulphur concentration (130 mg/L), similar to sulphate in the adit (148 mg/L), indicating that this location may be influenced by a mineralized area.

Photo 7. CMC-BH1. Photo depicts location as YG found it; stick standing in mud with pooling and nearly undetectable flow <1 L/s.

Photo 8. CMC-BH2. Piece of 4”x4” lumber inserted into ground, material which appears to be bentonite present on ground surrounding hole. Nearly undetectable flow <1 L/s.

4.4 Other surface water

Two opportunistic samples were collected from other surface water located by WRB staff. One of these locations was the headwater an unnamed creek northeast of the site, named CMC-NEC by WRB at the time of sampling. Another was CMC-SS, a seep emerging from the southern slope of the main site. These sites were also sampled for further information about regional water chemistry. The sample collected at CMC-NEC showed no exceedances of any relevant standards or guidelines, and the vast majority of sample parameters were below detection limits. Similarly, water quality at CMC-SS had no elevated parameters and no exceedances.

Photo 9. CMC-NEC headwater of creek emerging from ground in small pool, accumulating flow rapidly. Clear flowing water at approximately 2 L/s.

Photo 10. CMC-SS flow travelling along ditch on south side of site. WRB crew dug a small hole to allow for sampling then returned several hours later to collect sample after stirred sediment had flushed.

5 Key findings

i) Adit water quality in recent years has generally been similar to, or to some degree improved from, sampling results in the late 1980's and late 2000's.

ii) Cadmium and zinc are the most elevated contaminants in the adit water and have the highest potential to impact water quality in McCrory Creek.

iii) There were no exceedances of CCME guidelines in McCrory Creek during the visit; in the past there have been exceedances of aluminum, cadmium, and copper at the downstream-most McCrory station CMC-M2.

iv) During this visit, site impacted water originating from the adit was likely contributing to increased cadmium concentrations in McCrory Creek, but concentrations in McCrory Creek were below relevant guidelines for protection of aquatic life.

6 Recommendations

The water monitoring plan required under the mining land use authorization to be implemented by the proponent should include:

A. Monitor flow from the adit (CMC-11) and near where water enters McCrory Creek (CMC-99.5) using a low-flow method such as salt dilution gauging or volumetric method when flow levels allow.

   Rationale: There is sparse historical flow data available from the adit to better understand loadings to McCrory Creek. Although low-flow measurements are challenging, any rough method of measuring flow (such as a bucket method) will provide a better understanding than currently available. When feasible, monthly flow sampling would be ideal.

B. Analyze samples for physical parameters (conductivity, turbidity, pH, alkalinity, hardness, dissolved oxygen), TSS/TDS, total and dissolved metals, sulphate, ammonia, nitrogen-nitrite, nitrate, phosphorus and DOC, as well as field parameters twice annually (spring high-water and fall low-water) from the following stations:

   i. the adit (CMC-11),
   ii. the 'west' pond,
   iii. the inflow to McCrory Creek (CMC-99.5, documenting any changes to channel location),
   iv. McCrory Creek upstream (CMC-M1), and
   v. McCrory Creek downstream (CMC-M1.5) of the adit influenced inflow.

   Rationale: The adit discharge and 'west' pond have contaminants that are above relevant guidelines for the protection of aquatic life, and are elevated relative to the water quality in McCrory Creek. As such, there is potential to impact the creek. The above locations will monitor the source (CMC-11 and CMC-WP), known changes along the flow path towards the creek (CMC-99.5), and potential impacts to the creek (CMC-M1 and CMC-M1.5). Continued monitoring will enable assessment of this potential change over time.

7 Contact information

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References

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Appendix A – Lab water quality reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **WR2201160**	Page	: 1 of 14
Client	: **Government of Yukon**	Laboratory	: Whitehorse - Environmental
Contact	: Devon O'Connor	Account Manager	: Tasnia Tarannum
Address	: Department of Environment, Environmental Protection and Assessment Branch 419 Range Road Whitehorse YT Canada Y1A 3V1	Address	: #12 151 Industrial Road Whitehorse YT Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Silver Hart	Date Samples Received	: 22-Sep-2022 16:40
PO	: ----	Date Analysis Commenced	: 26-Sep-2022
C-O-C number	: 17-773935	Issue Date	: 11-Oct-2022 16:33
Sampler	: DO / AB		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 15		
No. of samples analysed	: 15		

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.

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General Comments

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

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

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

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

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

Unit	*Description*
-	No Unit
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

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

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

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

Qualifiers

Qualifier	*Description*
DLM	*Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).*
DTC	*Dissolved concentration exceeds total. Results were confirmed by re-analysis.*
DTMF	*Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.*
RRV	*Reported result verified by repeat analysis.*

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-EP	CMC-NP	CMC-NEC	CMC-WP	CMC-M1
					Client sampling date / time	21-Sep-2022 10:05	21-Sep-2022 09:00	21-Sep-2022 09:25	21-Sep-2022 11:30	21-Sep-2022 16:35
						WR2201160-001	WR2201160-002	WR2201160-003	WR2201160-004	WR2201160-005
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		104	16.6	48.3	44.4	16.4
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		104	16.6	48.3	44.4	16.4
conductivity	----	E100	2.0	µS/cm		278	42.2	132	101	43.3
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		149	18.6	64.8	46.2	18.1
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		137	18.6	67.4	47.1	18.3
pH	----	E108	0.10	pH units		8.13	7.19	7.73	7.66	7.30
solids, total dissolved [TDS]	----	E162	10	mg/L		166	39	80	78	36
solids, total suspended [TSS]	----	E160	3.0	mg/L		15.3	4.7	<3.0	5.3	<3.0
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	<0.0050	<0.0050	0.0053	0.0107
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
cyanate	88402-73-7	E343	0.20	mg/L		<0.20	<0.20	<0.20	<0.20	<0.20
fluoride	16984-48-8	E235.F	0.020	mg/L		0.104	0.027	0.067	0.042	0.031
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.0567	<0.0050	<0.0050	<0.0050	0.0058
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	0.0053	<0.0010	<0.0010	<0.0010
nitrogen, total	7727-37-9	E366	0.030	mg/L		0.072	0.352	0.067	0.220	0.102
nitrogen, total dissolved	----	E368	0.030	mg/L		0.063	0.244	0.052	0.155	0.076
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L		<0.0010	0.0018	<0.0010	0.0015	<0.0010
phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L		<0.0020	0.0121	<0.0020	0.0039	0.0061
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		45.1	2.71	19.6	7.96	4.00
Cyanides										
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cyanide, weak acid dissociable	----	E336	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon										
carbon, dissolved inorganic [DIC]	----	E353-L	0.50	mg/L		26.8	5.21	11.5	11.0	4.25
carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L		26.0	5.37	11.5	11.1	4.29

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-EP	CMC-NP	CMC-NEC	CMC-WP	CMC-M1
					Client sampling date / time	21-Sep-2022 10:05	21-Sep-2022 09:00	21-Sep-2022 09:25	21-Sep-2022 11:30	21-Sep-2022 16:35
						WR2201160-001	WR2201160-002	WR2201160-003	WR2201160-004	WR2201160-005
						Result	Result	Result	Result	Result
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.175	0.0697	0.0412	2.65	0.0558
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00436	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00121	0.00026	0.00019	0.0217	<0.00010
barium, total	7440-39-3	E420	0.00010	mg/L		0.00453	0.00592	0.00614	0.0413	0.00776
beryllium, total	7440-41-7	E420	0.000100	mg/L		<0.000100	<0.000100	<0.000100	0.000136	<0.000100
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	0.000112	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.000374	0.0000099	0.0000168	0.000989	<0.0000050
calcium, total	7440-70-2	E420	0.050	mg/L		51.9	6.57	24.6	14.7	6.48
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000279	0.000029	0.000022	0.00126	0.000044
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00111	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	0.00025	<0.00010	0.00067	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		0.00052	0.00073	<0.00050	0.0118	0.00071
iron, total	7439-89-6	E420	0.010	mg/L		0.205	0.355	0.027	2.01	0.030
lead, total	7439-92-1	E420	0.000050	mg/L		0.00120	0.000094	0.000055	0.0803	<0.000050
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0024	<0.0010	0.0011	0.0044	<0.0010
magnesium, total	7439-95-4	E420	0.0050	mg/L		1.73	0.542	1.45	2.53	0.505
manganese, total	7439-96-5	E420	0.00010	mg/L		0.00723	0.0808	0.00242	0.371	0.00094
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.00415	0.000984	0.00271	0.00188	0.000828
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00164	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.378	0.450	0.361	1.43	0.204
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00186	0.00189	0.00108	0.00861	0.00087
selenium, total	7782-49-2	E420	0.000050	mg/L		0.000114	<0.000050	<0.000050	<0.000050	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		4.02	1.58	4.66	7.06	3.63
silver, total	7440-22-4	E420	0.000010	mg/L		0.000018	<0.000010	<0.000010	0.00366	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		1.01	1.06	1.49	1.90	1.56
strontium, total	7440-24-6	E420	0.00020	mg/L		0.210	0.0347	0.142	0.120	0.0719
sulfur, total	7704-34-9	E420	0.50	mg/L		14.8	0.66	6.70	2.47	0.98
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-EP	CMC-NP	CMC-NEC	CMC-WP	CMC-M1
					Client sampling date / time	21-Sep-2022 10:05	21-Sep-2022 09:00	21-Sep-2022 09:25	21-Sep-2022 11:30	21-Sep-2022 16:35
						WR2201160-001	WR2201160-002	WR2201160-003	WR2201160-004	WR2201160-005
						Result	Result	Result	Result	Result
Total Metals										
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	0.000051	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00067	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00104	0.00040
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00868	0.00169	0.00093	0.0904	0.00104
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00027	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000949	0.000057	0.000253	0.00156	0.000451
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00304	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		0.175	<0.0030	0.0037	0.299	<0.0030
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00060 DLM	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0034	0.0340	1.68 DTC	0.0393	0.0381
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	0.00157	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00087	0.00023	0.00012	0.00610	<0.00010
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00294	0.00508	0.447 DTC	0.00863	0.00682
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.000353	0.0000097	0.0000165	0.000713	<0.0000050
calcium, dissolved	7440-70-2	E421	0.050	mg/L		57.0	6.58	23.5	14.9	6.46
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		0.000147	0.000016	0.000016	0.000028	0.000034
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	0.00019	0.00011	0.00024	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	0.00048	0.00062	0.00368	0.00035
iron, dissolved	7439-89-6	E421	0.010	mg/L		<0.010	0.236	0.017	0.057	0.015
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	0.000053	0.000338 DTC	0.00403	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0021	<0.0010	0.0115 DTC	<0.0010	<0.0010
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		1.70	0.528	1.49	2.18	0.487
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		<0.00010	0.0731	0.00168	0.341	0.00032
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00418	0.000924	0.00277	0.00178	0.000743
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	0.00068	<0.00050

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-EP	CMC-NP	CMC-NEC	CMC-WP	CMC-M1
					Client sampling date / time	21-Sep-2022 10:05	21-Sep-2022 09:00	21-Sep-2022 09:25	21-Sep-2022 11:30	21-Sep-2022 16:35
						WR2201160-001	WR2201160-002	WR2201160-003	WR2201160-004	WR2201160-005
						Result	Result	Result	Result	Result
Dissolved Metals										
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.304	0.375	0.334	0.702	0.197
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00117	0.00185	0.00096	0.00198	0.00081
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		0.000119	<0.000050	<0.000050	<0.000050	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		3.85	1.46	4.87	2.85	3.54
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	0.000345	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.05	1.08	1.42	1.92	1.72
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.234	0.0376	0.137	0.125	0.0750
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		14.3	0.83	6.30	2.30	1.17
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	0.00050	0.00096	0.00103	0.00039
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000808	0.000042	0.000250	0.000890	0.000355
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	0.00058	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		0.150	<0.0010	0.0045	0.0911	<0.0010
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	0.00114 DTC	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field

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

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-M1.5	CMC-M2	CMC-11-R	CMC-11	CMC-BH2
					Client sampling date / time	21-Sep-2022 16:00	21-Sep-2022 12:50	21-Sep-2022 15:20	21-Sep-2022 15:10	21-Sep-2022 10:20
						WR2201160-006	WR2201160-007	WR2201160-008	WR2201160-009	WR2201160-010
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		17.4	19.2	143	140	104
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		17.4	19.2	143	140	104
conductivity	----	E100	2.0	µS/cm		46.6	52.8	509	512	424
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		19.4	23.0	270	271	216
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		20.2	23.1	265	265	210
pH	----	E108	0.10	pH units		7.29	7.39	8.14	8.15	8.13
solids, total dissolved [TDS]	----	E162	10	mg/L		40	38	346	320	296
solids, total suspended [TSS]	----	E160	3.0	mg/L		<3.0	<3.0	12.7	3.9	10.1
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
cyanate	88402-73-7	E343	0.20	mg/L		<0.20	<0.20	<0.20	<0.20	<0.20
fluoride	16984-48-8	E235.F	0.020	mg/L		0.031	0.036	0.209	0.208	0.927
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		0.0052	0.0100	<0.0050	<0.0050	0.102
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	0.0027
nitrogen, total	7727-37-9	E366	0.030	mg/L		0.092	0.081	<0.030	<0.030	0.135
nitrogen, total dissolved	----	E368	0.030	mg/L		0.075	0.074	<0.030	<0.030	0.133
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	0.0030
phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L		0.0025	<0.0020	<0.0020	<0.0020	0.0050
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		4.85	5.17	148	148	130
Cyanides										
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cyanide, weak acid dissociable	----	E336	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon										
carbon, dissolved inorganic [DIC]	----	E353-L	0.50	mg/L		4.33	5.03	33.7	33.8	24.2
carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L		4.49	5.10	34.2	34.7	24.4
Total Metals										

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-M1.5	CMC-M2	CMC-11-R	CMC-11	CMC-BH2
					Client sampling date / time	21-Sep-2022 16:00	21-Sep-2022 12:50	21-Sep-2022 15:20	21-Sep-2022 15:10	21-Sep-2022 10:20
						WR2201160-006	WR2201160-007	WR2201160-008	WR2201160-009	WR2201160-010
						Result	Result	Result	Result	Result
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.0451	0.0242	0.0253	0.0374	0.187
antimony, total	7440-36-0	E420	0.00010	mg/L		<0.00010	<0.00010	0.00489	0.00488	0.00025
arsenic, total	7440-38-2	E420	0.00010	mg/L		<0.00010	<0.00010	0.00425	0.00430	0.00365
barium, total	7440-39-3	E420	0.00010	mg/L		0.00775	0.00741	0.0115	0.0122	0.00303
beryllium, total	7440-41-7	E420	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	0.014
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000056	0.0000062	0.00743	0.00746	0.0000919
calcium, total	7440-70-2	E420	0.050	mg/L		7.10	8.12	80.0	79.7	79.8
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000040	0.000049	0.00239	0.00240	0.000240
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00012
copper, total	7440-50-8	E420	0.00050	mg/L		0.00056	<0.00050	0.00077	0.00078	0.00094
iron, total	7439-89-6	E420	0.010	mg/L		0.021	<0.010	0.044	0.066	0.223
lead, total	7439-92-1	E420	0.000050	mg/L		<0.000050	<0.000050	0.000541	0.000763	0.00360
lithium, total	7439-93-2	E420	0.0010	mg/L		<0.0010	<0.0010	0.0102	0.0102	0.0116
magnesium, total	7439-95-4	E420	0.0050	mg/L		0.596	0.696	15.9	16.1	2.67
manganese, total	7439-96-5	E420	0.00010	mg/L		0.00050	0.00019	0.0236	0.0248	0.104
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.000792	0.00105	0.00330	0.00321	0.0444
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	0.00381	0.00379	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		0.216	0.216	1.08	1.08	0.452
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00095	0.00098	0.00441	0.00442	0.00180
selenium, total	7782-49-2	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	0.000146
silicon, total	7440-21-3	E420	0.10	mg/L		3.68	3.60	4.28	4.28	9.25
silver, total	7440-22-4	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	0.000033
sodium, total	7440-23-5	E420	0.050	mg/L		1.59	1.62	2.09	2.09	3.47
strontium, total	7440-24-6	E420	0.00020	mg/L		0.0772	0.0879	0.452	0.450	0.704
sulfur, total	7704-34-9	E420	0.50	mg/L		1.34	1.33	50.1	49.4	43.0
tellurium, total	13494-80-9	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-M1.5	CMC-M2	CMC-11-R	CMC-11	CMC-BH2
					Client sampling date / time	21-Sep-2022 16:00	21-Sep-2022 12:50	21-Sep-2022 15:20	21-Sep-2022 15:10	21-Sep-2022 10:20
						WR2201160-006	WR2201160-007	WR2201160-008	WR2201160-009	WR2201160-010
						Result	Result	Result	Result	Result
Total Metals										
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	0.000013	0.000014	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00069	<0.00030	0.00097	0.00176	0.00679
tungsten, total	7440-33-7	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00829
uranium, total	7440-61-1	E420	0.000010	mg/L		0.000510	0.000563	0.0242	0.0236	0.00376
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		<0.0030	<0.0030	4.61	4.54	0.0192
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0358	0.0236	0.0041	0.0027	0.0410
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		<0.00010	<0.00010	0.00464	0.00458	0.00022
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		<0.00010	<0.00010	0.00414	0.00392	0.00221
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.00682	0.00688	0.0116	0.0107	0.00897 DTMF
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	0.013
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		0.0000058	0.0000062	0.00720	0.00672	0.0000556
calcium, dissolved	7440-70-2	E421	0.050	mg/L		6.85	8.06	80.3	82.0	82.0
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		0.000035	0.000045	0.00214	0.00215	0.000144
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		0.00028	0.00034	0.00062	0.00074	0.00037
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.014	<0.010	<0.010	<0.010	0.012
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	0.000072	0.000420	0.000437	0.000112
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		<0.0010	<0.0010	0.0104	0.0104	0.0117
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		0.569	0.687	16.8	16.2	2.70
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.00027	0.00016	0.0216	0.0198	0.0892
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.000722	0.000948	0.00309	0.00305	0.0421
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	0.00355	0.00330	<0.00050

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-M1.5	CMC-M2	CMC-11-R	CMC-11	CMC-BH2
					Client sampling date / time	21-Sep-2022 16:00	21-Sep-2022 12:50	21-Sep-2022 15:20	21-Sep-2022 15:10	21-Sep-2022 10:20
						WR2201160-006	WR2201160-007	WR2201160-008	WR2201160-009	WR2201160-010
						Result	Result	Result	Result	Result
Dissolved Metals										
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		0.201	0.209	1.09	1.03	0.458
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00094	0.00096	0.00436	0.00413	0.00136
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	0.000116
silicon, dissolved	7440-21-3	E421	0.050	mg/L		3.61	3.58	4.18	4.13	8.81
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		1.67	1.68	2.15	1.98	3.44
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		0.0760	0.0889	0.432	0.421	0.678
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		1.38	1.26	49.1	50.1	42.1
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	0.000012	0.000012	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		0.00032	<0.00030	<0.00030	<0.00030	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	0.00783
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.000401	0.000441	0.0216	0.0218	0.00332
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0014	4.65	4.31	0.0053
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	Field	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	Field	Field	Field

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

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-BH1	CMC-99.5	Travel Blank	Field Blank	CMC-SS
					Client sampling date / time	21-Sep-2022 13:30	21-Sep-2022	21-Sep-2022	21-Sep-2022 13:00	21-Sep-2022
						WR2201160-011	WR2201160-012	WR2201160-013	WR2201160-014	WR2201160-015
						Result	Result	Result	Result	Result
Physical Tests										
alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L		109	29.0	<1.0	<1.0	42.9
alkalinity, carbonate (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, hydroxide (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L		<1.0	<1.0	<1.0	<1.0	<1.0
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L		109	29.0	<1.0	<1.0	42.9
conductivity	----	E100	2.0	µS/cm		257	106	<2.0	<2.0	183
hardness (as CaCO3), dissolved	----	EC100	0.60	mg/L		131	45.7	----	<0.60	78.9
hardness (as CaCO3), from total Ca/Mg	----	EC100A	0.60	mg/L		132	46.0	<0.60	<0.60	77.7
pH	----	E108	0.10	pH units		8.21	7.71	5.49	5.32	7.89
solids, total dissolved [TDS]	----	E162	10	mg/L		144	71	<10	<10	111
solids, total suspended [TSS]	----	E160	3.0	mg/L		4.5	8.1	<3.0	<3.0	5.1
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L		0.0074	<0.0050	<0.0050	0.0085 RRV	<0.0050
bromide	24959-67-9	E235.Br-L	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
chloride	16887-00-6	E235.Cl	0.50	mg/L		<0.50	<0.50	<0.50	<0.50	<0.50
cyanate	88402-73-7	E343	0.20	mg/L		<0.20	<0.20	<0.20	<0.20	<0.20
fluoride	16984-48-8	E235.F	0.020	mg/L		0.238	0.027	<0.020	<0.020	0.085
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L		<0.0050	0.0242	<0.0050	<0.0050	<0.0050
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
nitrogen, total	7727-37-9	E366	0.030	mg/L		<0.030	0.158	<0.030	<0.030	0.044
nitrogen, total dissolved	----	E368	0.030	mg/L		<0.030	0.112	----	<0.030	0.038
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L		0.0032	0.0021	----	<0.0020	0.0038
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L		29.5	19.4	<0.30	<0.30	43.2
Cyanides										
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cyanide, weak acid dissociable	----	E336	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Organic / Inorganic Carbon										
carbon, dissolved inorganic [DIC]	----	E353-L	0.50	mg/L		26.9	7.67	<0.50	<0.50	10.8
carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L		27.6	7.71	<0.50	<0.50	11.0
Bioassays										

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-BH1	CMC-99.5	Travel Blank	Field Blank	CMC-SS
					Client sampling date / time	21-Sep-2022 13:30	21-Sep-2022	21-Sep-2022	21-Sep-2022 13:00	21-Sep-2022
						WR2201160-011	WR2201160-012	WR2201160-013	WR2201160-014	WR2201160-015
						Result	Result	Result	Result	Result
Bioassays										
trout bioassay LC50	----	TRT-LC50-96	-	-		----	See attached	----	----	----
Total Metals										
aluminum, total	7429-90-5	E420	0.0030	mg/L		0.104	0.111	0.0083 RRV	<0.0030	0.0359
antimony, total	7440-36-0	E420	0.00010	mg/L		0.00014	<0.00010	<0.00010	<0.00010	<0.00010
arsenic, total	7440-38-2	E420	0.00010	mg/L		0.00112	0.00014	<0.00010	<0.00010	<0.00010
barium, total	7440-39-3	E420	0.00010	mg/L		0.0192	0.00836	0.00074 RRV	0.00018 RRV	0.00501
beryllium, total	7440-41-7	E420	0.000100	mg/L		<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
bismuth, total	7440-69-9	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
boron, total	7440-42-8	E420	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
cadmium, total	7440-43-9	E420	0.0000050	mg/L		0.0000121	0.0000520	<0.0000050	<0.0000050	0.0000166
calcium, total	7440-70-2	E420	0.050	mg/L		36.9	15.3	<0.050	<0.050	26.9
cesium, total	7440-46-2	E420	0.000010	mg/L		0.000559	0.000123	<0.000010	<0.000010	0.000450
chromium, total	7440-47-3	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
cobalt, total	7440-48-4	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
copper, total	7440-50-8	E420	0.00050	mg/L		<0.00050	0.00076	<0.00050	<0.00050	0.00081
iron, total	7439-89-6	E420	0.010	mg/L		0.335	0.104	<0.010	<0.010	0.041
lead, total	7439-92-1	E420	0.000050	mg/L		0.000507	0.000175	<0.000050	<0.000050	0.000100
lithium, total	7439-93-2	E420	0.0010	mg/L		0.0118	0.0010	<0.0010	<0.0010	0.0030
magnesium, total	7439-95-4	E420	0.0050	mg/L		9.65	1.89	<0.0050	<0.0050	2.55
manganese, total	7439-96-5	E420	0.00010	mg/L		0.0642	0.00526	<0.00010	<0.00010	0.00223
mercury, total	7439-97-6	E508	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
molybdenum, total	7439-98-7	E420	0.000050	mg/L		0.00375	0.000506	<0.000050	<0.000050	0.00410
nickel, total	7440-02-0	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
phosphorus, total	7723-14-0	E420	0.050	mg/L		<0.050	<0.050	<0.050	<0.050	<0.050
potassium, total	7440-09-7	E420	0.050	mg/L		1.04	0.450	<0.050	<0.050	0.280
rubidium, total	7440-17-7	E420	0.00020	mg/L		0.00252	0.00260	<0.00020	<0.00020	0.00120
selenium, total	7782-49-2	E420	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
silicon, total	7440-21-3	E420	0.10	mg/L		5.24	4.60	<0.10	<0.10	5.13
silver, total	7440-22-4	E420	0.000010	mg/L		0.000023	<0.000010	<0.000010	<0.000010	<0.000010
sodium, total	7440-23-5	E420	0.050	mg/L		2.34	1.58	<0.050	<0.050	2.00
strontium, total	7440-24-6	E420	0.00020	mg/L		2.12	0.112	<0.00020	<0.00020	0.167

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-BH1	CMC-99.5	Travel Blank	Field Blank	CMC-SS
					Client sampling date / time	21-Sep-2022 13:30	21-Sep-2022	21-Sep-2022	21-Sep-2022 13:00	21-Sep-2022
						WR2201160-011	WR2201160-012	WR2201160-013	WR2201160-014	WR2201160-015
						Result	Result	Result	Result	Result
Total Metals										
sulfur, total	7704-34-9	E420	0.50	mg/L		9.80	6.42	<0.50	<0.50	13.7
tellurium, total	13494-80-9	E420	0.00020	mg/L		0.00034	<0.00020	<0.00020	<0.00020	<0.00020
thallium, total	7440-28-0	E420	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
thorium, total	7440-29-1	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
tin, total	7440-31-5	E420	0.00010	mg/L		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
titanium, total	7440-32-6	E420	0.00030	mg/L		0.00382	0.00442	<0.00030	<0.00030	0.00170
tungsten, total	7440-33-7	E420	0.00010	mg/L		0.00226	<0.00010	<0.00010	<0.00010	<0.00010
uranium, total	7440-61-1	E420	0.000010	mg/L		0.00314	0.000812	<0.000010	<0.000010	0.00421
vanadium, total	7440-62-2	E420	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
zinc, total	7440-66-6	E420	0.0030	mg/L		0.0041	0.0122	0.0041 RRV	<0.0030	0.0065
zirconium, total	7440-67-7	E420	0.00020	mg/L		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dissolved Metals										
aluminum, dissolved	7429-90-5	E421	0.0010	mg/L		0.0091	0.0187	----	0.0012 RRV	0.0034
antimony, dissolved	7440-36-0	E421	0.00010	mg/L		0.00012	<0.00010	----	<0.00010	<0.00010
arsenic, dissolved	7440-38-2	E421	0.00010	mg/L		0.00095	<0.00010	----	<0.00010	<0.00010
barium, dissolved	7440-39-3	E421	0.00010	mg/L		0.0182	0.00660	----	0.00016 RRV	0.00492
beryllium, dissolved	7440-41-7	E421	0.000100	mg/L		<0.000100	<0.000100	----	<0.000100	<0.000100
bismuth, dissolved	7440-69-9	E421	0.000050	mg/L		<0.000050	<0.000050	----	<0.000050	<0.000050
boron, dissolved	7440-42-8	E421	0.010	mg/L		<0.010	<0.010	----	<0.010	<0.010
cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L		<0.0000050	0.0000363	----	<0.0000050	0.0000136
calcium, dissolved	7440-70-2	E421	0.050	mg/L		35.9	15.2	----	<0.050	27.6
cesium, dissolved	7440-46-2	E421	0.000010	mg/L		0.000434	0.000037	----	<0.000010	0.000422
chromium, dissolved	7440-47-3	E421	0.00050	mg/L		<0.00050	<0.00050	----	<0.00050	<0.00050
cobalt, dissolved	7440-48-4	E421	0.00010	mg/L		<0.00010	<0.00010	----	<0.00010	<0.00010
copper, dissolved	7440-50-8	E421	0.00020	mg/L		<0.00020	0.00050	----	<0.00020	0.00037
iron, dissolved	7439-89-6	E421	0.010	mg/L		0.170	<0.010	----	<0.010	<0.010
lead, dissolved	7439-92-1	E421	0.000050	mg/L		<0.000050	<0.000050	----	<0.000050	<0.000050
lithium, dissolved	7439-93-2	E421	0.0010	mg/L		0.0118	<0.0010	----	<0.0010	0.0029
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L		10.1	1.89	----	<0.0050	2.42
manganese, dissolved	7439-96-5	E421	0.00010	mg/L		0.0555	0.00034	----	<0.00010	0.00088
mercury, dissolved	7439-97-6	E509	0.0000050	mg/L		<0.0000050	<0.0000050	----	<0.0000050	<0.0000050

Analytical Results

Sub-Matrix: **Surface Water**
(Matrix: **Water**)

Analyte	CAS Number	Method	LOR	Unit	Client sample ID	CMC-BH1	CMC-99.5	Travel Blank	Field Blank	CMC-SS
					Client sampling date / time	21-Sep-2022 13:30	21-Sep-2022	21-Sep-2022	21-Sep-2022 13:00	21-Sep-2022
						WR2201160-011	WR2201160-012	WR2201160-013	WR2201160-014	WR2201160-015
						Result	Result	Result	Result	Result
Dissolved Metals										
molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L		0.00325	0.000485	----	<0.000050	0.00420
nickel, dissolved	7440-02-0	E421	0.00050	mg/L		<0.00050	<0.00050	----	<0.00050	<0.00050
phosphorus, dissolved	7723-14-0	E421	0.050	mg/L		<0.050	<0.050	----	<0.050	<0.050
potassium, dissolved	7440-09-7	E421	0.050	mg/L		1.01	0.423	----	<0.050	0.289
rubidium, dissolved	7440-17-7	E421	0.00020	mg/L		0.00226	0.00210	----	<0.00020	0.00123
selenium, dissolved	7782-49-2	E421	0.000050	mg/L		<0.000050	0.000053	----	<0.000050	<0.000050
silicon, dissolved	7440-21-3	E421	0.050	mg/L		5.06	4.38	----	<0.050	4.88
silver, dissolved	7440-22-4	E421	0.000010	mg/L		<0.000010	<0.000010	----	<0.000010	<0.000010
sodium, dissolved	7440-23-5	E421	0.050	mg/L		2.28	1.46	----	<0.050	1.92
strontium, dissolved	7440-24-6	E421	0.00020	mg/L		1.93	0.101	----	<0.00020	0.170
sulfur, dissolved	7704-34-9	E421	0.50	mg/L		9.91	6.42	----	<0.50	14.6
tellurium, dissolved	13494-80-9	E421	0.00020	mg/L		<0.00020	<0.00020	----	<0.00020	<0.00020
thallium, dissolved	7440-28-0	E421	0.000010	mg/L		<0.000010	<0.000010	----	<0.000010	<0.000010
thorium, dissolved	7440-29-1	E421	0.00010	mg/L		<0.00010	<0.00010	----	<0.00010	<0.00010
tin, dissolved	7440-31-5	E421	0.00010	mg/L		<0.00010	<0.00010	----	<0.00010	<0.00010
titanium, dissolved	7440-32-6	E421	0.00030	mg/L		<0.00030	<0.00030	----	<0.00030	<0.00030
tungsten, dissolved	7440-33-7	E421	0.00010	mg/L		0.00224	<0.00010	----	<0.00010	<0.00010
uranium, dissolved	7440-61-1	E421	0.000010	mg/L		0.00272	0.000498	----	<0.000010	0.00411
vanadium, dissolved	7440-62-2	E421	0.00050	mg/L		<0.00050	<0.00050	----	<0.00050	<0.00050
zinc, dissolved	7440-66-6	E421	0.0010	mg/L		<0.0010	0.0074	----	<0.0010	0.0062
zirconium, dissolved	7440-67-7	E421	0.00020	mg/L		<0.00020	<0.00020	----	<0.00020	<0.00020
dissolved mercury filtration location	----	EP509	-	-		Field	Field	----	Field	Field
dissolved metals filtration location	----	EP421	-	-		Field	Field	----	Field	Field

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

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WR2201160**	Page	: 1 of 52
Client	: **Government of Yukon**	Laboratory	: Whitehorse - Environmental
Contact	: Devon O'Connor	Account Manager	: Tasnia Tarannum
Address	: Department of Environment, Environmental Protection and Assessment Branch 419 Range Road Whitehorse YT Canada Y1A 3V1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Silver Hart	Date Samples Received	: 22-Sep-2022 16:40
PO	: ----	Issue Date	: 11-Oct-2022 16:34
C-O-C number	: 17-773935		
Sampler	: DO / AB		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 15		
No. of samples analysed	: 15		

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 Matrix Spike outliers occur.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- 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.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Total Metals	QC-MRG3-666101002	----	strontium, total	7440-24-6	E420	126 % MES	80.0-120%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

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 / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-11	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-11-R	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-99.5	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-BH1	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-BH2	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-EP	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
CMC-M1	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-M1.5	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-M2	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-SS	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-WP	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Field Blank	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Travel Blank	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-NEC	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) CMC-NP	E298	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-11	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-11-R	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-99.5	E235.Br-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-BH1	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-BH2	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-EP	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-M1	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-M1.5	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-M2	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-NEC	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-NP	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-SS	E235.Br-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE CMC-WP	E235.Br-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE Travel Blank	E235.Br-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC (Low Level)										
HDPE Field Blank	E235.Br-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-11	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-11-R	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-99.5	E235.Cl	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-BH1	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-BH2	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-EP	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-M1	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-M1.5	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-M2	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-NEC	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-NP	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-SS	E235.Cl	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE CMC-WP	E235.Cl	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE										
Travel Blank	E235.Cl	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE										
Field Blank	E235.Cl	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11-R	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-99.5	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH1	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH2	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-EP	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M1	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M1.5	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M2	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-NEC	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-NP	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-SS	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-WP	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
Field Blank	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Cyanate by Ion Selective Electrode										
UV-inhibited HDPE - total (sodium hydroxide)										
Travel Blank	E343	21-Sep-2022	----	----	----		05-Oct-2022	----	----	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE										
CMC-11	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-11-R	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-99.5	E378-U	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-BH1	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-BH2	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-EP	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-M1	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-M1.5	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-M2	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-NEC	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-NP	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-SS	E378-U	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE CMC-WP	E378-U	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE Travel Blank	E378-U	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE Field Blank	E378-U	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	8 days	× EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-11	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-11-R	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-99.5	E235.F	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-BH1	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-BH2	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-EP	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-M1	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-M1.5	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-M2	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-NEC	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE CMC-NP	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
CMC-SS	E235.F	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
CMC-WP	E235.F	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
Travel Blank	E235.F	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE										
Field Blank	E235.F	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
CMC-11	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
CMC-11-R	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
CMC-99.5	E235.NO3-L	21-Sep-2022	29-Sep-2022	3 days	7 days	× EHT	29-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
CMC-BH1	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
CMC-BH2	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-EP	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-M1	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-M1.5	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-M2	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-NEC	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-NP	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-SS	E235.NO3-L	21-Sep-2022	29-Sep-2022	3 days	7 days	× EHT	29-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE CMC-WP	E235.NO3-L	21-Sep-2022	28-Sep-2022	3 days	7 days	× EHT	28-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Travel Blank	E235.NO3-L	21-Sep-2022	29-Sep-2022	3 days	7 days	× EHT	29-Sep-2022	3 days	0 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE										
Field Blank	E235.NO3-L	21-Sep-2022	29-Sep-2022	3 days	8 days	× EHT	29-Sep-2022	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-11	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-11-R	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-99.5	E235.NO2-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-BH1	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-BH2	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-EP	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-M1	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE										
CMC-M1.5	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE CMC-M2	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE CMC-NEC	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE CMC-NP	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE CMC-SS	E235.NO2-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE CMC-WP	E235.NO2-L	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Travel Blank	E235.NO2-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	7 days	× EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Field Blank	E235.NO2-L	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	3 days	8 days	× EHT
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-11	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-11-R	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

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Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-99.5	E235.SO4	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-BH1	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-BH2	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-EP	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-M1	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-M1.5	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-M2	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-NEC	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE CMC-NP	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
CMC-SS	E235.SO4	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
CMC-WP	E235.SO4	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Travel Blank	E235.SO4	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE										
Field Blank	E235.SO4	21-Sep-2022	29-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid)										
CMC-11	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid)										
CMC-11-R	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid)										
CMC-99.5	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid)										
CMC-BH1	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid)										
CMC-BH2	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-EP	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-M1	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-M1.5	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-M2	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-NEC	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-NP	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-SS	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) CMC-WP	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)										
Amber glass dissolved (sulfuric acid) Field Blank	E375-T	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-11	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-11-R	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-99.5	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-BH1	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-BH2	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-EP	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-M1	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-M1.5	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-M2	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-NEC	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-NP	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-SS	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
CMC-WP	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Nitrogen by Colourimetry										
Amber glass dissolved (sulfuric acid)										
Field Blank	E368	21-Sep-2022	28-Sep-2022	----	----		29-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-11	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-11-R	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-99.5	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-BH1	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-BH2	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-EP	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-M1	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-M1.5	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-M2	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-SS	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-WP	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
Field Blank	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
Travel Blank	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-NEC	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	8 days	✓
Anions and Nutrients : Total Nitrogen by Colourimetry										
Amber glass total (sulfuric acid)										
CMC-NP	E366	21-Sep-2022	26-Sep-2022	----	----		28-Sep-2022	28 days	8 days	✓
Bioassays : Survival/LC50 Rainbow Trout (96 hours)										
LDPE carboy										
CMC-99.5	TRT-LC50-96	21-Sep-2022	----	----	----		26-Sep-2022	5 days	5 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11-R	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-99.5	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH1	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH2	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-EP	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-M1	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-M1.5	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-M2	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-NEC	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-NP	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-SS	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) CMC-WP	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Field Blank	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Travel Blank	E333	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-11-R	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-99.5	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH1	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-BH2	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-EP	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M1	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M1.5	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-M2	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-NEC	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-NP	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-SS	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
CMC-WP	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
Field Blank	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide)										
Travel Blank	E336	21-Sep-2022	30-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-11	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-11-R	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-99.5	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-BH1	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-BH2	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-EP	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-M1	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-M1.5	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-M2	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-NEC	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-NP	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
CMC-SS	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) CMC-WP	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) Field Blank	E509	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	28 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-11	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-11-R	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-99.5	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-BH1	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-BH2	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) Field Blank	E421	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	180 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-EP	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓

Matrix: **Water**

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Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-M1	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-M1.5	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-M2	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-NEC	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-NP	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-WP	E421	21-Sep-2022	26-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) CMC-SS	E421	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	180 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-11	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-11-R	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-99.5	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-BH1	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-BH2	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-EP	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-M1	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-M1.5	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-M2	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-NEC	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-NP	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-SS	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE CMC-WP	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE Field Blank	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Inorganic Carbon by Combustion										
HDPE Travel Blank	E353-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-11	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-11-R	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-99.5	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-BH1	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-BH2	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-EP	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-M1	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-M1.5	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-M2	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-NEC	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-NP	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-SS	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE CMC-WP	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE Field Blank	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Total Inorganic Carbon by Combustion (Low Level)										
HDPE										
Travel Blank	E354-L	21-Sep-2022	----	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-11	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-11-R	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-BH1	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-BH2	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-EP	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-M1	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-M1.5	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE										
CMC-M2	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE CMC-NEC	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE CMC-NP	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE CMC-WP	E290	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE CMC-99.5	E290	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE CMC-SS	E290	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Travel Blank	E290	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE Field Blank	E290	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-11	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-11-R	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE CMC-BH1	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-BH2	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-EP	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-M1	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-M1.5	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-M2	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-NEC	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-NP	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-WP	E100	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	28 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Conductivity in Water										
HDPE CMC-99.5	E100	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE CMC-SS	E100	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE Travel Blank	E100	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE Field Blank	E100	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE CMC-11	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-11-R	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-BH1	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-BH2	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-EP	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE CMC-M1	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-M1.5	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-M2	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-NEC	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-NP	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-WP	E108	21-Sep-2022	28-Sep-2022	----	----		28-Sep-2022	0.25 hrs	10.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-99.5	E108	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	0.25 hrs	30.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE CMC-SS	E108	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	0.25 hrs	30.25 hrs	× EHTR-FM
Physical Tests : pH by Meter										
HDPE Field Blank	E108	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	0.25 hrs	30.25 hrs	× EHTR-FM

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE Travel Blank	E108	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	0.25 hrs	30.25 hrs	× EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE CMC-11	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-11-R	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-99.5	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-BH1	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-BH2	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-EP	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-M1	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-M1.5	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE CMC-M2	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-NEC	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-NP	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-SS	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE CMC-WP	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Field Blank	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE Travel Blank	E162	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-11	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-11-R	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE CMC-99.5	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-BH1	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-BH2	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-EP	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-M1	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-M1.5	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-M2	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-NEC	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE CMC-NP	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TSS by Gravimetry										
HDPE										
CMC-SS	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
CMC-WP	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
Field Blank	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE										
Travel Blank	E160	21-Sep-2022	----	----	----		28-Sep-2022	7 days	7 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
CMC-11	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
CMC-11-R	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
CMC-99.5	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
CMC-BH1	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
CMC-BH2	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-EP	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-M1	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-M1.5	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-M2	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-NEC	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-NP	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-SS	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) CMC-WP	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid) Field Blank	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total Mercury in Water by CVAAS										
Glass vial total (hydrochloric acid)										
Travel Blank	E508	21-Sep-2022	26-Sep-2022	----	----		26-Sep-2022	28 days	5 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-11	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-11-R	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-99.5	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-BH1	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-BH2	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-EP	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-M1	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid)										
CMC-M1.5	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓

Matrix: **Water**

Evaluation: × = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CMC-M2	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CMC-NEC	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CMC-NP	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CMC-WP	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) Field Blank	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) Travel Blank	E420	21-Sep-2022	27-Sep-2022	----	----		27-Sep-2022	180 days	6 days	✓
Total Metals : Total metals in Water by CRC ICPMS										
HDPE total (nitric acid) CMC-SS	E420	21-Sep-2022	29-Sep-2022	----	----		30-Sep-2022	180 days	9 days	✓

Legend & Qualifier Definitions

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended

EHT: Exceeded ALS recommended hold time prior to analysis.

Rec. HT: ALS recommended hold time (see units).

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	669366	2	28	7.1	5.0	✓
Ammonia by Fluorescence	E298	667072	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	669371	2	23	8.7	5.0	✓
Chloride in Water by IC	E235.Cl	669370	2	25	8.0	5.0	✓
Conductivity in Water	E100	669367	2	37	5.4	5.0	✓
Cyanate by Ion Selective Electrode	E343	680095	1	18	5.5	5.0	✓
Dissolved Inorganic Carbon by Combustion	E353-L	669935	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	668021	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	666479	3	58	5.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	669375	2	20	10.0	5.0	✓
Fluoride in Water by IC	E235.F	669368	2	28	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	669372	2	30	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	669373	2	30	6.6	5.0	✓
pH by Meter	E108	669365	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	669369	2	28	7.1	5.0	✓
TDS by Gravimetry	E162	670493	2	30	6.6	5.0	✓
Total Cyanide	E333	674887	1	18	5.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)	E375-T	669756	1	19	5.2	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	669754	1	15	6.6	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	670773	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	666841	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	666101	2	38	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	667073	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	670479	2	30	6.6	5.0	✓
WAD Cyanide	E336	674888	1	17	5.8	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	669366	2	28	7.1	5.0	✓
Ammonia by Fluorescence	E298	667072	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	669371	2	23	8.7	5.0	✓
Chloride in Water by IC	E235.Cl	669370	2	25	8.0	5.0	✓
Conductivity in Water	E100	669367	2	37	5.4	5.0	✓
Cyanate by Ion Selective Electrode	E343	680095	1	18	5.5	5.0	✓
Dissolved Inorganic Carbon by Combustion	E353-L	669935	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	668021	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	666479	3	58	5.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	669375	2	20	10.0	5.0	✓
Fluoride in Water by IC	E235.F	669368	2	28	7.1	5.0	✓

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Nitrate in Water by IC (Low Level)	E235.NO3-L	669372	2	30	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	669373	2	30	6.6	5.0	✓
pH by Meter	E108	669365	2	38	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	669369	2	28	7.1	5.0	✓
TDS by Gravimetry	E162	670493	2	30	6.6	5.0	✓
Total Cyanide	E333	674887	1	18	5.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)	E375-T	669756	1	19	5.2	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	669754	1	15	6.6	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	670773	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	666841	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	666101	2	38	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	667073	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	670479	2	30	6.6	5.0	✓
WAD Cyanide	E336	674888	1	17	5.8	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	669366	2	28	7.1	5.0	✓
Ammonia by Fluorescence	E298	667072	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	669371	2	23	8.7	5.0	✓
Chloride in Water by IC	E235.Cl	669370	2	25	8.0	5.0	✓
Conductivity in Water	E100	669367	2	37	5.4	5.0	✓
Cyanate by Ion Selective Electrode	E343	680095	1	18	5.5	5.0	✓
Dissolved Inorganic Carbon by Combustion	E353-L	669935	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	668021	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	666479	3	58	5.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	669375	2	20	10.0	5.0	✓
Fluoride in Water by IC	E235.F	669368	2	28	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	669372	2	30	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	669373	2	30	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	669369	2	28	7.1	5.0	✓
TDS by Gravimetry	E162	670493	2	30	6.6	5.0	✓
Total Cyanide	E333	674887	1	18	5.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)	E375-T	669756	1	19	5.2	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	669754	1	15	6.6	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	670773	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	666841	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	666101	2	38	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	667073	1	15	6.6	5.0	✓
TSS by Gravimetry	E160	670479	2	30	6.6	5.0	✓
WAD Cyanide	E336	674888	1	17	5.8	5.0	✓
Matrix Spikes (MS)							

Matrix: **Water**

Evaluation: × = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Ammonia by Fluorescence	E298	667072	1	15	6.6	5.0	✓
Bromide in Water by IC (Low Level)	E235.Br-L	669371	2	23	8.7	5.0	✓
Chloride in Water by IC	E235.Cl	669370	2	25	8.0	5.0	✓
Cyanate by Ion Selective Electrode	E343	680095	1	18	5.5	5.0	✓
Dissolved Inorganic Carbon by Combustion	E353-L	669935	1	18	5.5	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	668021	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	666479	3	58	5.1	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	669375	2	20	10.0	5.0	✓
Fluoride in Water by IC	E235.F	669368	2	28	7.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	669372	2	30	6.6	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	669373	2	30	6.6	5.0	✓
Sulfate in Water by IC	E235.SO4	669369	2	28	7.1	5.0	✓
Total Cyanide	E333	674887	1	18	5.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)	E375-T	669756	1	19	5.2	5.0	✓
Total Dissolved Nitrogen by Colourimetry	E368	669754	1	15	6.6	5.0	✓
Total Inorganic Carbon by Combustion (Low Level)	E354-L	670773	1	16	6.2	5.0	✓
Total Mercury in Water by CVAAS	E508	666841	1	20	5.0	5.0	✓
Total metals in Water by CRC ICPMS	E420	666101	2	38	5.2	5.0	✓
Total Nitrogen by Colourimetry	E366	667073	1	15	6.6	5.0	✓
WAD Cyanide	E336	674888	1	17	5.8	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 Vancouver - Environmental	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 Vancouver - Environmental	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.
TSS by Gravimetry	E160 Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at 104 ± 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 Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 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 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl Vancouver - Environmental	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 Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 Vancouver - Environmental	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
Alkalinity Species by Titration	E290 Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Cyanide	E333 Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis. Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336 Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Cyanate by Ion Selective Electrode	E343 Waterloo - Environmental	Water	APHA 4500-CN L (mod)	This analysis is carried out using procedures adapted from APHA method 4500-CN "Cyanide". Cyanate is determined by the Cyanate hydrolysis method using an ammonia selective electrode
Dissolved Inorganic Carbon by Combustion	E353-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Inorganic Carbon is determined on a sample which is filtered through a 0.45 micron filter prior to analysis by the high temperature combustion method with measurement by an infrared detector, where the sample is acidified in a reaction chamber to convert all inorganic carbons (carbonates) to carbon dioxide for analysis.
Total Inorganic Carbon by Combustion (Low Level)	E354-L Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Inorganic Carbon is determined by the high temperature combustion method with measurement by an infrared detector, where the sample is acidified in a reaction chamber to convert all inorganic carbons (carbonates) to carbon dioxide for analysis.
Total Nitrogen by Colourimetry	E366 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Total Nitrogen is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Dissolved Nitrogen by Colourimetry	E368 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Total Dissolved Nitrogen is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.002 mg/L)	E375-T Vancouver - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total metals in Water by CRC ICPMS	E420 Vancouver - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Dissolved Hardness (Calculated)	EC100 Vancouver - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Hardness (Calculated) from Total Ca/Mg	EC100A Vancouver - Environmental	Water	APHA 2340B	“Hardness (as CaCO3), from total Ca/Mg” is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Survival/LC50 Rainbow Trout (96 hours)	TRT-LC50-96 Nautilus Environmental (Burnaby) - 8664 Commerce Court Burnaby British Columbia Canada V5A 4N7	Water	EPS1/RM/13	See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for Total Nitrogen in water	EP366	Water	APHA 4500-P J (mod)	Samples are heated with a persulfate digestion reagent.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
	Vancouver - Environmental			
Digestion for Total Dissolved Nitrogen in water	EP368 Vancouver - Environmental	Water	APHA 4500-P J (mod)	Samples are filtration through a 0.45 micron filter and then heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375 Vancouver - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
Dissolved Mercury Water Filtration	EP509 Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **WR2201160**	Page	: 1 of 35
Client	: Government of Yukon	Laboratory	: Whitehorse - Environmental
Contact	: Devon O'Connor	Account Manager	: Tasnia Tarannum
Address	: Department of Environment, Environmental Protection and Assessment Branch 419 Range Road Whitehorse YT Canada Y1A 3V1	Address	: #12 151 Industrial Road Whitehorse, Yukon Canada Y1A 2V3
Telephone	: ----	Telephone	: +1 867 668 6689
Project	: Silver Hart	Date Samples Received	: 22-Sep-2022 16:40
PO	: ----	Date Analysis Commenced	: 26-Sep-2022
C-O-C number	: 17-773935	Issue Date	: 11-Oct-2022 16:34
Sampler	: DO / AB		
Site	: ----		
Quote number	: Standing Offer		
No. of samples received	: 15		
No. of samples analysed	: 15		

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.

Signatories	*Position*	*Laboratory Department*
Alex Thornton	Analyst	Vancouver Metals, Burnaby, British Columbia
Anshim Anshim	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Caitlin Macey	Team Leader - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Erin Sanchez		Vancouver Metals, Burnaby, British Columbia
Jon Fisher	Department Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kyle Chang	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Inorganics, Burnaby, British Columbia
Paolo Obillo	Account Manager Assistant	Nautilus Environmental (Burnaby) External Subcontracting, Burnaby, British Columbia
Qammar Almas	Lab Assistant	Vancouver Metals, Burnaby, British Columbia

General Comments

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

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.
CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
DQO = Data Quality Objective.
LOR = Limit of Reporting (detection limit).
RPD = Relative Percent Difference
# = Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Physical Tests (QC Lot: 669365)											
VA22C2789-007	Anonymous	pH	----	E108	0.10	pH units	5.49	5.50	0.182%	4%	----
Physical Tests (QC Lot: 669366)											
VA22C2789-007	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		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, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 669367)											
VA22C2789-007	Anonymous	conductivity	----	E100	2.0	µS/cm	<2.0	<2.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 670479)											
VA22C2854-001	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 670480)											
WR2201160-006	CMC-M1.5	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 670493)											
VA22C2854-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	182	190	8	Diff <2x LOR	----
Physical Tests (QC Lot: 670494)											
WR2201160-006	CMC-M1.5	solids, total dissolved [TDS]	----	E162	10	mg/L	40	38	1	Diff <2x LOR	----
Physical Tests (QC Lot: 671585)											
VA22C3344-002	Anonymous	pH	----	E108	0.10	pH units	8.13	8.12	0.123%	4%	----
Physical Tests (QC Lot: 671586)											
VA22C3344-002	Anonymous	alkalinity, bicarbonate (as CaCO3)	----	E290	1.0	mg/L	69.6	69.1	0.721%	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, phenolphthalein (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
		alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	69.6	69.1	0.721%	20%	----
Physical Tests (QC Lot: 671587)											
VA22C3344-002	Anonymous	conductivity	----	E100	2.0	µS/cm	175	178	1.92%	10%	----
Anions and Nutrients (QC Lot: 667072)											
WR2201160-001	CMC-EP	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 667073)											

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*
Anions and Nutrients (QC Lot: 667073) - continued											
WR2201160-001	CMC-EP	nitrogen, total	7727-37-9	E366	0.030	mg/L	0.072	0.068	0.004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669368)											
VA22C2789-005	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669369)											
VA22C2789-005	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	<0.30	<0.30	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669370)											
VA22C2789-005	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669371)											
VA22C2789-005	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669372)											
VA22C2789-005	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669373)											
VA22C2789-005	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669375)											
VA22C2789-005	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669754)											
VA22C3271-001	Anonymous	nitrogen, total dissolved	----	E368	0.030	mg/L	0.053	0.056	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 669756)											
FJ2202691-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-T	0.0020	mg/L	<0.0020	<0.0020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671578)											
VA22C2456-006	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.030	0.029	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671579)											
VA22C2456-006	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	0.50	<0.50	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671580)											
VA22C2456-006	Anonymous	bromide	24959-67-9	E235.Br-L	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671581)											
VA22C2456-006	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671582)											
VA22C2456-006	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 671583)											
VA22C2456-006	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	14.1	14.1	0.344%	20%	----
Anions and Nutrients (QC Lot: 671589)											
KS2203613-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0100	mg/L	0.358	0.365	1.72%	20%	----
Anions and Nutrients (QC Lot: 680095)											
WT2216186-001	Anonymous	cyanate	88402-73-7	E343	0.20	mg/L	0.75	0.75	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Cyanides (QC Lot: 674887)											
VA22C2892-003	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 674888)											
VA22C2892-003	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 669935)											
VA22C3069-001	Anonymous	carbon, dissolved inorganic [DIC]	----	E353-L	0.50	mg/L	29.6	30.9	4.11%	20%	----
Organic / Inorganic Carbon (QC Lot: 670773)											
VA22C3069-001	Anonymous	carbon, total inorganic [TIC]	----	E354-L	0.50	mg/L	30.2	30.6	1.18%	20%	----
Total Metals (QC Lot: 666101)											
YL2201467-001	Anonymous	aluminum, total	7429-90-5	E420	0.0060	mg/L	0.0141	0.0154	0.0014	Diff <2x LOR	----
		antimony, total	7440-36-0	E420	0.00020	mg/L	0.00036	0.00036	0.000001	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00020	mg/L	0.00113	0.00110	0.00003	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00020	mg/L	0.0586	0.0577	1.42%	20%	----
		beryllium, total	7440-41-7	E420	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.020	mg/L	0.983	0.990	0.721%	20%	----
		cadmium, total	7440-43-9	E420	0.0000100	mg/L	<0.0000100	<0.0000100	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.100	mg/L	325	331	1.78%	20%	----
		cesium, total	7440-46-2	E420	0.000020	mg/L	0.000122	0.000122	0.0000005	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00020	mg/L	0.00053	0.00054	0.000005	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00100	mg/L	0.00118	0.00111	0.00007	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.020	mg/L	0.047	0.044	0.003	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0020	mg/L	0.0634	0.0646	1.79%	20%	----
		magnesium, total	7439-95-4	E420	0.0100	mg/L	85.2	85.8	0.676%	20%	----
		manganese, total	7439-96-5	E420	0.00020	mg/L	0.0704	0.0693	1.45%	20%	----
		molybdenum, total	7439-98-7	E420	0.000100	mg/L	0.0293	0.0290	1.12%	20%	----
		nickel, total	7440-02-0	E420	0.00100	mg/L	0.0129	0.0127	1.31%	20%	----
		phosphorus, total	7723-14-0	E420	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.100	mg/L	14.6	15.0	2.63%	20%	----
		rubidium, total	7440-17-7	E420	0.00040	mg/L	0.0164	0.0168	2.17%	20%	----
		selenium, total	7782-49-2	E420	0.000100	mg/L	<0.000100	<0.000100	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.20	mg/L	4.00	3.96	0.815%	20%	----
		silver, total	7440-22-4	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.100	mg/L	279	277	0.604%	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*
Total Metals (QC Lot: 666101) - continued											
YL2201467-001	Anonymous	strontium, total	7440-24-6	E420	0.00040	mg/L	6.51	6.61	1.47%	20%	----
		sulfur, total	7704-34-9	E420	1.00	mg/L	131	130	0.776%	20%	----
		tellurium, total	13494-80-9	E420	0.00040	mg/L	0.00050	0.00056	0.00006	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00060	mg/L	<0.00060	<0.00060	0	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00020	mg/L	0.00128	0.00129	0.000004	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000020	mg/L	0.00860	0.00882	2.56%	20%	----
		vanadium, total	7440-62-2	E420	0.00100	mg/L	<0.00100	<0.00100	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0060	mg/L	<0.0060	<0.0060	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00040	mg/L	<0.00040	<0.00040	0	Diff <2x LOR	----
Total Metals (QC Lot: 666841)											
VA22C3051-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	0.0120 µg/L	0.0000134	0.0000014	Diff <2x LOR	----
Total Metals (QC Lot: 671619)											
VA22C2978-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.0446	0.0453	1.53%	20%	----
		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	0.0000007	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.00202	0.00202	0.402%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	0.873	0.907	3.80%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, total	7440-50-8	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	0.056	0.058	0.002	Diff <2x LOR	----
		lead, total	7439-92-1	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	0.119	0.120	0.711%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.00523	0.00545	4.23%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000129	0.000129	0.0000003	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Total Metals (QC Lot: 671619) - continued											
VA22C2978-001	Anonymous	phosphorus, total	7723-14-0	E420	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.145	0.151	0.006	Diff <2x LOR	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00022	<0.00020	0.00002	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.18	1.21	2.49%	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	0.521	0.532	2.12%	20%	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.00385	0.00387	0.455%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	<0.00010	<0.00010	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	0.00053	0.00059	0.00006	Diff <2x LOR	----
		tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000039	0.000038	0.000001	Diff <2x LOR	----
		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	<0.0030	<0.0030	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 666479)											
WR2201117-007	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0116	0.0112	4.06%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00019	0.00019	0.000003	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00057	0.00057	0.0000004	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0486	0.0468	3.78%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	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	0.0000324	0.0000322	0.0000002	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	48.2	46.5	3.54%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00156	0.00161	0.00006	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	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 666479) - continued											
WR2201117-007	Anonymous	lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	12.1	11.8	3.10%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00032	0.00027	0.00005	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000362	0.000389	0.000026	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00057	0.00060	0.00003	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	0.120	0.119	0.0008	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000174	0.000148	0.000026	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.58	2.57	0.0560%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.616	0.619	0.442%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.106	0.103	2.60%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	8.66	8.73	0.768%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000641	0.000658	2.55%	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	0.0024	0.0028	0.0004	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 666480)											
WR2201119-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0074	0.0079	0.0005	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	0.00077	0.00079	0.00002	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00075	0.00082	0.00006	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0443	0.0438	1.22%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	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	0.00178	0.00176	0.900%	20%	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	90.9	91.7	0.824%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 666480) - continued											
WR2201119-001	Anonymous	chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00012	0.00012	0.000001	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00047	0.00046	0.00002	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.134	0.132	1.19%	20%	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000126	0.000138	0.000012	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0043	0.0043	0.000007	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	24.5	24.4	0.448%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0962	0.0969	0.784%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000760	0.000790	3.83%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00095	0.00095	0.0000001	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.100	mg/L	0.514	0.526	0.012	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00027	0.00030	0.00003	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.00202	0.00197	2.80%	20%	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	3.21	3.12	2.59%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.61	1.68	4.22%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.289	0.294	1.51%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	56.8	56.7	0.0644%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00248	0.00251	1.40%	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	0.223	0.223	0.186%	20%	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 668021)											
VA22C3037-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 671451)											
WR2201160-015	CMC-SS	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0034	0.0034	0.00007	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	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 671451) - continued											
WR2201160-015	CMC-SS	barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00492	0.00529	7.26%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000100	mg/L	<0.000100	<0.000100	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	0.0000136	0.0000172	0.0000035	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	27.6	28.5	3.09%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000422	0.000425	0.672%	20%	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00037	0.00039	0.00002	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	0.0029	0.0030	0.00008	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.42	2.55	5.27%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.00088	0.00095	0.00007	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.00420	0.00422	0.416%	20%	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.289	0.307	0.018	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00123	0.00121	0.00001	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	4.88	4.85	0.520%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.92	2.02	5.11%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.170	0.169	0.342%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	14.6	14.7	1.15%	20%	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.00411	0.00415	1.14%	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	0.0062	0.0062	0.00004	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 671451) - continued											
WR2201160-015	CMC-SS	zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----

Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 669366)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 669367)						
conductivity	----	E100	1	µS/cm	1.5	----
Physical Tests (QCLot: 670479)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 670480)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 670493)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 670494)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 671586)						
alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 671587)						
conductivity	----	E100	1	µS/cm	1.0	----
Anions and Nutrients (QCLot: 667072)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 667073)						
nitrogen, total	7727-37-9	E366	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 669368)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 669369)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 669370)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 669371)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 669372)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 669373)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 669375)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 669754)						
nitrogen, total dissolved	----	E368	0.03	mg/L	<0.030	----
Anions and Nutrients (QCLot: 669756)						
phosphorus, total dissolved	7723-14-0	E375-T	0.002	mg/L	<0.0020	----
Anions and Nutrients (QCLot: 671578)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 671579)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 671580)						
bromide	24959-67-9	E235.Br-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 671581)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 671582)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 671583)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 671589)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 680095)						
cyanate	88402-73-7	E343	0.2	mg/L	<0.20	----
Cyanides (QCLot: 674887)						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
Cyanides (QCLot: 674888)						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
Organic / Inorganic Carbon (QCLot: 669935)						
carbon, dissolved inorganic [DIC]	----	E353-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 670773)						
carbon, total inorganic [TIC]	----	E354-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 666101)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 666101) - continued						
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	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 666101) - continued						
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Total Metals (QCLot: 666841)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 671619)						
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	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 671619) - continued						
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 666479)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 666479) - continued						
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 666480)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 666480) - continued						
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 668021)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 671451)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 671451) - continued						
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 669365)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 669366)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	97.9	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	106	85.0	115	----
Physical Tests (QCLot: 669367)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.4	90.0	110	----
Physical Tests (QCLot: 670479)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	86.5	85.0	115	----
Physical Tests (QCLot: 670480)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	89.8	85.0	115	----
Physical Tests (QCLot: 670493)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	94.2	85.0	115	----
Physical Tests (QCLot: 670494)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.0	85.0	115	----
Physical Tests (QCLot: 671585)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 671586)									
alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	229 mg/L	98.4	75.0	125	----
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	109	85.0	115	----
Physical Tests (QCLot: 671587)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.7	90.0	110	----
Anions and Nutrients (QCLot: 667072)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	89.1	85.0	115	----
Anions and Nutrients (QCLot: 667073)									
nitrogen, total	7727-37-9	E366	0.03	mg/L	0.5 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 669368)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 669369)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 669370)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 669371)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 669371) - continued									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 669372)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 669373)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 669375)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 669754)									
nitrogen, total dissolved	----	E368	0.03	mg/L	0.5 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 669756)									
phosphorus, total dissolved	7723-14-0	E375-T	0.002	mg/L	0.05 mg/L	92.3	80.0	120	----
Anions and Nutrients (QCLot: 671578)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.6	90.0	110	----
Anions and Nutrients (QCLot: 671579)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 671580)									
bromide	24959-67-9	E235.Br-L	0.05	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 671581)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 671582)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 671583)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 671589)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	100	80.0	120	----
Anions and Nutrients (QCLot: 680095)									
cyanate	88402-73-7	E343	0.2	mg/L	1 mg/L	99.8	85.0	115	----
Cyanides (QCLot: 674887)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	90.8	80.0	120	----
Cyanides (QCLot: 674888)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	96.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 669935)									
carbon, dissolved inorganic [DIC]	----	E353-L	0.5	mg/L	8 mg/L	96.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 670773)									
carbon, total inorganic [TIC]	----	E354-L	0.5	mg/L	8 mg/L	99.7	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
Total Metals (QCLot: 666101)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	105	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	109	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	99.7	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	106	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	109	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	107	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	109	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	106	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	105	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	97.3	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	102	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	108	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	114	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	110	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	110	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	101	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	104	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	103	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	# 126	80.0	120	MES
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.3	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	104	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	109	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	103	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	103	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	115	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	106	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Total Metals (QCLot: 666101) - continued									
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
Total Metals (QCLot: 666841)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	104	80.0	120	----
Total Metals (QCLot: 671619)									
aluminum, total	7429-90-5	E420	0.003	mg/L	2 mg/L	104	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	1 mg/L	106	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	1 mg/L	102	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.25 mg/L	95.7	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.1 mg/L	110	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	1 mg/L	103	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	50 mg/L	101	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.05 mg/L	99.7	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.25 mg/L	99.3	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.25 mg/L	99.0	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.25 mg/L	99.6	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	1 mg/L	103	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.25 mg/L	107	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	50 mg/L	103	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	10 mg/L	100	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	50 mg/L	104	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	1 mg/L	102	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	10 mg/L	107	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.1 mg/L	94.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	50 mg/L	100	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	50 mg/L	92.7	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.1 mg/L	107	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	1 mg/L	103	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.1 mg/L	97.6	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
Total Metals (QCLot: 671619) - continued									
tin, total	7440-31-5	E420	0.0001	mg/L	0.5 mg/L	99.8	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.25 mg/L	94.0	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.1 mg/L	100	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.005 mg/L	104	80.0	120	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.5 mg/L	100	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.5 mg/L	99.3	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.1 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 666479)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	99.6	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	108	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	99.1	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	96.5	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	108	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	86.8	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	98.8	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	100	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	99.4	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	99.3	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	100	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	94.5	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	94.6	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.0	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	101	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	97.2	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	108	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.2	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	96.8	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	95.1	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.4	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	109	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	81.1	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 666479) - continued									
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	101	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	87.3	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	94.4	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	102	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	93.3	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	99.2	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	101	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	99.7	80.0	120	----
Dissolved Metals (QCLot: 666480)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	111	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	97.6	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	98.0	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	86.9	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	98.7	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	104	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	99.6	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	99.2	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	107	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	101	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	99.4	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	111	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	99.3	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	95.2	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	96.6	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 666480) - continued									
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	100	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	99.0	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	93.2	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	102	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	94.8	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	99.7	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	105	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	99.0	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	105	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	97.8	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	96.2	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	103	80.0	120	----
Dissolved Metals (QCLot: 671451)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	2 mg/L	106	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	1 mg/L	112	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	1 mg/L	108	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.1 mg/L	110	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	1 mg/L	110	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	1 mg/L	101	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.1 mg/L	103	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.05 mg/L	105	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.25 mg/L	104	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.25 mg/L	105	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	1 mg/L	106	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.5 mg/L	108	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.25 mg/L	109	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	106	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.25 mg/L	104	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.25 mg/L	109	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.5 mg/L	102	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	10 mg/L	105	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	111	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 671451) - continued									
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.1 mg/L	106	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	1 mg/L	100	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	10 mg/L	111	80.0	120	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.25 mg/L	109	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	50 mg/L	111	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.1 mg/L	108	80.0	120	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	1 mg/L	111	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.1 mg/L	105	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.25 mg/L	97.9	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.1 mg/L	109	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.005 mg/L	112	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.5 mg/L	106	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.1 mg/L	102	80.0	120	----

Qualifiers

Qualifier	Description
MES	*Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).*

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 667072)										
WR2201160-002	CMC-NP	ammonia, total (as N)	7664-41-7	E298	0.0859 mg/L	0.1 mg/L	85.9	75.0	125	----
Anions and Nutrients (QCLot: 667073)										
WR2201160-002	CMC-NP	nitrogen, total	7727-37-9	E366	0.388 mg/L	0.4 mg/L	97.0	70.0	130	----
Anions and Nutrients (QCLot: 669368)										
VA22C2789-006	Anonymous	fluoride	16984-48-8	E235.F	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 669369)										
VA22C2789-006	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	110 mg/L	100 mg/L	110	75.0	125	----
Anions and Nutrients (QCLot: 669370)										
VA22C2789-006	Anonymous	chloride	16887-00-6	E235.Cl	108 mg/L	100 mg/L	108	75.0	125	----
Anions and Nutrients (QCLot: 669371)										
VA22C2789-006	Anonymous	bromide	24959-67-9	E235.Br-L	0.554 mg/L	0.5 mg/L	111	75.0	125	----
Anions and Nutrients (QCLot: 669372)										
VA22C2789-006	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.74 mg/L	2.5 mg/L	109	75.0	125	----
Anions and Nutrients (QCLot: 669373)										
VA22C2789-006	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.522 mg/L	0.5 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 669375)										
VA22C2789-006	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0293 mg/L	0.03 mg/L	97.6	70.0	130	----
Anions and Nutrients (QCLot: 669754)										
WR2201160-001	CMC-EP	nitrogen, total dissolved	----	E368	0.386 mg/L	0.4 mg/L	96.6	70.0	130	----
Anions and Nutrients (QCLot: 669756)										
FJ2202691-002	Anonymous	phosphorus, total dissolved	7723-14-0	E375-T	0.0497 mg/L	0.05 mg/L	99.4	70.0	130	----
Anions and Nutrients (QCLot: 671578)										
WR2201160-012	CMC-99.5	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 671579)										
WR2201160-012	CMC-99.5	chloride	16887-00-6	E235.Cl	106 mg/L	100 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 671580)										
WR2201160-012	CMC-99.5	bromide	24959-67-9	E235.Br-L	0.536 mg/L	0.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 671581)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 671581) - continued										
WR2201160-012	CMC-99.5	nitrate (as N)	14797-55-8	E235.NO3-L	2.67 mg/L	2.5 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 671582)										
WR2201160-012	CMC-99.5	nitrite (as N)	14797-65-0	E235.NO2-L	0.532 mg/L	0.5 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 671583)										
WR2201160-012	CMC-99.5	sulfate (as SO4)	14808-79-8	E235.SO4	107 mg/L	100 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 671589)										
VA22C2456-006	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0290 mg/L	0.03 mg/L	96.7	70.0	130	----
Anions and Nutrients (QCLot: 680095)										
WT2216186-001	Anonymous	cyanate	88402-73-7	E343	1.89 mg/L	2 mg/L	94.5	70.0	130	----
Cyanides (QCLot: 674887)										
VA22C2892-004	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.219 mg/L	0.25 mg/L	87.5	75.0	125	----
Cyanides (QCLot: 674888)										
VA22C2892-004	Anonymous	cyanide, weak acid dissociable	----	E336	0.120 mg/L	0.125 mg/L	96.1	75.0	125	----
Organic / Inorganic Carbon (QCLot: 669935)										
VA22C3193-001	Anonymous	carbon, dissolved inorganic [DIC]	----	E353-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 670773)										
WR2201160-001	CMC-EP	carbon, total inorganic [TIC]	----	E354-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 666101)										
VA22C2963-001	Anonymous	aluminum, total	7429-90-5	E420	0.190 mg/L	0.2 mg/L	94.9	70.0	130	----
		antimony, total	7440-36-0	E420	0.0191 mg/L	0.02 mg/L	95.4	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0193 mg/L	0.02 mg/L	96.4	70.0	130	----
		barium, total	7440-39-3	E420	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00940 mg/L	0.01 mg/L	94.0	70.0	130	----
		boron, total	7440-42-8	E420	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		calcium, total	7440-70-2	E420	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, total	7440-46-2	E420	0.00983 mg/L	0.01 mg/L	98.3	70.0	130	----
		chromium, total	7440-47-3	E420	0.0378 mg/L	0.04 mg/L	94.6	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		copper, total	7440-50-8	E420	0.0189 mg/L	0.02 mg/L	94.4	70.0	130	----
		iron, total	7439-89-6	E420	1.90 mg/L	2 mg/L	94.8	70.0	130	----
		lead, total	7439-92-1	E420	0.0186 mg/L	0.02 mg/L	93.0	70.0	130	----
		lithium, total	7439-93-2	E420	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 666101) - continued										
VA22C2963-001	Anonymous	magnesium, total	7439-95-4	E420	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		nickel, total	7440-02-0	E420	0.0382 mg/L	0.04 mg/L	95.6	70.0	130	----
		phosphorus, total	7723-14-0	E420	9.96 mg/L	10 mg/L	99.6	70.0	130	----
		potassium, total	7440-09-7	E420	3.94 mg/L	4 mg/L	98.5	70.0	130	----
		rubidium, total	7440-17-7	E420	0.0189 mg/L	0.02 mg/L	94.7	70.0	130	----
		selenium, total	7782-49-2	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		silicon, total	7440-21-3	E420	8.51 mg/L	10 mg/L	85.1	70.0	130	----
		silver, total	7440-22-4	E420	0.00410 mg/L	0.004 mg/L	102	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E420	19.2 mg/L	20 mg/L	96.2	70.0	130	----
		tellurium, total	13494-80-9	E420	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		thallium, total	7440-28-0	E420	0.00363 mg/L	0.004 mg/L	90.8	70.0	130	----
		thorium, total	7440-29-1	E420	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		titanium, total	7440-32-6	E420	0.0374 mg/L	0.04 mg/L	93.6	70.0	130	----
		tungsten, total	7440-33-7	E420	0.0187 mg/L	0.02 mg/L	93.4	70.0	130	----
		uranium, total	7440-61-1	E420	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0963 mg/L	0.1 mg/L	96.3	70.0	130	----
		zinc, total	7440-66-6	E420	0.374 mg/L	0.4 mg/L	93.6	70.0	130	----
		zirconium, total	7440-67-7	E420	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
Total Metals (QCLot: 666841)										
WR2201160-001	CMC-EP	mercury, total	7439-97-6	E508	0.0000978 mg/L	0.0001 mg/L	97.8	70.0	130	----
Total Metals (QCLot: 671619)										
VA22C2978-003	Anonymous	aluminum, total	7429-90-5	E420	0.185 mg/L	0.2 mg/L	92.6	70.0	130	----
		antimony, total	7440-36-0	E420	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0185 mg/L	0.02 mg/L	92.5	70.0	130	----
		barium, total	7440-39-3	E420	0.0177 mg/L	0.02 mg/L	88.4	70.0	130	----
		beryllium, total	7440-41-7	E420	0.0398 mg/L	0.04 mg/L	99.5	70.0	130	----
		bismuth, total	7440-69-9	E420	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		boron, total	7440-42-8	E420	0.092 mg/L	0.1 mg/L	92.2	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00394 mg/L	0.004 mg/L	98.6	70.0	130	----
		calcium, total	7440-70-2	E420	3.69 mg/L	4 mg/L	92.2	70.0	130	----
		cesium, total	7440-46-2	E420	0.00962 mg/L	0.01 mg/L	96.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 671619) - continued										
VA22C2978-003	Anonymous	chromium, total	7440-47-3	E420	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		cobalt, total	7440-48-4	E420	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		copper, total	7440-50-8	E420	0.0196 mg/L	0.02 mg/L	97.9	70.0	130	----
		iron, total	7439-89-6	E420	1.89 mg/L	2 mg/L	94.7	70.0	130	----
		lead, total	7439-92-1	E420	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----
		lithium, total	7439-93-2	E420	0.0972 mg/L	0.1 mg/L	97.2	70.0	130	----
		magnesium, total	7439-95-4	E420	0.953 mg/L	1 mg/L	95.3	70.0	130	----
		manganese, total	7439-96-5	E420	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		nickel, total	7440-02-0	E420	0.0385 mg/L	0.04 mg/L	96.3	70.0	130	----
		phosphorus, total	7723-14-0	E420	9.26 mg/L	10 mg/L	92.6	70.0	130	----
		potassium, total	7440-09-7	E420	3.76 mg/L	4 mg/L	93.9	70.0	130	----
		rubidium, total	7440-17-7	E420	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		selenium, total	7782-49-2	E420	0.0396 mg/L	0.04 mg/L	99.0	70.0	130	----
		silicon, total	7440-21-3	E420	9.25 mg/L	10 mg/L	92.5	70.0	130	----
		silver, total	7440-22-4	E420	0.00388 mg/L	0.004 mg/L	97.1	70.0	130	----
		sodium, total	7440-23-5	E420	1.91 mg/L	2 mg/L	95.3	70.0	130	----
		strontium, total	7440-24-6	E420	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		sulfur, total	7704-34-9	E420	17.8 mg/L	20 mg/L	88.9	70.0	130	----
		tellurium, total	13494-80-9	E420	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		thallium, total	7440-28-0	E420	0.00373 mg/L	0.004 mg/L	93.3	70.0	130	----
		thorium, total	7440-29-1	E420	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		tin, total	7440-31-5	E420	0.0188 mg/L	0.02 mg/L	94.0	70.0	130	----
		titanium, total	7440-32-6	E420	0.0362 mg/L	0.04 mg/L	90.5	70.0	130	----
		tungsten, total	7440-33-7	E420	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		uranium, total	7440-61-1	E420	0.00386 mg/L	0.004 mg/L	96.5	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0953 mg/L	0.1 mg/L	95.3	70.0	130	----
		zinc, total	7440-66-6	E420	0.382 mg/L	0.4 mg/L	95.5	70.0	130	----
		zirconium, total	7440-67-7	E420	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 666479)										
WR2201117-008	Anonymous	aluminum, dissolved	7429-90-5	E421	ND mg/L	0.2 mg/L	ND	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0188 mg/L	0.02 mg/L	94.3	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0366 mg/L	0.04 mg/L	91.5	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00836 mg/L	0.01 mg/L	83.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 666479) - continued										
WR2201117-008	Anonymous	boron, dissolved	7440-42-8	E421	0.081 mg/L	0.1 mg/L	80.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00362 mg/L	0.004 mg/L	90.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00918 mg/L	0.01 mg/L	91.8	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0358 mg/L	0.04 mg/L	89.4	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0179 mg/L	0.02 mg/L	89.5	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.4	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.77 mg/L	2 mg/L	88.6	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0167 mg/L	0.02 mg/L	83.5	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0934 mg/L	0.1 mg/L	93.4	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0187 mg/L	0.02 mg/L	93.3	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0357 mg/L	0.04 mg/L	89.2	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.1 mg/L	10 mg/L	101	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.62 mg/L	4 mg/L	90.6	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0180 mg/L	0.02 mg/L	90.2	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0363 mg/L	0.04 mg/L	90.7	70.0	130	----
		silicon, dissolved	7440-21-3	E421	8.57 mg/L	10 mg/L	85.7	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00377 mg/L	0.004 mg/L	94.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.07 mg/L	2 mg/L	103	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	18.0 mg/L	20 mg/L	90.1	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0384 mg/L	0.04 mg/L	96.1	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00344 mg/L	0.004 mg/L	86.0	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.0172 mg/L	0.02 mg/L	86.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0178 mg/L	0.02 mg/L	89.3	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0363 mg/L	0.04 mg/L	90.7	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.0186 mg/L	0.02 mg/L	92.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00333 mg/L	0.004 mg/L	83.3	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0910 mg/L	0.1 mg/L	91.0	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.366 mg/L	0.4 mg/L	91.4	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0402 mg/L	0.04 mg/L	100	70.0	130	----
Dissolved Metals (QCLot: 666480)										
WR2201119-002	Anonymous	aluminum, dissolved	7429-90-5	E421	0.217 mg/L	0.2 mg/L	108	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0189 mg/L	0.02 mg/L	94.6	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 666480) - continued										
WR2201119-002	Anonymous	arsenic, dissolved	7440-38-2	E421	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00848 mg/L	0.01 mg/L	84.8	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.086 mg/L	0.1 mg/L	86.0	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00967 mg/L	0.01 mg/L	96.7	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0393 mg/L	0.04 mg/L	98.2	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0194 mg/L	0.02 mg/L	96.9	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.96 mg/L	2 mg/L	98.3	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0179 mg/L	0.02 mg/L	89.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0381 mg/L	0.04 mg/L	95.2	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	11.0 mg/L	10 mg/L	110	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.20 mg/L	4 mg/L	105	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.01 mg/L	10 mg/L	90.1	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00388 mg/L	0.004 mg/L	97.1	70.0	130	----
		sodium, dissolved	7440-23-5	E421	2.08 mg/L	2 mg/L	104	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00359 mg/L	0.004 mg/L	89.8	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0191 mg/L	0.02 mg/L	95.5	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0418 mg/L	0.04 mg/L	104	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.0186 mg/L	0.02 mg/L	92.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.376 mg/L	0.4 mg/L	93.9	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0386 mg/L	0.04 mg/L	96.4	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 668021)										
VA22C3037-003	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000923 mg/L	0.0001 mg/L	92.3	70.0	130	----
Dissolved Metals (QCLot: 671451)										
WR2201162-001	Anonymous	aluminum, dissolved	7429-90-5	E421	0.190 mg/L	0.2 mg/L	94.8	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0223 mg/L	0.02 mg/L	112	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		beryllium, dissolved	7440-41-7	E421	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.00899 mg/L	0.01 mg/L	89.9	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00369 mg/L	0.004 mg/L	92.2	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.0103 mg/L	0.01 mg/L	103	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0383 mg/L	0.04 mg/L	95.8	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0184 mg/L	0.02 mg/L	91.9	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0179 mg/L	0.02 mg/L	89.7	70.0	130	----
		iron, dissolved	7439-89-6	E421	1.86 mg/L	2 mg/L	93.2	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0190 mg/L	0.02 mg/L	94.9	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0224 mg/L	0.02 mg/L	112	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0360 mg/L	0.04 mg/L	90.1	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	10.2 mg/L	10 mg/L	102	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.99 mg/L	4 mg/L	99.7	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.0193 mg/L	0.02 mg/L	96.7	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E421	9.35 mg/L	10 mg/L	93.5	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00428 mg/L	0.004 mg/L	107	70.0	130	----
		sodium, dissolved	7440-23-5	E421	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	ND mg/L	20 mg/L	ND	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.0467 mg/L	0.04 mg/L	117	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.0211 mg/L	0.02 mg/L	105	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0389 mg/L	0.04 mg/L	97.2	70.0	130	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 671451) - continued										
WR2201162-001	Anonymous	tungsten, dissolved	7440-33-7	E421	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0977 mg/L	0.1 mg/L	97.7	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.367 mg/L	0.4 mg/L	91.9	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.0422 mg/L	0.04 mg/L	106	70.0	130	----

Acute Toxicity Test Results

Sample WR2201160-012 (CMC-99.5),
Collected September 26, 2022

Final Report

October 11, 2022

Submitted to: **ALS Environmental**
Whitehorse, YT

8664 Commerce Court, Burnaby, BC V5A 4N7

SAMPLE INFORMATION

Sample ID	Dates			Receipt temp.
	Collected	Received	Rainbow trout test initiation	
WR2201160-012 (CMC-99.5)	21-Sept-22 at 1500h	26-Sept-22 at 0908h	26-Sept-22 at 1513h	4.2-4.3°C

TESTS

- Rainbow trout 96-h LC50 test

RESULTS

Toxicity test results

Sample ID	LC50 (% v/v)
WR2201160-012 (CMC-99.5)	>100

LC = Lethal Concentration

QA/QC

QA/QC summary	Rainbow trout
Reference toxicant LC50 (95% CL)	1.0 (0.9 – 1.1) g/L KCl[1]
Reference toxicant historical mean (2 SD range)	1.7 (1.2 – 2.5) g/L KCl
Reference toxicant CV	19%
Organism health history	Acceptable
Protocol deviations	Yes (See Below[2])
Water quality range deviations	None
Control performance	Acceptable
Test performance	Valid

[1]Test date: September 23, 2022, LC = Lethal Concentration, CL = Confidence Limits, SD = Standard Deviation, CV = Coefficient of Variation

[2]The reference toxicant LC50 for the current batch of fish was slightly outside of 2SD, but within 3SD of the historical range. This could be due to random chance or susceptibility of the fish to the toxicant because of natural variability.

Report By:
Kiyeon Lee, B.Sc.
Laboratory Biologist

Reviewed By:
Mikayla Oldach, M.Sc.
Environmental Toxicologist

This report has been prepared by Nautilus Environmental Company Inc. based on data and/or samples provided by our client and the results of this study are for their sole benefit. Any reliance on the data by a third party is at the sole and exclusive risk of that party. The results presented here relate only to the samples tested.

APPENDIX A – Summary of test conditions

Table 1. Summary of test conditions: 96-h rainbow trout (*Oncorhynchus mykiss*) LC50 test.

Test species	*Oncorhynchus mykiss*
Organism source	Hatchery
Organism age	Juvenile
Test type	Static
Test duration	96 hours
Test vessel	20-L glass aquarium
Test volume	10 to 20 L (depending on size of fish)
Test solution depth	≥15 cm
Test concentrations	Five concentrations, plus laboratory control
Test replicates	1 per treatment
Number of organisms	10 per replicate
Control/dilution water	Dechlorinated Metro Vancouver municipal tapwater
Test solution renewal	None
Test temperature	15 ± 1°C
Feeding	None
Light intensity	100 to 500 lux
Photoperiod	16 hours light / 8 hours dark
Aeration	6.5 ± 1 mL/min/L
Test measurements	Temperature, dissolved oxygen and pH measured daily; salinity measured in the undiluted sample at test initiation; conductivity measured at test initiation and termination; survival checked daily.
Test protocol	Environment Canada (2000), EPS 1/RM/13, with 2007 & 2016 amendments
Statistical software	CETIS Version 2.1.1
Test endpoints	Survival (96-hour LC50)
Test acceptability criterion for controls	Survival ≥90%
Reference toxicant	Potassium chloride (KCl)

APPENDIX B – Toxicity test data

Rainbow Trout Summary Sheet

Client: ALS Environmental

Start Date/Time: Sept. 26, 2022 @ 1513h

Work Order No.: 221958

Test Species: *Oncorhynchus mykiss*

Sample Information:

Sample ID: WR 2201160-012 (CMC-99.5)
Sample Date: Sept. 21, 2022
Date Received: Sept. 26, 2022
Sample Volume: 4 x 10 L
Other: –

Test Validity Criteria:
≥ 90% Control Survival
WQ Ranges:
T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5

Dilution Water:

Type: Dechlorinated Municipal Tap Water
Hardness (mg/L $CaCO_3$): 22
Alkalinity (mg/L $CaCO_3$): 24

Test Organism Information:

Batch No.: 082322
Source: Aqua Farms
No. Fish/Volume (L): 10 / 12L
Loading Density (g/L): 0.36
Mean Length ± SD (mm): 35 ± 4 Range: 30 – 41
Mean Weight ± SD (g): 0.43 ± 0.13 Range: 0.28 – 0.60

KCl Reference Toxicant Results:

Reference Toxicant ID: RBTK46
KCl Lot# ~~Stock Solution ID:~~ 213248
Date Initiated: Sep 23/22
96-h LC50 (95% CL) [g/L KCl]: 1.0 (0.9 – 1.1)

Reference Toxicant Mean and Historical Range [g/L KCl]: 1.7 (1.2 – 2.5)
Reference Toxicant CV (%): 19

Test Results: The 96 h LC50 is estimated to be >100% (v/v).

Reviewed by: MDO

Date reviewed: Oct 11, 2022

96-Hour Rainbow Trout Toxicity Test Data Sheet

Client/Project#: ALS Environmental
Sample I.D. WR2201160-012 (CMC-99.5)
W.O. # 221958
RBT Batch #: 082322
Date Collected/Time: Sept. 21, 2022 / 1500h
Date Setup/Time: Sept. 26, 2022 / 1513h
CER #: 2
Sample Setup By: ML

Thermometer: CER#2
D.O. meter/probe: 5 / 5
Cond./Salinity meter/probe: 5 / 5
pH meter/probe: 5 / 5

Number Fish/Volume: 10/12L
7-d % Mortality: 0.45
Total Pre-aeration Time (mins): 30
Aeration rate adjusted to 6.5 ± 1 mL/min/L? (Y/N): Y

Undiluted Sample WQ			
Parameters	Initial WQ	Adjustment	30 min WQ
Temp °C	14.0		14.0
D.O. (mg/L)	10.9		10.1
pH	7.2		7.2
Cond. (µS/cm)	104		104
Salinity (ppt)	0.0		0.0

Concentration	# Survivors							Temperature (°C)					Dissolved Oxygen (mg/L)					pH					Conductivity (µS/cm)	
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	96
Ctrl				10	10	10	10	15.0	15.0	15.5	15.0	15.0	9.8	9.8	9.8	9.9	9.8	7.2	7.2	7.2	7.2	7.2	51	55
6.25				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.8	9.9	9.9	9.9	9.9	7.2	7.2	7.2	7.2	7.2	54	57
12.5				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.8	9.8	9.9	9.9	9.9	7.2	7.2	7.2	7.3	7.3	57	60
25				10	10	10	10	15.0	15.0	15.0	15.0	15.0	9.9	9.9	9.9	9.9	9.9	7.2	7.3	7.3	7.3	7.3	66	68
50				10	10	10	10	14.5	15.0	15.0	15.0	15.0	9.9	9.9	9.8	9.8	9.8	7.2	7.4	7.4	7.4	7.4	78	82
100				10	10	10	10	14.0	15.0	15.0	15.0	15.0	10.1	9.9	9.9	9.9	9.9	7.2	7.5	7.5	7.6	7.6	104	108
Initials				T.C.	T.C.	T.C.	T.C	ML	T.C.	T.C.	T.C.	T.C	ML	T.C.	T.C.	T.C.	T.C	ML	T.C.	T.C.	T.C.	T.C.	ML	T.C.

Sample Description/Comments: clear, green tinted, odourless liquid w/ particulates

Fish Description at 96 h: All fish appear normal

Number of Stressed Fish at 96 h: 0

Other Observations:

Test solution depth in each vessel ≥15 cm? (Y/N) Y

Reviewed by: MDO

Date Reviewed: Oct 11, 2022

APPENDIX C – Chain-of-custody form

Chain of Custody

Whitehorse - Environmental
#12 151 Industrial Road
Whitehorse YT Canada Y1A 2V3

78846

Destination Lab:	**Nautilus Environmental (Burnaby)**
Address:	8664 Commerce Court Burnaby BC Canada V5A 4N7
Work Order Number:	**WR2201160**
Original Receipt Date/Time	Instructions Received
22/09/2022 16:40	

Relinquished By	
Date/Time	
Received By	
Date/Time	
Receipt Temp	

Return as Indicated: Results: alsev.datasublet@alsglobal.com Invoice: alsev.datasublet@alsglobal.com Electronic Data: alsev.datasublet@alsglobal.com

Attention: Tasnia Tarannum

ALS Sample ID	Client ID	Matrix	Container Type	Test Codes	Method Description	Due Date	Sampling Date and Time	Remarks
WR2201160-012	CMC-99.5	Water	LDPE carboy			04-10-2022	21/09/2022 15:00	
WR2201160-012	CMC-99.5	Water	LDPE carboy			04-10-2022	21/09/2022 15:00	
WR2201160-012	CMC-99.5	Water	LDPE carboy			04-10-2022	21/09/2022 15:00	
WR2201160-012	CMC-99.5	Water	LDPE carboy	TRT-LC50-96	Survival/LC50 Rainbow Trout (96 hours)	04-10-2022	21/09/2022 15:00	

TH
Sept. 26/22 @ 9:08
4x10L
4.2-4.3°C
221958

END OF REPORT

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 - 773935

Page 1 of 1

Environmental Division Whitehorse
Work Order Reference
WR2201160

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	YG - Environment - Water Resources
Contact:	Devon D'Connor
Phone:	867-689-1894
Company address below will appear on the final report	
Street:	419 Range Road
City/Province:	Whitehorse, YT
Postal Code:	Y1A 0L4
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Same as above
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report [X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: WaterResources@Yukon.ca
Email 2: Devon.D'Connor@Yukon.ca
Email 3:

Invoice Distribution

Select Invoice Distribution: [ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax: WaterResources@Yukon.ca
Email 2: Devon.D'Connor@Yukon.ca

Project Information

ALS Account # / Quote #: Standing offer
Job #: Silver Hart
PO / AFE:
LSD:

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#
Major/Minor Code: Routing Code:
Requisitioner:
Location:

ALS Lab Work Order # (lab use only):
ALS Contact: ~~Jesse~~ M Sampler: DO/AB

Select Service Level Below - Contact your AM

Regular [R] [X] Standard TAT if received by
PRIORITY (Business Days): 4 day [P4-20%] [ ] 3 day [P3-25%] [ ] 2 day [P2-50%] [ ]
EMERGENCY: 1 Busin / Same Da / (Laborat
Date and Time Required for all E&P TATs:
For tests that can not be performed according to the service level sel
Analy:

Indicate Filtered (F), Preserved (P) or Fil

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	P	F/P	P	P	P	P								SAMPLES ON ICE	SUSPECTED HAZARD (see Special Instructions)
						Total Metals + Hg	Diss Metals + Hg	WAD/SAD Cyanide	Cyanate	Sulphate/Sulphide	Nitrate/Nitrogen/Nitrite	pH	Hardness	Alkalinity	Ammonia	TSS/TDS	Chloride	LC50		
	CMC-EP	21-Sept-22	10:05	SW	10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	CMC-NP		9:00																	
	CMC-NEC		9:25																	
	CMC-WP		11:30																	
	CMC-M1		16:35																	
	CMC-M1.5 / CMC-M2 (12:50)		16:00																	
	CMC-11-R		15:20																	
	CMC-11		15:10																	
	CMC-BH2 / CMC-BH1 (13:30)		10:20																	
	~~CMC-BH1~~ CMC-99.5		~~13:30~~		14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	Travel Blank		00:00		7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	~~FB~~ Field Blank		13:00		10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [X] NO
Are samples for human consumption/ use? [ ] YES [X] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

SAMPLE CONDITION AS RECI

Frozen [ ] SIF Observations
Ice Packs [ ] Ice Cubes [ ] Custody seal intact
Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C: 6 / 6 / 6 / 7 / 6 / 6

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT REC	
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:
Devon D'Connor	Sept 22/2022		(2)	Sept 22/22	16:40		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

ALS Environmental

www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 - 773935

Page 1 of 1

Environmental Division Whitehorse
Work Order Reference
WR2201160

Telephone : +1 867 668 6689

Report To	Contact and company name below will appear on the final report
Company:	YG - Environment - Water Resources
Contact:	Devon D'Connor
Phone:	867-689-1894
Company address below will appear on the final report	
Street:	419 Range Road
City/Province:	Whitehorse, YT
Postal Code:	Y1A 0L4
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	Same as above
Contact:	

Report Format / Distribution	
Select Report Format:	[X] PDF [ ] EXCEL [X] EDD (DIGITAL)
Quality Control (QC) Report with Report	[X] YES [ ] NO
[ ] Compare Results to Criteria on Report - provide details below if box checked	
Select Distribution:	[X] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	WaterResources@Yukon.ca
Email 2	Devon.D'Connor@Yukon.ca
Email 3	

Invoice Distribution	
Select Invoice Distribution:	[ ] EMAIL [ ] MAIL [ ] FAX
Email 1 or Fax	WaterResources@Yukon.ca
Email 2	Devon.D'Connor@Yukon.ca

Project Information	
ALS Account # / Quote #:	Standing offer
Job #:	Silver Hart
PO / AFE:	
LSD:	

Oil and Gas Required Fields (client use)	
AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (lab use only):

ALS Contact: Jesse M

Sampler: DO/AB

Select Service Level Below - Contact your AM to confirm all E&P TATs

Regular [R] [X] Standard TAT if received by

PRIORITY (Business Days): 4 day [P4-20%] [ ] ; 3 day [P3-25%] [ ] ; 2 day [P2-50%] [ ]

EMERGENCY: 1 Busin[ess] ; Same Da[y] (Laborat[ory])

Date and Time Required for all E&P TATs:

For tests that can not be performed according to the service level sel[ected]

Analy[sis]

Indicate Filtered (F), Preserved (P) or Fil[tered and Preserved]

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	P	F/P	P	P	P	P								SAMPLES ON
						Total Metals + Hg	Diss Metals + Hg	WAD/SAD Cyanide	Cyanate	Sulphate/Sulphide	Nitrate/Nitrogen/Nitrite	pH	Hardness	Alkalinity	Ammonia	TSS/TPS	Chlorate	LC50	
	CMC-EP	21-Sept-22	10:05	SW	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	CMC-NP		9:00																
	CMC-NEC		9:25																
	CMC-WP		11:30																
	CMC-M1		16:35																
	CMC-M1.5 / CMC-M2 (12:50)		16:00																
	CMC-IL-R		15:20																
	CMC-11		15:10																
	CMC-BH2 / CMC-BH1 (13:30)		10:20																
	~~CMC-BH1~~ CMC-99.5		~~13:30~~		14	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Travel Blank		00:00		7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	~~FB~~ Field Blank		13:00		10	✓	✓	✓	✓	✓	✓	✓	✓	✓					

SUSPECTED HAZARD (see Special Instructions)

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [X] NO	
Are samples for human consumption/ use? [ ] YES [X] NO	

SAMPLE CONDITION AS REC[EIVED]

Frozen [ ] SIF Observations

Ice Packs [ ] Ice Cubes [ ] Custody seal Intact

Cooling Initiated [ ]

INITIAL COOLER TEMPERATURES °C: 6 / 6 / 6 / 7 / 6 / 6 — 4.4-8.5

FINAL SHIPMENT REC

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT REC		
Released by: DEVON D'CONNOR	Date: Sept 22/2022	Time:	Received by:	Date: Sept 22/22	Time: 16:40	Received by: RC	Date: 09/25/22	14:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

Client: O'Connor/Yukon Water Resources Branch

Project: Silver Hart Audit

ISO# 2022528
Location: B1
12 for 18O+2H

Environmental Isotope Lab
2022-11-22

#	Sample	Date	Lab#	$\delta^{18}O$	Result	Repeat	$\delta^{2}H$	Result	Repeat		pH	EC	AZD
				H_2O	VSMOW	± 0.2‰	H_2O	VSMOW	± 0.8‰			µS/cm	
1	CMC-NEC	2022-09-21	489231	x	-21.55	-21.58	x	-167.54	-168.00	30ml	7.1	134	
2	CMC-M1.5	2022-09-21	489232	x	-20.88		x	-163.62		30ml	7.4	47	
3	CMC-BH1	2022-09-21	489233	x	-21.97		x	-169.74		30ml	7.7	262	
4	CMC-M1.5	2022-09-21	489234	x	-20.90	-20.78	x	-162.83	-162.18	30ml	7.2	43.3	
5	CMC-BH2	2022-09-21	489235	x	-20.81		x	-160.81		30ml	7.7	439	
6	CMC-WP	2022-09-21	489236	x	-19.43		x	-157.42		30ml	7.5	102	
7	CMC-NP	2022-09-21	489237	x	-19.31		x	-154.86		30ml	6.8	43.9	
8	CMC-EP	2022-09-21	489238	x	-22.18	-22.24	x	-168.74	-169.27	30ml	7.5	288	
9	CMC-M2	2022-09-21	489239	x	-21.23		x	-163.71		30ml	7.3	53.2	
10	CMC-11	2022-09-21	489240	x	-21.02		x	-161.77		30ml	7.9	530	
11	CMC-11-R	2022-09-21	489241	x	-21.13		x	-161.77		30ml	7.9	530	
12	CMC-99.5	2022-09-21	489242	x	-21.71	-21.57	x	-167.59	-166.00	30ml	7.3	104	

ENVIRONMENTAL ISOTOPE LABORATORY

Appendix B – Photo Log

Appendix B – Photo Log

Photo 1. CMC-WP

Pond immediately adjacent to site, named CMC-WP (West Pond) by WRB staff.

Photo 2. CMC-WP

Trickling flow <1L/s leaving CMC-WP location, flowing West and disappearing to ground.

Appendix B – Photo Log

Photo 3. CMC-SS

Flowing water in ditch, emerging from south facing slope on southern side of site.

Photo 4. CMC-NP

Pond to the Northwest of site, approximately at height of land of neighbouring catchment.

Appendix B – Photo Log

Photo 5. CMC-NEC.

Unnamed creek headwater northeast of site, emerging from ground immediately upstream of sample.

Photo 6. CMC-M1

McCrory Creek station upstream of adit input.

Appendix B – Photo Log

Photo 7. CMC-M1.5

McCrory Creek station downstream of adit influence.

Photo 8. CMC-M2

Downstream-most McCrory Creek station immediately upstream of access road bridge crossing.

Appendix B – Photo Log

Photo 9. CMC-EP

Pond east of main site footprint.

Photo 10. CMC-BH2

Seeping borehole located east of main site footprint.

Appendix B – Photo Log

Photo 11. CMC-BH1

Seeping borehole located northeast of main site footprint.

Photo 12. CMC-99.5

Trickling flow collected using YSI calibration cup.

Photo 13. CMC-99.5

Flow collecting through calibration cup.

Photo 14. CMC-11

Adit flow collecting into settling pond.