Site C Clean Energy Project
Water Quality Monitoring for Shale Rock Cuts and Other Occurrences
2025 Annual Report



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EXECUTIVE SUMMARY

Tetra Tech Canada Inc. (Tetra Tech) was retained by BC Hydro to develop and implement a surface water quality monitoring program for the BC Hydro Site C Clean Energy Project at midstream and discharge locations along River Road, in proximity to the South Bank Initial Access Road (SBIAR), and along the L3 Creek catchment. The River Road and SBIAR locations have been sampled monthly, except when frozen or dry conditions exist, since initiation of the program in 2017. Additional sampling stations have been added and removed throughout the years as construction progressed. For 2025, sampling was also conducted at the Right Bank Drainage Tunnel (RBDT) and the Area 20/21 temporary PAG stockpile location. Details of the 2025 sampling locations, objectives, and requirements for testing at each location are presented in Section 5 of this report.

This water quality sampling program is conducted in accordance with BC Hydro Site C Clean Energy Project Construction Environmental Management Plan (CEMP), Rev. 12, Appendix E (Rev. 6.1) Acid Rock Drainage and Metal Leachate Management Plan - Section 5.2.1.7 (BC Hydro, Oct 4, 2023), which specifies requirements for road cut monitoring. This water quality program is one component of numerous water quality monitoring programs, including regular monitoring in the Peace River receiving environment, as per the CEMP, and reported under separate cover.

The monitoring program includes locations at the discharge points and at midstream locations as well as locations upstream from the discharge to characterize variation to water chemistry within the catchment due to mixing and inflow of water from multiple sources. Throughout the report the "RB" and "LB" nomenclature refers to right and left riverbanks (when facing downstream), respectively.

The results of monthly monitoring are compiled and tracked for changes over time with special interest in metals associated with ARD/ML drainage, e.g., iron, aluminum, arsenic, cadmium, cobalt, copper, manganese, silver, and zinc.

River Road

Access road construction in 2016-2017, on the north/left bank, between Howe Pit and the Peace River along River Road cut through bedrock. Current mitigation along River Road adjacent to the PAG slopes includes a cut-off ditch above the slope, which diverts surface flows into limestone lined “Chimney ditches” which then feed into the River Road ditch below the slope. The River Road ditch adjacent to the PAG slope includes a bentonite liner and limestone rip-rap to provide neutralization potential and mitigate against acidic drainage. From November 2024 to March 2025, construction for placement of a permanent cover along the Upper River Road shale slope and cut-off ditch was completed to provide long-term mitigation of acid generation from the slope. The Lower River Road shale slope will be covered in 2026 for long-term ARD/ML mitigation.

A total of ten (10) monitoring locations were monitored in the River Road catchment to monitor the effectiveness of the limestone rip-rap in the ditch line and on the rock slope, and to observe longer term influences from the Potentially Acid Generating (PAG) rock cut and potential run-off/seepage from Howe Pit (non-Site C impacted area) on the water collected in the River Road ditch. Water quality sampling was attempted on a routine monthly basis from six of the River Road catchment locations, 1) in the lower chimney drain (LBRR-LC), 2) the upper chimney drain (LBRR-UC); 3) at the discharge of culvert RR-11 (LBRR-DD), 5) RR-9 culvert (LBRR-RR9) and 6) RR-8 culvert (LBRR-8). In situ testing, without lab sampling, is conducted at four additional locations within the River Road ditch at LBRR-12+600, LBRR-12+700, LBRR-12+810 and LBRR-12+920. Previously, since 2017, discharge from the outlet of culverts LBRR-DD, LBRR-RR9 and/or LBRR-RR8 were observed, which potentially reaches the Peace River.

In 2025, outside of dry or frozen conditions, eight lab samples were collected from River Road during four sample events on February 27 (5, LBRR-DD, LBRR-EDP, LBRR-LC, RR8, RR9), April 22 (1, LBRR-EDP), June (1, LBRR-EDP), and October 26 (1, LBRR-EDP).

In 2025, one sample event on February 27 observed discharge to the Peace River from LBRR-DD, RR8, and RR9, otherwise other months no flow was measured from the discharge locations due to dry or frozen no flow conditions.

In 2025, fourteen in situ water measurements were collected from six stations during six sample events.

During 2025, BCAWQG-FST exceedances measured for one sample event at LBRR-DD include total iron and total manganese. The BCAWQG-FST exceedances measured for one sample event at LBRR-LC include total cobalt, total iron, total manganese, and total silver. The BCAWQG-FST exceedances measured for one sample event at RR8 include total iron, and one sample event at RR9 include total iron and total manganese. The BCAWQG-FST exceedances measured for five sample events at LBRR-EDP include chloride (1), total cobalt (1), total iron (2), total manganese (1), dissolved cadmium (1), dissolved nickel (1), and dissolved zinc (2).

The BCAWQG-FLT exceedances measured for one sample event at LBRR-DD include sulphate, total aluminum, total arsenic, total cobalt, total selenium, total silver, dissolved cadmium, dissolved nickel, and dissolved selenium. The BCAWQG-FLT exceedances measured for one sample event at LBRR-LC include sulphate, total aluminum, total arsenic, and total selenium. The BCAWQG-FLT exceedances measured for one sample event at RR8 include total aluminum, and one sample event at RR9 include total aluminum, total arsenic, total cobalt, and dissolved nickel. The BCAWQG-FLT exceedances measured for five sample events at LBRR-EDP include sulphate (2), total aluminum (2), total arsenic (1), total cobalt (3), total selenium (1), total silver (1), dissolved cadmium (1), and dissolved nickel (1). Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring.

Water quality measurements along River Road have indicated that run-off water quality is influenced by active acid rock drainage and metal leaching (ARD/ML) processes within the River Road ditch catchment, however neutral drainage conditions prevail and the elevated metals concentrations are generally attributed to sediment loading from the roadway or from sediment in the ditchline. Elevated metal levels at River Road have also been correlated in the past with periods of naturally elevated metals concentrations in the Peace River during freshet and after high precipitation events.

SBIAR

The South Bank Initial Access Road (SBIAR) shale slope was initially exposed in 2015 as part of road construction works on the south bank between Relocated Surplus Excavation Material (RSEM) R6 and Area A. The total area of the shale slope is approximately 14,000 m^2, between both the East and West slopes. Management and mitigation measures include reduction of surface contact water through capture of up-gradient flow and diversion through a pipe to limit flow along the exposed shale slope, and collection of any remaining PAG contact water in ditches. The effectiveness of the mitigation is evaluated through monthly monitoring of water quality stations along the road. A cover design for long-term mitigation of ARD/ML from the shale slopes has been developed. Construction of the cover is expected to occur in Spring 2026.

It is noted that the water flowing in the ditches do not have a direct downstream receptor; the water from the east ditch passes under the road via a culvert to the downstream location in the west ditch where all water flows into a limestone armored spillway into a ditch which conveys to the PRHP RSEM R6 pond (permitted for PAG contact water and subject to monitoring before discharge).

In 2025, the total of four (4) monitoring locations were sampled at SBIAR, which includes two stations in the east ditch and two stations in the west ditch. The sample stations are to monitor for potential long-term influence on water quality from construction of the SBIAR facility. Sampling at the SBIAR monitoring locations was conducted monthly from 2017 to 2025, with exception to quarterly in 2018.

During 2025, outside of dry or frozen conditions, lab samples were collected from SBIAR during eleven (11) sampling events (February to November) resulting in a sum of twenty-one (21) samples. In the west ditch, two (2) samples were collected from RBSBIAR-US (February, October) and ten (10) samples were collected from RBSBIAR-DS (February to November). In the east ditch, seven (7) samples were collected from RBSBIAR-EUS (April to August, October, November), and two (2) samples from RBSBIAR-EDS (June, October).

In situ testing was completed on a monthly basis, with sufficient water available for eleven (11) months between February and November 2025. Frozen conditions in January and December prevented any sampling or in situ measurements. From February to November 2025, pH values measured at RBSBIAR-DS fluctuated to below and within the acceptable BCAWQG guideline range (pH 6.5 to 9.0). The March and June 2025 sample events at RBSBIAR-DS noted orange-tinged water with a pH below the BCAWQG-FST guidelines

During 2025, BCAWQG-FST exceedances were measured at the RBSBIAR-DS location for total iron (6), total cobalt (2), total manganese (1), dissolved cadmium (3), dissolved copper (3), dissolved nickel (4), dissolved zinc (3), and pH (2) below the acceptable range (pH 6.5 – 9.0) in ten sample events. At the RBSBIAR-US location, BCAWQG-FST exceedances were measured for total iron in two sample events. At the RBSBIAR-EDS location, BCAWQG-FST exceedances were measured for total iron and chloride in two sample events. No exceedances were measured at RBSBIAR-EUS in seven sample events.

At the RBSBIAR-DS location, BCAWQG-FLT exceedances were measured for sulphate (4), total aluminum (7), total arsenic (3), total cobalt (7), total selenium (1), total silver (1), dissolved cadmium (1), dissolved copper (2), dissolved iron (4), dissolved nickel (2), dissolved selenium (1), and dissolved zinc (1) in ten sample events. At the RBSBIAR-US location, BCAWQG-FLT exceedances were measured for total aluminum (2), total arsenic (1), and total cobalt (1) in two sample events. At the RBSBIAR-EDS location, BCAWQG-FLT exceedances were measured for sulphate (1), total aluminum (1), total cobalt (1), and dissolved nickel (1) in two sample events. At the RBSBIAR-EUS location, no BCAWQG-FLT exceedances were measured in seven sample events. Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring.

Right Bank Drainage Tunnel

The Right Bank Powerhouse Drainage Tunnel (RBDT) is excavated below the spillway and Powerhouse and ends under the dam core buttress at the center of the dam structure. The RBDT has 300+ drains installed along the tunnel in pullouts and water is collected in sumps which is then collected and pumped out for treatment. Significant seepage occurred below the powerhouse in 2024 and portions of the tunnel were lined with shotcrete, steel and a foaming expanding synthetic grout to control the seepage. In 2025, water quality analysis of samples collected from RBDT-sump water was conducted. Water from the RBDT is captured and treated, as needed, prior to discharge. The RBDT sampling is not part of the main Site C ARD/ML monthly sampling program but considered useful to BC Hydro to guide future management decisions.

The RBDT-Sump location was sampled eleven (11) times from February to December 2025.

During 2025, BCAWQG-FST exceedances were measured for total iron (1) and elevated pH > 9.0 (11 occurrences) above the acceptable range (pH 6.5 – 9.0).

Parameters measured above the BCAWQG-FLT for ammonia (10), nitrite (1), chloride (10), total aluminum (9), total arsenic (2), total cobalt (1), total silver (1), dissolved copper (7), and dissolved zinc (1). Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring.

Area 21-Sump

A temporary stockpile was constructed in 2024 in the Area 21 laydown area to hold PAG material prior to ultimate disposal in an approved location. The stockpile was designed by Tetra Tech, with input from the geotechnical, hydrotechnical and QP-ARD teams for stockpile. The source of material in the temporary stockpile, as well as the volume and extent of material in the pile varies. This is an important consideration when reviewing and evaluating the Area 20/21 sump data from different time periods. The construction of the Area 21 temporary stockpile pad location was completed at the end of 2023 for the initial purpose of holding PAG material excavations from the Approach Channel excavations. This stockpiled material was moved to the RSEM L5 Garbage Creek area for permanent disposal prior to reservoir flooding. The temporary stockpile received material from the R6 slope excavation in late summer 2024.

The Area 21-Sump sample location was established in January 2024 and receives run-off from the Area 21 Temporary PAG stockpile area.

During 2025, no BCAWQG-FST exceedances were measured at the Area 21-Sump location.

At the Area 21-Sump location, BCAWQG-FLT exceedances were measured for sulphate (7), total aluminum (2), total cobalt (3), total selenium (6), dissolved copper (4), dissolved nickel (3), and dissolved selenium (6) during nine sample events. Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring.

R6 Slope

The R6 Abutment shale slope east of the spillway was mitigated for long-term ARD-ML with a cover that was constructed in 2024. The construction works included consideration of geotechnical and geochemical components. Tetra Tech reviewed the cover design as summarized in a memo dated September 3, 2024, to BC Hydro.

BC Hydro had initially indicated fora monitoring program to collect water quality samples downstream of the slope to evaluate impacts during and post-construction. Tetra Tech included this consideration in their summary memo as QP(ARD). Due to operational and safety constraints, a water quality monitoring program at this location was not possible. BC Hydro field staff review the area for visual signs of ARD/ML.

TABLE OF CONTENTS

APPENDIX SECTIONS

TABLES

FIGURES

PHOTOGRAPHS

APPENDICES

ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
ARD	Acid Rock Drainage
ARD-ML	Acid Rock Drainage and Metal Leaching
BC MoE	BC Ministry of Environment and Climate Change Strategy Water Protection & Sustainability Branch
BCAWQG	British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture
°C	Degrees Celsius
CEMP	Construction Environmental Management Plan
DOC	Dissolved Organic Carbon
FB	Field Blank
FST	Freshwater Short-Term Maximum
FLT	Long-term Maximum
L/s	Litres per second
LBDB	Left Bank Debris Boom
LBRR	Left Bank River Road (referring to Sample ID)
Lorax	Lorax Environmental Services Ltd.
mg/L	milligrams per litre
ML	Metal Leaching
PAG	Potentially Acid Generating
PRHP	Peace River Hydro Partners
ppm	parts per million
RBSIBAR	Right bank South Bank Initial Access Road (referring to Sample ID)
RPD	Relative Percent Difference
RSEM	Relocated Surplus Excavation Material
SBIAR	South Bank Initial Access Road
TB	Travel Blank
µg/L	micrograms per litre
WQG	Water Quality Guideline

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of BC Hydro and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than BC Hydro, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) was retained by BC Hydro (the client) to develop and implement a surface water quality monitoring program at locations around the Site C Clean Energy Project site where bedrock shale exposures, classified as potentially acid generating (PAG), may have the potential to contribute to water quality changes due to acid rock drainage and metal leaching (ARD-ML) potential of the shale bedrock.

We acknowledge this work is being conducted on the traditional territory of Treaty 8 First Nations of Dunne Zaa, Cree and Tse'khene cultural descent.

Monitoring locations were established by Tetra Tech in conjunction with BC Hydro personnel. The initial sample program was designed so that locations were coincident, where possible and applicable, with the locations and station names used in 2016 by Lorax Environmental Services Ltd. (Lorax) for water quality monitoring on behalf of Peace River Hydro Partners (PRHP) prior to BC Hydro taking over sampling of these stations.

The initial sampling was program focused on rock cuts at River Road and South Bank Initial Access Road where the water conveyance facilities were identified as having potential for direct ARD-ML impacts due to exposure of shale bedrock during construction related activities. These two locations have been subject to monitoring since program initiation in 2017 and have continued though 2025. Additional sampling stations have been added and removed throughout the years as construction progressed. The areas reviewed and stations sampled in 2025 are discussed in this report.

The monitoring program includes locations at the discharge points and at midstream locations as well as locations upstream from the discharge to characterize variation to water chemistry within the catchment due to mixing and inflow of water from multiple sources. Sampling events are completed monthly, and samples are collected outside of frozen or no flow conditions.

The water quality monitoring discussed in this report is one of multiple water quality monitoring programs on-site, and the information presented in this report should be considered in the context of the project's overall ARD/ML mitigation and management and water quality monitoring programs.

This report documents the sampling events conducted monthly between January and December of 2025. Results are discussed in the context of ARD-ML management and mitigation for the PAG shale areas on-site.

2.0 MONITORING PROGRAM SET-UP AND PURPOSE

The monitoring locations are visited monthly by BC Hydro personnel and was documented by field notes and photographs. Samples and in situ measurements are collected, except when prevented by frozen or dry conditions. The 2025 monitoring period commenced with the first sample event on February 27, 2025, and was completed with the twelfth and final sample event of the year on December 22, 2025.

2.1 Monitoring Program Requirements and Comparison Criteria

Requirements for the development and implementation of the water quality monitoring programs are mandated under the Environmental Assessment Certificate – Condition 3, and the Federal Decision Statement – Condition 7. Reporting of the program results are required on an annual basis. These requirements were carried forward and presented in the BC Hydro Site C Clean Energy Project Construction Environmental Management Plan (CEMP), Revision 12 (October 23, 2023), Appendix E (Rev 6.1) Acid Rock Drainage and Metal Leachate Management Plan (October 4, 2023).

In accordance with the CEMP Appendix E Section 5.2.1.7, analytical results for all monitoring locations are evaluated against the British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture (BCAWQG) freshwater short-term maximum (FST) value[1](BC MOE, 2025). The monthly results are compiled for long-term trend analysis in trend charts. The long-term trends data is evaluated against the BCAWQG freshwater long-term (BCAWQG-FLT) chronic values in Appendix B, Tables B1 to B4 and trend charts in Figure 6 to 65.

Water quality measurements collected at discharge locations to the Peace River that exceed the BCAWQG-FST values are reported to BC Hydro within 24 hours of receiving the results, and subsequently to the provincial Emergency Management BC hotline, the Independent Environmental Monitor, and the office of the Comptroller of Water Rights. The complete results of sampling at all locations are presented in a monthly routine memo to BC Hydro.

Under BCAWQG, the intention of freshwater long-term (FLT; “chronic”) WQG’s are for the protection of the most sensitive species and life stage against sub-lethal and lethal effects for indefinite explores, and uses an averaging period, whereas the freshwater short-term (FST; “acute”) WQG’s are intended to protect against severe effects, e.g., lethality, to the most sensitive species and life stage over a defined short-term exposure period approach (BC MOE, 2025). Results are compared to both guidelines for the purpose of tracking individual sample events and trend monitoring over longer periods.

2.2 Analytical Program Parameters

In situ water quality testing is completed during the field investigation and sampling program. The in situ monitoring program includes measurements of pH, electrical conductivity, alkalinity, hardness, water temperature, and estimated flow. In situ monitoring is completed at all stations where flow is noted. Water samples are collected at select locations for off-site analytical testing of water quality.

The off-site laboratory analytical program was designed to measure a suite of parameters suitable for screening the water quality against the BCAWQG-FST for surface water. The sampling and analytical procedures implemented during 2025 were commensurate with Tetra Tech’s monitoring programs from 2017 to 2024, and the program previously implemented in 2016 by Lorax for parameters, analytical methods, and detection limits. Samples were collected in a set of clean bottles provided by the lab and were submitted for analysis.

Analysis was conducted for the following parameters:

- Total Metals, Low Level (including Hg);
- Dissolved Metals, Low Level (including Hg);
- Hardness;
- pH;
- Alkalinity: Total/Species (CO_3^{2-} , HCO_3^-, OH^-);

[1] The British Columbia Approved Water Quality Guidelines: Aquatic Life, Wildlife and Agriculture document has been updated frequently during the course of the monitoring program, and has undergone revisions in March 2016, 2017 (June, August, December), March 2018, 2019 (August), 2020 (June), 2021 (February, September, December), 2023 (April, August, November), 2024 (February, June, July, August), and 2025 (February, March, May). Screening of the monthly water quality results are compared to the guidelines at the time of reporting.

- Acidity;
- Solids: Total Suspended (TSS) and Total Dissolved (TDS);
- Anions: Nitrogen species (nitrite, nitrate, ammonia), Sulphate, Chloride; and
- Dissolved Organic Carbon (DOC).

2.3 Summary of Parameters of Interest

Geochemical modelling completed by Klohn Crippen Berger (2015) identified copper, cobalt, cadmium, and zinc as having high probability of leaching into solution of site water during oxidation of the local shale bedrock under acid rock generating and metal leaching conditions.

Water quality screening efforts have focused on these elements and others with BCAWQG-FST guidelines, which have changed over the course of sampling since 2017 due to BC Ministry Guideline updates. Parameters with BCAWQG-FST guidelines in 2025 include pH, ammonia, chloride, nitrite, in addition to:

- Total concentrations: boron, cobalt (May 2025), iron, manganese, and molybdenum. Formerly, silver (until March 2025), lead (until February 2025), copper (until August 2019), cobalt (until May 2025) had FST guidelines but either changed during the 2025 season or during this BC Hydro project.
- Dissolved concentrations: cadmium, copper, iron, nickel (February 2025), and zinc (August 2023). Formerly, aluminum (until August 2023) had FST guidelines but changed during this BC Hydro project.

During this BC Hydro Site C project from 2017 to 2025, some parameters have been changed from BCAWQG-FST to BCAWQG-FLT or from dissolved to total or vice versa, which are shown on trend charts and Appendix B tables. These include total aluminum (formerly dissolved aluminum with FST and FLT, now FLT only), total arsenic (formerly FST), total cobalt (formerly FST and FLT), dissolved copper (formerly total), dissolved lead (formerly total FST and FLT), total silver (formerly FST and FLT), and dissolved zinc (formerly total).

Changes in concentrations of some elements or metals, reported as both total and dissolved, can have various implications for water quality under ARD-ML conditions. The solubility of individual elements can vary with pH. Discussion of key parameters of interest and association with ARD/ML is discussed below:

- Alkalinity and pH are important water quality parameters to indicate the ratio between residual alkalinity and acidity in solution and are key indicators for onset of acidic conditions within neutral to alkaline waters when monitored over time.
  - Neutralization of acidity by carbonate, and to a lesser degree silicate, minerals can temporarily increase alkalinity through release of the bicarbonate ion into solution, thereby buffering pH at a near constant value.
  - Bicarbonate will continue to react with, and deplete, any residual acidity. Once all carbonate and bicarbonate sources are depleted, alkalinity no longer is available to neutralize acidity and pH will drop. An indicator for accelerating acid generating processes is when increasing alkalinity is observed without proportional change to pH.
  - The BCAWQG-FST guideline for pH ranges from 6.5-9.0. There is no BCAWQG-FST guideline for alkalinity or acidity.
- Water clarity is measured as turbidity (nephelometric turbidity units, NTU) or as total suspended solids (TSS), which is an indicator of the amount of sediment (generally accepted as silt sized particles and coarser, or >0.45 μm in diameter), contained within the water column.

  - TSS can increase if sediment loading occurs due to erosion, or due to rapid precipitation of secondary minerals from chemical reactions such as neutralization of acidic water. The bulk chemistry of water with high TSS tends to mimic the chemical composition of the source sediment being eroded, or in the case of mineral precipitation tends to be high in iron as iron-oxide minerals are the most common secondary mineral to form.
  - Rapid temporal changes to TSS measurements within a catchment due to formation of secondary minerals can indicate presence of active ARD-ML reactions. The BCAWQG-FST guideline is based on deviations related to background TSS.
- Measurements such as total dissolved solids (TDS), electrical conductivity (EC) and salinity are indicators for the concentration of dissolved components and/or ions in solution. Sudden or gradual increases in these parameters can indicate changes in water chemistry such as an increase in reactive ions or dissolved metals as a result of potential metal leaching processes. Changes to these parameters in association with changes to pH or alkalinity may also indicate active metal leaching processes. BCAWQG-FST guidelines are not defined for these parameters.
- Dissolved sulphate can originate from anthropogenic sources, microbial processes and through chemical processes related to degradation of rock forming minerals in environments with potential for acid generation through the oxidation of primary sulphide (e.g., pyrite) or dissolution of sulphate minerals (e.g., gypsum). Elevated sulphate concentrations may indicate oxidation, or weathering, of PAG materials in proximity to sample collection locations; however, it may also indicate influence from regional groundwater sources.
  - Water quality with elevated sulphate and pH > 7.0 may indicate ARD-ML processes with sufficient acid neutralizing materials, whereas sulphate with decreasing pH may indicate a shortage of acid neutralizing materials. Sulphate is commonly reactive with several cations and metal ions under ambient environmental conditions forming both soluble and non-soluble mineral precipitates.
  - The guideline value for sulphate is not stated in the short-term BCAWQG-FST guideline; however, a long-term average guideline value is stated (variable with hardness) and is referenced in this report.
  - Groundwater monitoring from 2016-2020 up-gradient and down-gradient of RSEM R5a and R5b measured elevated sulphate concentrations below the BCAWQG-FLT guideline, as reported in the Site C Clean Energy Project, 2020 Q4 Groundwater Quality, Monitoring Report for RSEM R5a and R5b (Lorax, 2020). These results indicate the presence of sulphate in groundwater systems. It is noted that the down-gradient monitoring wells at RSEM R5b were screened in overburden materials above the bedrock contact.
- Marine shales such as the local Shaftsbury Formation commonly contain sulphide minerals (mainly pyrite, FeS_2) and may also have primary sulphate minerals such as anhydrite ($CaSO_4$), gypsum ($CaSO_4 \cdot 2H_2O$), or barite ($BaSO_4$), and/or other sulphate minerals.
  - Preliminary characterization determined that the primary sulfur species in the shale was sulphide with some detectable sulphate (Klohn Crippen Berger, 2015). Based on this mineral association and site observations, it is possible that groundwater contacting fractured bedrock could contain naturally elevated sulphate concentrations. Only one well from the Main Civil Works (MCW) Site was reported in the baseline groundwater sampling conducted as part of the project's Environmental Impact Statement (Hemmera Envirochem Inc. and BGC Engineering Inc., 2012) which did indicate groundwater contained elevated sulphate.
- Water hardness is derived from the total concentration of calcium and magnesium ions in solution, and often reported as mg/L of dissolved $CaCO_3$) is known to mitigate the effect of certain metals on aquatic organisms. Water hardness classification on-site is Hard to Very Hard (180 to >250 mg/L, and up to 1,000 mg/L, dependent on location) and is often measured above the guideline threshold used to calculate BCAWQG-FST guideline values. Where the ambient hardness values exceed the guideline limited listed for BCAWQG, the exceedance

criteria have been calculated using the upper limit "capped" hardness value instead of the measured ambient hardness. The BCAWQG values for multiple elements are based on water hardness.

- Formation of iron-oxide precipitate is a widely recognized indicator of active ARD-ML processes. Total iron concentrations are associated with ARD-ML due to liberation of ferric iron from the oxidation of primary iron bearing sulphides. Subsequent formation of iron-oxide or iron hydroxide minerals can precipitate when acidic waters are neutralized and may be present as suspended solids or can form scaling on reactive surfaces such as limestone.
- Aluminum is abundant in rock forming minerals and can be released as part of oxidation and degradation of rocks during ARD-ML processes. Aluminum is soluble in acidic water and is typically not soluble in neutral and alkaline waters. Aluminum, as Al3+, can also contribute to acidity along with H+. When concentrations of aluminum are measured in detectible concentrations in neutral or alkaline water, it is possible that the formation of very fine aluminum hydroxide clays may occur in previously acidic waters that have been neutralized. Aluminum hydroxide mineral species (e.g., polymorphs of gibbsite or hydrargillite) can form on rock surfaces and are indicators of acid generating conditions. Precipitation of aluminum and iron hydroxide produced by weathering may occur and reduce the exposure of acid generating and acid neutralizing minerals. (Price, 2009).
- Concentrations of aluminum, iron and copper are typically low in neutral pH drainage; however, elements such as antimony, arsenic, cadmium, molybdenum, selenium, and zinc can be present in neutral pH drainage (BC MEM, 1998). Neutral pH metal leaching is an important mechanism to be observed on the Site C project as several of these neutral pH soluble elements are prevalent in the shale bedrock. These elements can be concentrated within secondary mineral formation on shale bedrock during prolonged periods of low moisture, then released into run-off water in elevated concentration during high precipitation events.

3.0 SAMPLE LOCATIONS

A list of sample locations is provided in the attached Table 1, and the locations are shown on Figures 1 through 3. A summary of the rock cut locations that are subject to monthly monitoring are presented in the following sections, along with a description of the monthly sampling and in situ testing locations. Photos of the water sampling locations during 2025 are included in the Photographs (1 through 33) section of the Appendix.

3.1 Description of River Road and Sample Locations

Access road construction in 2016-2017, on the north/left bank, between Howe Pit and the Peace River along River Road cut through bedrock along an upper and lower slope:

- The Upper River Road site is located along an east facing slope on River Road, from approximately Station 12+735 to Station 12+885, The original cut-slope along this segment was generally graded at 2H:1V (26.6 degrees) and ranges between 10 m to 20 m in height. The cut-slope contains exposed shale, extending from ditch level to near the crest of the slope, which is at an approximate elevation of 464 masl.
- The Lower River Road site is located along a southeast facing slope on River Road and extends from approximately Station 12+400 to Station 12+550. The cut-slope along this segment is generally graded less than 2H:1V (26.6 degrees) and is up to 30 m in height. The cut-slope contains exposed shale slopes classified as PAG. The slope extends from near the toe of the slope to the crest at an approximate elevation of 455 masl. A chimney ditch bisects the PAG shale slope and separates it into East and West PAG shale slope exposures.

3.1.1 Monitoring Locations

Sample locations are established along the River Road ditch for in situ testing, primarily as a means of monitoring the effectiveness of the ARD-ML mitigation measures and to observe water quality changes over time. A total of eleven (11) monitoring locations were established in the River Road catchment, shown in Figure 1.

The six sample stations include 1) lower chimney drain (LBRR-LC), 2) upper chimney (LBRR-UC), 3) upstream of the lower chimney drain within the River Road ditch (LBRR-12+500 or LBRR-12+450 during 2022 due to significant rip-rap over the channel), 4) discharge of culvert RR-11 (LBRR-DD), and downstream drainage culvert outlets at 5) RR8 and 6) RR9. The four stations with only in situ monitoring include LBRR-12+600, LBRR-12+700, LBRR-12+810 and LBRR-12+920.

The River Road Ditch Diversion pipe, installed in March 2018, is to address erosion and sediment control by transport of run-off water into an elongated ditchline to reduce flow velocities and to promote settlement of suspended sediment. Inlets to culverts RR9 and RR8 are slightly elevated from the ditch base which will allow water to pond within the ditch and infiltrate or discharge via the culverts only if water levels reach sufficient height. Both culverts are made of HDPE materials.

The monitoring program includes sampling of discharge from the LBRR-RR8 and LBRR-RR9 culverts. Water flow is rarely observed at these two discharge stations, and in 2025 flow and sampling could only be completed during the February sampling event. The rarity of flow is due to the design of the ditch to deposit sediment and infiltrate before reaching the culverts. The ditchline is often subject to sediment infill from the adjacent roadway. In previous years it was noted that the diversion pipe was successfully reducing the amount of direct high TSS discharge into the Peace River by allowing the water to be collected and slowly infiltrate into the River Road ditch.

The established River Road monitoring locations are shown in Figure 1 and photos of the locations are included in the Photographs section of the Appendix. Water quality lab data results are provided in Appendix B, Table B1 and discussed in Section 5.3.

3.1.2 River Road Slope ARD/ML Mitigation Measures

Mitigation measures during dam site construction along River Road adjacent to the PAG slopes included a cut-off ditch above the slope, which diverts surface flows into limestone lined “Chimney ditches” which feed into the River Road ditch below the slope. The River Road ditch adjacent to the PAG slope included a bentonite liner and limestone rip-rap to provide neutralization potential and mitigate against acidic drainage.

The placed limestone rip-rap is effective at mitigating the pH of the drainage when there are fresh surfaces of limestone available for chemical reactions. Potentially acidic leachate generated from the rock cut-slopes reacts with the alkaline limestone to help neutralize water as it passes through the rip-rap lined ditch. Mineral precipitates can accumulate on rip-rap over time which reduces the effectiveness of the limestone. Periodic refreshing or replacement of limestone has been completed over the life of the project. No maintenance activities were completed in 2022 or 2023 as the limestone continued to work effectively with minor precipitate coatings noted as well as road sediment encroachment. Work in 2024 and early 2025 included permanent mitigation measures for long-term management of PAG from the River Road Slope.

With increased use of River Road, sediment and erosion control measures are needed to be addressed to manage the sediment load coming off of the road and into the ditch. The limestone is monitored for accumulation of precipitates and sediment and refreshed either by cleaning or replacement as needed.

Maintenance 2017-2020

In 2017, the collection ditch on the cut-bank (north) side of River Road between approximately 12+340 and 12+960 was lined with limestone rip-rap to assist with mitigating the potential effects of ARD-ML from PAG bedrock that was exposed during the initial road construction in 2015 and early 2016. Limestone was also placed between stations LBRR+920 and LBRR-DD to manage the pH of baseline drainage water at the outflow location. Limestone rip-rap within the ditch between road stations 12+600 and 12+900 continued to be maintained in 2018, including completion of a hydroseeding program and a limestone buttress as the toe of the shale slope to support long-term erosion control and slope stability in March 2018. The hydroseed appeared to remain in place on the slope, however, germination was not successful at year's end. No maintenance activities were completed in 2020.

Maintenance in 2021

In early July 2021, rip-rap was replaced with fresh limestone up to but not including under the diversion pipe. During limestone replacement, the contractor also removed and replaced the previously installed bentonite liner with a new bentonite liner.

Maintenance in 2022 and 2023

No maintenance requirement for limestone in 2022 and 2023.

Maintenance in 2024 and 2025

In early 2024, road maintenance along River Road unintentionally graded a large amount of road surfacing material into the limestone lined ditches on the north side of River Road. The limestone rip-rap was buried under road material and no longer functioned as mitigation for the PAG contact water coming down the slope. It was decided that in place of re-establishing the ditch and replacing the limestone, that a permanent cover system for the PAG slope would be advanced in 2024 instead of waiting for the permanent site road construction planned for 2026.

The long-term ARD-ML mitigation measure for the Upper River Road slope consists of a cover system that includes an impermeable geomembrane liner overlain by a cellular confinement system. The impermeable liner prevents oxygen and water ingress into the shale surface, thereby eliminating ARD-ML reactions once the cover is in place. The purpose of the cellular confinement system is to protect the liner from UV light degradation and physical damage, such as abrasion and puncture, and create a traversable surface primarily for wildlife. The extents of the cover system were supported by field rinse pH tests to define areas of active acid generation, and to confirm depth of scraping on the slope prior to cover placement. The shale slope was prepared prior to placement of the geosynthetic materials. The portion of the slope representing the footprint of the cover system design was excavated to remove actively acid generating shale material and create a level surface for the geomembrane liner.

Construction of the Upper River Road slope cover and Cut-Off Ditch started in November 2024 and was completed in mid-March 2025.

Detailed design of a similar cover system for the Lower River Road shale slopes is completed, and construction is expected to take place in Spring 2026.

3.2 Description of South Bank Initial Access Road Site and Sample Locations

The South Bank Initial Access Road (SBIAR) shale slope was initially exposed in 2015 as part of road construction works on the south bank between Relocated Surplus Excavation Material (RSEM) R6 and Area A. The shale bedrock is characterized as potentially acid generating (PAG) and monitoring and short-term mitigation for acid rock drainage and metal leaching (ARD-ML) has been ongoing at the site since 2016.

Shale is exposed on the east and west road cut-slopes below an approximate elevation of 460 m. The shale slope length is approximately 200 m from end to end, the vertical height is up to 22 m. The total area of the shale slope is approximately 14,000 m^2, between both the East and West slopes. The shale contact with the overlying granular material is a natural conduit for seepage. Surface water infiltrates into the ground through the granular material and drains out at the top of the low permeability shale horizon.

Evidence of ARD-ML processes are observed on the shale slopes in SBIAR through observation of secondary iron hydroxide mineral formation and acidic rinse pH values for shale samples collected from the slope.

3.2.1 Monitoring Locations

The effectiveness of ARD-ML mitigation measures is evaluated through monthly monitoring of water quality stations in the east and west ditches at locations upstream and downstream of the shale exposures.

A total of four (4) monitoring locations is established in the SBIAR catchment to monitor water quality flowing in the SBIAR ditches at the toe of the SBIAR road cut. The four sample locations allow for data collection from the east and west SBIAR ditches. This provides long-term characterization of SBIAR water management from the upstream location in the west ditch (RBSBIAR-US) and the downstream location in the west ditch (RBSBIAR-DS), as well as upstream (RBSBIAR-EUS) and downstream (RBSBIAR-EDS) sampling locations in the east ditch.

The established RBSBIAR monitoring locations are shown in Figure 2 and 3, and photos of the locations are included in the Photographs section of the Appendix. Water quality lab data results are provided in Appendix B, Table B2 and discussed in Section 5.4.

There is an intensive water quality monitoring program in the pond (continuous in situ measurements of pH, conductivity; daily lab analysis for all parameters) conducted prior to discharge by Trinity Consultants Ltd. (formerly Ecofish Research Ltd.) and Aski Reclamation LP, as well as DWB Consulting Services Ltd., as well as Peace River receiving environment monitoring conducted by Trinity Consultants Ltd. and Reclamation LP

3.2.2 SBIAR Shale Slope ARD/ML Mitigation

ARD-ML management and mitigation measures during dam construction included reduction of surface contact water through capture of up-gradient flow and diversion through a pipe to limit flow along the exposed shale slope, and collection of any remaining PAG contact water in ditches. A large cut-off ditch at the top of the west slope contained two overflow pipes from a former pond in Area 20/21 that outlet onto the west SBIAR slope. During dam construction these pipes extended down the slope and along the western ditch to convey overflow from the pond to the R6 Settlement Ponds. The remaining drainage pipes were removed in May 2023, and surface drainage currently flows overtop of the shale slopes.

Water flowing through the SBIAR ditches has no direct downstream receptor, and all water in the east and west ditches is conveyed directly to the PRHP RSEM R6 settlement pond which is an approved PAG contact water management facility and where water quality is monitored in the RSEM prior to discharge into the Peace River.

In late March 2024, ditch cleaning to remove ice in the SBIAR west ditch exposed fresh shale at the base of the ditch. During the April 2024 site audit, slope material from the SBIAR west and east ditches was tested by rinse pH to acquire pH values of between 2.45 to 6.30 from the exposed shale material.

With the construction phase of the Site C dam completed, and reduced capacity for ongoing monitoring and maintenance, a permanent cover on the PAG slope is required for long-term mitigation of the ARD-ML from the slope. An ARD-ML cover solution has been designed and construction of the cover is expected to be completed in Spring-Summer 2026 for permanent road construction.

3.3 Description of RBDT and Sampling Location

The Right Bank Drainage Tunnel (RBDT) is an approximately 1.123 km long groundwater dewatering tunnel that was excavated within shale bedrock under the Roller Compacted Concrete (RCC) Buttress by PRHP to provide reduction of hydrostatic pressures for stability under the Right Bank Dam abutment infrastructure foundations. Construction of the facility began in July 2016 and was completed in January 2019 (PRHP, 2020). The RBDT sampling is not part of the main Site C ARD/ML monthly sampling program but considered useful to BC Hydro to guide future management decisions. Water from the RBDT is captured and treated, if needed, prior to discharge.

During construction of the RBDT, water quality sampling was completed along eleven locations in the tunnel on July 6, 2020 (5 locations), February 22, 2021 (7 locations), and June 7, 2023 (1 location). On January 21, 2024, sampling of the tunnel seepage water from the RBDT commenced on a monthly basis. In 2024, the RBDT and RBDT-Sump locations were sampled thirteen (13) times from January to December from locations at both a discharge valve line near the tunnel entrance, and a sump located approximately 685 metres further inside the tunnel where the RBDT Access intersects the main tunnel. When sampling was not possible from the RBDT entrance due to reduced flow, a sample was collected the sump further into the tunnel.

In 2025, the RBDT-Sump location was sampled eleven (11) times from February to December from the one sump location approximately 685 metres into the tunnel. A map showing the location is presented on Figure 2.

3.4 Description of Area 21 and Sampling Location

The Area 21 stockpile was designed by Tetra Tech with input from the geotechnical, hydrotechnical and QP-ARD teams for stockpile. The purpose of the stockpile is to temporarily store PAG material before it is moved to a permanent approved PAG storage location. The shale material stored in the Area 20/21 Temporary PAG pile is classified as PAG, and rinse pH testing from 2024 indicates that the material is currently acid generating (AG). Rinse pH testing has indicated that isolated areas of the Area 20/21 stockpile have rinse pH values in the range of pH 2 to 4. The BC Hydro stockpile report (July 15, 2025) shows there is a PAG material (shale) volume of 18,200 cubic meters (cu.m.) stored in Area 20/21 Temporary PAG pile. The long-term storage of this shale material is expected to be in the Outlet Portal PAG disposal area.

The Area 21-Sump sample location was established in January 2024 and receives run-off from the Area 21 Temporary PAG stockpile area prior to ultimate disposal in an approved location. In 2025, monthly sampling from the Area 21-Sump occurred nine (9) times from the months of February to October.

The location of the Area 20/21 sump sample is presented on Figure 2 and 3.

4.0 LOCAL CONDITIONS

4.1 Weather Conditions - Temperature and Precipitation

The minimum, maximum, and average daily temperature and the seven-day temperature range preceding each sampling event are summarized in the attached Table 2. The total precipitation measured for the seven days preceding each sample event and the precipitation on the day prior to and the day of the sample event are also summarized in Table 2. The temperature and precipitation data were sourced from BC Hydro's Site C Meteorological and Air Quality Station (attached Figure 4; BC Hydro, 2025), Station 7C Site C North Camp. A summary of mean daily temperature recorded on sampling events, and precipitation recorded prior to and during the sampling event is provided in Table 4-1.

Sampling events in 2025 were primarily conducted on dry days with little to no precipitation, except for moderate precipitation of 21.4 mm on October 26, 2025. Precipitation during the 7-days prior to sample events were mostly minimal to none, except for prior to the July 30 (48.5 mm), October 26 (22.5 mm), and Dec 22 (28.4 mm) sample events in 2025.

Table 4-1: Sample Event Temperature and Precipitation

Sample Event No.	Sample Event Date	Mean Daily Temperature	Precipitation Sample Event	Precipitation for 7 Days Prior to Sample Event
		(°C)	(mm)	(mm)
1	28-Feb-25	5.2	0	0.76
2	27-Mar-25	-3.1	0	0.00
3	02-Apr-25	-1.3	0	0.12
4	22-Apr-25	6.8	0	0
5	13-May-25	14.1	0	0.57
6	22-Jun-25	12.7	0	2.62
7	30-Jul-25	23.2	0	48.5
8	31-Aug-25	20.1	0	0
9	07-Oct-25	9.9	1.75	3.51
10	26-Oct-25	1.3	21.4	22.5
11	23-Nov-25	-1.7	0	9.80
12	22-Dec-25	-27.6	4.07	28.4

4.2 Classification of Seasonal Flows in Ditch

Residence time for water is low in the investigated area ditches due to their small catchment size. The climate data was used to evaluate water availability and potential water source for flows that were observed in the ditches.

The flows in ditches are susceptible to seasonal change and flow rate is highly influenced by local precipitation events, thus the classification of flow in ditches can assist to interpret the source and subsequent chemical fluctuations in water sampled (attached Table 3). For example, flows in ditches can be attributed to shallow or regional groundwater, spring freshet or surface run-off, dependant on the season and amount of precipitation recorded in the previous 24-hours and 7-days to the sampling event.

When significant or moderate precipitation occurred in the previous 7-days, but minimal precipitation within the prior 24-hour period to the sampling event, the flows in ditches can result from shallow groundwater flow, mainly through unconsolidated overburden. The highest amount of precipitation in the preceding seven days to a water sampling event during 2025 occurred prior to the July 30 (48.5 mm), December 22 (28.4 mm), and October 26 (22.5 mm) events. During the July and October events, precipitation falls as rain and during December it falls as snow. The elevated precipitation events falling as rain do show some correlation with elevated turbidity and TSS measurements in the Peace River, as discussed in the proceeding section.

During spring freshet and snow melt, sampling events can be classified as having a 'dilution' effect to the water chemistry, although increased TSS from turbid high flows can counteract this effect. On the contrary, during more arid seasons with little to no precipitation occurring in the previous 7-days and 24-hours, flows in ditches can be attributed to regional groundwater baseline seepage. In this event, when precipitation and sampling occur following dry periods, the surface chemistry of the rocks will be washed into the ditches and concentrated.

The classification of seasonal flows in ditches, therefore, is important to consider when interpreting fluctuations and exceedances in parameters measured in water quality guidelines over the period of one year. However, it is also noted that the observations at the water quality monitoring locations can be influenced by other factors as well including construction activity and road grading which may influence sediment encroachment into the water being analyzed.

In ARD/ML situations, precipitation and snowmelt can flush both dissolved products of sulphide oxidation (sulphate, dissolved metals) and particulate material containing adsorbed/occluded metals; therefore, simultaneous increases in TSS, sulphate, and dissolved metals are commonly observed.

4.3 Peace River Turbidity and TSS

During construction phase of the Site C dam, turbidity of the Peace River was monitored by BC Hydro through a series of continuous data loggers situated both upstream and downstream stations (PAM-PBM and PAM-PBM) of the dam construction area. Peace River Above Moberly (PAM) or Below Moberly (PBM) reference relative to the Moberly River which is slightly upstream of the dam.

In 2024, the PAMs were decommissioned in preparation for reservoir filling and got replaced by two "background" stations just downstream of the tailrace (PBM left and right bank) where PBM = Peace Below Moberly downstream of the dam. At this time, the data series collected from the left and right banks of the Peace River below the Moberly River (PBM) were provided to Tetra Tech by Ecofish to provide a general understanding of influence by precipitation on natural sediment within the Peace River surrounding sampling events.

The turbidity data, measured in Nephelometric Turbidity Units (NTU), is converted to a value representing TSS, in mg/L, using a conversion factor developed by Ecofish using calibration of field measurements with laboratory data (Ecofish, 2026).

A summary of the referenced data for turbidity and TSS is presented in Appendix Table 4.

The highest reported 7-day- precipitation prior to a sampling event is recorded for July 30, 2025, which is consistent with the relatively elevated TSS and turbidity values, summarized in Table 4-2.

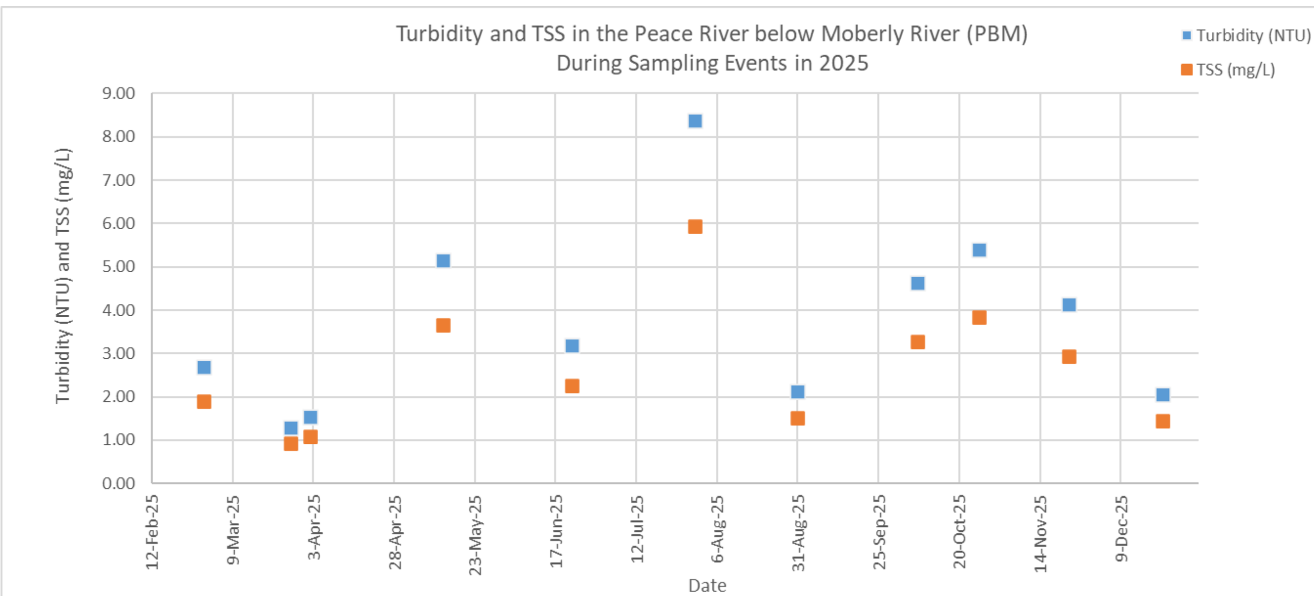
Table 4-2: Highest Turbidity and TSS During Water Quality Sample Events in 2025

Sampling Date	Turbidity (NTU)[1]	TSS (mg/L)
	PBM Combined	PBM Combined
13-May-25	5.16	3.66
30-Jul-25	8.38	5.95
26-Oct-25	5.40	3.83

NTU: Nephelometric Turbidity Units
PBM: Peace River Below Moberly

Figure 4-1 illustrates the variability and trends in turbidity and TSS during 2025 and can be reviewed in conjunction with the precipitation events listed in Appendix Table 2.

Figure 4-1: Turbidity and TSS during Water Quality Sample Events in 2025



5.0 WATER QUALITY MONITORING PROGRAM RESULTS

5.1 Sample Events in 2025

A summary of each water quality sampling event and corresponding analytical results are provided in the Routine Memos prepared by Tetra Tech and reported to BC Hydro between January to December 2025. Field reviews are completed monthly at the selected locations. Water quality sampling and in situ measurements are attempted monthly but are limited by frozen or dry conditions in some months.

The attached Table 1 presents a summary of the dates of the sampling events and which locations had in situ measurements or sample collection.

Field notes document field observations monthly at each monitoring location and include estimated flow rate and water clarity, site conditions and construction activities. In situ tests are completed with measurements of water temperature, hardness, alkalinity, pH, and electrical conductivity using a hand-held meter. The in situ test data is presented in the Appendix Tables 6, 8, 10, and 12, and summarized in the proceeding sections.

Laboratory results for all locations are provided in Appendix B (Tables B1 to B4). A summary of water quality results exceeding the BCAWQG water quality values, organized by monitoring location and month, are presented in Appendix Tables 7, 9, 11, and 13.

5.2 Quality Control and Quality Assurance Program

5.2.1 Overview of QA/QC Program

The Quality Control and Quality Assurance (QA/QC) program is based first and foremost on experienced field staff familiar with the water quality monitoring program adhering to the British Columbia Field Sampling Manual, Part A and Part E (BC MoE, 2013) for sample collection procedures and QA/QC practises.

New sample containers were acquired from the laboratory prior to the sampling event and all handling of the containers, sampling devices and equipment during sample collection was completed wearing new nitrile gloves to minimize potential for contamination of the samples. A new disposable syringe and 0.45 µm filter are used for each sample being submitted for dissolved metals, as per field sampling procedures (BC MoE, 2013). A peristaltic pump and 0.45 µm high-capacity inline filter is used when the water is too turbid for the manual syringe filtering. All samples were stored in a cooler filled with ice packs during the sampling.

The program incorporates the use of a Travel Blank (TB), Field Blank (FB) and replicate sample to test for potential contamination during sample collection, handling, or laboratory preparation, and to evaluate the precision of laboratory analysis. Travel Blanks were prepared by the laboratory and Field Blanks were prepared in the field at sample collection sites by field staff using the same source water as was used for the Travel Blank.

5.2.2 Laboratory QA/QC

Analytical testing was completed by ALS Laboratories (ALS). The lab implements a detailed QC program into the sample analysis which includes a series of checks and evaluations for consistency in the sample analysis. The QC program includes method blanks, certified reference materials, laboratory control samples and duplicates. The QC Lot reported on Assay Certificates consistently met internal ALS Data Quality Objectives during the year.

5.2.3 Tetra Tech QA/QC

The analytical results of the QA samples (TB, FB, and replicate samples) were reviewed by Tetra Tech, and if potential contamination or concerns with analytical results were identified, they were discussed with the laboratory and/or the field sampler representatives, with reanalysis of samples completed for verification if necessary. The results of the field and travel blanks samples are provided in the Appendix Table 5a and results of the replicate samples in the QA program are presented in Appendix Table 5b.

5.2.3.1 Blank Samples

Travel Blanks were prepared by the laboratory and Field Blanks were prepared in the field at sample collection sites by field staff using the same sourced water. If the source distilled water was contaminated, similar elemental anomalies would be expected in both the TB and the FB. Blank samples were considered to ‘fail’ where any measured value was in concentrations above the reported detection limits for that parameter. Elemental concentrations measured above detection limit can be attributed to field contamination or calibration of analytical instrumentation. During 2025, TB and FB data showed minimal occurrences of any significant concentrations of values above the detection limit. As a result, no reruns were required by the lab during 2025.

During the 2025 monitoring period, elemental concentrations measuring above the analytical detection limits in TB and FB samples occurred nineteen (19) times, as detailed in the attached Table 5a. The above detection limit values were noted for acidity (16 samples), ammonia (1 sample), nitrate (1 sample), and total arsenic (1 sample).

The pH for the TB and FB samples ranged from 5.40 to 5.45, with an average pH value of 5.43 from the 2025 sampling events. This pH range is typical for distilled water used for the TB and FB samples.

5.2.3.2 Replicate Samples

Replicate samples were evaluated using Relative Percent Difference (RPD). When an RPD value is less than 30% it is considered an acceptable threshold for variation of surface waters.

During the 2025 monitoring period, field replicate samples with differences of elemental concentrations above the acceptable threshold of RPD > 30% occurred for a variable number of parameters, including: February 26 (1), May 13 (2), June 22 (1), and October 7 (1). No occurrences were measured in field replicate samples in the remaining sample events. Discrepancies are attributed to sediment disturbance during the collection of the first sample. The field staff were informed of these issues and were reminded of the importance of QC procedures during replicate sampling.

5.2.3.3 Total vs Dissolved Concentrations

Tetra Tech also reviewed the data for more general anomalies and inconsistencies. The total and dissolved concentrations for the full suite of elements were continued to be compared since there are frequent occurrences of dissolved concentrations exceeding total concentrations. The results were screened for analytical error, then assessed for expected natural variability of surface waters. Most instances were due to measurements at or near the analytical detection limit and could be explained by being within an acceptable range of error up to five times the lower detection limit for the respective element. In this case of reporting within five times of detection limit, the total concentrations are considered equal to the dissolved concentrations.

Dissolved concentrations exceeding total concentrations in samples were calculated within the acceptable threshold of an RPD < 30%, with no occurrences outside of this acceptable threshold.

5.3 River Road Water Quality Monitoring

Dry, freezing and/or low or no flow conditions prevented consistent lab sampling and in situ measurements at the River Road monitoring locations in 2025. Field observations were documented each month.

Sufficient flowing water permitted samples to be collected during 2025 from the following stations, with the sampled months listed in parentheses:

- LBRR-DD (February in situ and lab) – discharge location to Peace River;
- LBRR-EDP (February, April, June, October in situ and lab; May in situ only);
- LBRR-LC (February in situ and lab);

- LBRR-UC (no samples);
- LBRR-12+920 (March, April, May, June, October – in situ only);
- RR8 (February in situ and lab) – discharge location to Peace River;
- RR9 (February in situ and lab) – discharge location to Peace River.

5.3.1 In Situ Measurements and Field Observations

Values for a total of fourteen (14) in situ measurements of pH, conductivity, hardness, alkalinity, water temperature, estimated flow and turbidity were measured at the River Road monitoring locations in 2025. The range in water temperatures was 0.0 to 20.9 °C. Measurements of pH ranged between 7.24 to 9.21, alkalinity ranged between 40 to 120 ppm, hardness of 100 to 800 ppm and conductivity between 195 to 4500 µS/cm. The in situ results from River Road are provided in Appendix Table 6 and summarized in Table 5-1.

Table 5-1: River Road In Situ Tests

Summary	River Road In Situ Tests - 2025					
	pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)
Mean	8.07	1953	725	60	7.56	0.73
Median	8.18	1904	800	40	3.75	0.10
Minimum	7.24	195	100	40	0.00	0.01
Maximum	9.21	4500	800	120	20.9	3.50

Flows within the River Road ditch are ephemeral. During 2025, three stations were not sampled through the year due to insufficient flow for sampling, LBRR-12+600, LBRR-12+700, and LBRR-12+810. The three discharge stations, LBRR-DD, RR8, and RR9, were observed with flow and discharging to the Peace River in the February sampling event, and no other events. The lower chimney, LBRR-LC, was flowing in the February sample event, and no other events. In the February and March sample events, the upper chimney, LBRR-UC, drainage had little to no visibility due to ice cover and no sampling in 2025. The LBRR-12+920 location had flow in five sampling events from March to June and October, with clear or turbid flow. The LBRR-EDP location had flow in five sampling events in February, April, May June, and October, with clear or turbid flow. Field observations commonly noted water volumes too low for sampling resulting from dry or frozen conditions.

In the River Road catchment, the source of TSS is primarily attributed to River Road run-off, scouring of sediment deposited within the River Road ditch and washing from the cut-slopes. During the February 27, 2025 sampling event, turbid high flows were observed associated with water management issues from ongoing Blind Corner works and PAG mitigation cover at the Upper Chimney drainage. Further up the drainage upstream water was diverted to the Howe Pit pond and flows were drastically reduced at the Lower Chimney drainage following sampling. In April 2025, the LBRR ditch was cleaned out around Blind Corner and straw wattle materials placed in front of the RR9 culvert and downstream of the L3 diversion pipe at LBRR-EDP.

5.3.2 Freshwater Short-Term Maximum Exceedances

The summary of exceedances is presented in appendix Table 7 and summarized below. The complete data results from the samples are summarized in Appendix B, Table B1.

Eight (8) samples were collected from River Road during 2025 for laboratory analytical testing. On February 27, 2025, samples were collected from LBRR-DD, LBRR-LC, LBRR-EDP, RR8, and RR9. The LBRR-EDP location was also sampled on April 22, June 22, and October 26, 2025. A total of eighteen (18) occurrences of BCAWQG-FST exceedances were measured at various location and dates.

BCAWQG-FST exceedances were measured for chloride (1), total cobalt (2), total iron (6), total manganese (4), total silver (1), dissolved cadmium (1), dissolved nickel (1), and dissolved zinc (2). These results are consistent with results in previous sampling years. Neutral to alkaline lab pH values ranged from pH 7.69 to 8.27.

Table 5-2: River Road Lab Samples – BCAWQG-FST Exceedances

Sample Location	Sample Date	BCAWQG-FST (Short-term) Guidelines							
			Total				Dissolved		
		Chloride (Cl)	Cobalt (Co)	Iron (Fe)	Manganese Mn)	Silver (Ag)	Cadmium (Cd)	Nickel (Ni)	Zinc (Zn)
LBRR-DD [1]	27-Feb-25			✓	✓				
LBRR-LC	27-Feb-25		✓	✓	✓	✓			
LBRR-EDP	27-Feb-25		✓	✓	✓				
	22-Apr-25						✓	✓	✓
	22-Jun-25								✓
	26-Oct-25	✓		✓					
RR8 [1]	27-Feb-25			✓					
RR9 [1]	27-Feb-25			✓	✓				

[1] Discharge location to Peace River.

BCAWQG-FLT exceedances were measured for sulphate (4), total aluminum (6), total arsenic (4), total cobalt (5), total selenium (3), total silver (2), dissolved cadmium (2), dissolved nickel (3), and dissolved selenium (1). Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring.

Table 5-3: River Road Lab Samples – BCAWQG-FLT Exceedances

Sample Location	Sample Date	BCAWQG-FLT (Long-term) Guidelines								
		Total						Dissolved		
		Sulphate	Aluminum (Al)	Arsenic (As)	Cobalt (Co)	Selenium (Se)	Silver (Ag)	Cadmium (Cd)	Nickel (Ni)	Selenium (Se)
LBRR-DD [1]	27-Feb-25	✓	✓	✓	✓	✓	✓	✓	✓	✓
LBRR-LC	27-Feb-25	✓	✓	✓		✓				
LBRR-EDP	27-Feb-25		✓	✓		✓	✓			
	22-Apr-25	✓			✓					
	22-Jun-25	✓			✓			✓	✓	
	26-Oct-25		✓		✓					
RR8 [1]	27-Feb-25		✓							
RR9 [1]	27-Feb-25		✓	✓	✓				✓	

[1] Discharge location to Peace River.

5.3.3 Trend Monitoring and Details of 2025 Sample Results

Data results from 2017 to 2025 at River Road monitoring stations have been compiled and plotted for trend analysis. Please refer to Figures 6 to 17 for time series charts. Eight samples were collected from five stations at River Road in 2025, therefore it is difficult to establish trends at River Road. We refer the reader to previous annual reports for additional discussion on trends from measured parameters from laboratory testing and attach the updated trend charts in the Figures section for reference.

Water quality sampling has been inconsistent at the River Road locations since 2017 due to frequent low flow or frozen conditions. There is minimal data available from mid-2018 to the end of 2019, 2024 (1 sample), and 2025 (8 samples), and variable amounts of data in 2017 and 2021 to 2025 from different stations and times.

Monthly water quality monitoring measures instantaneous ambient conditions at the time of sampling and as discussed in Section 3.1 the measurements are highly susceptible to temporal climate conditions due to the small catchment and short residence time of water within the River Road ditch. It is also observed on-site that the River Road ditch is often subject to sediment encroachment and erosion from the roadway.

The February 2025 sample event is the only event that provides multiple samples and therefore can be reviewed to provide some data on the variation in parameters within the River Road ditch. From this event we see that the lowest sulphate values, lower total metal contents, and lower acidity are observed at the downstream RR8 and RR9 sample stations compared to those at the upstream stations. All stations report similar neutral pH values. The RR8 and RR9 locations report lower TDS and TSS.

The LBRR-EDP represents one station from 2025 that had multiple sample events, with four samples between February to October. The highest sulphate values and lowest total metals contents (Al, Fe, Co, Se, Mn) are observed in April and June. Higher dissolved concentrations of Cd, Zn and Ni are observed in the April and June events.

The measured in situ pH values collected at River Road have remained within an acceptable BCAWQG-FST range (pH 6.5 to 9.0) during 2025 sampling events. This is consistent with previous years, except for some variability in pH during 2017 and 2018 when low pH values at select stations were observed prior to implementation of various mitigation and erosion control measures were implemented.

Over the period of record for River Road since 2017, sulphate concentrations show a generally elevated baseline with discrete peaks. These sulphate peaks are often coincident with increases in TDS, which is consistent with episodic inputs of oxidized sulphide weathering products. TSS data indicate episodic spikes, which are temporally discrete rather than persistent, suggesting event-driven mobilization, for example from run-off or slope disturbance.

For many metals, total concentrations are higher than dissolved concentrations, indicating a particle-associated metal fraction is present at times possibly from precipitation or sediment erosion and encroachment into the ditch. Iron and aluminum display the largest temporal variability and the most pronounced episodic peaks among the metals. Base metal species such as zinc and copper show episodic spikes in both total and dissolved fractions; spikes are less frequent for cadmium and arsenic.

The settling ditch appears to partially convert dissolved metals to particle-associated forms or enable precipitation/settling for some events, as suggested by larger total vs dissolved fractions at RR8/RR9 during spikes. The downstream stations therefore record both the source signal and the effectiveness (partial) of the ditch as a treatment/attenuation feature. Furthermore, the volume of flow at the downstream stations RR8 and RR9 are significantly reduced and rarely discharge to the Peace River.

5.4 SBIAR Water Quality Monitoring

At SBIAR, sufficient flowing water permitted twenty-one (21) lab samples to be collected during 2025 from:

- RBSBIAR-US (February and October: 2 samples);
- RBSBIAR-DS (February to November: 10 samples);
- RBSBIAR-EUS (April to November: 7 samples);
- RBSBIAR-EDS (June and October: 2 samples).

In situ measurements were collected in the same months when sampling was possible. Field observations were documented each month and results for each monthly sampling event were plotted on time series charts for trend and qualitative correlation analysis.

A summary of water quality measurements exceeding the BCAWQ values at SBIAR listed by monitoring location and month are listed in appendix Table 9. The complete set of screening results based on the laboratory data are tabulated in Appendix B Table B2.

5.4.1 In Situ Measurements and Field Observations

Values for water temperature, pH, total alkalinity, and electrical conductivity measured at the SBIAR monitoring locations are included in Table 8. At the SBIAR locations during 2025, the range in water temperatures was -0.2 °C to 21.4 °C. Measurements of pH typically ranged between 7.59 to 8.78 (except two pH values of 5.26 and 4.76 at the RBSBIAR-DS station, discussed below), alkalinity ranged between 0 to 120 ppm, hardness ranged between 450 to 800 ppm and conductivity between 255 to 2800 µS/cm. Flows in the SBIAR ditch system are variable throughout the year, from no flow conditions to a range of 0.03 to 1.5 L/s when flow was observed.

Table 5-4 RBSBIAR In Situ Tests

Summary	RBSBIAR In Situ Tests - 2025					
	pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)
Mean	7.75	1052	768	60	9.45	0.45
Median	7.91	884	800	80	9.60	0.25
Minimum	4.76	255	450	0.0	-0.20	0.03
Maximum	8.78	2800	800	120	21.4	1.50

In the downstream west ditch at RBSBIAR-DS, orange-tinged staining in water was noted in the March, April, and June sampling events; and pH varied from a low pH of 4.76 and 5.26 in June and March, to a pH between 7.59 to 8.78 in the remaining eight months of sampling at RBSBIAR-DS in 2025. It is noted that similar low pH values were noted in March and June 2024, with alkaline pH values through the remainder of the year. In 2024 it was partially attributed to construction ditch cleaning that exposed new shale in March 2024. In both years, the field samplers note orange-stained water, with some fresh exposures of shale possibly resulting from freshet flows.

Sediment washing from the adjacent roadway due to roadway grading or clearing, precipitation events, or freshet can affect results. It is difficult to track all times when sediment encroachment may occur due to roadway grading or clearing. However, during the October 26, 2025, sample event, moderate turbid flow was noted at RBSBIAR-EDS where it was observed that road run-off was diverted into the ditch.

5.4.2 Freshwater Short-Term Maximum Exceedances

The summary of exceedances at RBSBIAR are presented in Table 9 and summarized below. The complete data results from the samples are summarized in Appendix B Table B2.

Twenty-two (22) samples were collected from RBSBIAR locations in 2025 for laboratory analytical testing. Two samples were collected from each of the RBSBIAR-US (2 samples) and RBSBIAR-EDS (2 samples) locations. The majority of samples were collected from the RBSBIAR-DS (10 samples) and RBSIBAR-EUS (8 samples) locations. In 2025, a total of thirty-two (32) occurrences of BCAWQG-FST exceedances were measured at SBIAR locations.

BCAWQG-FST exceedances were measured for pH<6.5 (2), chloride (1), total iron (9), total cobalt (2), total manganese (1), dissolved cadmium (3), dissolved copper (3), dissolved iron (4), dissolved nickel (4), and dissolved zinc (3). These results are consistent with results in previous sampling years. Neutral to alkaline lab pH values were measured except two pH values from RBSBIAR-DS in March and June 2025. No BCAWQG-FST exceedances were measured at the RBSBIAR-EUS location in 2025.

Table 5-5: SBIAR Lab Samples – BCAWQG-FST Exceedances

Sample Location	Sample Date	BCAWQG-FST (Short-term) Guideline									
			Total				Dissolved				
		pH (<6.5)	Cl-	Iron (Fe)	Cobalt (Co)[1]	Mang. (Mn)	Cadmium (Cd)	Copper (Cu)	Iron (Fe)	Nickel (Ni)	Zinc (Zn)
RBSBIAR-US	28-Feb-25			✓							
	26-Oct-25			✓							
RBSBIAR-DS	28-Feb-25			✓	✓		✓	✓	✓	✓	✓
	27-Mar-25	✓		✓	✓	✓	✓	✓	✓	✓	✓

Sample Location	Sample Date	BCAWQG-FST (Short-term) Guideline									
			Total				Dissolved				
		pH (<6.5)	Cl-	Iron (Fe)	Cobalt (Co)[1]	Mang. (Mn)	Cadmium (Cd)	Copper (Cu)	Iron (Fe)	Nickel (Ni)	Zinc (Zn)
	22-Apr-25			✓					✓	✓	✓
	13-May-25										
	22-Jun-25	✓		✓			✓	✓	✓	✓	
	30-Jul-25										
	31-Aug-25										
	07-Oct-25										
	26-Oct-25			✓							
	23-Nov-25			✓							
RBSBIAR-EUS	22-Apr-25										
	13-May-25										
	22-Jun-25										
	30-Jul-25										
	31-Aug-25										
	7-Oct-25										
	26-Oct-25										
	23-Nov-25										
RBSBIAR-EDS	22-Jun-25										
	26-Oct-25		✓	✓							

[1] Total Cobalt applicable prior to May 2025.

Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring. BCAWQG-FLT exceedances were measured at RBSIAR for sulphate (5), total aluminum (10), total arsenic (4), total cobalt (9), total selenium (1), total silver (1), dissolved cadmium (1), dissolved copper (2), dissolved iron (4), dissolved nickel (3), dissolved selenium (1), and dissolved zinc (1).

Table 5-6: RBSBIAR Lab Samples – BCAWQG-FLT Exceedances

Sample Location	Sample Date	BCAWQG-FLT (Long-term) Guideline											
		Analyte	Total					Dissolved					
		Sulphate	Al	As	Co[1]	Se	Ag[2]	Cd	Cu	Fe	Ni	Se	Zn
RBSBIAR-US	28-Feb-25		✓										
	26-Oct-25		✓	✓	✓								
RBSBIAR-DS	28-Feb-25	✓	✓							✓			
	27-Mar-25	✓	✓	✓		✓				✓		✓	
	22-Apr-25	✓	✓					✓	✓	✓			
	13-May-25				✓						✓		
	22-Jun-25	✓	✓	✓	✓					✓			
	30-Jul-25		✓		✓								
	31-Aug-25				✓								

Sample Location	Sample Date	BCAWQG-FLT (Long-term) Guideline											
		Analyte	Total					Dissolved					
		Sulphate	Al	As	Co[1]	Se	Ag[2]	Cd	Cu	Fe	Ni	Se	Zn
	07-Oct-25				✓								
	26-Oct-25		✓	✓	✓		✓						
	23-Nov-25		✓		✓				✓		✓		✓
RBSBIAR-EUS	22-Apr-25												
	13-May-25												
	22-Jun-25												
	30-Jul-25												
	31-Aug-25												
	7-Oct-25												
	26-Oct-25												
	23-Nov-25												
RBSBIAR-EDS	22-Jun-25	✓									✓		
	26-Oct-25		✓		✓								

[1] Total Cobalt: new BCAWQG guideline in May 2025.
[2] Total Silver: new BCAWQG guidelines in March 2025.

5.4.3 Trend Monitoring and Details of 2025 Sample Results

Monthly water quality monitoring measures instantaneous ambient conditions at the time of sampling and, as discussed in Section 4, the measurements are highly susceptible to temporal climate conditions due to the small catchment and short residence time of water in the SBIAR ditch.

In 2025, the SBIAR-DS sample location provides the most consistent sampling record for consideration of temporal variability. The ten sample events in 2025 show that the pH remained alkaline, except for two outlier low pH values in March and June that correspond with the highest sulphate values as well as higher levels of total and dissolved As, Co, Al, and Fe.

Overall, the trend analysis over the period of record since 2017 shows that sulphide oxidation is the likely primary process producing elevated sulphate and episodic acidity at the sample locations. These oxidation products are flushed during precipitation/snowmelt events and mobilize metals. Particulate transport is important during event flows: total-metal peaks aligned with TSS increases, indicating metals are transported both dissolved and adsorbed/particulate.

Alkalinity and pH values indicate that waters have remained alkaline from 2017 through 2025, with exception of March 2021, March and June 2024, and March and June 2025. Since 2017, alkalinity shows more variability than pH values. In 2025, alkalinity and pH values show high variability at RBSBIAR-DS and more consistency at the other SBIAR locations. Acidity measures two sharp increases in March and June in both 2024 and 2025 at RBSBIAR, and the other locations remain more consistent.

Typically, the SBIAR ditches measure variable TSS and TDS values attributable to the relatively small catchment and short residence time of waters that are subsequently sensitive to flux in surface water inputs from precipitation. In 2025, TDS values at RBSBIAR-DS show an overall decreasing trend over the year, and RBSBIAR-EUS shows an overall increase over the year.

During 2024 and 2025, sulphate measures within range of values collected since 2017, with the exception of sulphate measured at RBSBIAR-DS shows a general increase from 2017 to 2025 with sulphate elevated above the BCAWQG-FLT in 2024 and 2025 but not common in previous years. In 2025, the RBSBIAR-DS location shows a decreasing trend from February to December with the majority of measurements above the long-term guideline. In previous years, a common seasonal trend in sulphate concentration noted peaks in spring/early summer followed by an overall decrease during the year.

Ammonia (NH_4 as N) is subject to a temperature and pH-dependent BCAWQG-FST and BCAWQG-FLT guideline. Although no exceedances are measured to the BCAWQG-FST, it is observed that ammonia values measure higher in the downstream SBIAR ditches (RBSBIAR-DS/-EDS) than the upstream ditches from 2017 to 2025.

Total and dissolved aluminum measure within range of values collected since 2017. The west downstream ditch measures sharp increases in total and dissolved aluminum values in a few months relative to previous years since 2017, and other SBIAR locations. The BCAWQG-FLT is applicable to total aluminum which exceeds the long-term guidelines in the majority of sampling events in 2024 and 2025 at RBSBIAR-DS, RBSBIAR-US, and RBSBIAR-EDS. At RBSBIAR-EUS, total aluminum is noted with consistently lower values than previous years and relative to the other three ditch sample locations. At RBSBIAR-DS, total and dissolved aluminum reach higher values in 2024 and 2025 than previously in 2017 to 2023.

Total and dissolved iron measures within range of values collected since 2017, with exception to an increasing trend of higher values of iron at RBSBIAR-DS in 2024 and 2025 relative to previous years. Total iron shows a more variable trend below and above the BCAWQG-FST guideline from 2017 to 2025, whereas dissolved iron previously remains below detection limit from 2016 to 2022, followed by occasional spikes in dissolved iron and more commonly elevated dissolved iron above BCAWQG-FST.

5.5 Right Bank Drainage Tunnel

In situ measurements for RBDT-Sump Table 10. Lab analysis for water quality at RBDT-Sump is presented in Appendix Table B3 and BCAWQG exceedances summarized in Table 11.

5.5.1 Field Observations and In Situ Measurements

5.5.1.1 Right Bank Drainage Tunnel Sump

In 2025, eleven (11) water samples and ten (10) coincident in situ measurements and field observation notes were taken from the RBDT-Sump to characterize lab water quality from February to December.

The summary of in situ field measurements at RBDT-Sump are presented in the attached Table 10 and summarized in Table 5-7.

Table 5-7: RBDT-Sump In situ Tests

Summary	RBDT-Sump In Situ Tests – 2025 (n=10)				
	pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)
Mean	9.81	1,857	0	240	11.7
Media	9.83	1,800	0	240	11.5
Minimum	9.53	1,539	0	240	8.8
Maximum	10.08	2,240	0	240	13.8

At RBDT-Sump, the in situ measurements collected from February to December 2025 recorded a range of pH 9.53 to 10.08 with mean pH value of 9.81, electrical conductivity from 1539 to 2240 µs/cm, hardness 0 ppm and alkalinity 240 ppm in all months, and water temperature from 8.8 to 13.8 °C. A clear flow was observed in all sample months except slightly turbid during the Aug 31 event. The water is still with no flow or flow rate observed. Water from the RBDT is captured and treated, if needed, prior to discharge.

5.5.2 Freshwater Guideline Exceedances

5.5.2.1 Right Bank Drainage Tunnel Sump

The water quality results and BCAWQG exceedances at RBDT-Sump are presented in the attached Table 11 and Appendix Table B3 and summarized below.

The eleven sample events in 2025 at the RBDT-Sump location resulted in a total twelve (12) BCAWQG-FST (freshwater short-term) guideline exceedances measured, including eleven occurrences of elevated pH > 9.0 in all eleven sample events and one occurrence of elevated total iron in the April 2 sample event.

Table 5-8: RBDT-Sump Lab Samples: BCAWQG-FST Exceedances

RBDT-Sump Sample Date	BCAWQG-FST (Short-term) Guidelines	
	pH (>9.0)	Total Iron (Fe)
28-Feb-25	✓	
02-Apr-25	✓	✓
22-Apr-25	✓	
13-May-25	✓	
22-Jun-25	✓	
30-Jul-25	✓	
31-Aug-25	✓	
08-Oct-25	✓	
26-Oct-25	✓	
23-Nov-25	✓	
22-Dec-25	✓	

Long-term BCAWQG-FLT guidelines are provided for reference with long-term trends. During 2025, the eleven samples from RBDT-Sump resulted in a total forty-four (44) BCAWQG-FLT exceedances measured, including ammonia (10), nitrite (1), chloride (11), total aluminum (10), total arsenic (2), total cobalt (1), total silver (1), dissolved copper (7), and dissolved zinc (1). Most exceedances are from the April 2, 2025 sample event, with values on adjacent sample events below the BCAWQG-FLT guidelines. The consistently elevated concentrations of pH, ammonia, aluminum and chloride are attributed to the concrete additives used in the tunnel. The results do not show evidence of ARD/ML related processes.

Table 5-9: RBDT-Sump Lab Samples: BCAWQG-FLT Exceedances

RBDT-Sump Sample Date	BCAWQG-FLT (Long-term) Guidelines								
	Analyte			Total				Dissolved	
	Ammonia	Nitrite	Chloride	Aluminum (Al)	Arsenic (As)	Cobalt (Co)	Silver (Ag)	Copper (Cu)	Zinc (Zn)
28-Feb-25	✓		✓	✓	✓			✓	✓
02-Apr-25	✓	✓	✓	✓	✓	✓	✓	✓	
22-Apr-25	✓		✓	✓				✓	
13-May-25	✓		✓	✓				✓	
22-Jun-25	✓		✓	✓				✓	
30-Jul-25	✓		✓	✓				✓	
31-Aug-25			✓						
08-Oct-25	✓		✓	✓					
26-Oct-25	✓		✓	✓					
23-Nov-25	✓		✓	✓				✓	
22-Dec-25	✓		✓	✓				✓	

5.5.3 Trend Monitoring and Details of 2025 Sample Results

The dataset at RBDT-Sump is limited to a couple years of data. The results to date show consistently alkaline pH conditions in the tunnel, with low acidity, high ammonia, chloride, and aluminum concentrations. Some parameters like alkalinity, sulphate, ammonia, nitrate, and TDS show an increasing trend through 2024 and then levelling off through sampling in 2025. Nitrate shows a strong increasing trend from September to December 2025. A spike in some parameters of total metals is noted in April 2025 coincidence with a spike in TSS.

5.6 Area 21 Temporary PAG Stockpile Sump

In situ measurements for Area 21-Sump are presented in Table 12. Lab analysis for water quality at Area 21-Sump is presented in Appendix Table B4 and BCAWQG exceedances summarized in Table 13.

5.6.1 Field Observations and In Situ Measurements

In 2025, nine (9) water samples and nine (9) coincident in situ measurements and field observation notes were taken from the Area 21-Sump to characterize lab water quality from February to October. No samples and frozen conditions were observed in other months in 2025.

During the May 31, 2025 sample event, it was observed that the Area 21 sump had been receiving concrete contact water from a concrete holding area to the west. It is being used as a temporary holding pond with CO_2 bubbles to reach BC Water Quality Guidelines. Once water is within BCWQG range for pH, it was periodically pumped to the SBIAR ditch as needed. On the May 31 sample event, no water was pumping and no CO_2 addition was occurring. Field personnel observed no flow being pumped and no CO_2 bubbling during any sample events in 2025. It is believed that some pumping did occur outside of sampling times/dates in May 2025 however no specifics were known.

The summary of in situ field measurements at Area 21-Sump are presented in the attached Table 12 and summarized in Table 5-10.

Table 5-10: Area 21-Sump In Situ Tests

Summary	Area 21-Sump In Situ Tests - 2025				
	pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)
Mean	8.17	1319	722	40	13.1
Median	8.11	1100	800	40	12.7
Minimum	7.85	590	450	40	1.0
Maximum	8.43	3140	800	40	26.0

At Area 21-Sump, the in situ measurements collected from February to October 2025 recorded a range of pH 7.85 to 8.43 with mean pH value of 8.17, electrical conductivity from 590 to 3140 µs/cm, hardness from 450 to 800 ppm, alkalinity 40 ppm in all months, and water temperature from 1.0 to 26 °C. A clear flow was observed in all sample months except slightly turbid during the Oct 26 event. No flow was observed in all months except a minor estimated flow of 0.15 L/s observed on Oct 26.

5.6.2 Freshwater Guideline Exceedances

5.6.2.1 Area 21-Sump

The water quality results and BCAWQG exceedances at Area 21-Sump are presented in the attached Table 13 and Appendix Table B4 and summarized below.

The nine sample events in 2025 at the Area 21-Sump location measured no BCAWQG-FST (freshwater short-term) guideline exceedances.

Long-term BCAWQG-FLT guidelines requires consistent sampling. They are provided for the individual sample results for reference of long-term monitoring. The nine sample events in 2025 at the Area 21-Sump location resulted in a total thirty-one (31) BCAWQG-FLT (freshwater long-term) guideline exceedances measured, including sulphate (7), total aluminum (2), total cobalt (3), total selenium (6), dissolved copper (4), dissolved nickel (3), and dissolved selenium (6), summarized in table 5-11.

Table 5-11: Area 21-Sump Lab Samples: BCAWQG-FLT Exceedances

Area 21-Sump Sample Date	BCAWQG-FLT (Long-Term Guidelines)						
		Total			Dissolved		
	Sulphate	Aluminum (Al)	Cobalt (Co)	Selenium (Se)	Copper (Cu)	Nickel (Ni)	Selenium (Se)
28-Feb-25		✓	✓			✓	
27-Mar-25						✓	
22-Apr-25	✓			✓			✓
13-May-25	✓	✓	✓	✓	✓		✓
22-Jun-25	✓		✓	✓	✓	✓	✓
30-Jul-25	✓			✓	✓		✓
31-Aug-25	✓			✓	✓		✓
07-Oct-25	✓			✓			✓
26-Oct-25	✓						

5.6.3 Trend Monitoring and Details of 2025 Sample Events

Consistently neutral to alkaline pH has been noted at the Area 20/21 sump location since the initiation of testing in 2024. Total dissolved solids increased in the 2025 sample events from February through the start of October, before falling in the last sample event in late October. The increasing TDS coincided with the same increase and drop off in sulphate concentration throughout the year. Selenium concentrations were noted as being elevated above the BCAWQ-FLT value through the period of April to October but below guideline during the other sample events.

6.0 CONCLUSIONS AND RECOMMENDATIONS

A water quality monitoring program was completed in 2025 to monitor the water quality at PAG exposure locations from River Road, South Bank Initial Access Road, Right Bank Drainage Tunnel and at a temporary PAG storage area in Area 21.

The water quality monitoring discussed in this report is one of multiple water quality monitoring programs on-site, and the information presented in this report should be considered in the context of the project's overall ARD/ML mitigation, management and water quality monitoring programs. Additional water quality monitoring programs are completed by Trinity Consultants Ltd. and Aski Environmental Reclamation, and DWB Consulting Services Ltd. and reported under separate cover.

Water chemistry is monitored to identify influence of ARD-ML processes on water quality from construction related exposed PAG shale. This is one water quality program that is completed on-site, and does not include all areas related to PAG shale or exposures.

The water quality program is conducted in accordance with the CEMP, Rev. 12 Appendix E (Rev 6.1) Acid Rock Drainage and Metal Leachate Management Plan, Section 5.2.1.7 (BC Hydro, 2023). The program includes monthly review of the sample locations and observations on water flow, signs of ARD/ML, and changes resulting from construction or other site activities. In situ measurements and sample collection is attempted at all locations, however, it is limited at various times due to frozen or no flow conditions.

The sampled locations are generally ephemeral. Residence time for water is low in the investigated area ditches due to their small catchment size. The flows in ditches are susceptible to seasonal change and flow rate is highly influenced by local precipitation events as well as freezing and melt off, thus the classification of flow in ditches can assist to interpret the source and subsequent chemical fluctuations in water sampled. For example, flows in ditches can be attributed to shallow or regional groundwater, spring freshet, or surface run-off, dependent on the season and amount of precipitation recorded before and during the sampling event. Monthly water quality monitoring measures instantaneous water quality and may not be reflective of long-term baseline conditions.

The water quality program is achieving the purpose of evaluating water quality from dam site areas where construction related PAG exposures and PAG contact surface water is identified. The results of the program demonstrate that ARD/ML processes are occurring, however the management and mitigation measures implemented are working and water quality remains primarily neutral to alkaline, with metals concentrations that vary. The water quality monitoring program provides a framework for identifying water quality concerns from the exposed rock cuts in a timely manner and implementing the required mitigation measures.

The results of the water quality program are used as the basis of evaluating the needs of long-term mitigation of the sites. Construction of a cover system on the shale cut-slope at Upper River Road and the cut-off ditch occurred from November 2024 to March 2025. A similar cover will be constructed on the Lower River Road shale slope in 2026. A cover system is also being finalized for SBIAR that will be implemented as part of the permanent dam site roads construction. The PAG material temporarily stored in the Area 20/21 location will be removed and permanently disposed of in an approved PAG storage facility for long-term storage.

6.1 River Road Water Quality Monitoring

Water quality laboratory data was collected in eight samples from five locations, LBRR-DD, LBRR-EDP, LBRR-LC, RR8, and RR9 during 2025. The other RR sample locations were dry or frozen with no flow conditions. A total of fourteen (14) in situ measurements were collected in 2025 from six sampling locations including LBRR-DD (1), LBRR-EDP (5), LBRR-LC (1), LBRR-12+920 (5), RR8 (1), and RR9 (1).

Flows within the River Road ditch are ephemeral. Water quality laboratory data was collected from five locations within the River Road ditch during 2025. Four of the five stations were only sampled during one sampling event, in February 2025. Dry or frozen conditions prevented sampling at these four stations outside of that one event.

Discharge from River Road to the Peace River was noted during the February 27 sample event at the discharge stations, LBRR-DD, RR8, and RR9. Total iron and total manganese were noted as exceeding the BCAWQG-FST values during this sample event at those stations. BCAWQG-FST exceedances were measured for chloride, total cobalt, total iron, total manganese, total silver, dissolved cadmium, dissolved nickel, and dissolved zinc in select sample events, as discussed in Section 5.3.2. These results are consistent with results in previous sampling years.

The seasonal flows in ditches are important to consider when interpreting fluctuations and exceedances in parameters measured in water quality guidelines. Monthly water quality monitoring measures instantaneous ambient conditions at the time of sampling and are highly susceptible to temporal climate conditions due to the small catchment and short residence time of water within the River Road ditch. In the River Road catchment, the source of TSS is primarily attributed to River Road run-off, scouring sediment deposited within the River Road ditch and washing from the cut-slopes. During the February 2025 sampling event, turbid high flows were observed associated with water management issues from ongoing Blind Corner works and PAG mitigation cover at the Upper Chimney drainage. further up the drainage where upstream water was then diverted to the Howe Pit pond and flows drastically reduced at the Lower Chimney drainage following sampling. In April 2025, the ditch was cleaned out around Blind Corner and straw wattle materials placed in front of the culvert of the downstream station in the sediment control ditch and downstream of the L3 creek diversion pipe.

Neutral to alkaline lab pH values, ranging from from pH 7.69 to 8.27, were noted at all samples during the 2025 sample year. Low pH water has capacity to dissolve metals more readily than neutral, or alkaline, water.

The February 2025 sample event is the only event that provides multiple samples and therefore can be reviewed to provide some data on the variation in parameters within the River Road ditch. From this event we see that the lowest sulphate values, lower total metal contents, and lower acidity are observed at the downstream RR8 and RR9 sample stations compared to those at the upstream stations. All stations report similar neutral pH values. The RR8 and RR9 locations report lower TDS and TSS.

A cover system for the cut-bank on the north side of River Road between the upper chimney and lower chimney ditches was designed to mitigate the acid generating exposure on the slope in the long-term. The extents of the cover system was supported by field rinse pH tests to define areas of active acid generation, and to confirm depth of scraping on the slope prior to cover placement. Construction of the slope cover between approximately 12+730 and 12+900 occurred from November 2024 to March 2025. In addition, a cover design for the cut-off ditch up-gradient of River Road was completed during this same period. Detailed design of a similar cover for the shale slope adjacent to the lower chimney ditch is completed with construction expected to commence in Spring 2026.

Recommendations for River Road

As per CEMP Appendix E Section 5.2.1.7, it is recommended that water quality monitoring is continued on a monthly basis within the River Road catchment at the downstream stations until the final ARD/ML mitigation covers are in place. The sampling locations and frequency of monitoring will be reviewed with BC Hydro pending completion of the long-term covers and final road construction.

With increased use of River Road, sediment and erosion control measures will be needed to address the management of sediment load coming from the road into the ditch, until such time that River Road permanent road and ditch construction is completed.

It is recommended that in situ water quality measurements are collected from any discharge observed from culvert RR8 and/or RR9 during high flow events even if outside of regular sampling events.

6.2 SBIAR Water Quality Monitoring

Water quality data was collected from the four established sampling locations in 2025 that measure water directly from within the SBIAR ditch locations. The ditch samples provide long-term characterization of SBIAR water management and water quality originating from the SBIAR PAG slope at the upstream and downstream location in the east and west ditches. At SBIAR, sufficient flowing water permitted twenty-two (22) lab samples to be collected during 2025. In situ measurements were collected in the same months when sampling was possible.

Evidence of active ARD-ML processes are observed on the shale slopes in SBIAR through observation of secondary iron hydroxide mineral formation. During 2025, the pH values remain neutral to alkaline in three SBIAR ditches and vary from acidic to alkaline in the one downstream west ditch. In the downstream west ditch, orange-tinged staining in water was noted in the March and June sampling events; and pH varied from a low pH of 4.76 and 5.26 in June and March, to a pH between 7.59 to 8.78 in the remaining eight months of sampling at in 2025. It is noted that similar low pH values were noted in March and June 2024, with alkaline pH values through the remainder of the year. In 2024 it was partially attributed to construction ditch cleaning that exposed new shale in March 2024. In both years, the field samplers note orange-stained water, with some fresh exposures of shale possibly resulting from freshet flows. Precipitate formation in the ditches, occurring predominantly as rust-coloured staining in the ditch line, is indicative of the change in pH from the acidic condition on the slope to alkaline pH in the ditch and the associated precipitation of metals out of solution.

BCAWQG-FST exceedances were measured for pH<6.5, chloride, total iron, total cobalt, total manganese, dissolved cadmium, dissolved copper, dissolved iron, dissolved nickel, and dissolved zinc in select sample events. These results are consistent with results in previous sampling years.

Overall, the trend analysis over the period of record at SBIAR shows that sulphide oxidation is the likely primary process producing elevated sulphate and episodic acidity at the sample locations. These oxidation products are flushed during precipitation/snowmelt events and mobilize metals. Particulate transport is important during event flows: total-metal peaks aligned with TSS increases, indicating metals are transported both dissolved and adsorbed/particulate.

Water flowing through the SBIAR ditch has no direct downstream receptor, and all water in the east and west ditches is conveyed directly to the RSEM R6 pond which is an approved PAG contact water management facility. Downstream water quality is monitored within the RSEM R6 pond for management prior to discharge into the Peace River.

Recommendations for SBIAR Water Quality Monitoring

Construction of permanent site roads include SBIAR and will include permanent mitigation measures for mitigation of PAG slopes, and water quality monitoring programs may be modified in consideration of the permanent road configuration and covers. The collection of up-gradient and down-gradient water samples from both the western and eastern SBIAR ditch is suggested to continue through 2026 for comparative purposes prior to and during the construction of the long-term cover solution. Once the cover solution is in place the need for long-term monitoring is not considered necessary but may support characterization of the effectiveness of the cover. The need for monitoring will depend on the water management after construction. Downstream water is currently collected within the RSEM R6 pond for management prior to discharge into the Peace River.

6.3 Right Bank Drainage Tunnel Water Quality Monitoring

The RBDT sample location is at a sump located in the tunnel. During 2025, eleven (11) in situ measurements and lab samples were collected from the RBDT-Sump, which is located approximately 685 m from the RBDT tunnel entrance and where the RBDT Access intersects the main tunnel. Water from the RBDT is captured and treated, if needed, prior to discharge.

The signature of RBDT-Sump water quality is high alkaline pH > 9.0 in all sample events elevated above the BCAWQG-FST guidelines (pH 6.5 to 9.0). One other BCAWQG-FST exceedance for total iron occurred in the April 2025 sample event.

The results to date at RBDT show consistently alkaline pH conditions in the tunnel, with low acidity, and high ammonia, chloride, and aluminum concentrations.

The source of the consistent elevated pH, ammonia, and total aluminum is thought to be related to water contact with construction and admixtures of concrete cement contact water in the tunnel (Bai et al., 2005). Previously, during dam construction, water sampling at the L2 Powerhouse in the area as well as the adjacent area for the AFDE foundation enhancement trial drilling program, both contained an excess of aluminum. This was previously investigated and determined that the most likely source of the aluminum was originating from the RCC concrete which contains fly-ash (21.2% aluminum oxide) and General use (GU) cement (5% aluminum oxide).

Recommendations for RBDT Water Quality Monitoring

The water quality testing at the RBDT-sump location is not indicative of ARD/ML processes. It is Tetra Tech's understanding that the RBDT work is complete and that no shale exposures are present. BC Hydro should evaluate the long-term dewatering from the RBDT and determine if ongoing sampling is required. Continued monitoring of water quality should continue to inform the need for water treatment of the captured water.

6.4 Area 21 Temporary Stockpile Area Water Quality Monitoring

An engineered, temporary stockpile area was constructed in 2024 in the Area 20/21 laydown area to manage PAG material prior to final disposal in an approved PAG storage location.

The Area 21-Sump sample location was established in January 2024 and receives run-off from the Area 21 Temporary PAG stockpile area, as well as groundwater recharge. The accumulated water in the sump was pumped to the SBIAR Ditch when required, where it is managed through the RSEM R6 ponds, and water treatment as needed, prior to ultimate discharge.

During 2025, the nine water quality sampling events from February to October did not result in any BCAWQG-FST exceedances, a similar trend to 2024. At Area 21-Sump, the pH measurements were consistently neutral to alkaline with a range of pH 7.60 to 8.02.

During the total nine sample events at Area 21-Sump in 2025, parameters elevated above the BCAWQG-FLT guidelines include sulphate (7), total aluminum (2), total cobalt (3), total selenium (6), dissolved copper (4), dissolved nickel (3), and dissolved selenium (6).

Recommendations for Area 21 Water Quality Monitoring

Water quality testing is recommended to continue at the Area 21-Sump location on a monthly basis until the temporary stockpile is completely removed and/or covered by an engineered suitable cover for mitigation of PAG materials.

6.5 R6 Slope

The R6 Abutment shale slope east of the spillway was mitigated for long-term ARD-ML with a cover that was constructed in 2024. The construction works included consideration of geotechnical and geochemical components. Tetra Tech reviewed the cover design as summarized in a memo dated September 3, 2024, to BC Hydro.

The construction included foundation preparation to remove weathered shale bedrock from the existing slope such that the Zone 3 material cover is placed against fresh and geotechnically sound bedrock. The foundation preparation and removal of weathered shale from the slope prior to placement of the Zone 3 material benefits the cover design. The design consists of Zone 3 granular fill placed on the slope and then covered with a 300mm thick layer of Zone5a limestone rip-rap. The Zone 5a limestone material will provide neutralization capacity to the inflowing precipitation prior to reaching the shale slope, which will help to buffer against ARD-ML at the shale surface.

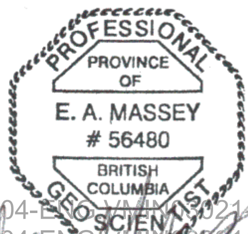
BC Hydro had initially indicated for a monitoring program to collect water quality samples downstream of the slope to evaluate impacts during and post-construction. Tetra Tech included this consideration in their summary memo as QP(ARD). Due to operational and safety constraints, a water quality monitoring program at this location was not possible. BC Hydro field staff review the area for visual signs of ARD-ML.

Tetra Tech reviewed this area during a June 2025 site visit to evaluate if the removal of a planned water monitoring program was acceptable. No visual signs of ARD/ML were noted and Tetra Tech observed that there is a significant amount of limestone rip-rap placed in all directions from the project area. This includes down-gradient of the slope in the spillway drainage, adjacent to the spillway east (right) wall, and up-gradient of the slope. This all contributes to reducing the potential impacts from ARD-ML from the shale slope. The water quality from this project area is monitored as part of the overall receiving water monitoring program. Based on this review, Tetra Tech considers it acceptable that BC Hydro is not directly sampling at this location.

7.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully Submitted,
Tetra Tech Canada Inc.



2026-03-26

PERMIT TO PRACTICE
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TABLES

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Table 1: Water Sampling Locations and In Situ and Lab Events

		Sampling Event Number:					1		2		3		4		5		6		7		8		9		10		11		12	
Catchment	Sample Site	UTM Coordinates Zone 10 (NAD83)		Elevation	Jan 2025 No sampling		2025-Feb-27-28		27-Mar-25		2/Apr/25		22-Apr-25		13-May-25		22-Jun-25		30-Jul-25		31-Aug-25		2025-Oct-07-08		2025-Oct-26-27		23-Nov-25		22-Dec-25	
		Easting	Northing		In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab	In-Situ	Lab
Right Bank - South Bank Initial Access Road	RBSBIAR-US	630327	6228397	468.0			✓	✓																	✓	✓				
	RBSBIAR-DS	630320	6228645	445.2			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	RBSBIAR-EUS	630376	6228399	464.6									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓		
	RBSBIAR-EDS	630370	6228635	437.4													✓	✓							✓	✓				
Left Bank River Road	LBRR-DD*	632853	6229862	422.0			✓	✓																						
	LBRR-EDP	632715	6229832	416.4			✓	✓					✓	✓	✓		✓	✓							✓	✓				
	LBRR-LC	632856	6229899	427.2			✓	✓																						
	LBRR-UC	633018	6230253	463.2																										
	LBRR-12+500	632914	6229921	432																										
	LBRR-12+600	632948	6229983	436																										
	LBRR-12+700	632992	6230078	443																										
	LBRR-12+810	633039	6230195	454																										
	LBRR-12+920	633000	6230282	463					✓				✓		✓		✓								✓					
	RR8*	632262	6229624	412			✓	✓																						
	RR9*	632460	6229680	413			✓	✓																						
RBDT-Sump	RBDT-Sump	629418	6229144	-			✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Area 21	Area 21-Sump	630260	6228333	482			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				

*Discharge Location to Peace River

All elevations are approximate

Table 2: Daily and 7-Day Mean Temperature and Precipitation

Date	Time	Precipitation[1]		Temperature[1]			Summary
Sample Event Date Bolded	Time Period	Precipitation Event	Total (mm)	Mean (°C)	Minimum (°C)	Maximum (°C)	24 Hr and 7 Day Precipitation
February 21-27, 2025	7 days	February.22	0.76	4.8	-1.4	9.6	Minimal precipitation (0.76 mm) over 7 days
February 27, 2025	24 hrs.	none	0.00	6.3	2.9	9.6	No precipitation
February 28, 2025	**24 hrs.**	**none**	**0.00**	**5.2**	**0.8**	**9.7**	**No precipitation**
March 20-26, 2025	7 days	none	0.00	3.6	-1.9	10.9	No precipitation
March 26, 2025	24 hrs.	none	0.00	0.8	-2.3	4.5	No precipitation
March 27, 2025	**24 hrs.**	**none**	**0.00**	**-3.1**	**-5.3**	**-0.7**	**No precipitation**
March 26-Apr 1	7 days	April.1	0.12	-0.9	-9.3	9.7	Minimal precipitation (0.12 mm) over 7 days
April 1, 2025	24 hrs.	3:00AM-5:00AM	0.12	-2.1	-5.2	1.8	Minimal precipitation
April 2, 2025	**24 hrs.**	**none**	**0.00**	**-1.3**	**-7.1**	**4.8**	**No precipitation**
April 15-21, 2025	7 days	none	0.00	**6.2**	**-2.8**	**18.3**	No precipitation
April 21, 2025	24 hrs.	none	0.00	**3.9**	**-2.8**	**10**	No precipitation
April 22, 2025	**24 hrs.**	**none**	**0.00**	**6.8**	**0.5**	**11.9**	**No precipitation**
May 6-12, 2025	7 days	May. 6, 7	0.57	12.3	2.4	19.3	Minimal precipitation (0.57 mm) over 7 days
May 12, 2025	24 hrs.	none	0.00	13.6	8.3	19.0	No precipitation
May 13, 2025	**24 hrs.**	**none**	**0.00**	**14.1**	**4.7**	**20.4**	**No precipitation**
June 15-21, 2025	7 days	June. 18, 19	2.62	11.2	-0.8	20.2	Minimal precipitation (2.62 mm) over 7 days
June 21, 2025	24 hrs.	none	0.00	13.0	7.6	18.6	No precipitation
June 22, 2025	**24 hrs.**	**none**	**0.00**	**12.7**	**5.4**	**18.9**	**No precipitation**
July 23-29, 2025	7 days	July. 24, 25, 26, 27, 29	48.47	16.9	8.6	31.2	Significant precipitation (48.47 mm) over 7 days
July 29, 2025	24 hrs.	12:00 PM	37.09	20.8	10.5	30.1	Significant precipitation (37.09 mm)
July 30, 2025	**24 hrs.**	**none**	**0.00**	**23.2**	**12.4**	**31.2**	**No precipitation**
August 24-30, 2025	7 days	none	0.00	21.2	10.7	33.5	No precipitation
August 30, 2025	24 hrs.	none	0.00	21.9	11.1	31.1	No precipitation
August 31, 2025	**24 hrs.**	**none**	**0.00**	**20.1**	**12.7**	**27.4**	**No precipitation**
September 30-October 6, 2025	7 days	September 30, October 1, 4, 6	3.51	9.0	0.7	15.7	Minimal precipitation (3.51 mm)
October 6, 2026	24 hrs.	3:00 AM	0.15	11.9	6.0	15.7	Minimal precipitation (0.15 mm)
October 7, 2025	**24 hrs.**	**3:00-11:00 PM**	**1.75**	**9.9**	**3.1**	**15.3**	**Minimal precipitation (1.75 mm)**
October 19-25, 2025	7 days	October. 24, 26	22.46	6.1	-1.2	15	Moderate precipitation (22.46 mm) over 7 days
October 25, 2025	24 hrs.	1:00AM - 8:00AM	1.07	1.2	0	2.8	Minimum precipitation (1.07mm)
October 26, 2025	**24 hrs.**	**4:00AM-24:00AM**	**21.44**	**1.3**	**0.7**	**2.1**	**Significant precipitation (21.44 mm)**
November 16-22, 2025	7 days	November. 16, 17, 19, 21	9.8	-2.8	-12	7.5	Moderate precipitation (9.8 mm) over 7 days
November 22, 2025	24 hrs.	none	0.00	2.5	-0.2	6.2	No precipitation
November 23, 2025	**24 hrs.**	**none**	**0.00**	**-1.7**	**-6.3**	**1.9**	**No precipitation**
December 15-21, 2025	7 days	December 15, 17, 18, 19, 20, 21	28.36	-22.8	-30.0	-18.9	**Moderate precipitation (28.36 mm) over 7 days**
December 21, 2025	24 hrs.	3:00AM-11:00PM	2.80	-25.1	-27.0	-24.0	**Minimal precipitation (2.80 mm)**
December 22, 2025	**24 hrs.**	**1:00AM-24:00AM**	**4.07**	**-27.6**	**-28.4**	**-27**	**Minimal precipitation (4.07 mm)**

[1] BC Ministry of Environment, BC Air quality data: Fort St John North Camp C_Met_60 weather station. https://envistaweb.env.gov.bc.ca/.

Precipitation is relative ranges, from minimum (<10 mm), moderate (10-20 mm), significant (>20 mm) for one day (7-day precipitation is separate reference).

Table 3: Classification of Flows in Ditch

Sample Event Date Bolded	Time Period	Precipitation Event	Total (mm)	Mean (°C)	24 Hr and 7 Day Precipitation	Classification
February 21-27, 2025	7 days	February.22	0.76	4.8	Minimal precipitation (0.76 mm)	Regional groundwater flow; near-frozen conditions.
February 27, 2025	24 hrs.	none	0	6.3	No precipitation	
February 28, 2025	**24 hrs.**	**none**	**0**	**5.2**	**No precipitation**	
March 20-26, 2025	7 days	none	0	3.6	No precipitation	Regional groundwater flow; near-frozen conditions.
March 26, 2025	24 hrs.	none	0	0.8	No precipitation	
March 27, 2025	**24 hrs.**	**none**	**0**	**-3.1**	**No precipitation**	
March 26-Apr 1	7 days	April.1	0.12	-0.9	Minimal precipitation (0.12 mm)	Regional groundwater flow; sub-zero temperatures.
April 1, 2025	24 hrs.	3:00AM-5:00AM	0.12	-2.1	Minimal precipitation	
April 2, 2025	**24 hrs.**	**none**	**0**	**-1.3**	**No precipitation**	
April 15-21, 2025	7 days	none	0	6.2	No precipitation	Surface runoff and early spring freshet; melting and warming conditions.
April 21, 2025	24 hrs.	none	0	3.9	No precipitation	
April 22, 2025	**24 hrs.**	**none**	**0**	**6.8**	**No precipitation**	
May 6-12, 2025	7 days	May. 6, 7	0.57	12.3	Minimal precipitation (0.57 mm)	Surface runoff and spring freshet; melting and warming conditions.
May 12, 2025	24 hrs.	none	0	13.6	No precipitation	
May 13, 2025	**24 hrs.**	**none**	**0**	**14.1**	**No precipitation**	
June 15-21, 2025	7 days	June. 18, 19	2.62	11.2	Minimal precipitation (2.62 mm)	Late freshet surface runoff, shallow and regional groundwater flow.
June 21, 2025	24 hrs.	none	0	13.0	No precipitation	
June 22, 2025	**24 hrs.**	**none**	**0**	**12.7**	**No precipitation**	
July 23-29, 2025	7 days	July. 24, 25, 26, 27, 29	48.47	16.9	Significant precipitation (48.47 mm)	Shallow and regional groundwater flow; surface water flow, warm temperatures.
July 29, 2025	24 hrs.	12:00 PM	37.09	20.8	Significant precipitation (37.09 mm)	
July 30, 2025	**24 hrs.**	**none**	**0**	**23.2**	**No precipitation**	
August 24-30, 2025	7 days	none	0	21.2	No precipitation	Shallow or regional groundwater flow; warm temperatures.
August 30, 2025	24 hrs.	none	0	21.9	No precipitation	
August 31, 2025	**24 hrs.**	**none**	**0**	**20.1**	**No precipitation**	
September 30-October 6, 2025	7 days	September 30, October 1, 4, 6	3.51	9.0	Minimal precipitation (3.51 mm)	Shallow or regional groundwater flow, cooling temperatures.
October 6, 2026	24 hrs.	3:00 AM	0.15	11.9	Minimal precipitation (0.15 mm)	
October 7, 2025	**24 hrs.**	**3:00-11:00 PM**	**1.75**	**9.9**	**Minimal precipitation (1.75 mm)**	
October 19-25, 2025	7 days	October. 24, 26	22.46	6.1	Moderate precipitation (22.46 mm)	Shallow or regional groundwater flow; surface flow from high precipitation events; cooling temperatures.
October 25, 2025	24 hrs.	1:00AM - 8:00AM	1.07	1.2	Minimum precipitation (1.07mm)	
October 26, 2025	**24 hrs.**	**4:00AM-24:00AM**	**21.44**	**1.3**	**Significant precipitation (21.44 mm)**	
November 16-22, 2025	7 days	November. 16, 17, 19, 21	9.8	-2.8	Moderate precipitation (9.8 mm)	Regional groundwater flow; sub-zero temperatures.
November 22, 2025	24 hrs.	none	0	2.5	No precipitation	
November 23, 2025	**24 hrs.**	**none**	**0**	**-1.7**	**No precipitation**	
December 15-21, 2025	7 days	December 15, 17, 18, 19, 20, 21	28.36	-22.8	**Moderate precipitation (28.36 mm)**	Regional groundwater flow; precipitation as snow; frigid temperatures and frozen conditions.
December 21, 2025	24 hrs.	3:00AM-11:00PM	2.80	-25.1	**Minimal precipitation (2.80 mm)**	
December 22, 2025	**24 hrs.**	**1:00AM-24:00AM**	**4.07**	**-27.6**	**Minimal precipitation (4.07 mm)**	

[1] BC Ministry of Environment, BC Air quality data: Fort St John North Camp C_Met_60 weather station. https://envistaweb.env.gov.bc.ca/.
Precipitation is relative ranges, from minimum (<10 mm), moderate (10-20 mm), significant (>20 mm)

Table 4: Daily Mean Turbidity and TSS Measurements with the Peace River 2025

Date	Turbidity (Daily Mean) and TSS Measurements and Calculations Peace River below Moberly River (PBM)	
Sampling Event Date Bolded	**PBM Combined LB, RB**	**PBM Combined LB, RB**
	NTU [1]	**TSS [2] (mg/L)**
February 21-27, 2025	2.56	1.82
February 27, 2025	3.37	2.40
February 28, 2025	2.70	1.91
March 1, 2025	2.47	1.76
March 20-26, 2025	1.99	1.41
March 26, 2025	1.53	1.08
March 27, 2025	1.30	0.92
March 28, 2025	1.28	0.91
March 26 - April 1, 2025	1.52	1.08
April 1, 2025	1.53	1.08
April 2, 2025	1.53	1.09
April 3, 2025	1.68	1.20
May 6-12, 2025	5.21	3.70
May 12, 2025	5.58	3.96
May 13, 2025	5.16	3.66
May 14, 2025	5.81	4.13
June 15-21, 2025	3.24	2.30
June 21, 2025	2.98	2.12
June 22, 2025	3.19	2.26
June 23, 2025	3.03	2.15
July 23-29, 2025	6.74	4.78
July 29, 2025	8.12	5.76
July 30, 2025	8.38	5.95
July 31, 2025	6.53	4.64
August 24-30, 2025	4.17	2.96
August 30, 2025	2.52	1.79
August 31, 2025	2.13	1.51
September 1, 2025	4.10	2.91
Sep 30 - Oct 6, 2025	5.44	3.86
October 6, 2025	5.32	3.78
October 7, 2025	4.62	3.28
October 8, 2025	4.16	2.95
Oct 19-25, 2025	4.88	3.47
October 25, 2025	5.22	3.70
October 26, 2025	5.40	3.83
October 27, 2025	5.18	3.68
November 16-22, 2025	3.79	2.69
November 22, 2025	3.98	2.83
November 23, 2025	4.13	2.94
November 24, 2025	5.91	4.19
December 15-21, 2025	2.12	1.51
December 21, 2025	1.94	1.38
December 22, 2025	2.05	1.46
December 23, 2025	2.10	1.49

[1] NTU (Nephelometric Turbidity Unit) and TSS (total suspended sediment) data provided by Ecofish Ltd., January 28, 2026.

2 TSS (mg/L) is determined by converting turbidity values to TSS using a TSS:Turbidity relationship. For 2025, a TSS:Turbidity Relationship of 0.71:1 was applied for the entire year.

NTU: to some extent, measures (scattered light at 90 degrees from the incident light beam) how much light reflects for a given amount of particulates dependent upon properties of the particles, e.g. their shape, color, and reflectivity.

Note: 7-day average turbidity values are calculated as the average turbidity measured during the prior seven days to the sampling event.

Table 5a: 2025 QAQC - Travel and Field Blanks

Sample ID	Unit	RDL	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank
			26-Feb-25	26-Feb-25	27-Mar-25	27-Mar-25	22-Apr-25	22-Apr-25	13-May-25	13-May-25	22-Jun-25	22-Jun-25	30-Jul-25	30-Jul-25	31-Aug-25	31-Aug-25	7-Oct-25	7-Oct-25	26-Oct-25	26-Oct-25	23-Nov-25	23-Nov-25	21-Dec-25	21-Dec-25
Physical Parameters																								
Acidity (as $CaCO_3$)	µg/L	1000	**2000**	<2000	**2000**	**2000**	<2000	**2000**	**2000**	**2100**	<2000	<2000	<2000	**2100**	**2000**	**2000**	**2200**	**2200**	**2000**	**2000**	<2000	**2200**	**2200**	**2300**
Alkalinity (Total as $CaCO_3$)	µg/L	1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Electrical Conductivity (EC)	µS/cm	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Hardness as $CaCO_3$, dissolved	µg/L	600	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0	<600	0
Hardness as $CaCO_3$, from total Ca/Mg	µg/L	600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600	<600
pH	pH Units	0.1	5.40	5.41	5.45	5.40	5.47	5.45	5.06	5.11	5.53	5.51	5.64	5.56	5.52	5.52	5.36	5.24	5.49	5.44	5.63	5.43	5.34	5.36
Total Dissolved Solids (TDS)	µg/L	10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000	<10000
Total Suspended Solids (TSS)	µg/L	3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000	<3000
Alkalinity (Hydroxide as $CaCO_3$)	µg/L	1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	µg/L	1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	µg/L	1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Anions and Nutrients																								
Ammonia (NH_4 as N)	µg/L	5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**6.1**	<5	<5	<5
Chloride (Cl^-)	µg/L	500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Nitrate (NO_3^- as N)	µg/L	5.0	**30.2**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nitrite (NO_2^- as N)	µg/L	1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulphate (SO_4)	µg/L	300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300	<300
Dissolved Organic Carbon (DOC)	µg/L	500	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0	<500	0
Metals, Total																								
Aluminum	µg/L	3.0	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Antimony	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	µg/L	0.10	<0.1	<0.1	<0.1	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Barium	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	µg/L	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cadmium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Calcium	µg/L	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cesium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	µg/L	0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Copper	µg/L	0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron	µg/L	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Lead	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lithium	µg/L	1.0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Magnesium	µg/L	5.0	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Manganese	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phosphorus	µg/L	50.0	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Potassium	µg/L	50.0	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Rubidium	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Selenium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silicon	µg/L	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Silver	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	µg/L	50.0	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Strontium	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Sulfur	µg/L	500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500	<500
Tellurium	µg/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	µg/L	0.30	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	µg/L	0.10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	µg/L	0.50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	µg/L	3.0	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Zirconium	µg/L	0.06	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Sample ID	Unit	RDL	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank	Field Blank	Travel Blank
			26-Feb-25	26-Feb-25	27-Mar-25	27-Mar-25	22-Apr-25	22-Apr-25	13-May-25	13-May-25	22-Jun-25	22-Jun-25	30-Jul-25	30-Jul-25	31-Aug-25	31-Aug-25	7-Oct-25	7-Oct-25	26-Oct-25	26-Oct-25	23-Nov-25	23-Nov-25	21-Dec-25	21-Dec-25
Metals, Dissolved																								
Aluminum	µg/L	1.0	<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1	
Antimony	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Arsenic	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Barium	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Beryllium	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Bismuth	µg/L	0.05	<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05	
Boron	µg/L	10.0	<10		<10		<10		<10		<10		<10		<10		<10		<10		<10		<10	
Cadmium	µg/L	0.005	<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005	
Calcium	µg/L	50.0	<50		<50		<50		<50		<50		<50		<50		<50		<50		<50		<50	
Cesium	µg/L	0.01	<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01	
Chromium	µg/L	0.10	<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5	
Cobalt	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Copper	µg/L	0.20	0.23		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Iron	µg/L	10.0	<10		<10		<10		<10		<10		<10		<10		<10		<10		<10		<10	
Lead	µg/L	0.05	<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05	
Lithium	µg/L	1.0	<1		<1		<1		<1		<1		<1		<1		<1		<1		<1		<1	
Magnesium	µg/L	5.0	<5		<5		<5		<5		<5		<5		<5		<5		<5		<5		<5	
Manganese	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Mercury	µg/L	0.005	<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005		<0.005	
Molybdenum	µg/L	0.05	<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05	
Nickel	µg/L	0.50	<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5	
Phosphorus	µg/L	50.0	<50		<50		<50		<50		<50		<50		<50		<50		<50		<50		<50	
Potassium	µg/L	50.0	<50		<50		<50		<50		<50		<50		<50		<50		<50		<50		<50	
Rubidium	µg/L	0.20	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Selenium	µg/L	0.05	<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05		<0.05	
Silicon	µg/L	50.0	<50		<50		<50		<50		<50		<50		<50		<50		<50		<50		<50	
Silver	µg/L	0.01	<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01	
Sodium	µg/L	50.0	<50		<50		<50		<50		<50		<50		<50		<50		<50		<50		<50	
Strontium	µg/L	0.2	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Sulfur	µg/L	500	<500		<500		<500		<500		<500		<500		<500		<500		<500		<500		<500	
Tellurium	µg/L	0.20	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Thallium	µg/L	0.01	<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01	
Thorium	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Tin	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Titanium	µg/L	0.30	<0.3		<0.3		<0.3		<0.3		<0.3		<0.3		<0.3		<0.3		<0.3		<0.3		<0.3	
Tungsten	µg/L	0.10	<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1		<0.1	
Uranium	µg/L	0.01	<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01	
Vanadium	µg/L	0.50	<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5	
Zinc	µg/L	1.0	<1		<1		<1		<1		4		<1		<1		<1		<1		<1		<1	
Zirconium	µg/L	0.06	<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2	
Laboratory Work Order Number			FJ2500628	FJ2500628	FJ2500908	FJ2500908	FJ2501134	FJ2501134	FJ2501382	FJ2501382	FJ2501891	FJ2501891	FJ2502301	FJ2502301	FJ2502690	FJ2502690	FJ2503105	FJ2503105	FJ2503336	FJ2503336	FJ2503610	FJ2503160	FJ2503845	FJ2503845

RDL - Reportable detection limit

RPD - Relative percent difference calculated as (ABS[(difference between two values)]/((sum of two values/2))*100

Blank indicates RPD not calculated. RPD cannot be calculated if one or more of the analytical results is less than detection limits or within 5 times the RDL.

Shaded gray - exceeds BCAWQG-FSTM guideline.

Blank - not analyzed.

Table 5b: 2025 Quality Assurance/Quality Control for Water Quality Sample Results - Field Replicate Samples

Parameter	Unit	RDL	LBRR-EDP	LBRR-EDP-R	RPD%	RBSBIAR-DS	RBSBIAR-DS-R	RPD%	RBSBIAR-DS	RBSBIAR-DS-R	RPD %	RBSBIAR-DS	RBSBIAR-DS-R	RPD %	RBDT-SUMP	RBDT-SUMP-R	RPD %	RBDT-SUMP	RBDT-SUMP-R	RPD %	RBDT-SUMP	RBDT-SUMP-R	RPD %	RBSBIAR-DS	RBSBIAR-DS-R	RPD %	RBSBIAR-DS	RBSBIAR-DS-R	RPD %	RBDT-SUMP	RBDT-SUMP-R	RPD %	RBDT-SUMP	RBDT-SUMP-R	RPD %
			26-Feb-25	26-Feb-25		27-Mar-25	27-Mar-25		22-Apr-25	22-Apr-25		13-May-25	13-May-25		22-Jun-25	22-Jun-25		30-Jul-25	30-Jul-25		31-Aug-25	31-Aug-25		7-Oct-25	7-Oct-25		26-Oct-25	26-Oct-25		23-Nov-25	23-Nov-25		21-Dec-25	21-Dec-25	
Physical Parameters																																			
Acidity (as $CaCO_3$)	µg/L	2000	<2000	2100	4.9	499000	496000	0.60	<2000	<2000	-	<2000	<2000	-	<2000	<2000	-	<2000	<2000	-	<2000	<2000	-	<2000	<2000	-	3600	2800	25.0	<2000	<2000	-	<2000	<2000	-
Alkalinity (Total as $CaCO_3$)	µg/L	1000.0	110000	109000	0.91	<1000	<1000	-	120000	121000	0.83	175000	176000	0.57	329000	327000	0.61	308000	308000	0.00	374000	372000	0.54	234000	233000	0.43	224000	228000	1.8	404000	400000	1.00	368000	373000	1.35
Electrical Conductivity (EC)	µS/cm	2.0	496	506	2.00	2510	2500	0.40	1320	1330	0.75	1100	1100	0.00	1650	1680	1.80	1690	1700	0.59	2090	2070	0.96	1000	1010	1.00	844	838	0.7	2210	2240	1.35	1960	2010	2.52
Hardness as $CaCO_3$, dissolved	µg/L	600	172000	177000	2.87	1120000	1100000	1.80	578000	595000	2.90	447000	460000	2.87	27000	27000	0.00	22300	23500	5.24	24000	23900	0.42	354000	356000	0.56	387000	367000	5.3	20100	20000	0.50	22300	21900	1.81
Hardness as $CaCO_3$, from total Ca/Mg	µg/L	600	2070000	2010000	2.94	1140000	1160000	1.74	556000	544000	2.18	441000	430000	2.53	28000	28500	1.77	29100	28700	1.38	27800	27800	0.00	365000	367000	0.55	654000	590000	10.3	20800	21200	1.90	23800	23500	1.27
pH	pH Units	0.1	8.10	8.05	0.62	4.11	4.1	0.24	7.98	7.97	0.13	8.26	8.25	0.12	9.35	9.34	0.11	9.66	9.65	0.10	9.29	9.29	0.00	8.29	8.31	0.24	7.79	7.77	0.3	9.41	9.41	0.00	9.23	9.29	0.65
Total Dissolved Solids (TDS)	µg/L	10000	359000	360000	0.28	2140000	2060000	3.81	940000	959000	2.00	768000	760000	1.05	778000	890000	13.4	973000	931000	4.41	1240000	1280000	3.17	642000	650000	1.24	644000	585000	9.6	1300000	1220000	6.35	1150000	1110000	3.54
Total Suspended Solids (TSS)	µg/L	3000	11800000	10800000	8.85	203000	196000	3.51	22900	22500	1.76	<3000	3100	3.28	<3000	<3000	-	18400	14400	24.39	11300	10500	7.34	<3000	<3000	-	1640000	1560000	5.0	<3000	<3000	-	<3000	<3000	-
Alkalinity (Hydroxide as $CaCO_3$)	µg/L	1000	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-
Alkalinity (Carbonate as $CaCO_3$)	µg/L	1000	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	<1000	<1000	-	88800	85800	3.44	122000	123000	0.82	87100	85600	1.74	<1000	2600	**88.9**	<1000	<1000	-	119000	116000	2.55	80600	90600	11.68
Alkalinity (Bicarbonate as $CaCO_3$)	µg/L	1000	110000	109000	0.91	<1000	<1000	-	120000	121000	0.83	175000	176000	0.57	240000	241000	0.42	185000	186000	0.54	286000	287000	0.35	234000	230000	1.72	224000	228000	1.8	286000	284000	0.70	287000	283000	1.40
Anions and Nutrients																																			
Ammonia (NH_4 as N)	µg/L	5.0	205	208	1.5	787	792	0.63	353	351	0.57	442	450	1.79	165	166	0.60	223	226	1.34	75	80.6	7.20	92.8	94.4	1.71	197	162	19.5	140	131	6.64	219	219	0.00
Chloride (Cl^-)	µg/L	500	55400	56800	2.50	43300	42900	0.93	62100	61600	0.81	59800	59900	0.17	272000	275000	1.10	277000	278000	0.36	362000	364000	0.55	45000	46400	3.06	97800	97700	0.1	409000	408000	0.24	346000	347000	0.29
Nitrate (NO_3^- as N)	µg/L	5.0	697	670	3.95	793	792	0.13	1590	1660	4.31	692	699	1.01	952	968	1.67	998	1010	1.20	843	849	0.71	517	518	0.19	630	649	3.0	1360	1340	1.48	2730	1070	87.37
Nitrite (NO_2^- as N)	µg/L	1.0	16.4	15.8	3.73	<20	<20	-	5.7	5.5	3.57	17.2	17.9	3.99	56.9	54.1	5.05	83.9	83.4	0.60	112	112	0.00	18.3	18.7	2.16	7.1	7.5	5.5	64.4	71.4	10.3	23.6	18.9	22.12
Sulphate (SO_4)	µg/L	300	62800	63000	0.32	1630000	1640000	0.61	497000	492000	1.01	356000	357000	0.28	82700	83500	0.96	90600	90200	0.44	89400	89100	0.34	240000	247000	2.87	188000	189000	0.5	107000	105000	1.89	101000	101000	0.00
Dissolved Organic Carbon (DOC)	µg/L		4.74	5.19	9.06	1250	1090	13.7	0.73	0.76	4.03	0.83	1.00	18.58	2.36	2.35	0.42	2.9	2.98	2.72	17.8	17.7	0.56	1.17	0.96	19.7	2.84	2.92	2.8	3.12	3.01	3.59	3.06	3.17	3.53
Metals, Total																																			
Aluminum	µg/L	3.0	105000	102000	2.90	50800	51100	0.59	4260	4280	0.47	109	104	4.69	964	970	0.62	1290	1270	1.56	1250	1240	0.80	107	111	3.67	30500	25500	17.9	1030	1040	0.97	976	968	0.82
Antimony	µg/L	0.10	2.3	2.54	9.92	<0.5	<0.5	-	0.11	0.1	9.52	0.3	0.3	0.00	1.52	1.53	0.66	2.62	2.69	2.64	2.42	2.51	3.65	<0.1	<0.1	-	1.34	1.34	0.0	1.71	1.72	0.58	1.99	2.01	1.00
Arsenic	µg/L	0.10	64.7	70.2	8.15	28.2	29	2.8	1.43	1.43	0.00	0.27	0.26	3.77	4.08	3.95	3.24	4.76	4.66	2.12	4.6	4.63	0.65	0.23	0.21	9.09	28.6	24.5	15.4	4.84	4.84	0.00	4.97	4.9	1.42
Barium	µg/L	0.10	5620	5500	2.16	41.6	41.6	0.0	24.2	23.4	3.36	27.6	28	1.44	125	123	1.61	111	108	2.74	117	116	0.86	26.1	26.9	3.02	1190	1030	14.4	126	126	0.00	138	135	2.20
Beryllium	µg/L	0.10	5.94	6.2	4.28	12	11.9	0.84	1.25	1.2	4.08	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	1.86	1.63	13.2	<0.1	<0.1	-	<0.1	<0.1	-
Bismuth	µg/L	0.05	1.88	1.82	3.24	<0.25	<0.25	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.05	<0.05	-	0.367	0.311	16.5	<0.1	<0.1	-	<0.1	<0.1	-
Boron	µg/L	10	127	121	4.84	169	173	2.34	118	116	1.71	167	168	0.60	269	266	1.12	302	304	0.66	366	356	2.77	305	311	1.95	108	95	12.8	383	401	4.59	399	376	5.94
Cadmium	µg/L	0.005	9.52	9.39	1.37	22.3	22.8	2.22	2.55	2.51	1.58	0.208	0.195	6.45	<0.0125	<0.0125	-	<0.0175	<0.015	-	<0.02	<0.025	-	0.0494	0.0572	14.6	3.2	2.62	19.9	<0.01	<0.01	-	<0.0125	<0.01	-
Calcium	µg/L	50	611000	595000	2.65	206000	211000	2.40	149000	144000	3.41	122000	118000	3.33	7030	7120	1.27	8260	8130	1.59	7360	7260	1.37	97600	96400	1.24	191000	170000	11.6	5060	5210	2.92	6270	6110	2.58
Cesium	µg/L	0.01	9.42	9.77	3.65	0.204	0.19	7.11	0.052	0.048	8.00	0.065	0.063	3.12	0.061	0.06	1.65	0.151	0.146	3.37	0.088	0.084	4.65	0.029	0.026	10.9	3.48	3.12	10.9	0.074	0.075	1.34	0.081	0.082	1.23
Chromium	µg/L	0.10	277	268	3.30	38	38.4	1.05	2.29	2.36	3.01	<0.5	<0.5	-	1.15	1.11	3.54	3.14	2.98	5.23	2.36	2.4	1.68	<0.5	<0.5	-	55	48.4	12.8	1.04	1.07	2.84	<1	<1	-
Cobalt	µg/L	0.10	123	122	0.82	485	483	0.41	43.4	43.6	0.46	6.45	6.32	2.04	<0.1	<0.1	-	0.32	0.35	8.96	0.2	0.22	9.52	3.47	3.58	3.12	43.2	35.7	19.0	<0.2	<0.2	-	<0.2	<0.2	-
Copper	µg/L	0.50	319	316	0.94	412	414	0.48	58.2	58.8	1.03	1.18	1.18	0.00	1.85	1.91	3.19	5.06	4.55	10.61	4.23	4.33	2.34	0.86	0.81	5.99	96.6	81.8	16.6	1.91	1.88	1.58	2.35	2.36	0.42
Iron	µg/L	10	354000	362000	2.23	64300	64000	0.47	7040	7080	0.57	185	179	3.30	41	37	10.3	380	326	15.30	191	188	1.58	104	114	9.17	73200	63500	14.2	31	27	13.8	62	63	1.60
Lead	µg/L	0.05	153	146	4.7	1.21	1.17	3.36	0.175	0.151	14.72	<0.05	<0.05	-	0.399	0.404	1.25	0.402	0.37	8.29	0.363	0.379	4.31	<0.05	<0.05	-	29.4	25.1	15.8	<0.1	<0.1	-	0.138	0.129	6.74
Lithium	µg/L	1.0	135	130	3.77	494	505	2.2	70.4	68	3.47	47.3	45.8	3.22	84.9	86.6	1.98	82.3	85.3	3.58	112	110	1.80	53.6	55.9	4.20	61.9	52.3	16.8	120	124	3.28	108	99.7	7.99
Magnesium	µg/L	5.0	133000	128000	3.83	152000	153000	0.66	44800	44700	0.22	33200	33000	0.60	2550	2600	1.94	2060	2050	0.49	2290	2340	2.16	29500	30600	3.66	43000	40100	7.0	1990	1990	0.00	1980	1990	0.50
Manganese	µg/L	0.10	9850	9580	2.78	4380	4500	2.7	471	462	1.93	150	150	0.00	0.93	0.93	0.00	5.35	4.79	11.05	4.56	4.44	2.67	73.6	75.5	2.55	1650	1420	15.0	0.86	0.75	13.7	1.28	1.17	8.98
Mercury	µg/L	0.005	0.0206	0.608	**186.9**	0.0093	0.0085	8.99	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	0.164	0.131	22.4	<0.005	<0.005	-	<0.005	<0.005	-
Molybdenum	µg/L	0.05	7.26	8.61	17.01	1.39	1.24	11.41	1.2	1.17	2.53	4.05	4.03	0.50	22.7	22.8	0.44	25.7	26.3	2.31	32.7	33.4	2.12	1.33	1.38	3.69	5.79	5.77	0.3	39.5	40.4	2.25	31.1	31.2	0.32
Nickel	µg/L	0.5	363	360	0.83	1550	1560	0.64	160	162	1.24	23.4	23.3	0.43	0.69	0.66	4.44	1.39	1.24	11.41	1.12	1.21	7.73	17.9	18.1	1.11	148	124	17.6	<1	<1	-	1.03	1	2.96
Phosphorus	µg/L	50.0	14800	15000	1.34	3560	3890	8.86	107	107	0.00	<50	<50	-	90	85	5.71	<100	<100	-	<100	<100	-	<50	<50	-	3050	2660	13.7	109	117	7.08	<100	<100	-
Potassium	µg/L	50.0	22100	22000	0.45	3940	4000	1.51	3580	3610	0.83	5860	5860	0.00	6100	6200	1.63	8010	8100	1.12	8780	8840	0.68	3390	3460	2.04	9230	8760	5.2	7620	7690	0.91	7940	7870	0.89
Rubidium	µg/L	0.2	103	104	0.97	6.7	6.61	1.35	2.82	2.81	0.36	4.24	4.13	2.63	6.92	7.05	1.86	11.2	11.3	0.89	10.8	11	1.83	1.93	1.95	1.03	36	32.5	10.2	9.53	9.42	1.16	8.84	8.15	8.12
Selenium	µg/L	0.05	2.14	2.51	15.91	5.07	4.79	5.68	1.05	1.05	0.00	0.888	0.924	3.97	0.83	0.741	11.3	1.01	1.03	1.96	0.989	0.913	7.99	0.098	0.085	14.2	1.79	1.6	11.2	0.9	0.865	3.97	0.953	1.02	6.79
Silicon	µg/L	100	129000	127000	1.56	8040	8050	0.12	4760	4610	3.20	3350	3340	0.30	4830	5000	3.46	6330	6240	1.43	5800	5890	1.54	3790	3810	0.53	41500	37600	9.9	5970	6120	2.48	5720	5790	1.22
Silver	µg/L	0.01	2.28	2.28	0.00	<0.05	0.053	5.83	<0.01	<0.01	-	<0.01	<0.01	-	0.011	<0.01	9.52	<0.02	<0.02	-	0.021	0.022	4.65	<0.01	<0.01	-	0.485	0.431	11.8	<0.02	<0.02	-	<0.02	<0.02	-
Sodium	µg/L	50.0	25800	24800	3.95	128000	129000	0.78	56900	56900	0.00	63400	62500	1.43	349000	345000	1.15	335000	337000	0.60	463000	480000	3.61	87100	88300	1.37	31700	28000	12.4	486000	494000	1.63	420000	417000	0.72
Strontium	µg/L	0.2	1950	2000	2.53	1350	1340	0.74	760	759	0.13	812	794	2.24	120	120	0.00	119	116	2.55	132	133	0.75	719	715	0.56	1120	1110	0.9	138	142	2.86	121	124	2.45
Sulfur	µg/L	500	28000	24400	13.74	580000	573000	1.21	181000	179000	1.11	119000	118000	0.84	33800	34500	2.05	34900	34300	1.73	37600	38900	3.40	87000	90600	4.05	76900	66100	15.1	41600	40900	1.70	36100	38400	6.17
Tellurium	µg/L	0.2	<2	<2	-	<1	<1	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.4	<0.4	-	<0.4	<0.4	-	<0.2	<0.2	-	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	-
Thallium	µg/L	0.01	2.47	2.42	2.04	0.074	0.068	8.45	0.028	0.028	0.00	0.037	0.039	5.26	<0.01	<0.01	-	<0.02	<0.02	-	<0.02	<0.02	-	<0.01	<0.01	-	0.604	0.521	14.8	<0.02	<0.02	-	<0.02	<0.02	-
Thorium	µg/L	0.10	44.7	45.1	0.89	43.7	45.5	4.04	4.92	4.97	1.01	<0.1	<0.1	-	<0.1	<0.1	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.1	<0.1	-	14.3	12	17.5	<0.2	<0.2	-	<0.2	<0.2	-
Tin	µg/L	0.10	<1	1.14	13.08	<0.5	<0.5	-	<0.1	<0.1	-	<0.1	<0.1	-	0.16	0.16	0.00	0.44	0.4	9.52	0.45	0.48	6.45	<0.1	<0.1	-	0.58	0.6	3.4	<0.2	<0.2	-	0.2	0.2	0.00
Titanium	µg/L	0.30	732	777	5.96	<7.95	<6.6	-	1.33	0.7	62.07	<0.3	<0.3	-	1.3	1.14	13.1	6.22	6.1	1.95	7.4	6.39	14.6	<0.3	<0.3	-	285	288	1.0	1.06	0.9	16.3	1.63	1.56	4.39
Tungsten	µg/L	0.10	5.85	6.98	17.61	<0.5	<0.5	-	<0.1	<0.1	-	<0.1	<0.1	-	1.92	1.92	0.00	2.49	2.51	0.80	3.19	3.3	3.39	<0.1	<0.1	-	2.04	1.7	18.2	3.39	3.48	2.62	3.32	3.11	6.53
Uranium	µg/L	0.01	14.8	14.2	4.14	34.9	35.9	2.82	3.66	3.71	1.36	1.49	1.49	0.00	0.661	0.666	0.75	0.651	0.664	1.98	0.704	0.737	4.58	0.77	0.751	2.50	5.48	4.48	20.1	0.654	0.656	0.31	0.693	0.668	3.67
Vanadium	µg/L	0.50	319	328	2.78	3.04	2.92	4.03	<0.5	<0.5	-	<0.5	<0.5	-	7.58	7.59	0.13	9.94	9.95	0.10	10.2	10.1	0.99	<0.5	<0.5	-	87.3	77.8	11.5	10.5	10.6	0.95	9.12	8.8	3.57
Zinc	µg/L	3.0	1240	1230	0.81	5080	5130	0.98	524	529	0.95	22.9	22.2	3.10	<3	<3	-	7.4	7.2	2.74	7.7	7.3	5.33	7.5	8.9	17.1	505	429	16.3	6.5	<6	8.00	<6	<6	-
Zirconium	µg/L	0.06	<2	<2	-	<1	<1	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.4	<0.4	-	<0.4	<0.4	-	<0.2	<0.2	-	0.57	0.43	28.0	<0.4	<0.4	-	<0.4	<0.4	-
Metals, Dissolved																																			
Aluminum	µg/L	1.0	7	7.7	9.52	43200	42300	2.11	126	128	1.57	74.6	82.5	10.06	871	867	0.46	855	873	2.08	976	952	2.49	84.8	89.3	5.17	30.3	35.5	15.8	979	983	0.41	871	864	0.81
Antimony	µg/L	0.10	0.18	0.18	0.00	<0.5	<0.5	-	<0.1	<0.1	-	0.29	0.31	6.67	1.54	1.57	1.93	2.71	2.71	0.00	2.35	2.39	1.69	<0.1	<0.1	-	0.24	0.2	18.2	1.58	1.58	0.00	1.97	1.96	0.51
Arsenic	µg/L	0.10	0.31	0.3	3.28	9.13	8.8	3.68	<0.1	<0.1	-	0.21	0.2	4.88	3.78	3.94	4.15	4.67	4.69	0.43	4.55	4.41	3.12	0.18	0.18	0.00	0.2	0.2	0.0	5.07	4.92	3.00	4.98	4.72	5.36
Barium	µg/L	0.10	57	57.1	0.18	13.8	13.6	1.46	17	16.8	1.18	27.3	27.1	0.74	115	115	0.00	83.6	85.2	1.90	83.2	81.4	2.19	26.7	27.3	2.22	80.3	85.8	6.6	122	121	0.82	123	122	0.82
Beryllium	µg/L	0.10	<0.1	<0.1	-	9.67	9.79	1.23	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-
Bismuth	µg/L	0.05	<0.05	<0.05	-	<0.25	<0.25	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.1	<0.1	-	<0.1	<0.1	-
Boron	µg/L	10.0	23	23	0.00	148	153	3.32	103	107	3.81	136	146	7.09	252	251	0.40	276	287	3.91	330	331	0.30	307	321	4.46	78	69	12.2	357	370	3.58	317	305	3.86
Cadmium	µg/L	0.005	0.0124	0.0128	3.17	22.8	22.9	0.44	1.69	1.66	1.79	0.208	0.185	11.70	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.015	-	<0.005	<0.005	-	0.133	0.124	7.0	<0.01	<0.015	-	<0.01	<0.01	-
Calcium	µg/L	50.0	48600	49900	2.64	194000	193000	0.52	150000	157000	4.56	119000	123000	3.31	6840	6760	1.18	5710	6130	7.09	5830	5820	0.17	94400	94000	0.42	112000	106000	5.5	4780	4750	0.63	5790	5700	1.57
Cesium	µg/L	0.01	<0.01	<0.01	-	0.059	0.074	22.6	0.034	0.034	0.00	0.069	0.068	1.46	0.059	0.055	7.02	0.054	0.054	0.00	0.068	0.069	1.46	0.028	0.028	0.00	<0.01	<0.01	-	0.065	0.062	4.72	0.047	0.052	10.10
Chromium	µg/L	0.10	<0.5	<0.5	-	2.66	2.74	2.96	<0.5	<0.5	-	<0.5	<0.5	-	1.05	1.03	1.92	2.47	2.38	3.71	1.79	1.81	1.11	<0.5	<0.5	-	<0.5	<0.5	-	<1	<1	-	<1	<1	-
Cobalt	µg/L	0.10	0.49	0.49	0.00	480	477	0.63	41	40.3	1.72	6.5	6.56	0.92	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	2.63	2.7	2.63	1.18	1.08	8.8	<0.2	<0.2	-	<0.2	<0.2	-
Copper	µg/L	0.20	1.41	1.44	2.11	381	378	0.79	4.35	4	8.38	0.82	0.9	9.30	1.53	1.55	1.30	2.7	2.62	3.01	2.48	2.38	4.12	0.46	0.46	0.00	0.98	1.05	6.9	1.62	1.56	3.77	1.81	1.79	1.11
Iron	µg/L	10.0	<10	<10	-	14400	14100	2.11	670	546	20.39	<10	17	**51.9**	<20	<20	-	<20	<20	-	<20	<20	-	14	11	24.0	<10	<10	-	<20	<20	-	<20	<20	-
Lead	µg/L	0.05	<0.05	<0.05	-	<0.25	<0.25	-	<0.05	<0.05	-	<0.05	<0.05	-	0.372	0.358	3.84	<0.1	<0.1	-	0.124	0.125	0.80	<0.05	<0.05	-	<0.05	<0.05	-	<0.1	<0.1	-	<0.1	<0.1	-
Lithium	µg/L	1.0	8	8.3	3.68	433	447	3.18	63	66.8	5.86	39.9	41.8	4.65	79.3	79.8	0.63	81.4	83.4	2.43	108	104	3.77	56.6	59.1	4.32	19	18.6	2.1	115	111	3.54	97.2	92.2	5.28
Magnesium	µg/L	5.0	12400	12800	3.17	155000	149000	3.95	49300	49300	0.00	36500	37100	1.63	2420	2450	1.23	1960	1990	1.52	2290	2280	0.44	28800	29400	2.06	26100	24800	5.1	1980	1970	0.51	1910	1860	2.65
Manganese	µg/L	0.10	52.8	54.6	3.35	4600	4410	4.22	542	523	3.57	159	159	0.00	0.51	0.54	5.71	0.66	0.64	3.08	0.26	0.24	8.00	33	35.2	6.45	267	232	14.0	0.44	0.43	2.30	0.55	0.53	3.70
Mercury	µg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-
Molybdenum	µg/L	0.05	2.99	3.02	1.00	<0.25	<0.25	-	0.997	1.02	2.28	4.14	4.08	1.46	22.4	22.7	1.33	25.6	25.9	1.17	31.9	32.9	3.09	1.3	1.33	2.28	2.36	2.17	8.4	37.7	38.1	1.06	30.2	30	0.66
Nickel	µg/L	0.50	3.61	3.81	5.39	1510	1500	0.66	152	150	1.32	23.8	24	0.84	<1	<1	-	<1	<1	-	<1	<1	-	17.1	17.4	1.74	3.74	3.48	7.2	<1	<1	-	1.01	<1	1.00
Phosphorus	µg/L	50.0	<50	<50	-	<250	<250	-	<50	<50	-	<50	<50	-	<100	<100	-	<100	<100	-	<100	<100	-	<50	<50	-	<50	<50	-	106	<100	5.83	<100	<100	-
Potassium	µg/L	50.0	7420	7520	1.34	3980	3770	5.42	3330	3220	3.36	5960	5970	0.17	5820	5810	0.17	7950	8100	1.87	8750	8620	1.50	3660	3850	5.06	5040	5060	0.4	7990	7960	0.38	7790	7680	1.42
Rubidium	µg/L	0.20	1.36	1.3	4.51	5.26	5.67	7.5	2.41	2.49	3.27	4.38	4.63	5.55	7.3	7.41	1.50	9.75	9.95	2.03	10.7	11.1	3.67	2.04	2.3	12.0	1.77	1.63	8.2	8.84	8.71	1.48	8.5	8.31	2.26

Parameter	Unit	RDL	LBRR-EDP 26-Feb-25	LBRR-EDP-R 26-Feb-25	RPD%	RBSBIAR-DS 27-Mar-25	RBSBIAR-DS-R 27-Mar-25	RPD%	RBSBIAR-DS 22-Apr-25	RBSBIAR-DS-R 22-Apr-25	RPD %	RBSBIAR-DS 13-May-25	RBSBIAR-DS-R 13-May-25	RPD %
Selenium	µg/L	0.05	0.34	0.366	7.37	4.41	4.31	2.29	0.909	0.895	1.55	0.918	0.937	2.05
Silicon	µg/L	50.0	2150	2200	2.30	6470	6590	1.84	4080	4130	1.22	3300	3350	1.50
Silver	µg/L	0.01	<0.01	<0.01	-	<0.05	<0.05	-	<0.01	<0.01	-	<0.01	<0.01	-
Sodium	µg/L	50.0	20300	20500	0.98	132000	128000	3.08	57300	57700	0.70	64200	64700	0.78
Strontium	µg/L	0.2	420	428	1.89	1160	1170	0.86	803	756	6.03	796	782	1.77
Sulfur	µg/L	500	22500	22100	1.79	515000	512000	0.58	162000	171000	5.41	112000	113000	0.89
Tellurium	µg/L	0.20	<0.2	<0.2	-	<1	<1	-	<0.2	<0.2	-	<0.2	<0.2	-
Thallium	µg/L	0.01	0.01	0.012	18.18	0.051	0.05	1.98	0.03	0.028	6.90	0.039	0.04	2.53
Thorium	µg/L	0.10	<0.1	<0.1	-	0.59	0.58	1.71	<0.1	<0.1	-	<0.1	<0.1	-
Tin	µg/L	0.10	<0.1	<0.1	-	<0.5	<0.5	-	<0.1	<0.1	-	<0.1	<0.1	-
Titanium	µg/L	0.30	<0.3	<0.3	-	<1.5	<1.5	-	<0.3	<0.3	-	<0.3	<0.3	-
Tungsten	µg/L	0.10	0.58	0.6	3.39	<0.5	<0.5	-	<0.1	<0.1	-	<0.1	<0.1	-
Uranium	µg/L	0.01	1.13	1.19	5.17	28.4	28.9	1.75	2.52	2.51	0.40	1.47	1.52	3.34
Vanadium	µg/L	0.50	<0.5	<0.5	-	<2.5	<2.5	-	<0.5	<0.5	-	<0.5	<0.5	-
Zinc	µg/L	1.0	<1	<1	-	4770	4740	0.63	211	196	7.37	17.9	26.6	**39.1**
Zirconium	µg/L	0.06	<0.2	<0.2	-	<1	<1	-	<0.2	<0.2	-	<0.2	<0.2	-
Laboratory Work Order Number			FJ2500628	FJ2500628		FJ2500908	FJ2500908		FJ2501134	FJ2501134		FJ2501382	FJ2501382	

Parameter	Unit	RDL	RBDT-SUMP 22-Jun-25	RBDT-SUMP-R 22-Jun-25	RPD %	RBDT-SUMP 30-Jul-25	RBDT-SUMP-R 30-Jul-25	RPD %	RBDT-SUMP 31-Aug-25	RBDT-SUMP-R 31-Aug-25	RPD %	RBSBIAR-DS 7-Oct-25	RBSBIAR-DS-R 7-Oct-25	RPD %
Selenium	µg/L	0.05	0.95	0.649	**37.6**	0.866	0.931	7.23	0.709	0.595	17.5	0.087	0.113	26.0
Silicon	µg/L	50.0	4670	4690	0.43	5220	5230	0.19	5060	5020	0.79	3620	3610	0.28
Silver	µg/L	0.01	<0.02	<0.02	-	<0.02	<0.02	-	<0.02	<0.02	-	<0.01	<0.01	-
Sodium	µg/L	50.0	333000	339000	1.79	337000	335000	0.60	448000	461000	2.86	82600	84000	1.68
Strontium	µg/L	0.2	122	118	3.33	107	108	0.93	118	125	5.76	702	710	1.13
Sulfur	µg/L	500	33700	32500	3.63	31300	31500	0.64	37400	38100	1.85	81500	79300	2.74
Tellurium	µg/L	0.20	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	-	<0.2	<0.2	-
Thallium	µg/L	0.01	<0.02	<0.02	-	<0.02	<0.02	-	<0.02	<0.02	-	<0.01	<0.01	-
Thorium	µg/L	0.10	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.1	-
Tin	µg/L	0.10	<0.2	<0.2	-	0.34	0.32	6.06	0.31	0.29	6.67	<0.1	<0.1	-
Titanium	µg/L	0.30	<0.6	<0.6	-	0.6	<0.6	0.00	<0.6	0.73	19.5	<0.3	<0.3	-
Tungsten	µg/L	0.10	2.01	1.92	4.58	2.36	2.32	1.71	3.08	3.04	1.31	<0.1	<0.1	-
Uranium	µg/L	0.01	0.722	0.689	4.68	0.586	0.578	1.37	0.728	0.728	0.00	0.758	0.766	1.05
Vanadium	µg/L	0.50	7.12	7.16	0.56	8.89	9.01	1.34	9.75	9.81	0.61	<0.5	<0.5	-
Zinc	µg/L	1.0	<2	<2	-	<2	<2	-	<2	<2	-	<1	<1	-
Zirconium	µg/L	0.06	<0.4	<0.4	-	<0.4	<0.4	-	<0.4	<0.4	-	<0.2	<0.2	-
Laboratory Work Order Number			FJ2501891	FJ2501891		FJ2502301	FJ2502301		FJ2502690	FJ2502690		FJ2503105	FJ2503105	

Parameter	Unit	RDL	RBSBIAR-DS 26-Oct-25	RBSBIAR-DS-R 26-Oct-25	RPD %	RBDT-SUMP 23-Nov-25	RBDT-SUMP-R 23-Nov-25	RPD %	RBDT-SUMP 21-Dec-25	RBDT-SUMP-R 21-Dec-25	RPD %
Selenium	µg/L	0.05	0.611	0.504	19.2	0.939	0.907	3.47	0.84	0.784	6.90
Silicon	µg/L	50.0	2490	2280	8.8	5790	5930	2.39	5760	5750	0.17
Silver	µg/L	0.01	<0.01	<0.01	-	<0.02	<0.02	-	<0.02	<0.02	-
Sodium	µg/L	50.0	28800	26700	7.6	485000	475000	2.08	411000	400000	2.71
Strontium	µg/L	0.2	935	890	4.9	138	137	0.73	126	124	1.60
Sulfur	µg/L	500	78200	66500	16.2	40200	41000	1.97	38300	36600	4.54
Tellurium	µg/L	0.20	<0.2	<0.2	-	<0.4	<0.4	-	<0.4	<0.4	-
Thallium	µg/L	0.01	0.017	0.015	12.5	<0.02	<0.02	-	<0.02	<0.02	-
Thorium	µg/L	0.10	<0.1	<0.1	-	<0.2	<0.2	-	<0.2	<0.2	-
Tin	µg/L	0.10	<0.1	<0.1	-	<0.2	<0.2	-	<0.2	<0.2	-
Titanium	µg/L	0.30	<0.3	<0.3	-	<0.6	<0.6	-	<0.6	0.62	3.28
Tungsten	µg/L	0.10	0.19	0.17	11.1	3.38	3.35	0.89	3.1	3.16	1.92
Uranium	µg/L	0.01	2.18	1.88	14.8	0.61	0.592	3.00	0.64	0.672	4.88
Vanadium	µg/L	0.50	<0.5	<0.5	-	10.2	10.3	0.98	8.67	8.58	1.04
Zinc	µg/L	1.0	1.6	1.2	28.6	<2	2	0.00	<2	2.1	4.88
Zirconium	µg/L	0.06	<0.2	<0.2	-	<0.4	<0.4	-	<0.4	<0.4	-
Laboratory Work Order Number			FJ2503336	FJ2503336		FJ2503610	FJ2503610		FJ2503845	FJ2503845	

Notes:

RDL - Reportable detection limit

RPD - Relative percent difference calculated as (ABS[(difference between two values)]/((sum of two values/2))*100

Blank indicates RPD not calculated. RPD cannot be calculated if one or more of the analytical results is less than detection limits or within 5 times the RDL.

RPD greater than 30%

Blank - not analyzed.

Table 6: River Road - In Situ Water Quality Sampling

Sample Site	Date	In-Situ Tests - 2025							Comments
		pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)	Turbidity	
LBRR-DD [1]	27-Feb-25	7.76	1526	800	40	1.2	1.0	turbid	actively discharging to the Peace River at time of sampling.
	22-Apr-25	no flow / dry conditions							LBRR locations: ditch cleanout had occurred around blind corner earlier this month (Apr). ESC materials consisting of straw wattles were placed within the ditch along RR downstream of L3 diversion pipe at LBRR-EDP. Straw wattles were also placed in front on the RR9 culvert.
LBRR-LC	27-Feb-25	7.46	1315	800	40	9.4	3.5	very turbid	High flows of very turbid, muddy water during sampling associated with water management issues from Blind Corner works occurring up the drainage. Water upstream was then diverted to the Howe Pit pond and flows were drastically reduced at the Lower Chimney drainage after sampling had occurred.
LBRR-UC	27-Feb-25								Blind Corner works are still ongoing and the PAG mitigation cover is up against the Upper Chimney drainage. No visible flow was apparent during sampling although trickling water under the snow/ice was heard. No sample could be collected. Site experiencing warming temperatures during the sampling event and significant melt occurring on site.
	27-Mar-25						0.05		drainage largely ice covered with no visible surface flow. Low flow of ~5 mL/s observed under the ice but no sample could be collected.
LBRR-12+600									
LBRR-12+700									
LBRR-12+810									
LBRR-12+920	27-Mar-25	9.21	2120	800	40	0	0.07	clear	
	22-Apr-25	8.20	2040	800	80	8.6	0.20	clear	
	13-May-25	8.15	1768	800	80	18.6	0.10	clear	
	22-Jun-25	8.22	1418	800	80	20.9	0.1	clear	
	27-Oct-25	7.88	4500	800	40	2.5	0.05	turbid	
RR8 [1]	27-Feb-25	7.24	195.3	100	80	1.4	0.08	slightly turbid	actively discharging to the Peace River at time of sampling.
RR9 [1]	27-Feb-25	7.68	386	450	80	1.4	2.0	turbid	actively discharging to the Peace River at time of sampling.
LBRR-EDP	27-Feb-25	8.33	518	800	120	1.00	3.00	very turbid	
	22-Apr-25	8.21	2830	800	40	4.8	0.02	clear	flow stops about 15 m downstream of culvert.
	13-May-25	8.23	3040	800	40	14.7	0.01	clear	too low to sample, flow dries up ~5m downstream of culvert.
	22-Jun-25	8.27	2650	800	40	18.7	0.10	clear	flow disappears after ~25m downstream of culvert.
	27-Oct-25	8.14	3030	800	40	2.7	0.05	slightly turbid	
	Mean	8.07	1952.59	725.00	60.00	7.56	0.73		
	Median	8.18	1904.00	800.00	40.00	3.75	0.10		
	Minimum	7.24	195.30	100.00	40.00	0.00	0.01		
	Maximum	9.21	4500.00	800.00	120.00	20.90	3.50		

[1] Discharge station

Table 7: Summary of Water Quality Exceedances (BCAWQG-FST) Along River Road from Water Sampling Events in 2025

Sample Location	Sampling Events with Lab Testing	BCAWQG-FST (Short-term) Guidelines								BCAWQG-FLT (Long-term) Guidelines								
			Total				Dissolved			Total						Dissolved		
		Chloride (Cl)	Cobalt (Co), prior to May 2025	Iron (Fe)	Manganese (Mn)	Silver (Ag)	Cadmium (Cd)	Nickel (Ni)	Zinc (Zn)	Sulphate	Aluminum (Al)	Arsenic (As)	Cobalt (Co)	Selenium (Se)	Silver (Ag)	Cadmium (Cd)	Nickel (Ni)	Selenium (Se)
LBRR-DD [1]	27-Feb-25			✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓
LBRR-LC	27-Feb-25		✓	✓	✓	✓				✓	✓	✓		✓				
LBRR-EDP	27-Feb-25		✓	✓	✓						✓	✓		✓	✓			
	22-Apr-25						✓	✓	✓	✓			✓					
	22-Jun-25								✓	✓			✓			✓	✓	
	26-Oct-25	✓		✓							✓		✓					
RR8 [1]	27-Feb-25			✓							✓							
RR9 [1]	27-Feb-25			✓	✓						✓	✓	✓				✓	

[1] **Discharge station**

British Columbia Ministry of Environment, Water Protection & Sustainability Branch. 2025. British Columbia Approved Water Quality Guidelines (BCAWQG): Aquatic Life, Wildlife & Agriculture Summary Report. Referenced Guidelines are for Freshwater Aquatic Life water use and Short Term Maximum (FST) WQG. Exceedances denoted by a check mark.

Table 8: RBSBIAR - In Situ Water Quality Measurements

Sample Site	Date	In-Situ Tests - 2025							
		pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)	Turbidity	Comments
RBSBIAR-US	28-Feb-25	8.78	378.00	450	80	0.00	0.10	clear	
	26-Oct-25	8.35	642.00	450	40	3.10	0.50	turbid	
RBSBIAR-DS	28-Feb-25	7.84	1642	800	40	0.8	0.30	clear	
	27-Mar-25	5.26	2800	800	0	-0.2	1.00		light brown/orange stained water.
	22-Apr-25	7.92	1299	800	40	10.2	1.00	clear	bottom of ditch has an orange coating.
	13-May-25	8.18	1138	800	80	17.3	1.00	clear	
	22-Jun-25	4.76	1779	800	0	17.8	1.00		orange tinge to water. No water discharge into the ditch observed in the west ditch at time of sampling.
	30-Jul-25	8.21	1186	800	80	19.2	0.75	clear	
	31-Aug-25	8.09	1081	800	80	17.4	0.50	clear	
	7-Oct-25	8.20	1064	800	80	11.7	0.50	clear	
	26-Oct-25	7.88	906	800	80	5.5	1.50	highly turbid	
	23-Nov-25	8.27	1219	800	40	0.9	0.50	clear	
RBSBIAR-EUS	28-Feb-25	8.22	611	800	40	1.0	0.03	clear	clear melt on ice, not enough to sample.
	22-Apr-25	8.05	680	800	80	9.0	0.15	clear	
	13-May-25	7.88	751	800	80	14.6	0.15	clear	
	22-Jun-25	7.69	803	800	80	19.3	0.20	clear	
	31-Aug-25	7.78	813	800	80	19.8	0.15	clear	
	7-Oct-25	7.59	834	800	40	11.2	0.05	clear	not enough water flow for lab sample.
	26-Oct-25	7.80	849	800	80	4.3	0.15	clear	
	23-Nov-25	7.89	861	800	40	0.0	0.15	clear	flow was covered by thin ice.
RBSBIAR-EDS	13-May-25						0.02	clear	too low to sample.
	22-Jun-25	8.18	1548	800	120	21.4	0.08	clear	
	26-Oct-25	7.75	255	800	40	3.5	0.2	moderately turbid	road runoff is being diverted into ditch.
	22-Dec-25	site not visited. Access not cleared due to recent snow events with frozen conditions. Site presumed frozen / no flow.							RBSBIAR-EUS and -EDS not visited - no access
	Mean	7.75	1051.77	768.18	60.00	9.45	0.45		
	Median	7.91	883.50	800.00	80.00	9.60	0.25		
	Minimum	4.76	255.00	450.00	0.00	-0.20	0.03		
	Maximum	8.78	2800.00	800.00	120.00	21.40	1.50		

Table 9: Summary of Water Quality Exceedances (BCAWQG-FST) RBSBIAR from Water Sampling Events in 2025

		BCAWQG-FST (Short-term) Guideline									BCAWQG-FLT (Long-term) Guideline											
				Total			Dissolved					Total					Dissolved					
Sample Location	Sample Date	pH (<6.5)	Chloride	Iron (Fe)	Cobalt (Co), prior to May 2025	Manganese (Mn)	Cadmium (Cd)	Copper (Cu)	Nickel (Ni)	Zinc (Zn)	Sulphate	Aluminum (Al)	Arsenic (As)	Cobalt (Co), New May 2025	Selenium (Se)	Silver (Ag), New Mar 2025	Cadmium (Cd)	Copper (Cu)	Iron (Fe)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
RBSBIAR-US	28-Feb-25			✓								✓										
	26-Oct-25			✓								✓	✓	✓								
RBSBIAR-DS	28-Feb-25			✓	✓		✓	✓	✓	✓	✓	✓							✓			
	27-Mar-25	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓		✓	
	22-Apr-25			✓					✓	✓	✓	✓					✓	✓	✓			
	13-May-25													✓						✓		
	22-Jun-25	✓		✓			✓	✓	✓		✓	✓	✓	✓					✓			
	30-Jul-25											✓		✓								
	31-Aug-25													✓								
	7-Oct-25													✓								
	26-Oct-25			✓								✓	✓	✓		✓						
	23-Nov-25			✓								✓		✓				✓		✓		✓
RBSBIAR-EUS	22-Apr-25																					
	13-May-25																					
	22-Jun-25																					
	30-Jul-25																					
	31-Aug-25																					
	7-Oct-25																					
	26-Oct-25																					
	23-Nov-25																					
RBSBIAR-EDS	22-Jun-25										✓									✓		
	26-Oct-25		✓	✓								✓		✓								

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Table 10: RBDT - In Situ Water Quality Sampling

Sample Site	Date	In-Situ Tests - 2025							
		pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)	Turbidity	Comments
RBDT-Sump	28/Feb/25	10.08	1640	0	240	10.2	n/a		clear, sampled in sump inside the RBDT
	27/Mar/25	sample location occupied - no sample							Sump undergoing cleanout - sample collected Apr 2 instead.
	02/Apr/25	sump sampled - no in situ measurements							Sump sampled. No field notes or in situ measurements.
	22/Apr/25	10.02	1626	0	240	9.6	n/a	clear	Tunnel cleaning had finished April 19th, three days prior to this month's Apr 22 sampling event.
	13/May/25	9.98	1539	0	240	12.5	n/a	clear	
	22/Jun/25	9.90	1663	0	240	13.5	n/a	clear	
	30/Jul/25	9.84	1628	0	240	13.8	n/a	clear	
	31/Aug/25	9.53	2110	0	240	13.8	n/a	slightly turbid	
	08/Oct/25	9.64	1936	0	240	11.4	n/a	clear	
	26/Oct/25	9.82	2210	0	240	11.6	n/a	clear	
	23/Nov/25	9.74	2240	0	240	11.4	n/a	clear	
	22-Dec-25	9.56	1977	0	240	8.8	n/a	clear	
	Mean	9.81	1856.90	0	240	11.66			
	Median	9.83	1799.50	0	240	11.50			
	Minimum	9.53	1539	0	240	8.8			
	Maximum	10.08	2240	0	240	13.8			

TETRA TECH

Table 11: Summary of Water Quality Exceedances (BCAWQG-FST) at RBDT From Water Sampling Events in 2025

Sample Location	Sample Date	BCAWQG-FST (Short-term) Guidelines		BCAWQG-FLT (Long-term) Guidelines								
		pH (>9.0)	Total	Ammonia	Nitrite	Chloride	Total				Dissolved	
			Iron (Fe)				Aluminum (Al)	Arsenic (As)	Cobalt (Co)	Silver (Ag)	Copper (Cu)	Zinc (Zn)
RDBT-Sump	28/Feb/25	✓		✓		✓	✓	✓			✓	✓
RDBT-Sump	02/Apr/25	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
RDBT-Sump	22/Apr/25	✓		✓		✓	✓				✓	
RDBT-Sump	13/May/25	✓		✓		✓	✓				✓	
RDBT-Sump	22/Jun/25	✓		✓		✓	✓				✓	
RBDT-Sump	30/Jul/25	✓		✓		✓	✓				✓	
RBDT-Sump	31/Aug/25	✓				✓						
RBDT-Sump	08/Oct/25	✓		✓		✓	✓					
RBDT-Sump	26/Oct/25	✓		✓		✓	✓					
RBDT-Sump	23/Nov/25	✓		✓		✓	✓				✓	
RBDT-Sump	22-Dec-25	✓		✓		✓	✓				✓	

British Columbia Ministry of Environment, Water Protection & Sustainability Branch. 2025. British Columbia Approved Water Quality Guidelines (BCAWQG): Aquatic Life, Wildlife & Agriculture Summary Report.
Referenced Guidelines are for Freshwater Aquatic Life (F) water use and Short Term Maximum (ST) WQG. Exceedances denoted by a check mark.

Table 12: Area 21 Sump - In Situ Water Quality Sampling

Sample Site	Date	In-Situ Tests - 2025							
		pH	EC (µS/cm)	Hardness (ppm)	Alkalinity (ppm)	Water Temp (°C)	Estimated Flow (L/sec)	Turbidity	Comments
Area 21 Sump	28-Feb-25	8.40	624	800	40	1	n/a		drainage ditch into sump was frozen. Thin ice covered sump
	27-Mar-25	7.85	657	450	40	1.5	n/a	clear	no flow into sump. Thin ice covering sump.
	22/Apr/25	8.11	1075	800	40	10.7	n/a	clear	
	13/May/25	8.28	1117	800	40	19.4	n/a		this sump has been receiving concrete contact water from a concrete holding area to the west. It is being used as a temporary holding pond with CO2 bubbles to reach BC Water Quality Guidelines. Once water is within BCWQG for pH, it is periodically pumped to the SBIAR ditch as needed. No water was being pumped at time of sampling and no CO2 was being added to the Area 21-Sump.
	22/Jun/25	8.43	1100	800	40	22	n/a	clear	no water entering sump.
	30/Jul/25	8.02	1495	800	40	26	n/a	clear	low volume. No water has been pumped recently into the sump and no CO2 has been added.
	31/Aug/25	8.09	2070	800	40	22	n/a		low water level. No water has been pumped recently into the sump and no CO2 has been added.
	07/Oct/25	8.04	3140	800	40	12.7	n/a	clear	water level of the sump remains low. No water has been pumped recently into the sump and no CO2 has been added.
	26/Oct/25	8.27	590	450	40	3.0	0.15	slightly turbid	south drainage channel had minor flow. No water has been pumped into the sump and no CO2 has been added. Water level in the sump remains low.
	23/Nov/25	frozen conditions							low volume in the sump.
	22-Dec-25	frozen / snow covered							
	Mean	8.17	1319	722	40	13.1			
	Median	8.11	1100	800	40	12.7			
	Minimum	7.85	590	450	40	1.0			
	Maximum	8.43	3140	800	40	26.0			

Table 13: Summary of Water Quality Exceedances (BCAWQG-FST) at the Area 21-Sump From Water Sampling Events in 2025

Area 21-Sump Sample Date	BCAWQG-FST (Short-Term Guidelines) - none	BCAWQG-FLT (Long-Term Guidelines)						
			Total			Dissolved		
		Sulphate	Aluminum (Al)	Cobalt (Co)	Selenium (Se)	Copper (Cu)	Nickel (Ni)	Selenium (Se)
28-Feb-25			✓	✓			✓	
27-Mar-25							✓	
22/Apr/25		✓			✓			✓
13/May/25		✓	✓	✓	✓	✓		✓
22/Jun/25		✓		✓	✓	✓	✓	✓
30/Jul/25		✓			✓	✓		✓
31/Aug/25		✓			✓	✓		✓
07/Oct/25		✓			✓			✓
26/Oct/25		✓						

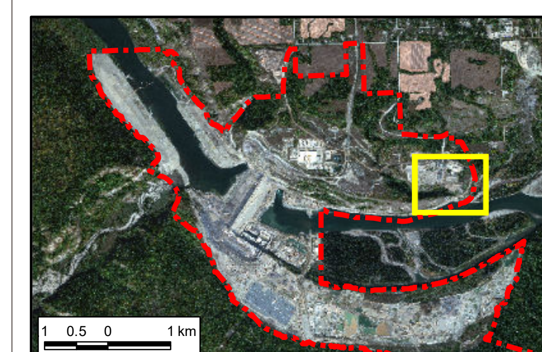
British Columbia Ministry of Environment, Water Protection & Sustainability Branch. 2025. British Columbia Approved Water Quality Guidelines (BCAWQG): Aquatic Life, Wildlife & Agriculture Summary Report. Referenced Guidelines are for Freshwater Aquatic Life water use and Short Term Maximum (FST) WQG. Exceedances denoted by a check mark.

FIGURES

LEGEND

- Water Sample (Insitu Testing Only)
- Water Sample (Insitu Testing & External Lab Testing)
- Discharge Location
- Culvert
- Ditch
- Ditch Diversion
- Howe Pit
- Blind Corner Outcrop
- Site C Project Boundary

Sample ID	Easting	Northing
LBRR-RR8	632262	6229624
LBRR-RR9	632460	6229680
LBRR-EDP	632715	6229832
LBRR-DD	632853	6229862
LBRR-LC	632856	6229899
LBRR-12+500	632914	6229921
LBRR-12+600	632948	6229983
LBRR-12+700	632992	6230078
LBRR-12+810	633039	6230195
LBRR-12+920	633000	6230282
LBRR-UC	633018	6230253



NOTES
Base data source:
Imagery provided by BC Hydro (Jan 2025).
Background imagery from ESRI; Maxar (July 2024).

STATUS
ISSUED FOR USE

SITE C WATER QUALITY MONITORING 2025 ANNUAL REPORT

Left Bank - River Road

PROJECTION: UTM Zone 10
DATUM: NAD83
CLIENT: BC Hydro Power smart

Scale: 1:3,500
50 25 0 50
Metres

TETRA TECH

FILE NO.
VMIN03021-08_Fig01_WaterSamplesLBRR.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	EM	0

DATE: March 25, 2026
PROJECT NO.: ENG.VMIN03021-08

Figure 1

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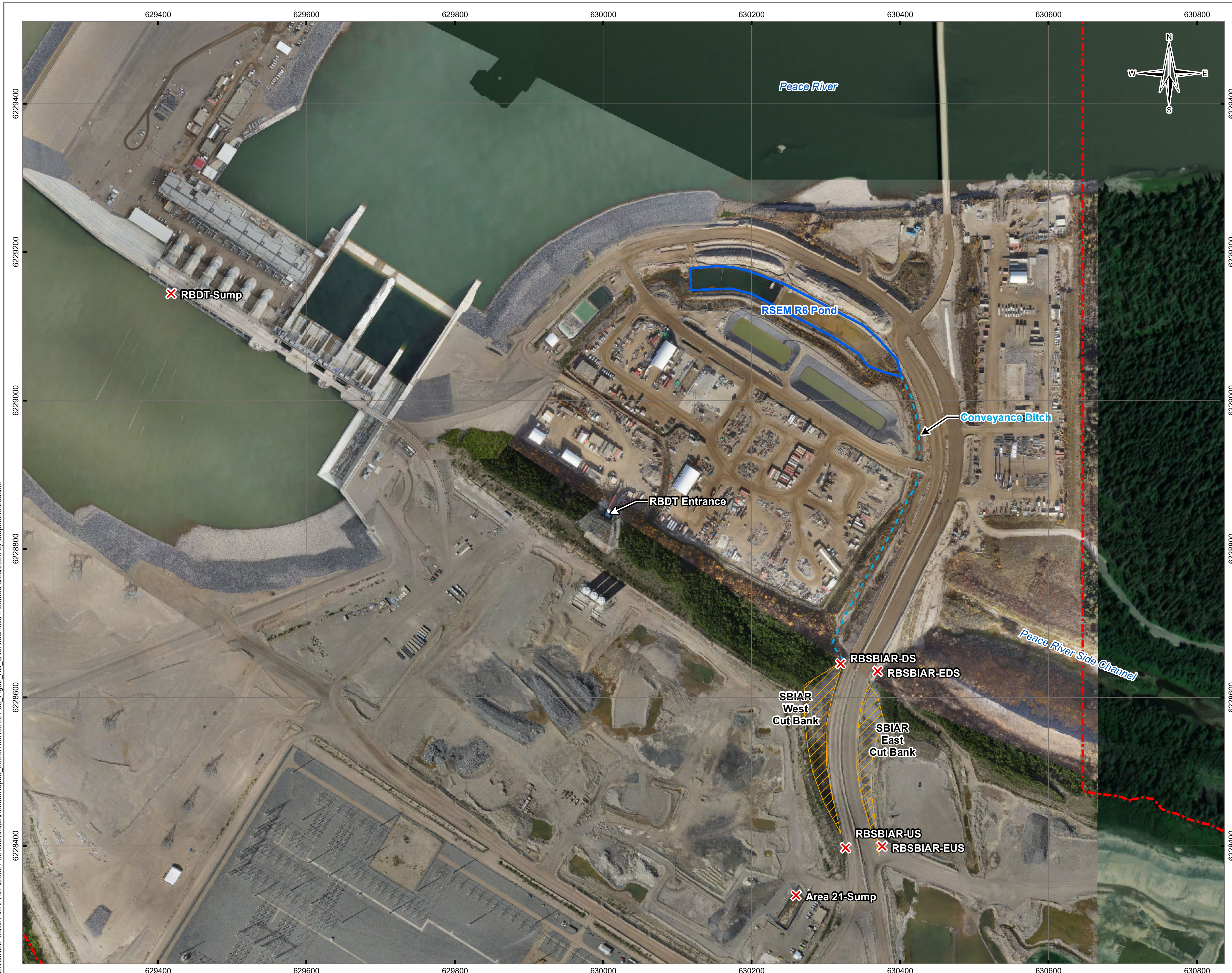

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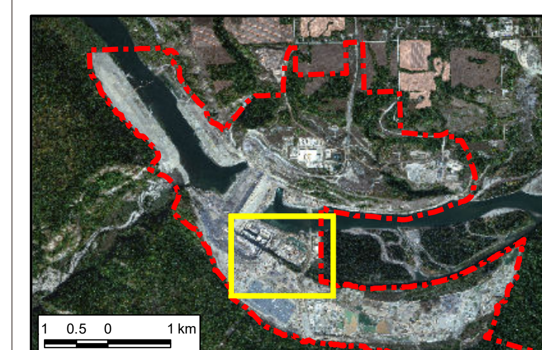
LEGEND

- Water Sample (Insitu Testing & External Lab Testing)
- Ditch
- Cut Bank
- RSEM R6 Pond
- Site C Project Boundary

Sample ID	Easting	Northing
RBSBIAR-US	630327	6228397
RBSBIAR-EUS	630376	6228399
RBSBIAR-DS	630320	6228645
RBSBIAR-EDS	630370	6228635
Area 21-Sump	630260	6228333
RBDT	630010	6228840
RBDT-Sump	629418	6229144



NOTES
Base data source:
Imagery provided by BC Hydro (May 2025/Oct 2024).
Background imagery from ESRI; Maxar (July 2024).

STATUS
ISSUED FOR USE

SITE C WATER QUALITY MONITORING 2025 ANNUAL REPORT

Right Bank Stations - Overview

PROJECTION
UTM Zone 10

DATUM
NAD83

Scale: 1:5,000

100 50 0 100

Metres

CLIENT
BC Hydro Power smart

TETRA TECH

FILE NO.
VMIN03021-08_Fig02_RB_Overview.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	EM	0

DATE
March 25, 2026

PROJECT NO.
ENG.VMIN03021-08

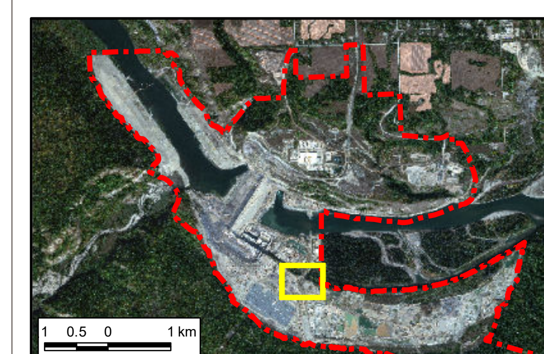
Figure 2

G:\ENGINEERING\VMIN\VMIN03021-08\GIS\Maps\AnnualReport_2025\VMIN03021-08_Fig03_RB_Detail.mxd modified 3/25/2026 by Stephanie.Leusink

LEGEND

- Water Sample (Insitu Testing & External Lab Testing)
- Ditch
- Cut Bank
- Site C Project Boundary

Sample ID	Easting	Northing
RBSBIAR-US	630327	6228397
RBSBIAR-EUS	630376	6228399
RBSBIAR-DS	630320	6228645
RBSBIAR-EDS	630370	6228635
Area 21-Sump	630260	6228333



NOTES
Base data source:
Imagery provided by BC Hydro (May 2025/Oct 2024).

STATUS
ISSUED FOR USE

SITE C WATER QUALITY MONITORING 2025 ANNUAL REPORT

Right Bank Stations - Detail

PROJECTION: UTM Zone 10
DATUM: NAD83
CLIENT: BC Hydro Power smart

Scale: 1:2,000
40 20 0 40
Metres

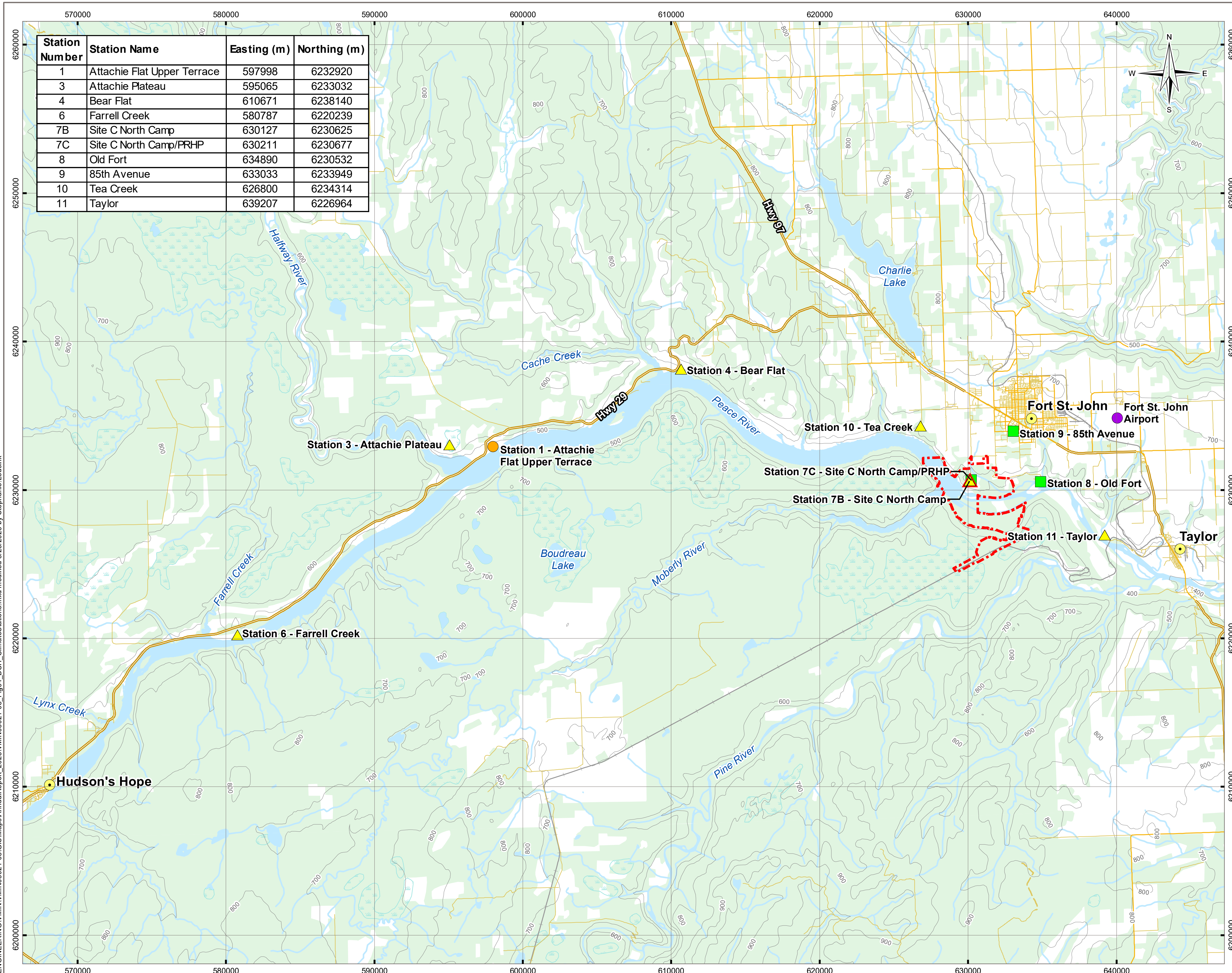
TETRA TECH

FILE NO.: VMIN03021-08_Fig03_RB_Detail.mxd

OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	BB	EM	0

DATE: March 25, 2026
PROJECT NO.: ENG.VMIN03021-08

Figure 3



Station Number	Station Name	Easting (m)	Northing (m)
1	Attachie Flat Upper Terrace	597998	6232920
3	Attachie Plateau	595065	6233032
4	Bear Flat	610671	6238140
6	Farrell Creek	580787	6220239
7B	Site C North Camp	630127	6230625
7C	Site C North Camp/PRHP	630211	6230677
8	Old Fort	634890	6230532
9	85th Avenue	633033	6233949
10	Tea Creek	626800	6234314
11	Taylor	639207	6226964

LEGEND

Site C Project Boundary

Station Type

- Meteorological Only - used for Temperature and Precipitation data
- Meteorological Only
- Air Quality Only
- Meteorological and Air Quality
- Environment Canada Meteorological Station

Base Features

- City/District Municipality
- Highway
- Main Road
- Local Road
- Resource/Recreational Road
- Railway
- Residential
- Contour (100 m)
- Watercourse
- Waterbody
- Wetland
- Wooded

NOTES
Station locations provided by BC Hydro and RWDI (September 2017).
Base data source: CanVec 1:250,000.

STATUS
ISSUED FOR USE

SITE C WATER QUALITY MONITORING 2025 ANNUAL REPORT

Site C Meteorological and Air Quality Stations

PROJECTION UTM Zone 10 | DATUM NAD83 | CLIENT BC Hydro Power smart

Scale: 1:250,000
5 2.5 0 5
Kilometres

FILE NO. VMIN03021-08_Fig04_BCH_ClimateStations.mxd

TETRA TECH

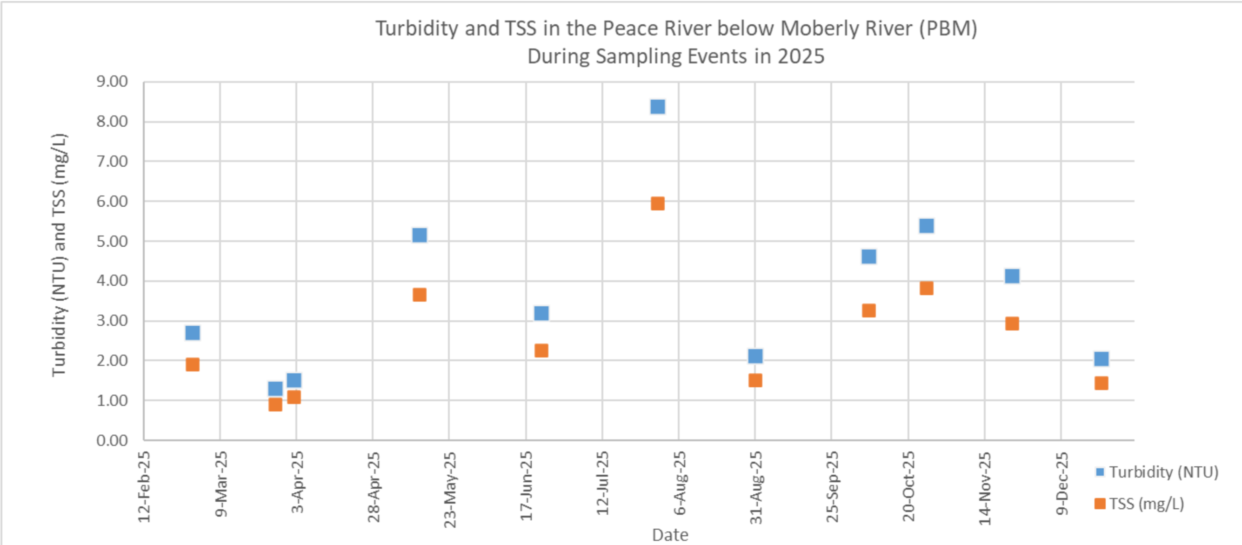
OFFICE	DWN	CKD	APVD	REV
Tt-VANC	SL	YL	EM	0

DATE March 25, 2026
PROJECT NO. ENG.VMIN03021-08

Figure 4

G:\ENGINEERING\VMIN\VMIN03021-08\GIS\Maps\AnnualReport_2025\VMIN03021-08_Fig04_BCH_ClimateStations.mxd modified 3/25/2026 by Stephanie Leusink

Figure 5: Turbidity and TSS Measured in the Peace River



Average turbidity and TSS across the Peace River include both left bank and right bank.

NTU (Nephelometric Turbidity Unit) and TSS (total suspended sediment) data provided by Ecofish Ltd., January 28, 2026.

TSS (mg/L) is determined by converting turbidity values to TSS using a TSS:Turbidity relationship. For 2025, a TSS:Turbidity Relationship of 0.71:1 was applied for the entire year.

EcoFish Disclaimer: Note, these relationships are specific to a particular make/model of sensor. Please exercise caution if relationship applied to any data collected.

Figure 6: pH at River Road Locations

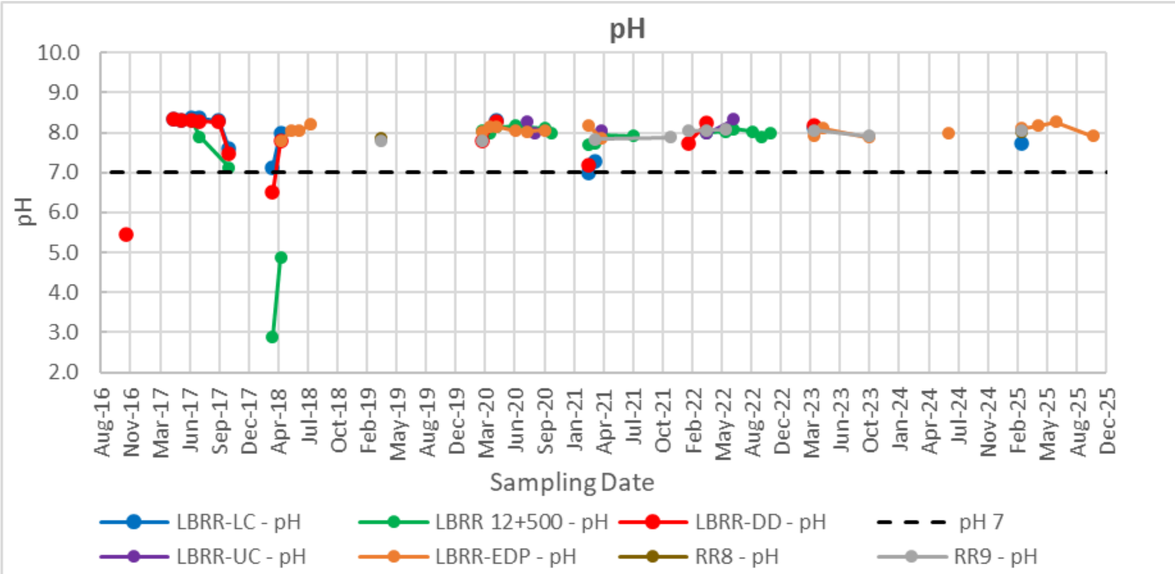


Figure 7: Total Alkalinity at River Road Locations

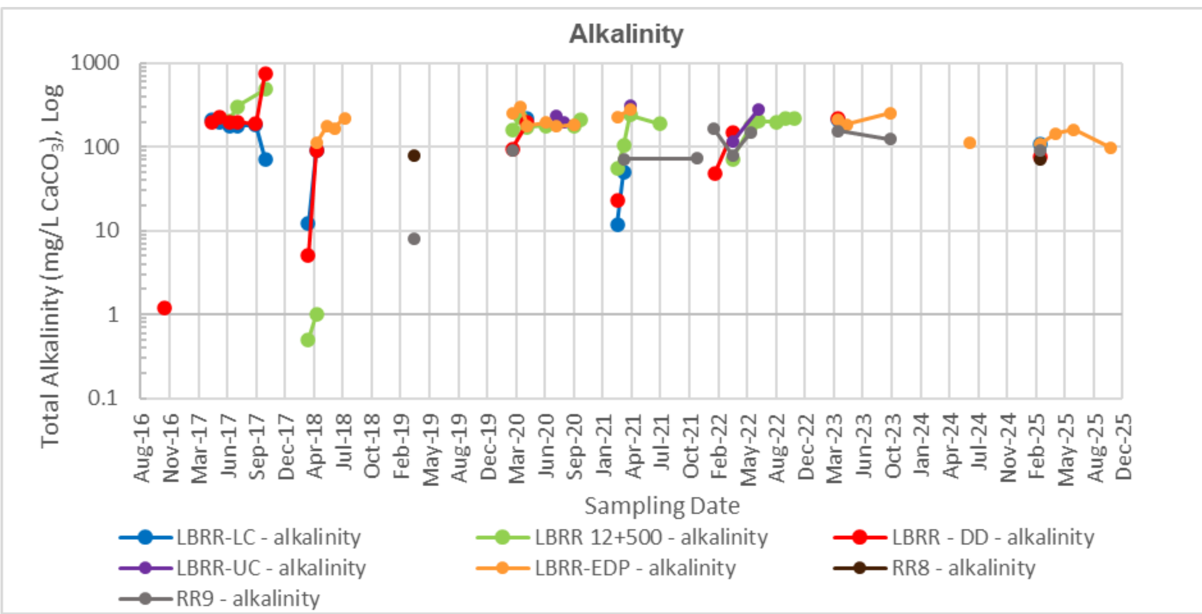


Figure 8: Acidity at River Road Locations

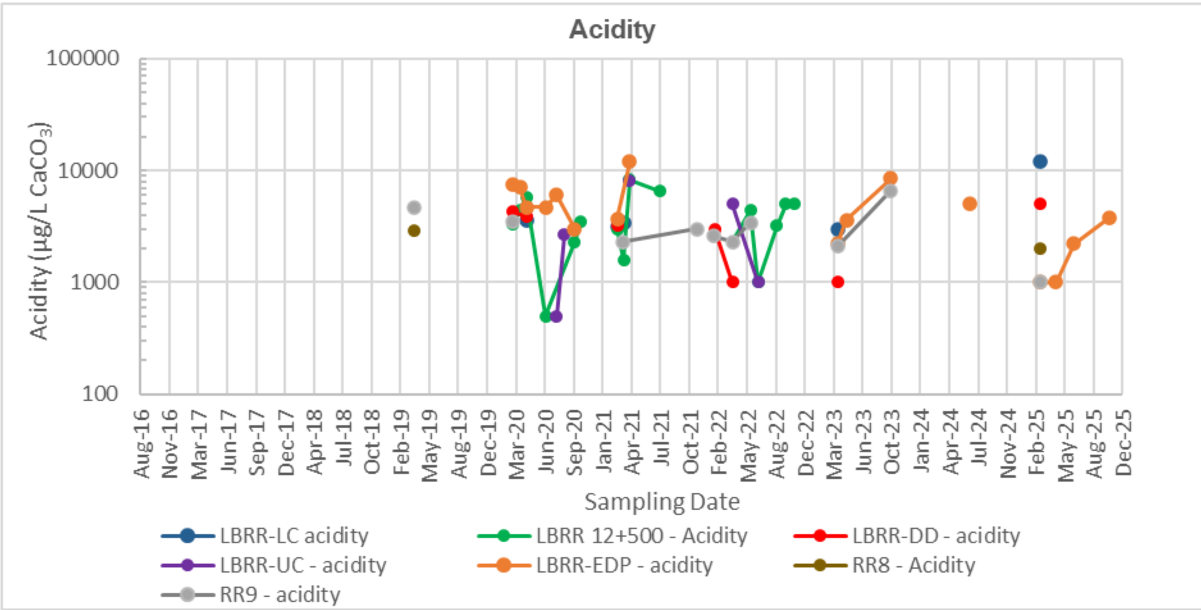


Figure 9: Sulphate at River Road Locations

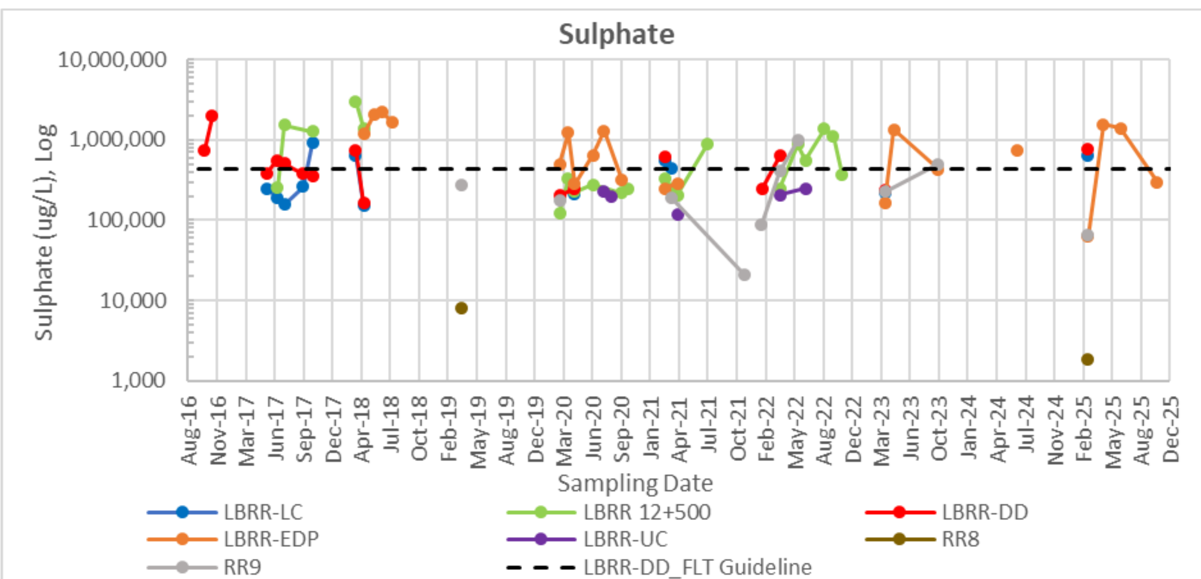


Figure 10a: TDS at River Road Locations

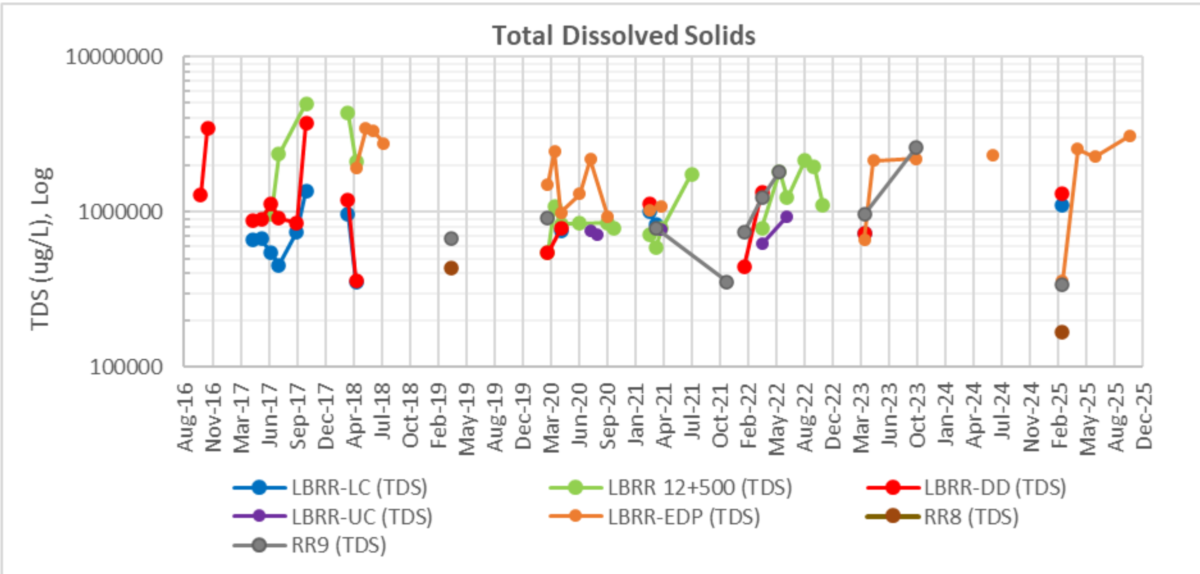


Figure 10b: TSS at River Road Locations

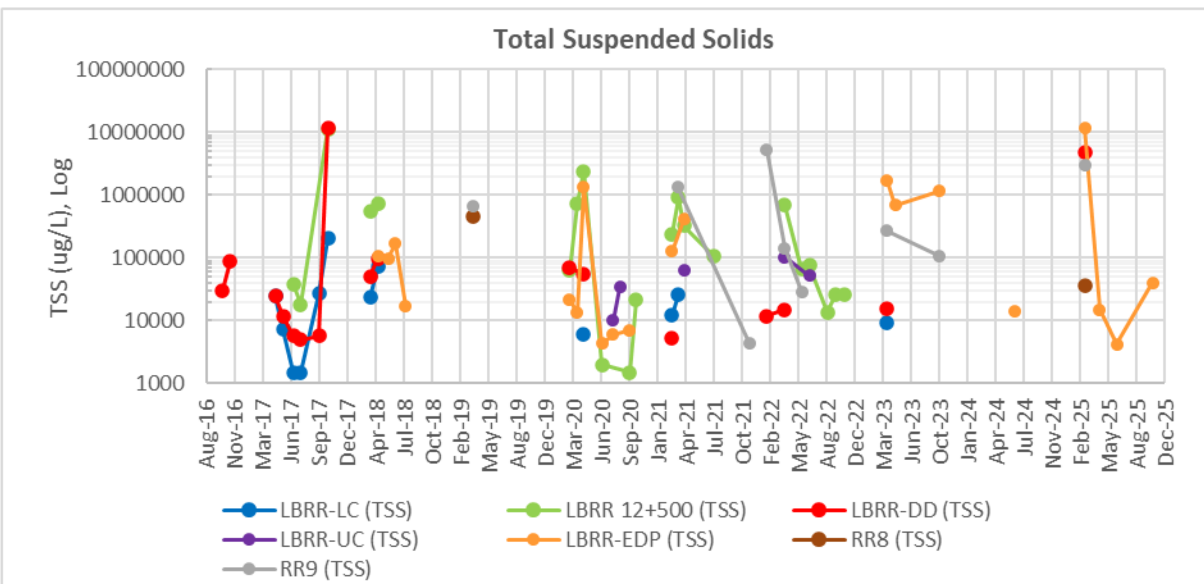


Figure 11a: Total Aluminum at River Road Locations

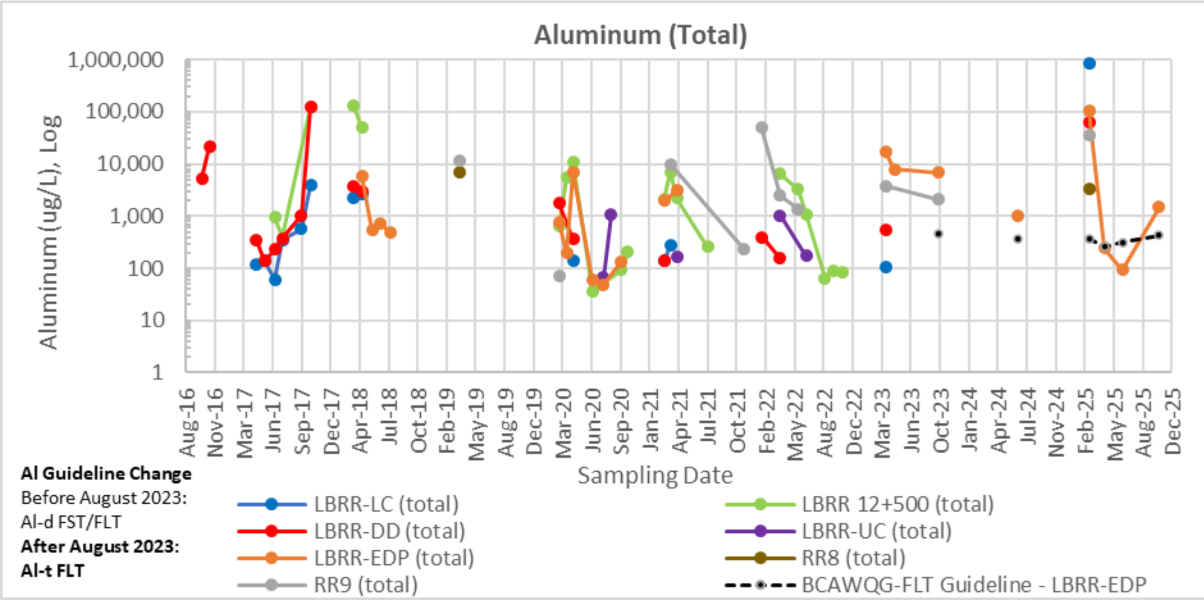


Figure 11b: Dissolved Aluminum at River Road Locations

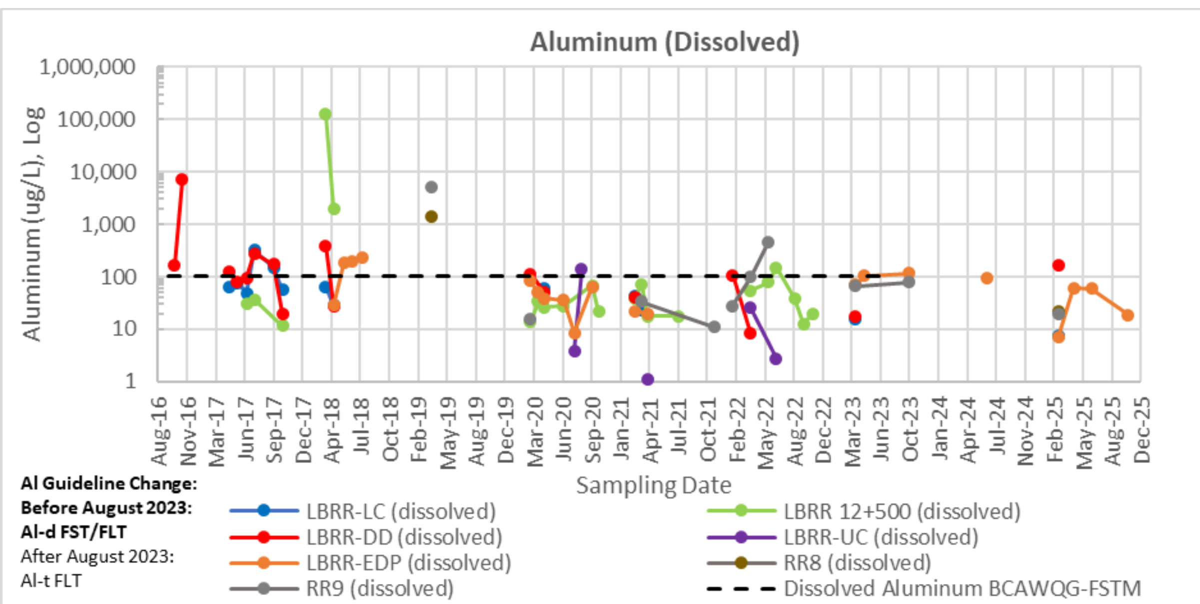


Figure 12a: Total Iron at River Road Locations

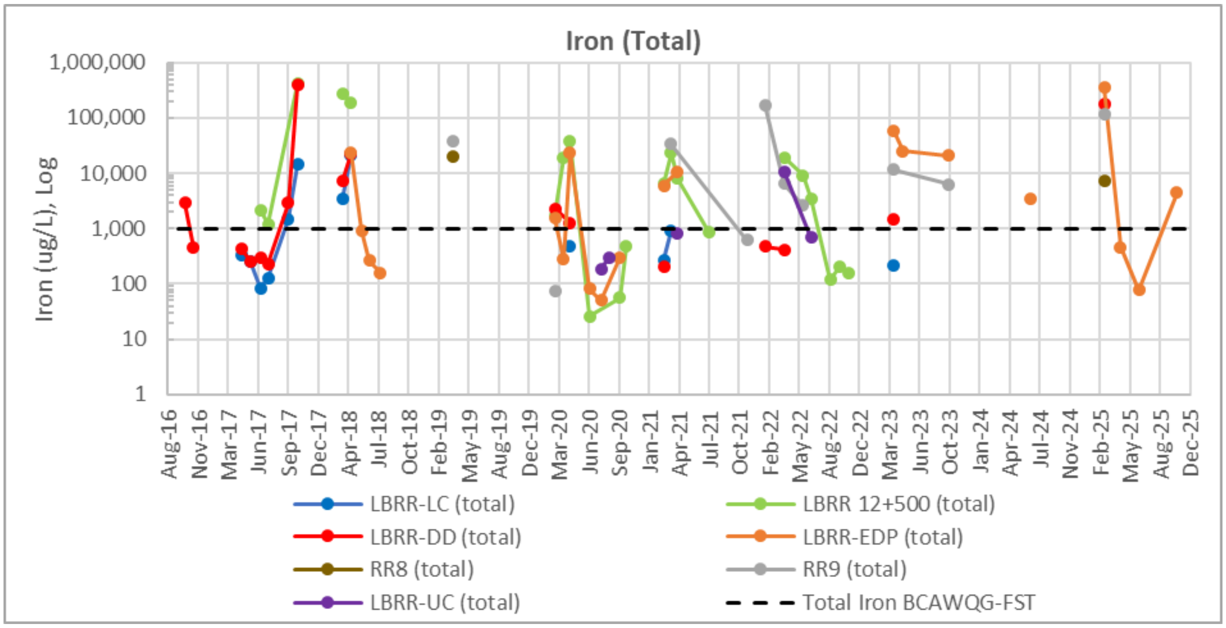


Figure 12b: Dissolved Iron at River Road Locations

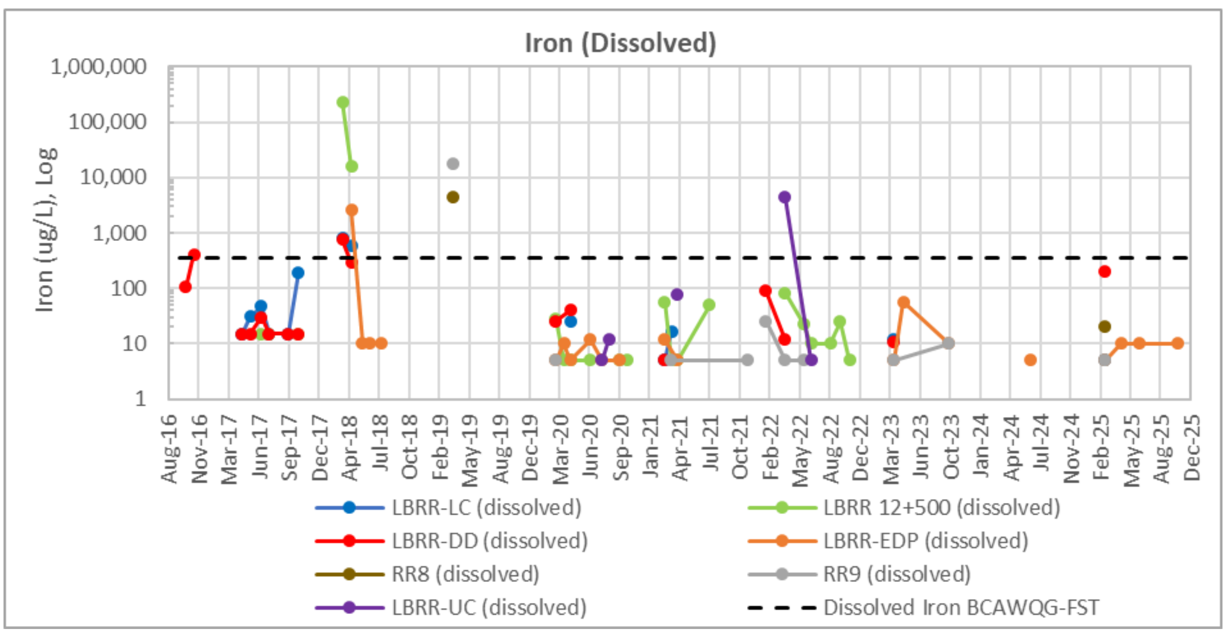


Figure 13a: Total Arsenic at River Road Locations

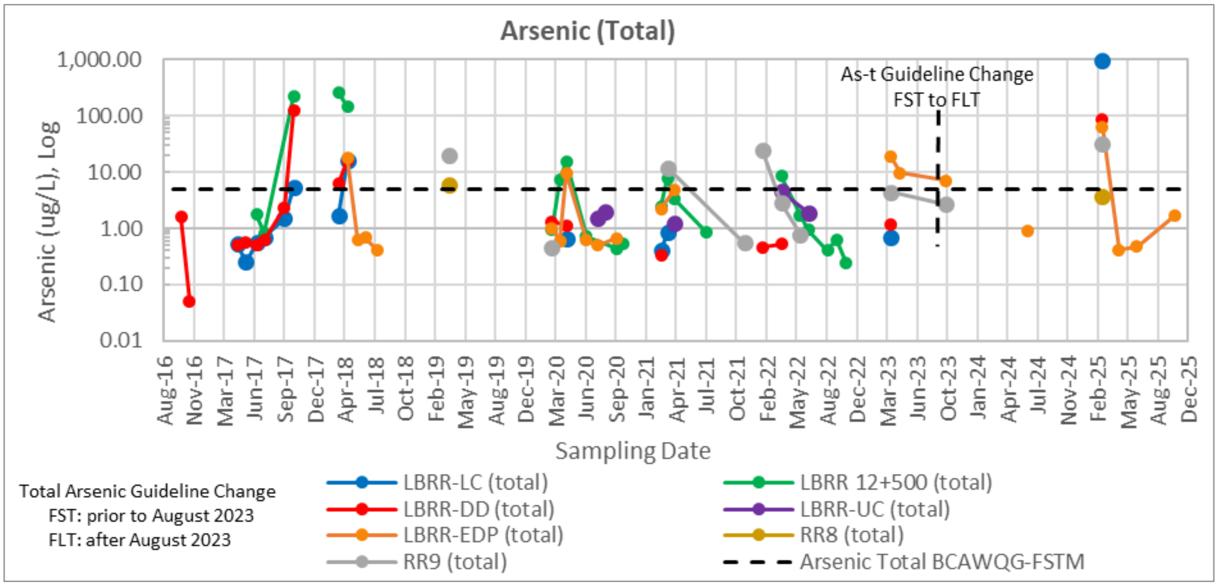


Figure 13b: Dissolved Arsenic at River Road Locations

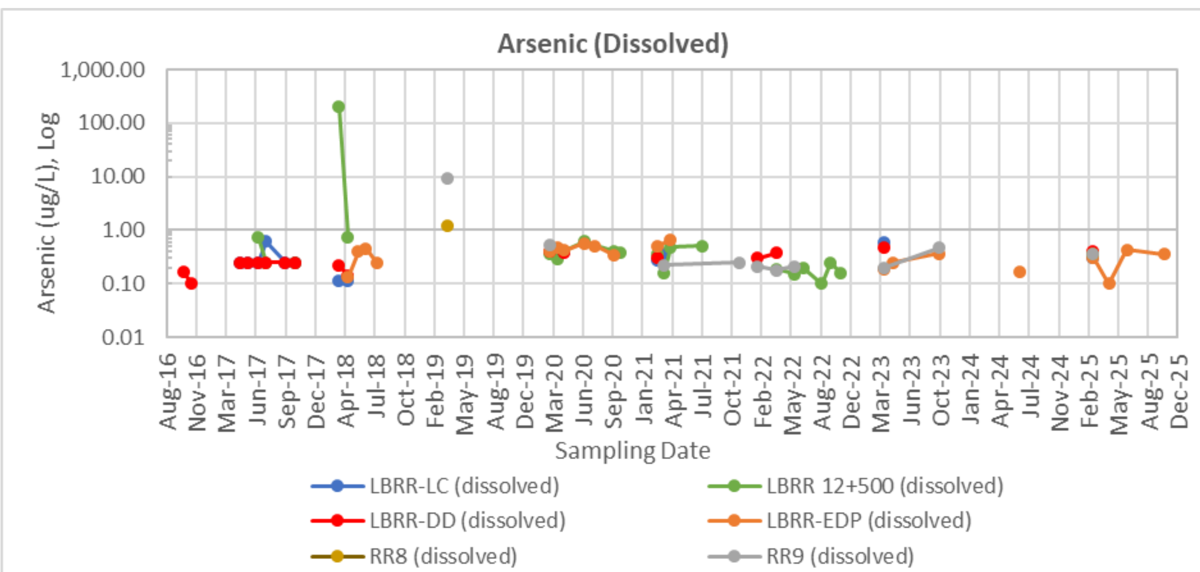


Figure 14a: Total Cadmium at River Road Locations

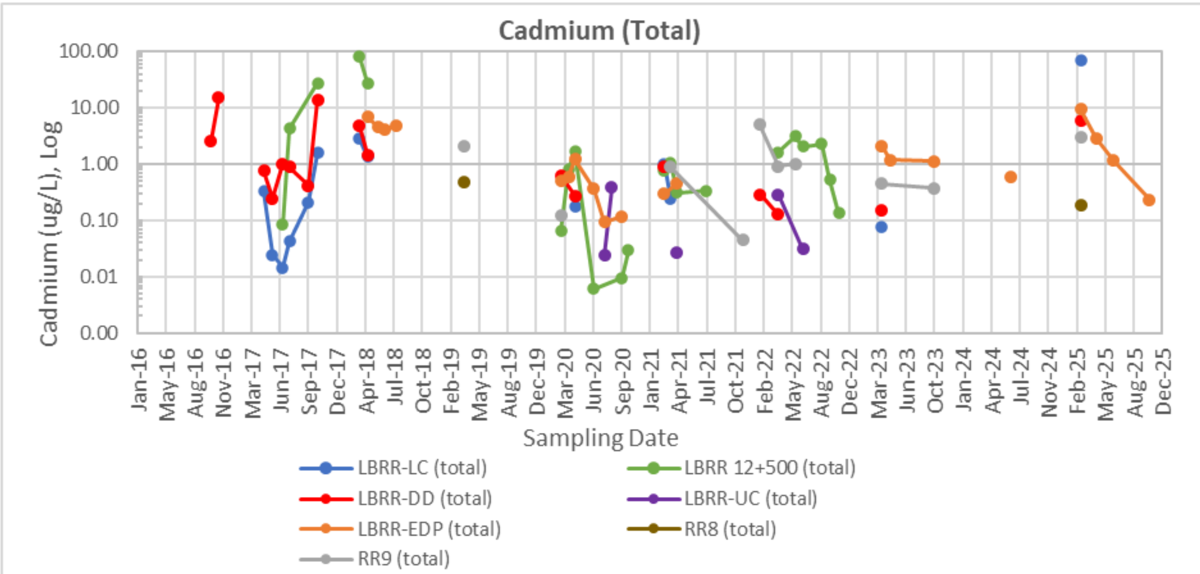


Figure 14b: Dissolved Cadmium at River Road Locations

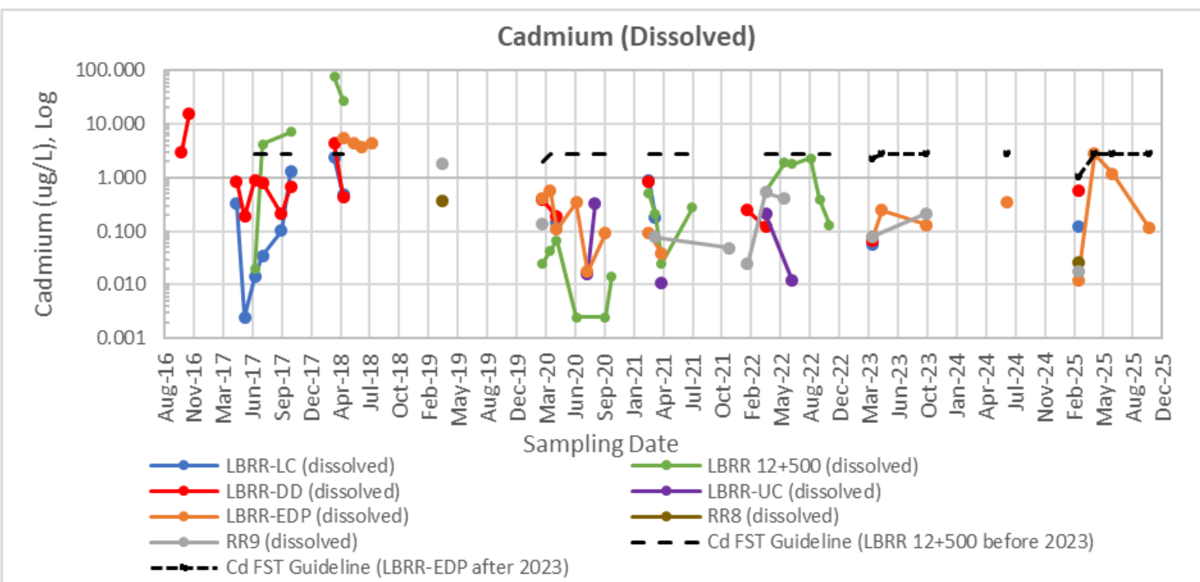


Figure 15a: Total Cobalt at River Road Locations

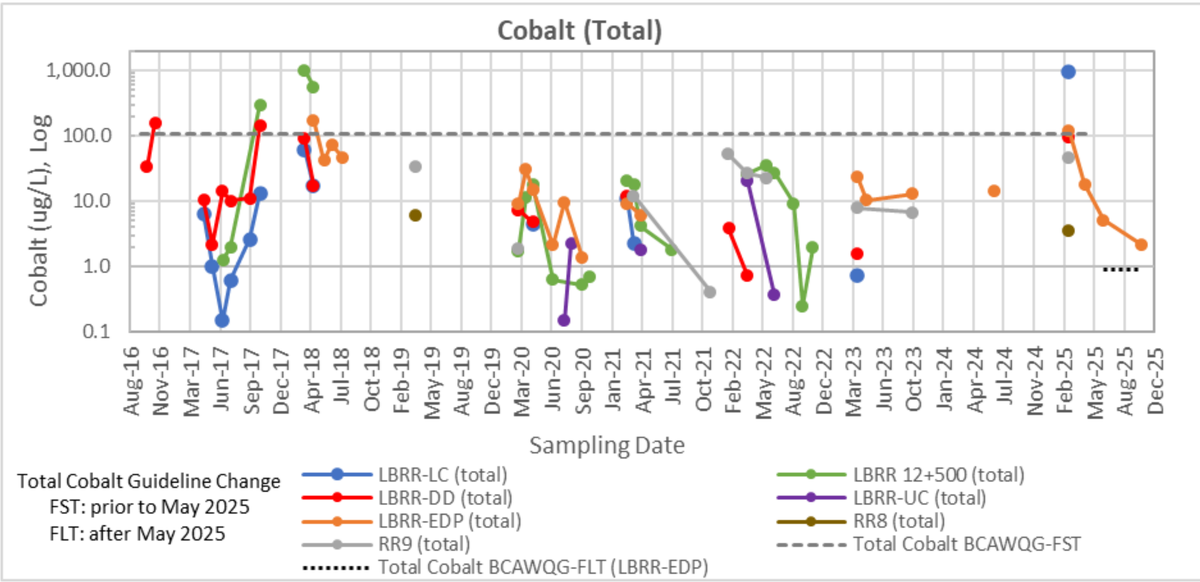


Figure 15b: Dissolved Cobalt at River Road Locations

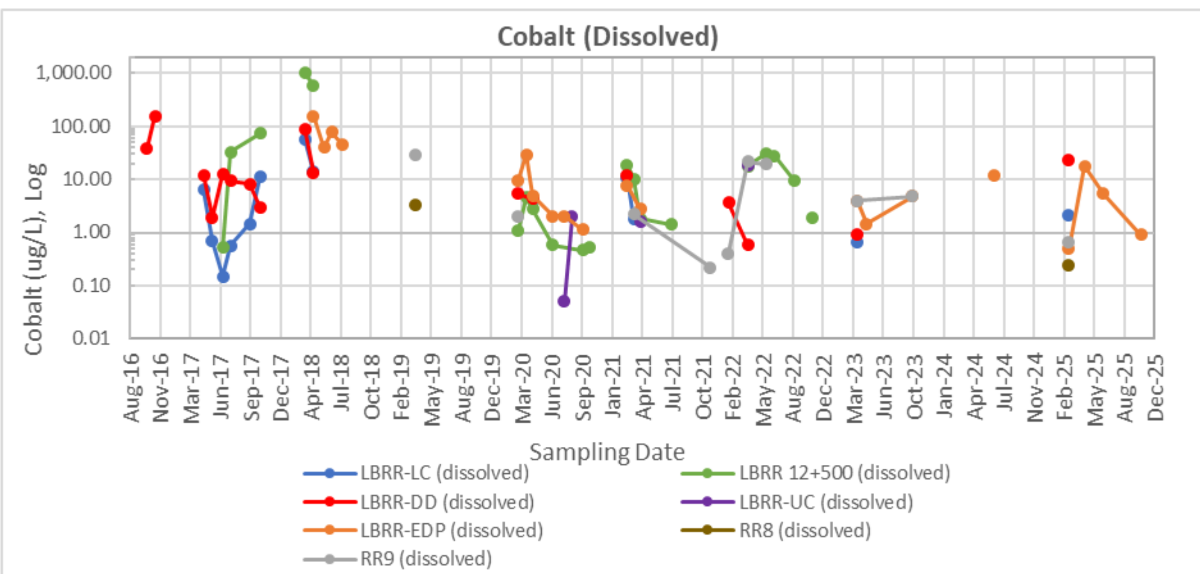


Figure 16a: Total Copper at River Road Locations

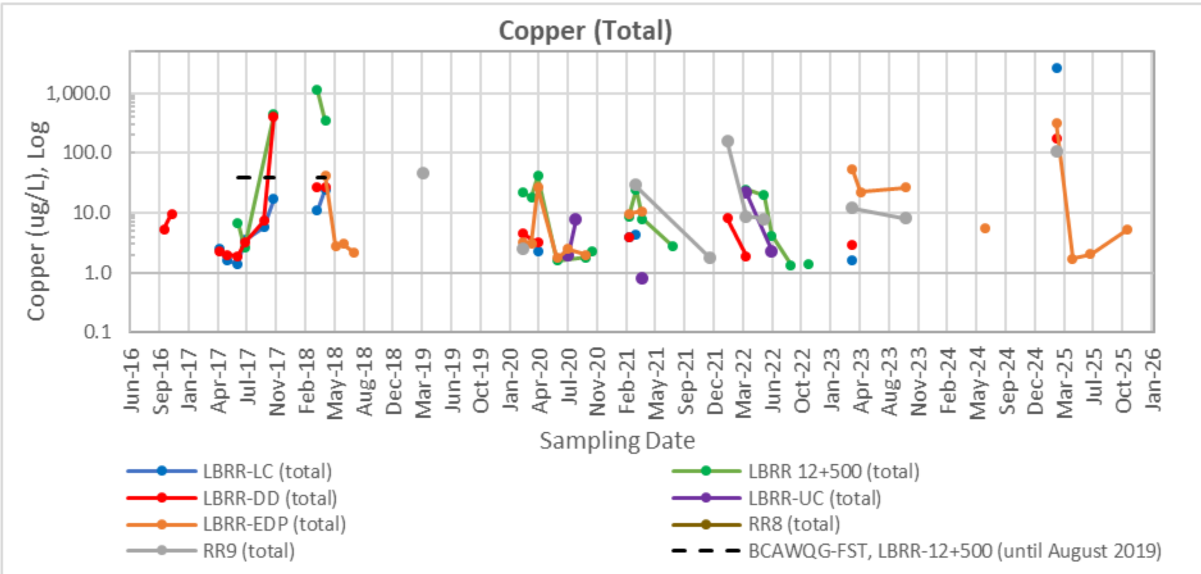


Figure 16b: Dissolved Copper at River Road Locations

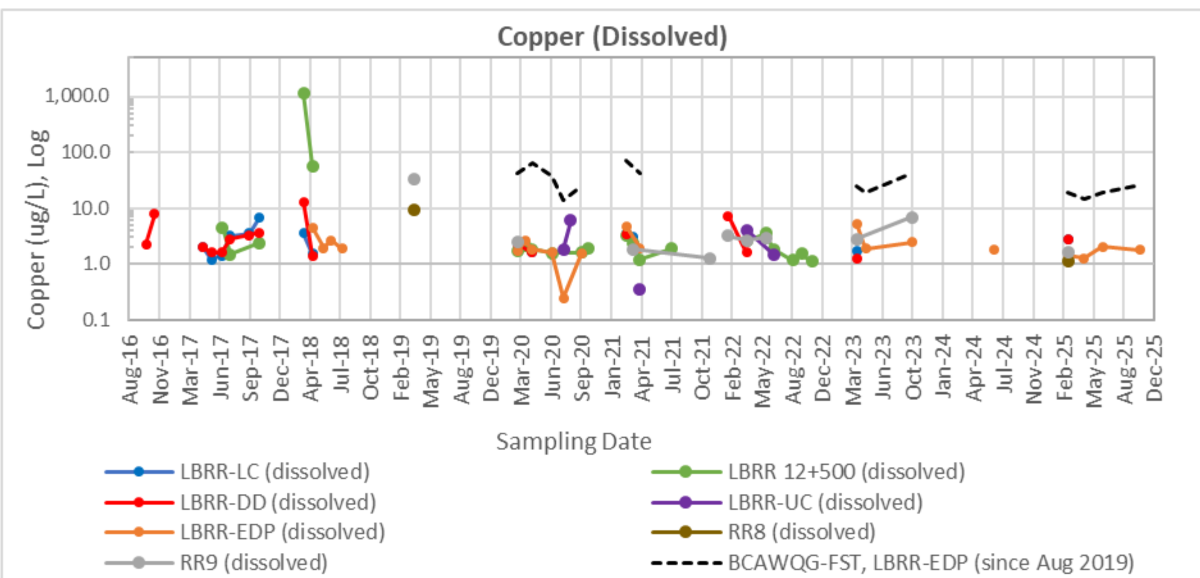


Figure 17a: Total Zinc at River Road Locations

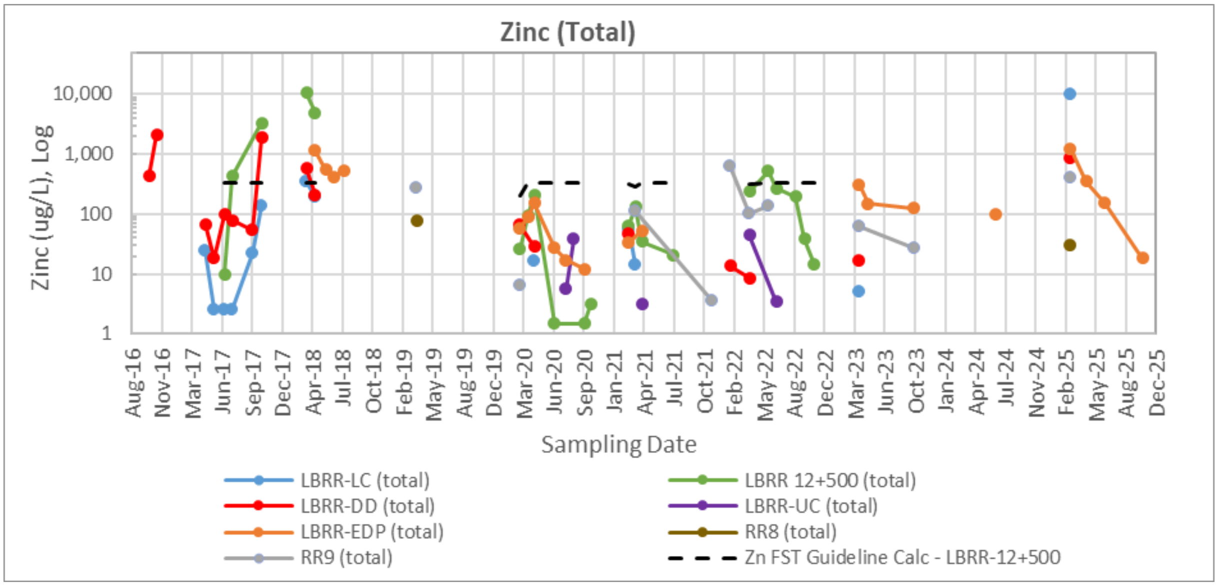
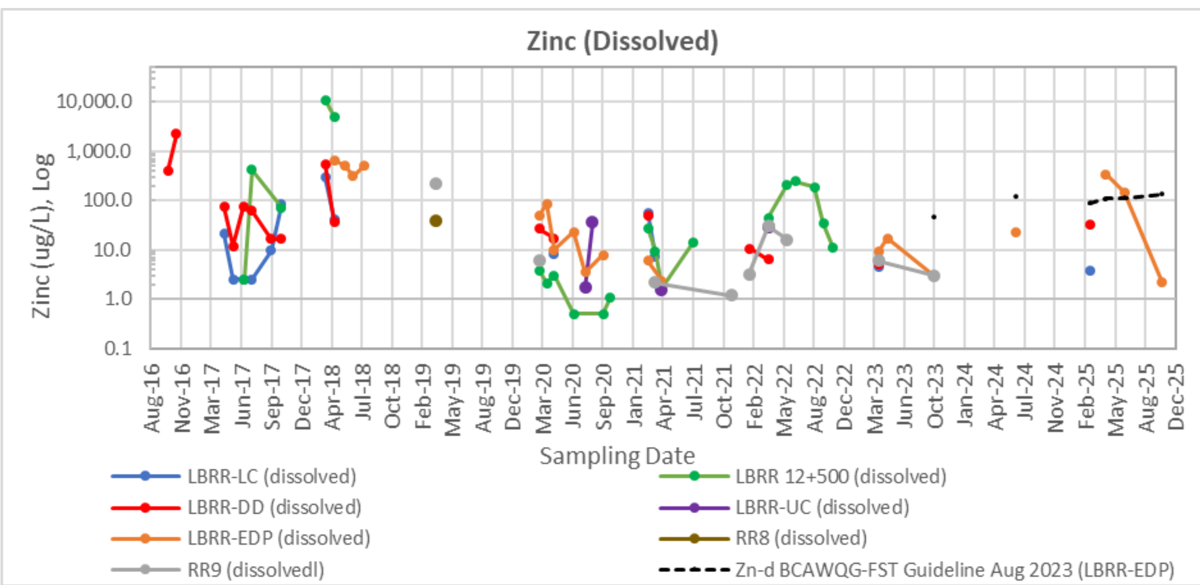


Figure 17b: Dissolved Zinc at River Road Locations



TETRA TECH

Figure 18: pH at RBSBIAR Locations

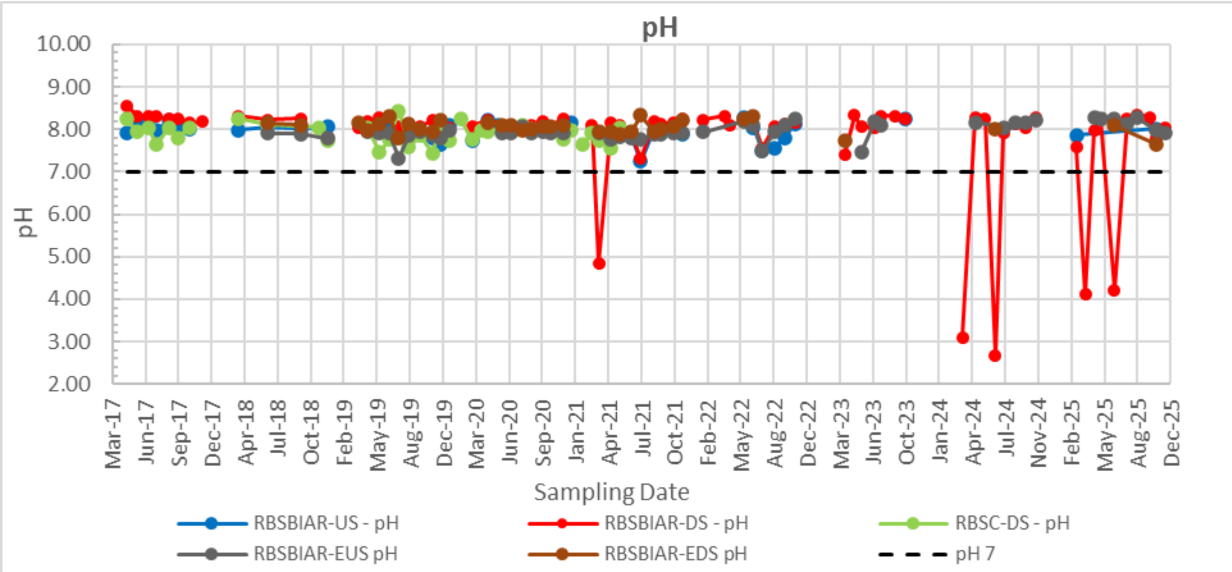


Figure 19: Total Alkalinity at RBSBIAR Locations

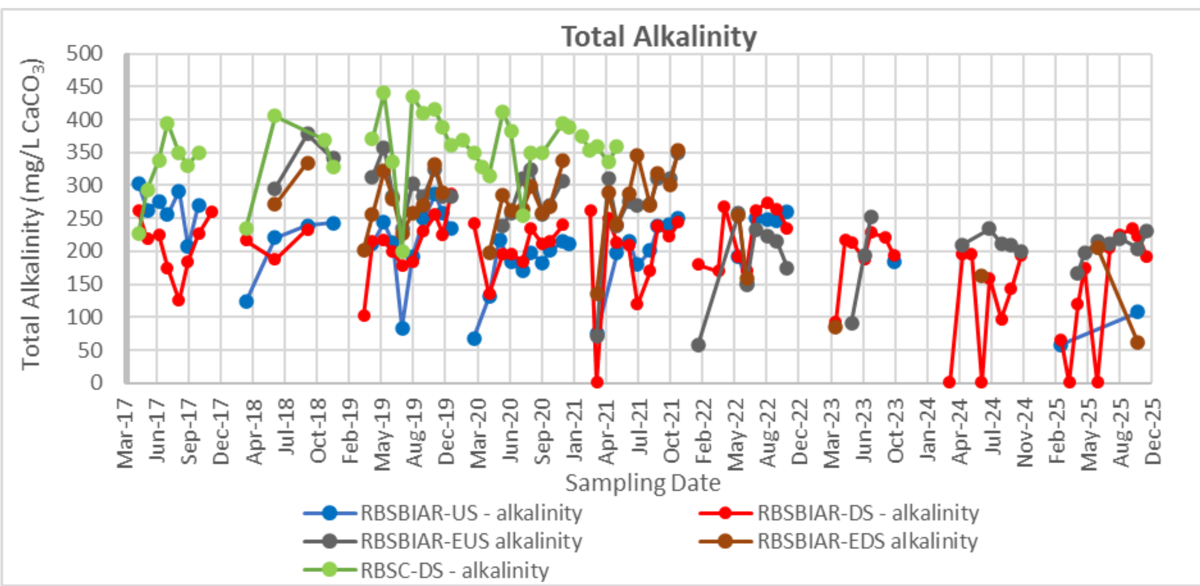


Figure 20: Acidity at RBSBIAR Locations

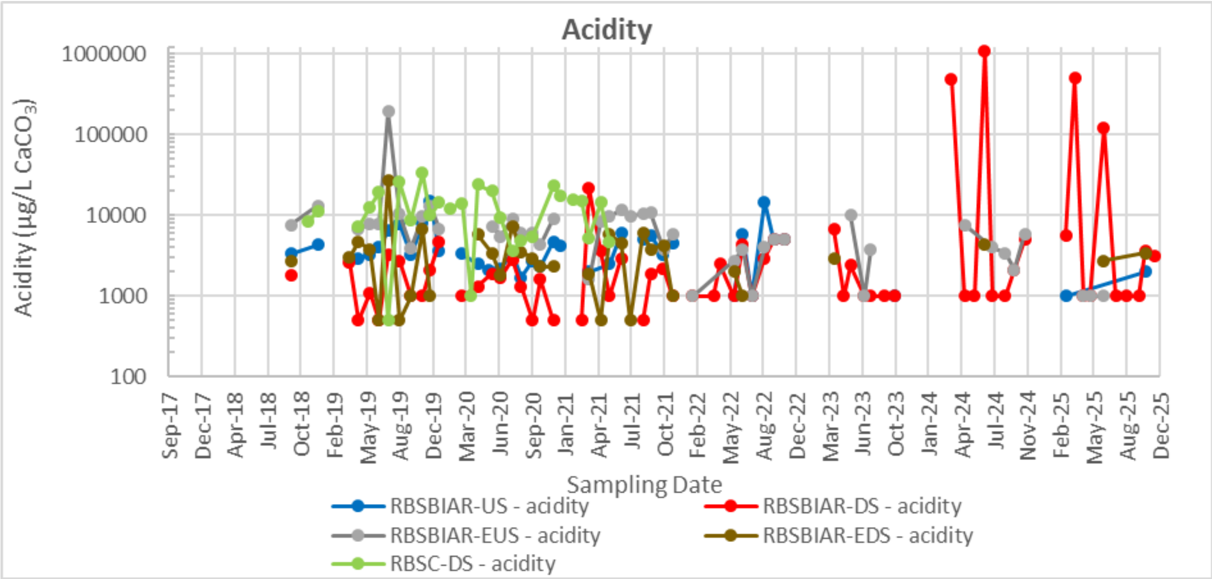


Figure 21: Sulphate at RBSBIAR Locations

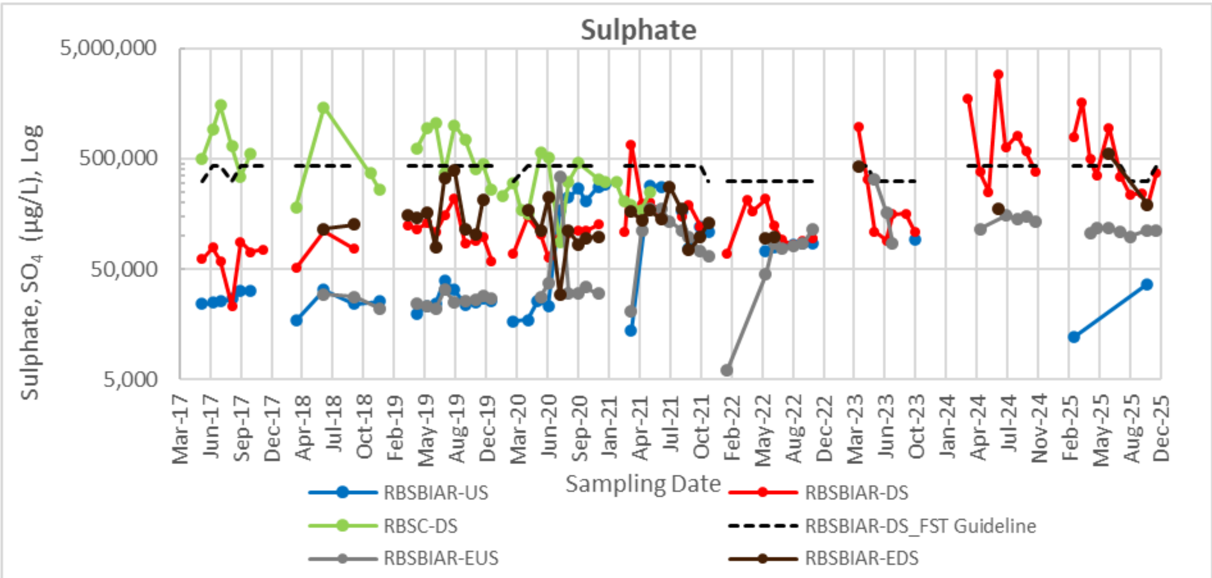


Figure 22a: TDS at RBSBIAR Locations

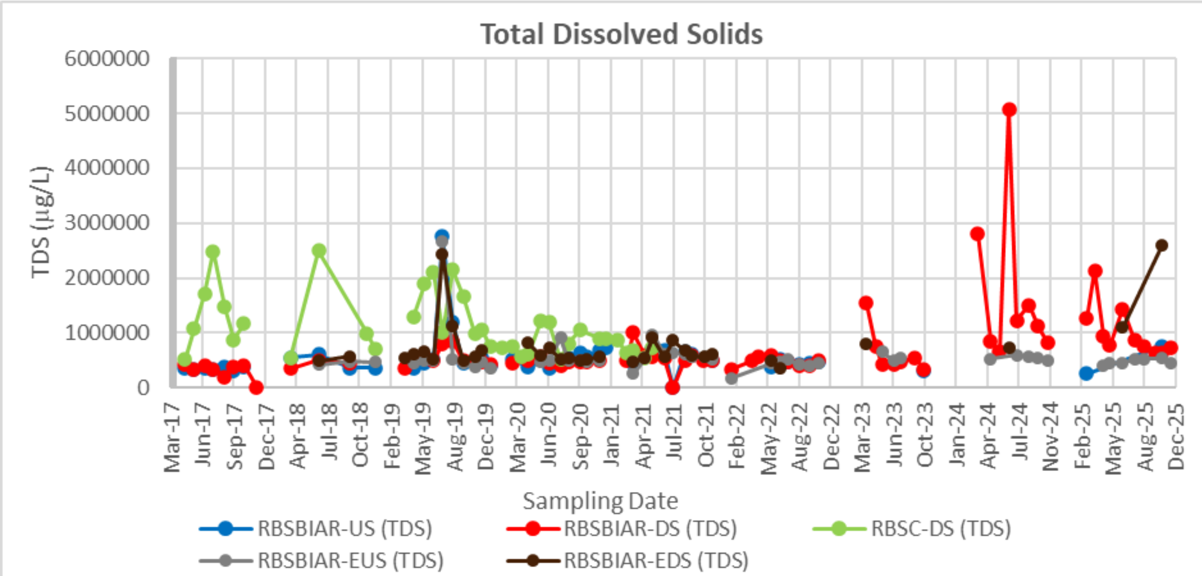


Figure 22b: TSS at RBSBIAR Locations

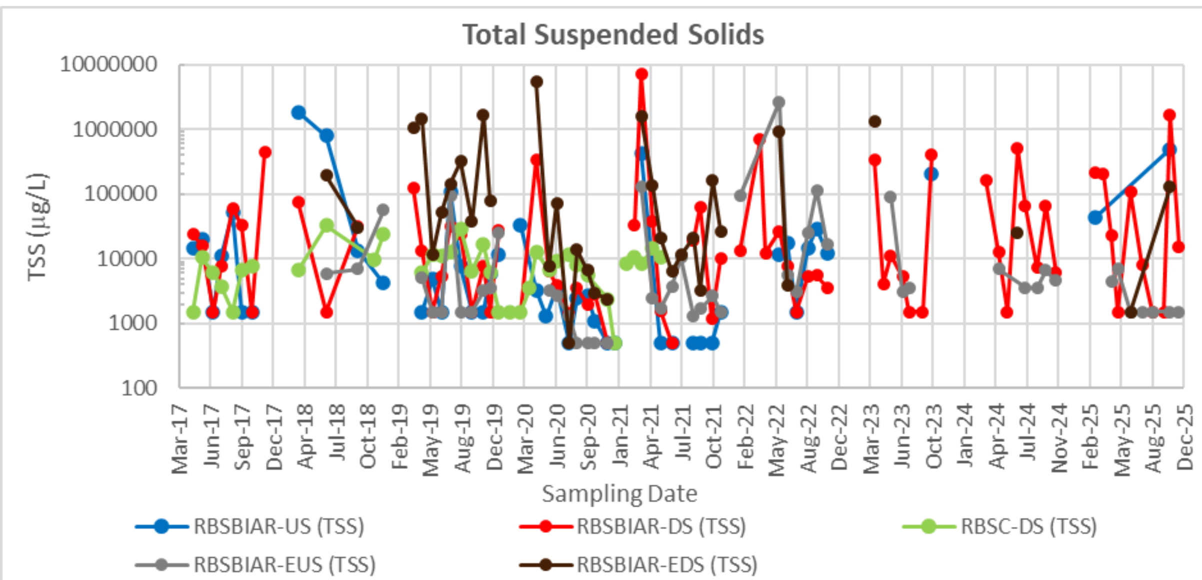


Figure 23a: Total Aluminum at RBSBIAR Locations

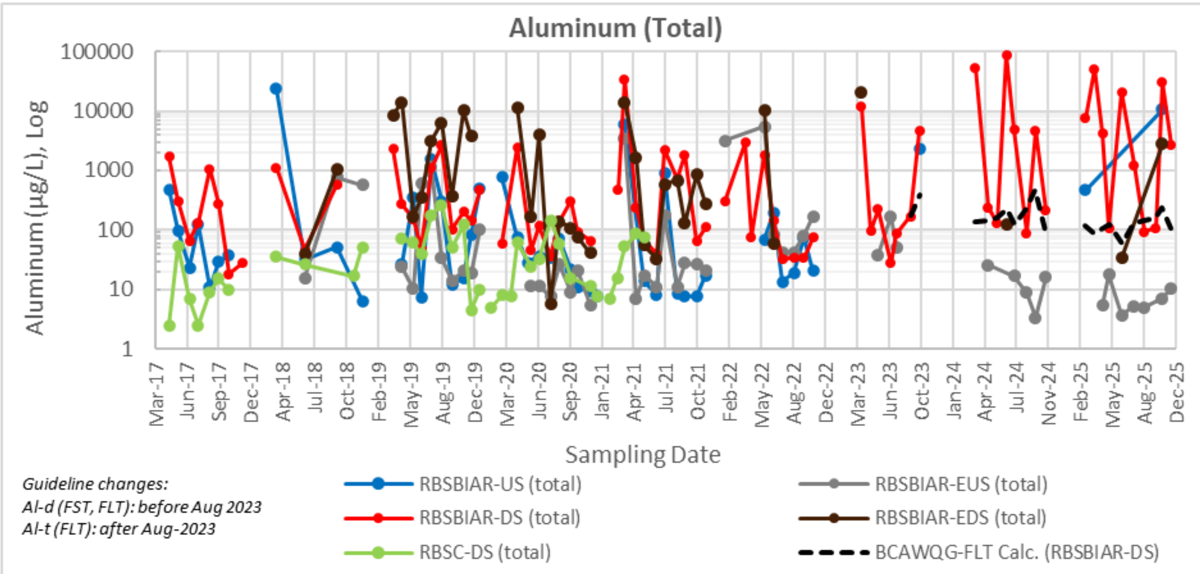
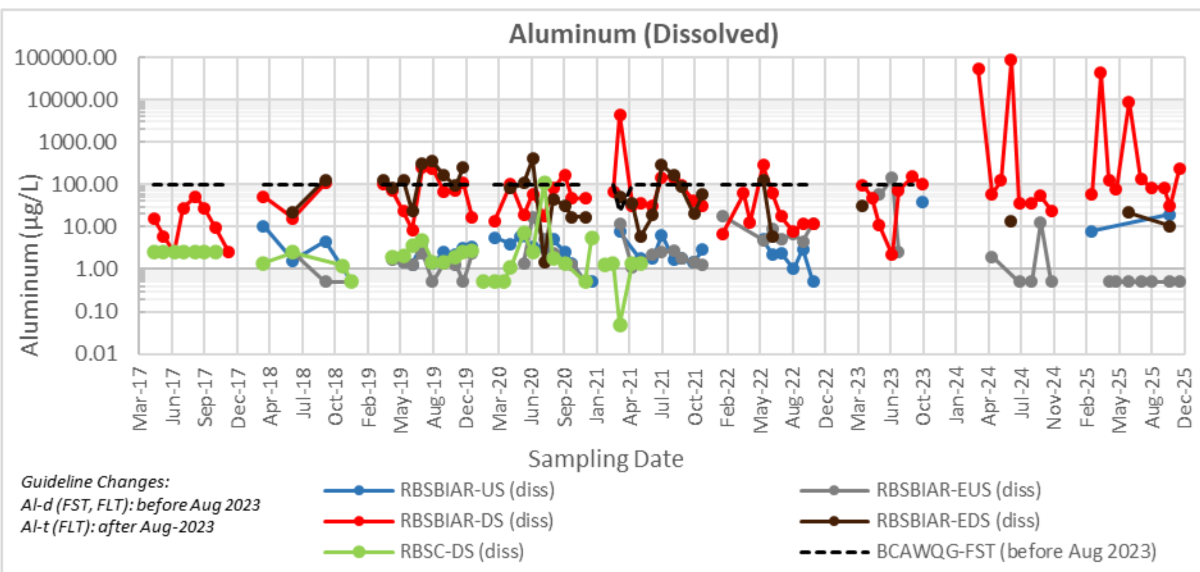


Figure 23b: Dissolved Aluminum at RBSBIAR Locations



TETRA TECH

Figure 24a: Total Iron at RBSBIAR Locations

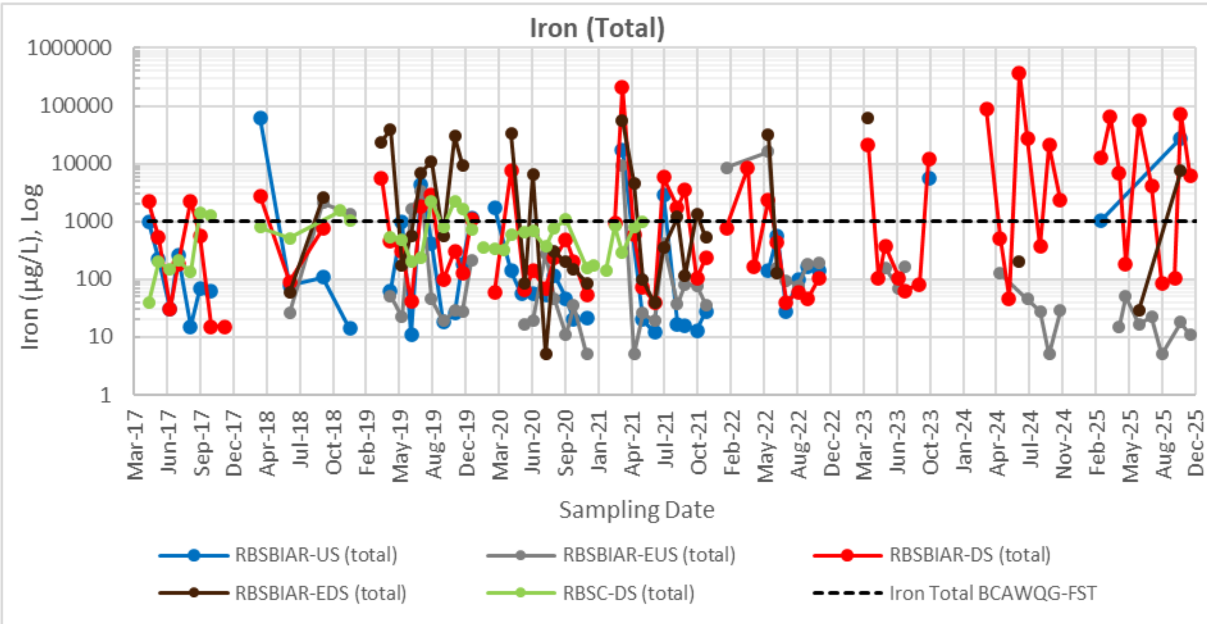


Figure 24b: Dissolved Iron at RBSBIAR Locations

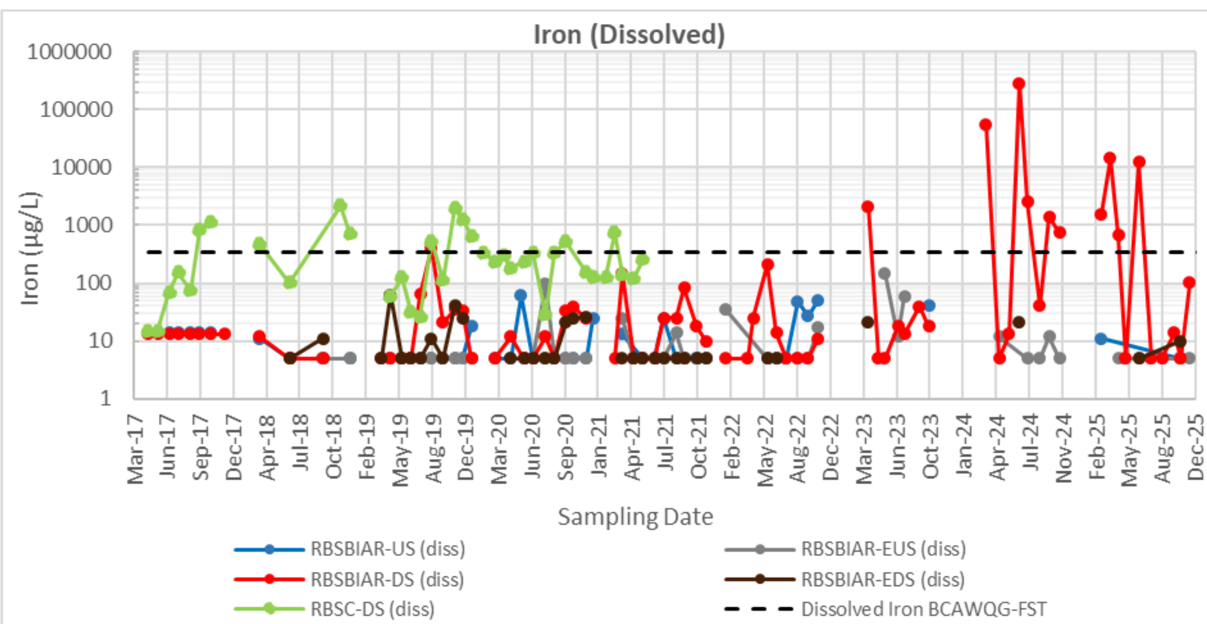


Figure 25a: Total Arsenic at RBSBIAR Locations

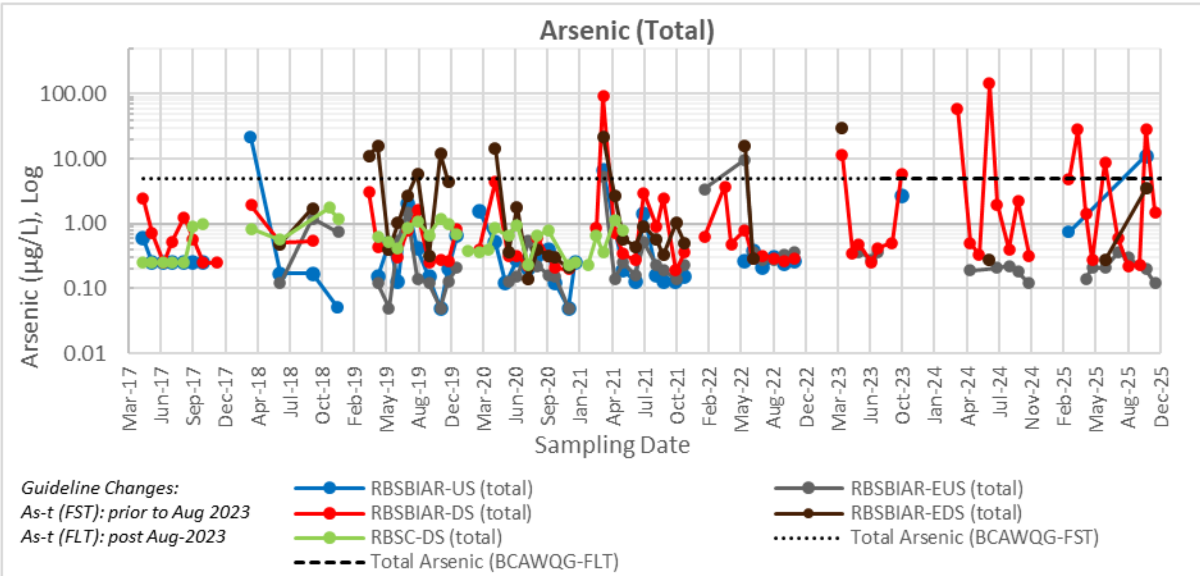


Figure 25b: Dissolved Arsenic at RBSBIAR Locations

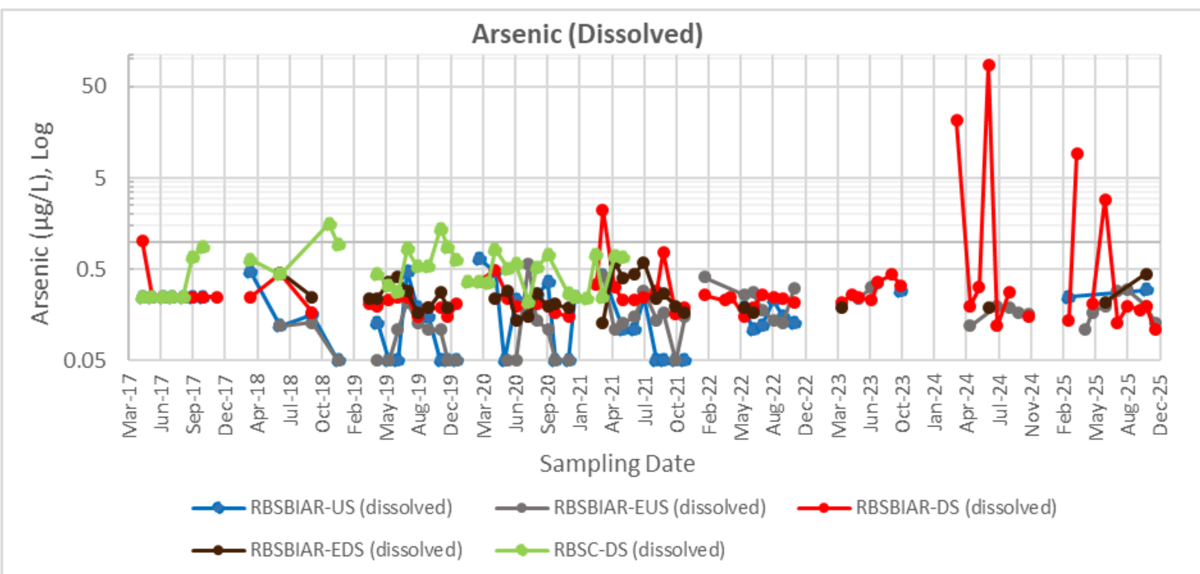


Figure 26a: Total Cadmium at RBSBIAR Locations

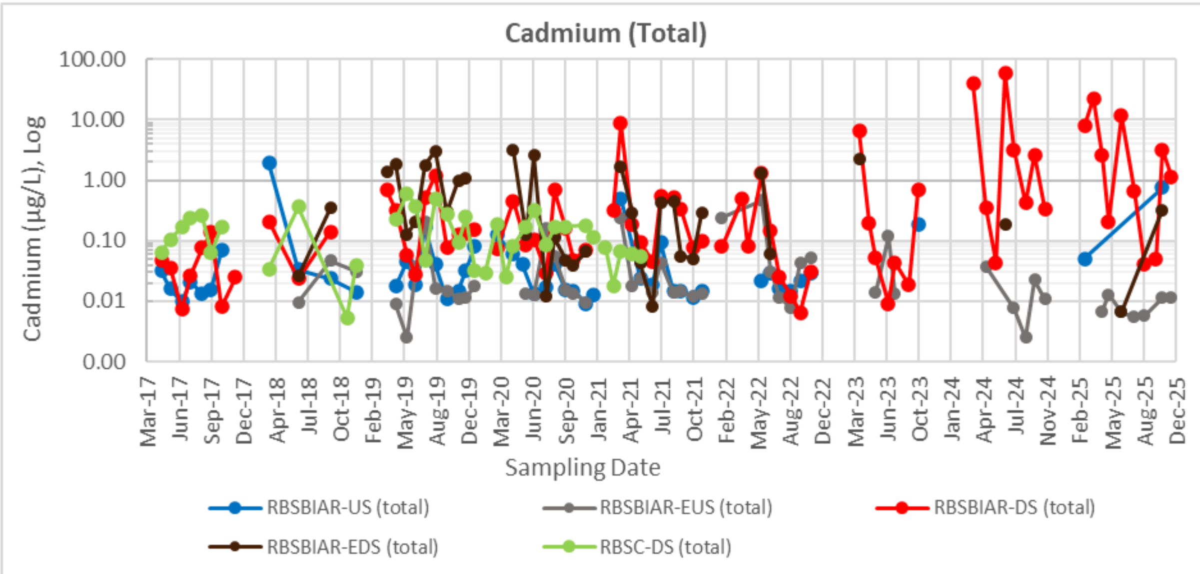


Figure 26b: Dissolved Cadmium at RBSBIAR Locations

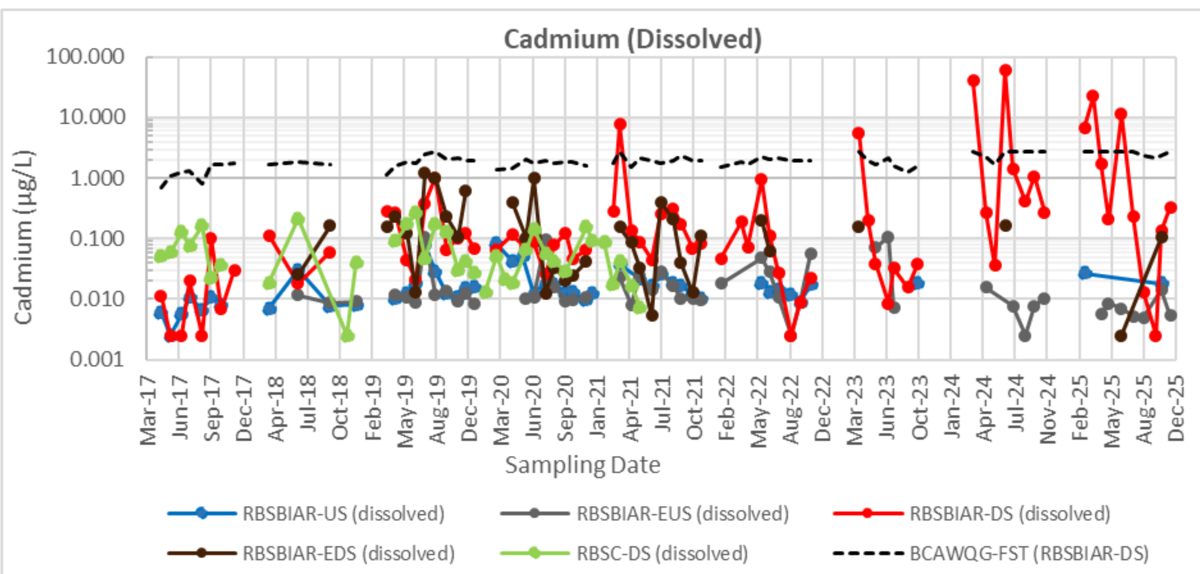


Figure 27a: Total Cobalt at RBSBIAR Locations

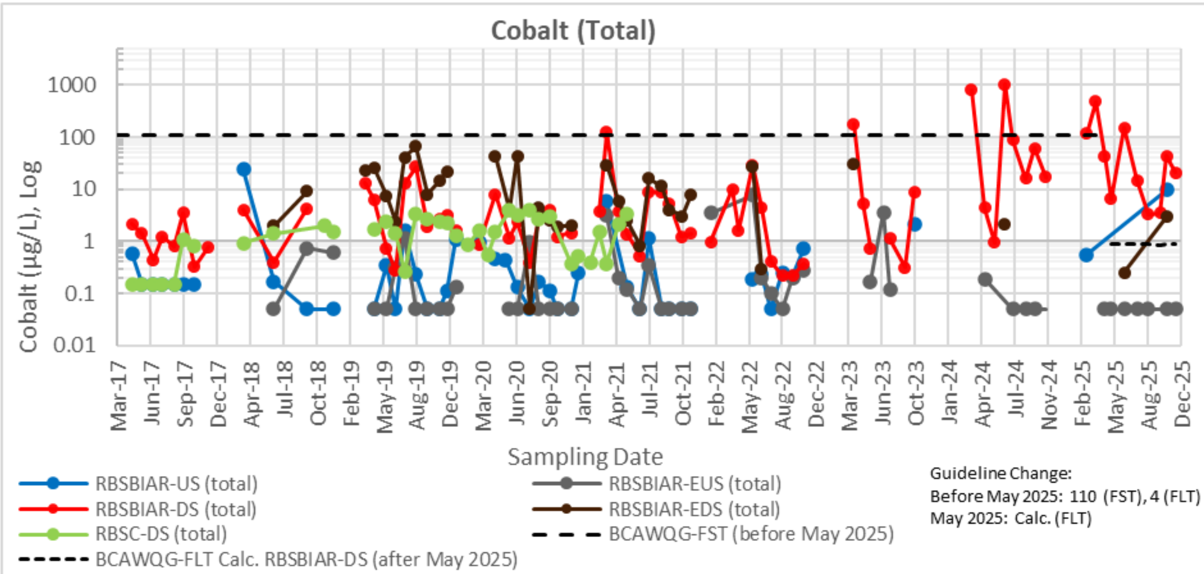


Figure 27b: Dissolved Cobalt at RBSBIAR Locations

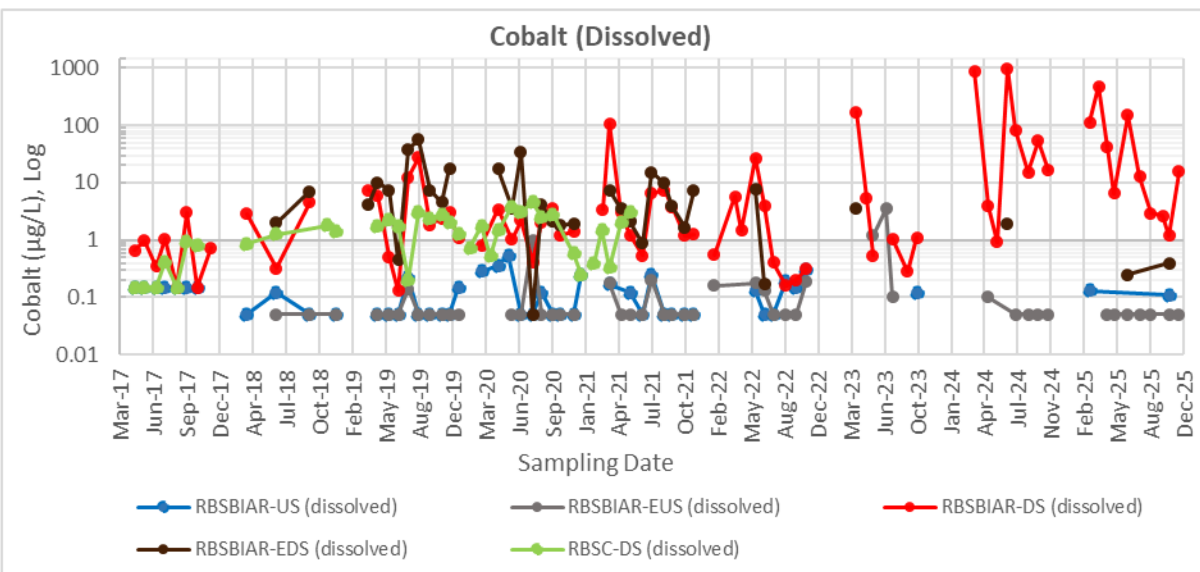


Figure 28a: Total Copper at RBSBIAR Locations

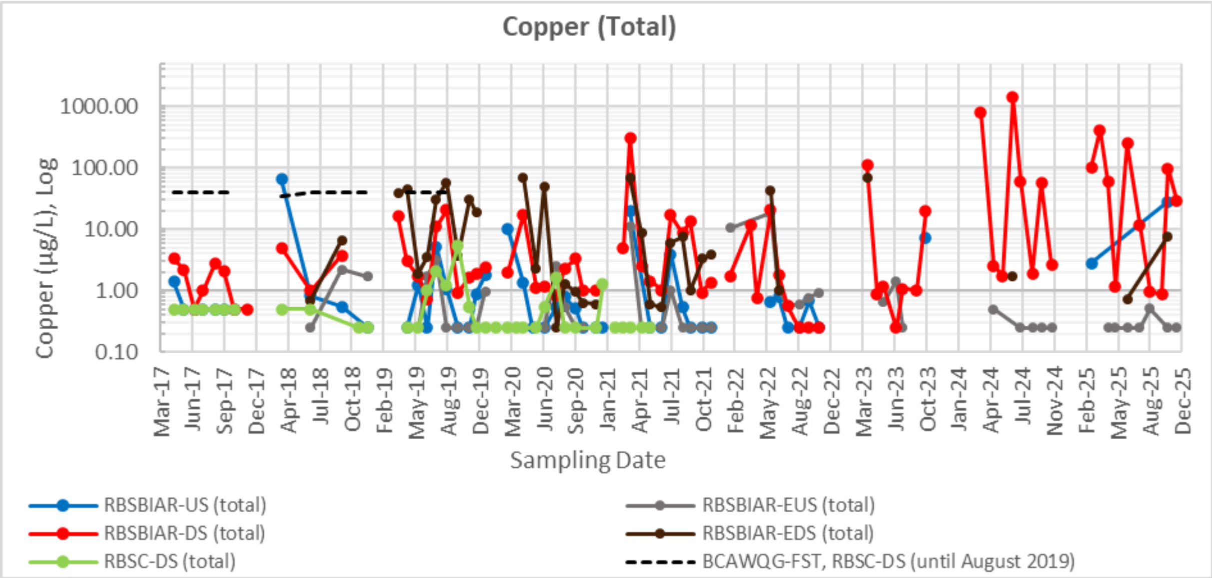


Figure 28b: Dissolved Copper at RBSBIAR Locations

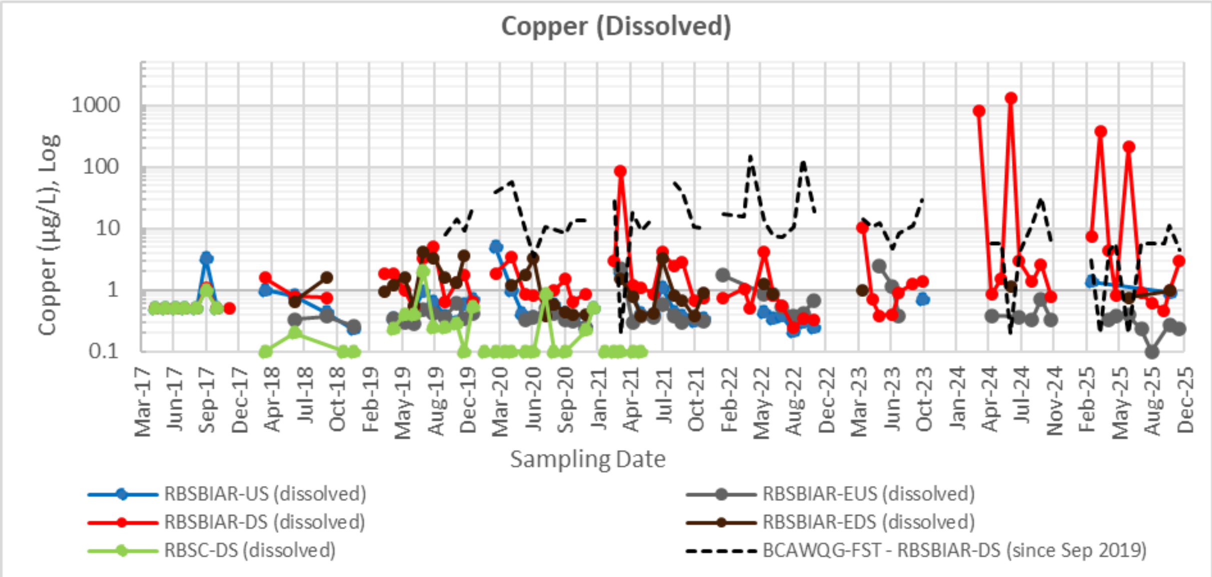


Figure 29a: Total Zinc at RBSBIAR Locations

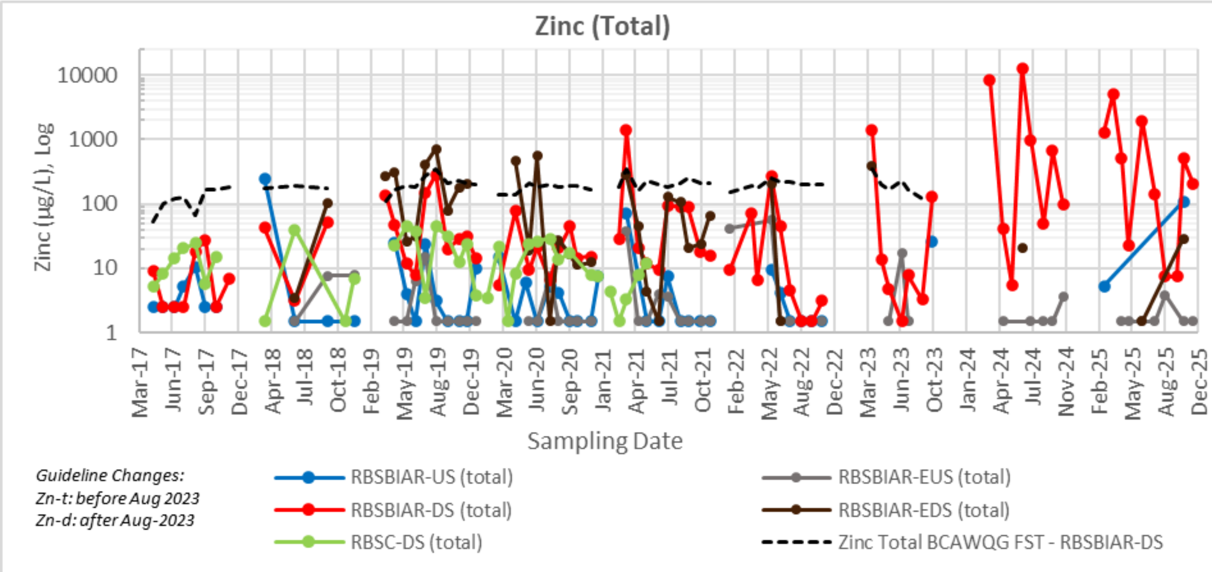


Figure 29b: Dissolved Zinc at RBSBIAR Locations

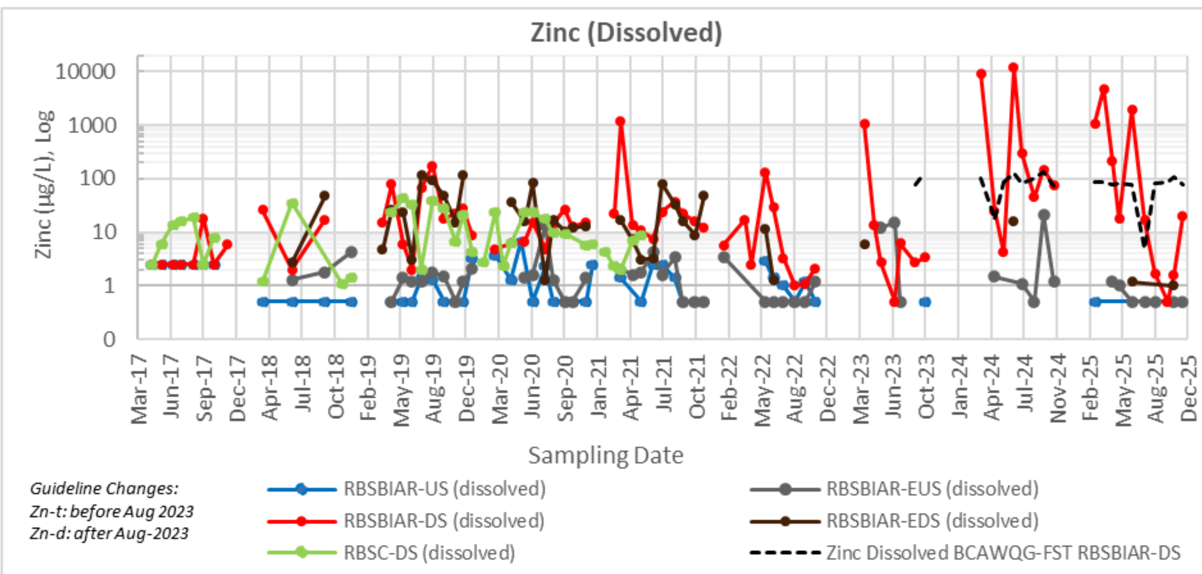


Figure 30: Total Manganese at RBSBIAR Locations

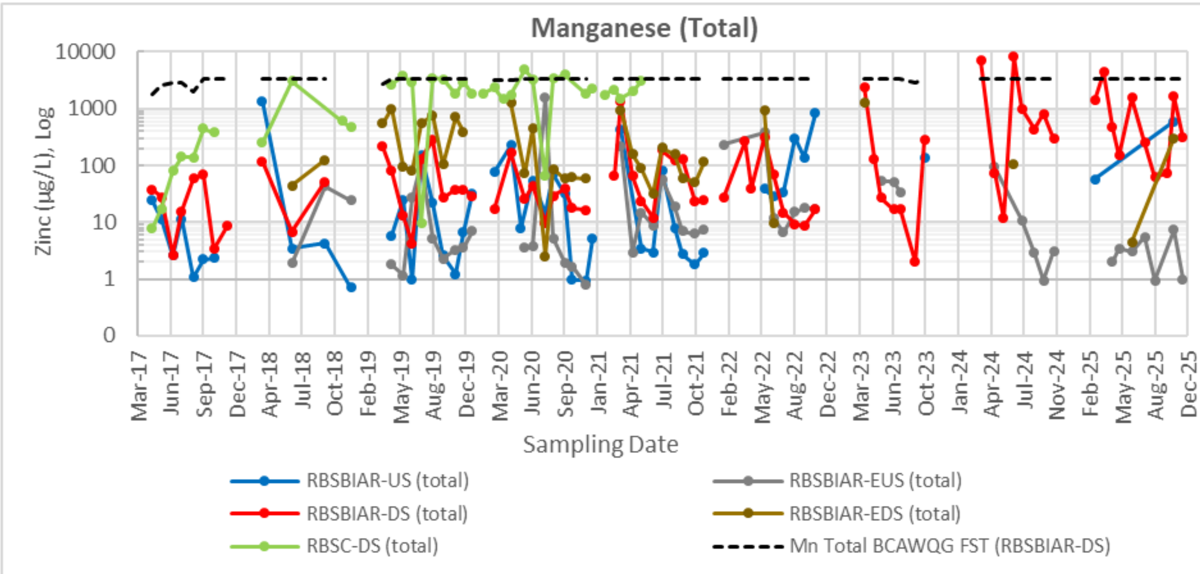


Figure 31: Ammonia at RBSBIAR Locations

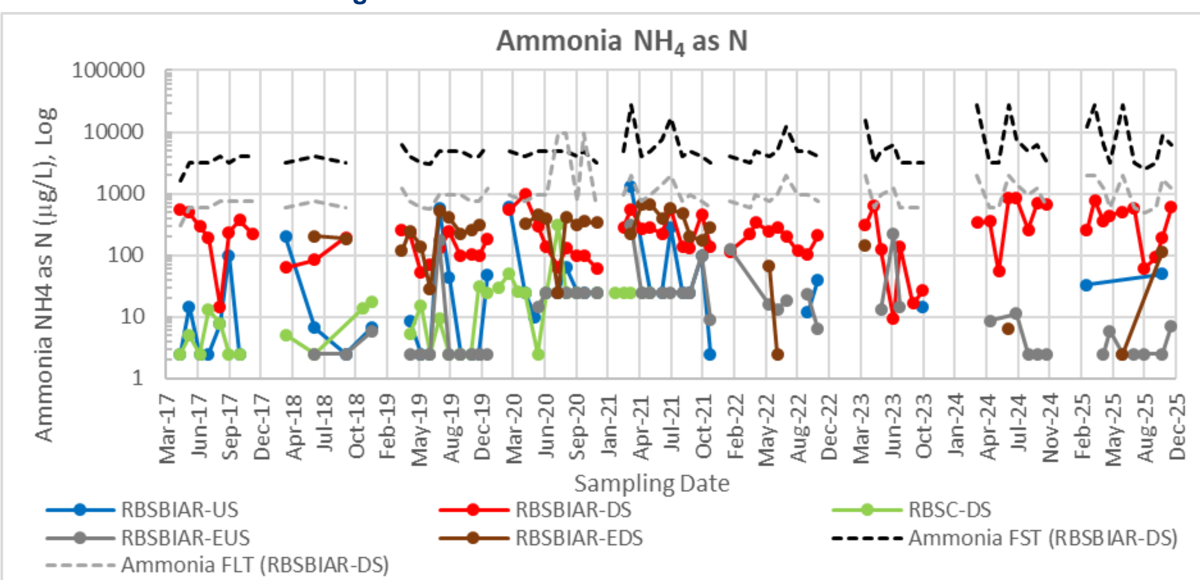


Figure 32a: Nitrite at RBSBIAR Locations

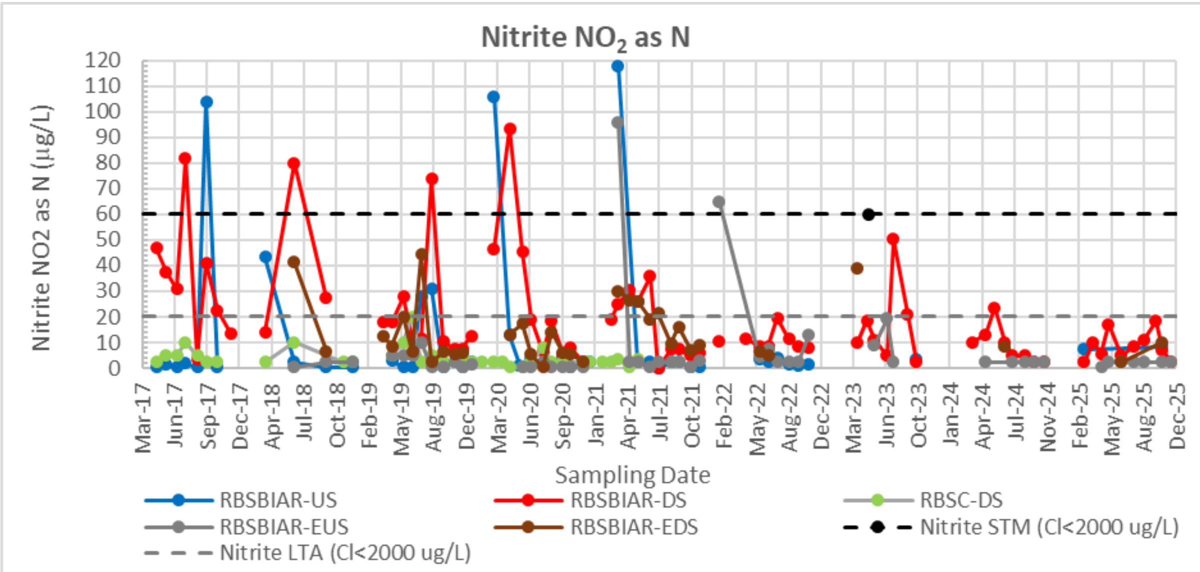


Figure 32b: Nitrate at RBSBIAR Locations

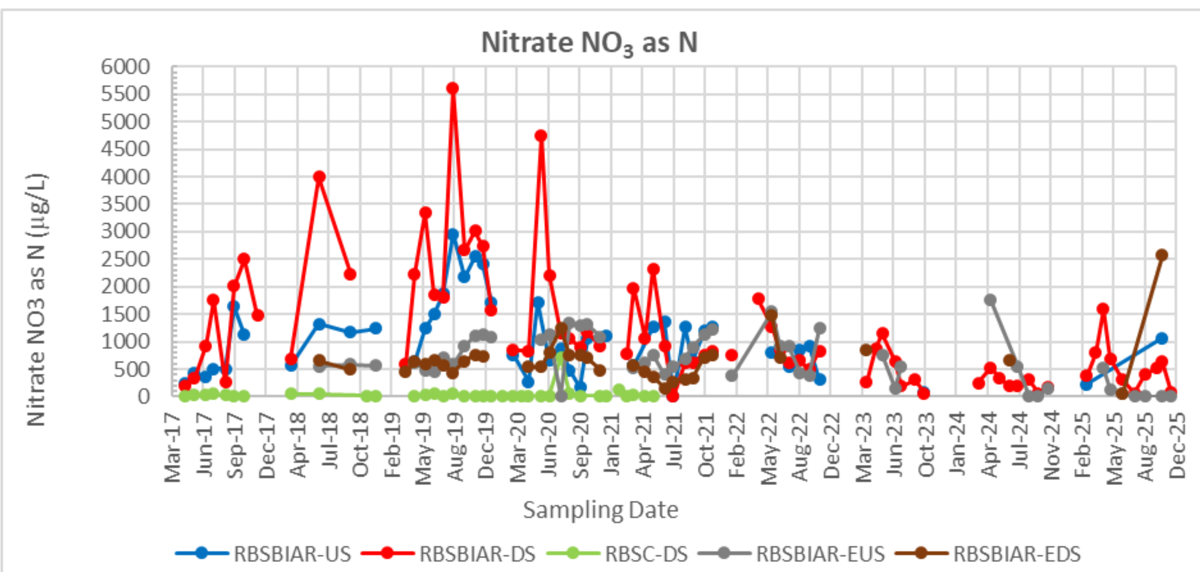


Figure 33a: Total Selenium at RBSBIAR Locations

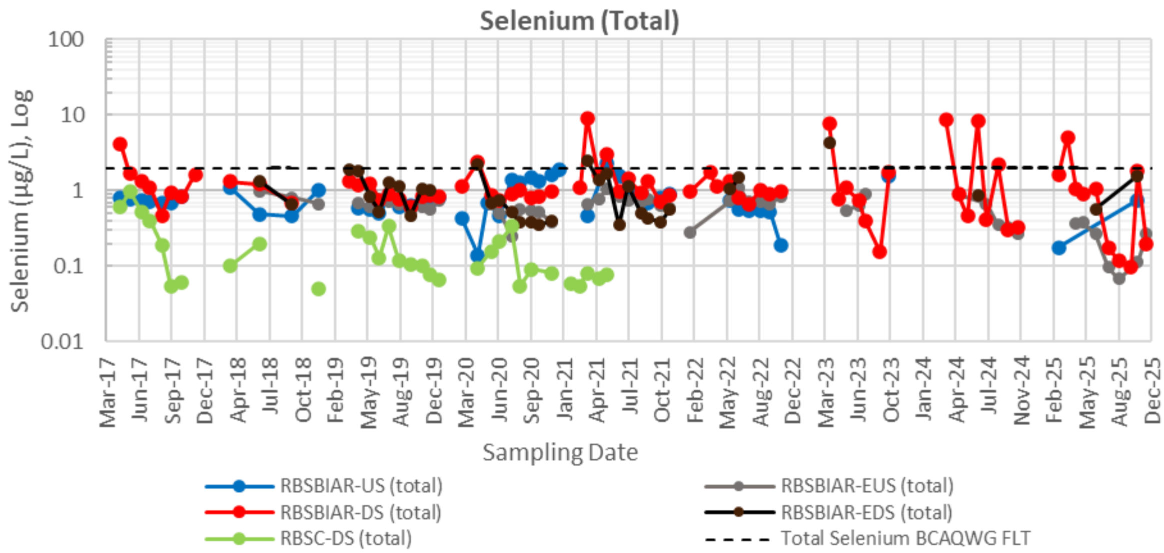


Figure 33b: Dissolved Selenium at RBSBIAR Locations

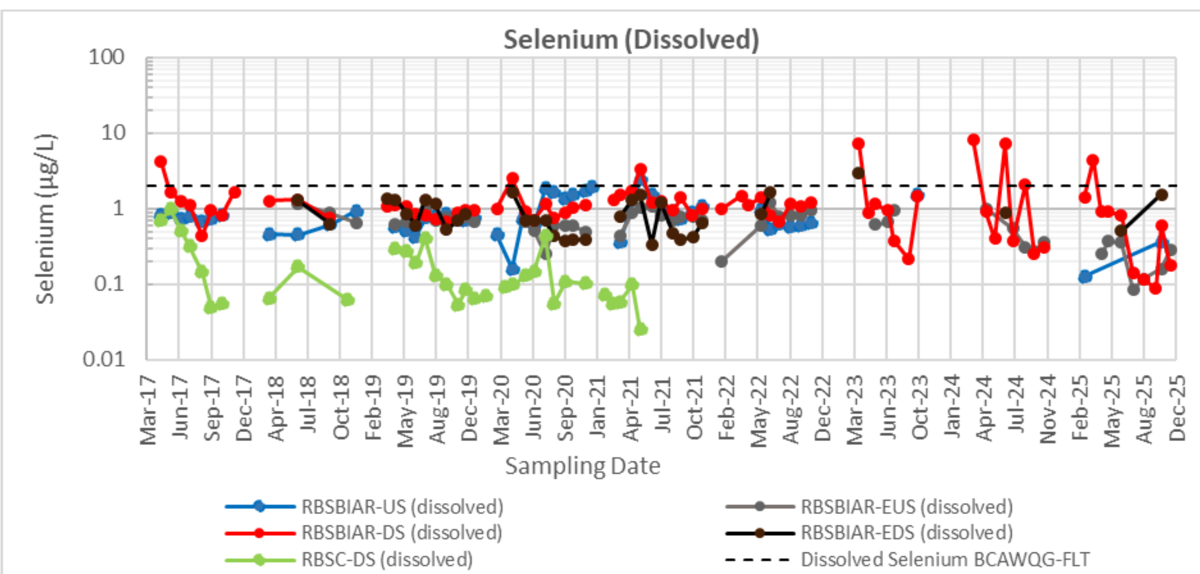


Figure 34: pH at RBDT-Sump

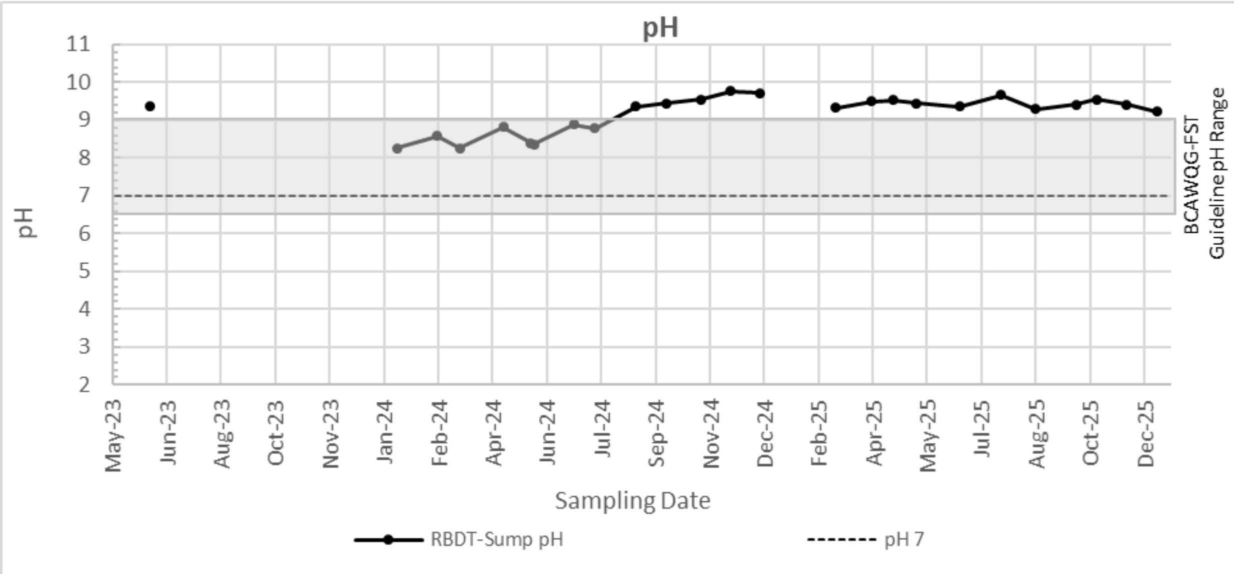


Figure 35: Total Alkalinity at RBDT-Sump

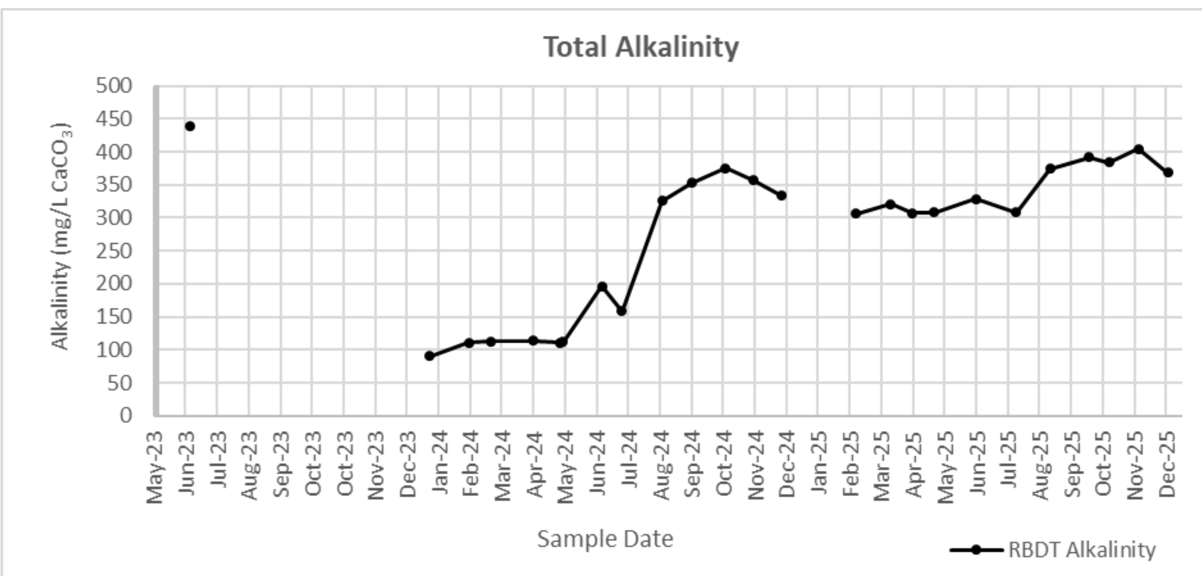


Figure 36: Acidity at RBDT-Sump

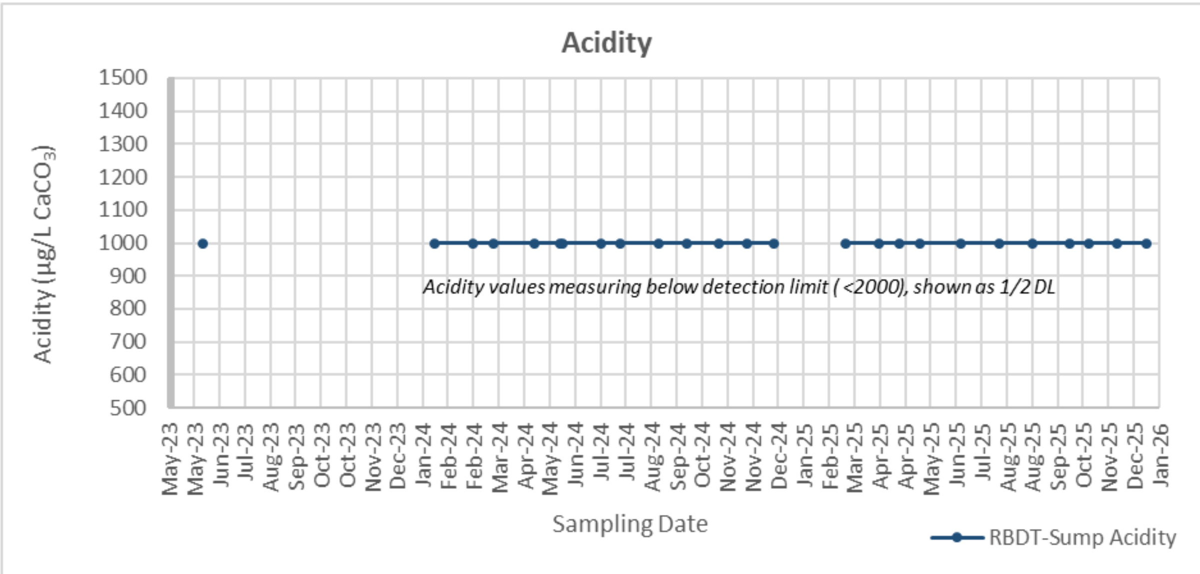


Figure 37: Sulphate at RBDT-Sump

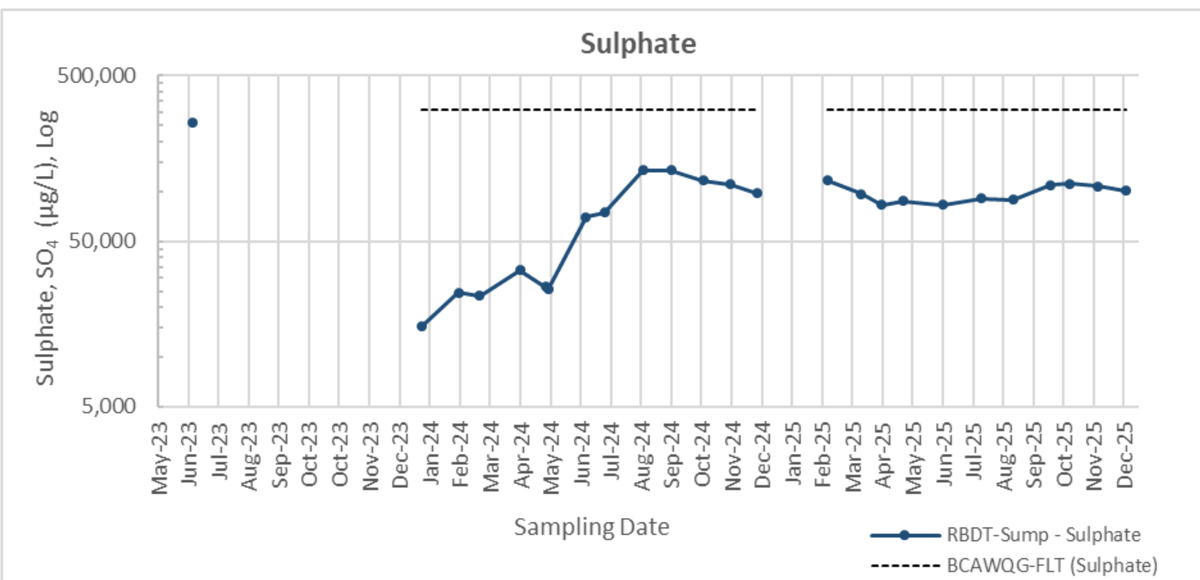


Figure 38a: TDS at RBDT-Sump

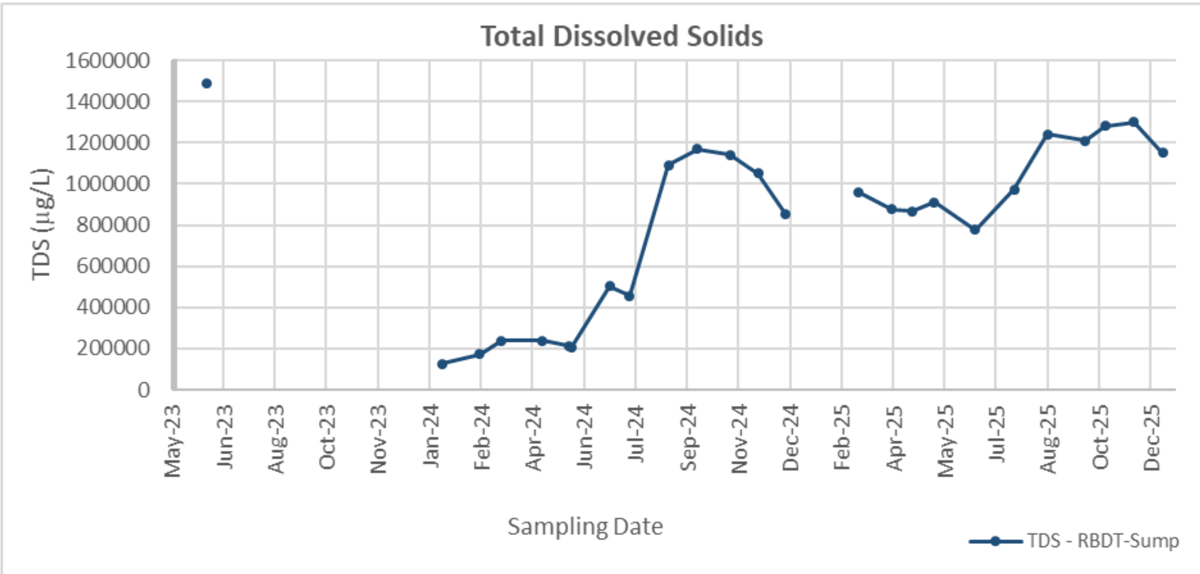


Figure 38b: TSS at RBDT-Sump

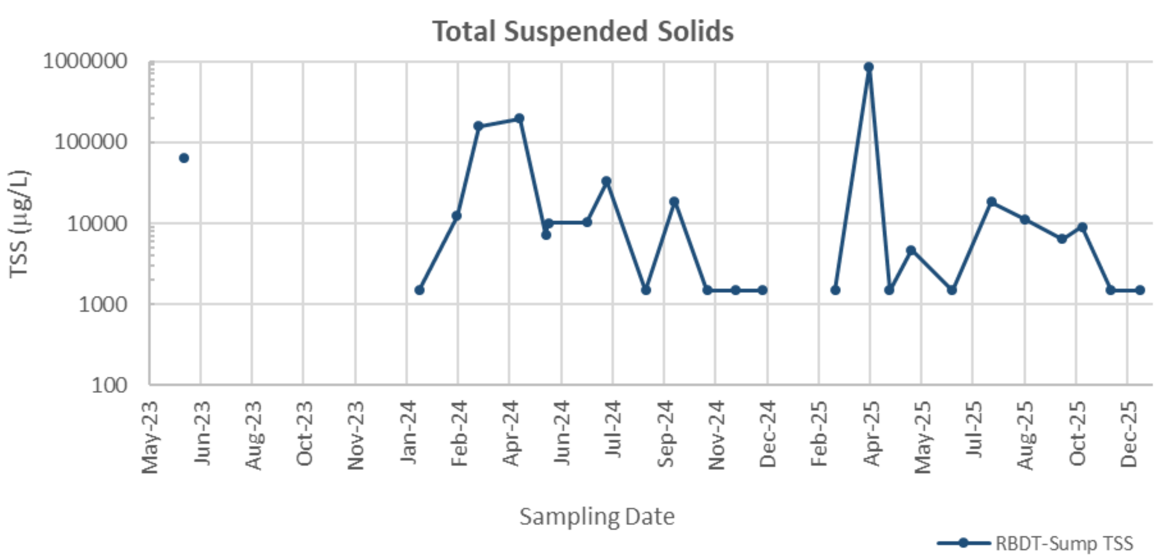


Figure 39: Ammonia at RBDT-Sump

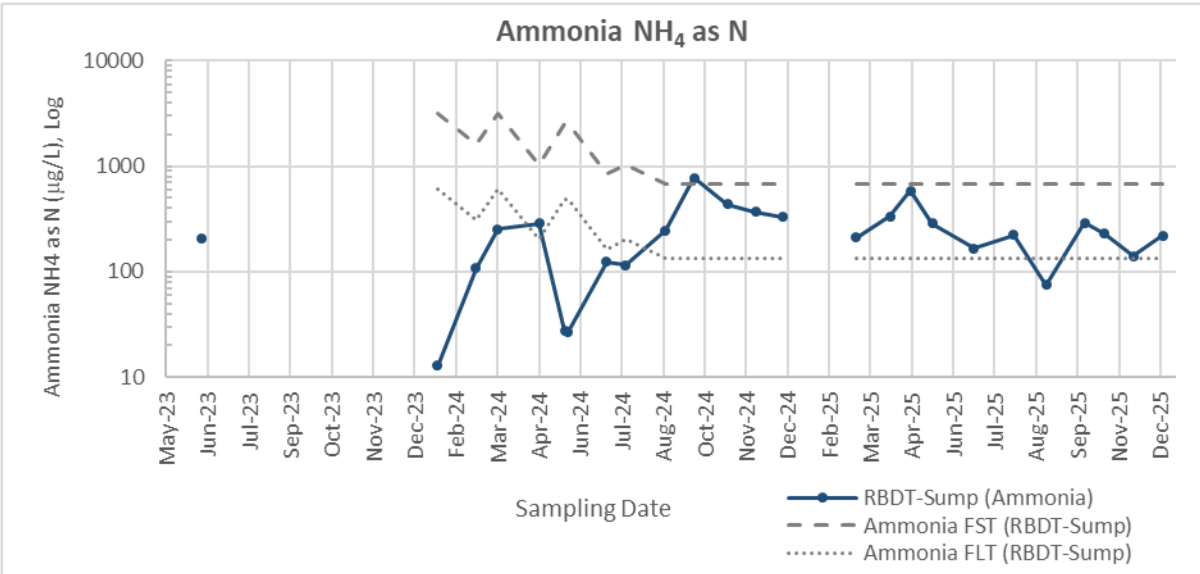


Figure 40a: Nitrate at RBDT-Sump

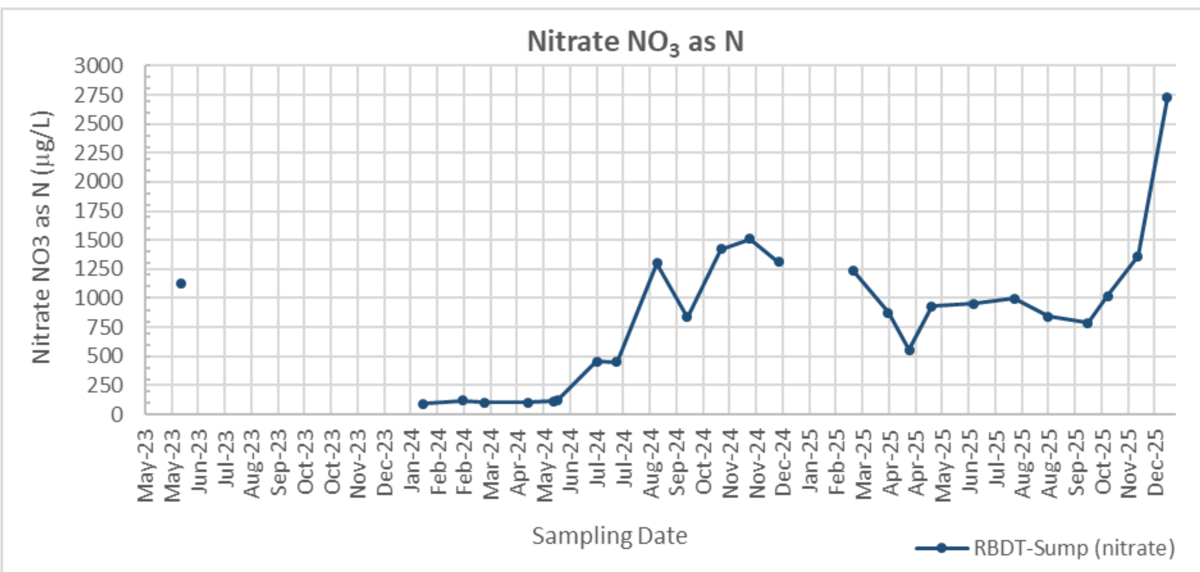


Figure 40b: Nitrite at RBDT-Sump

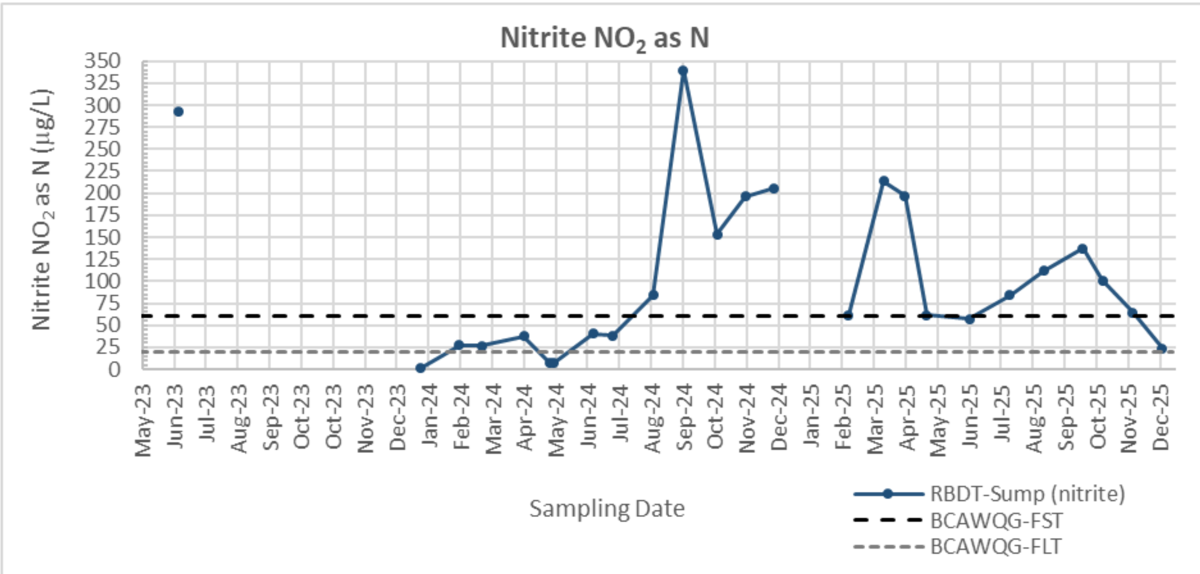


Figure 41a: Total Aluminum at RBDT-Sump

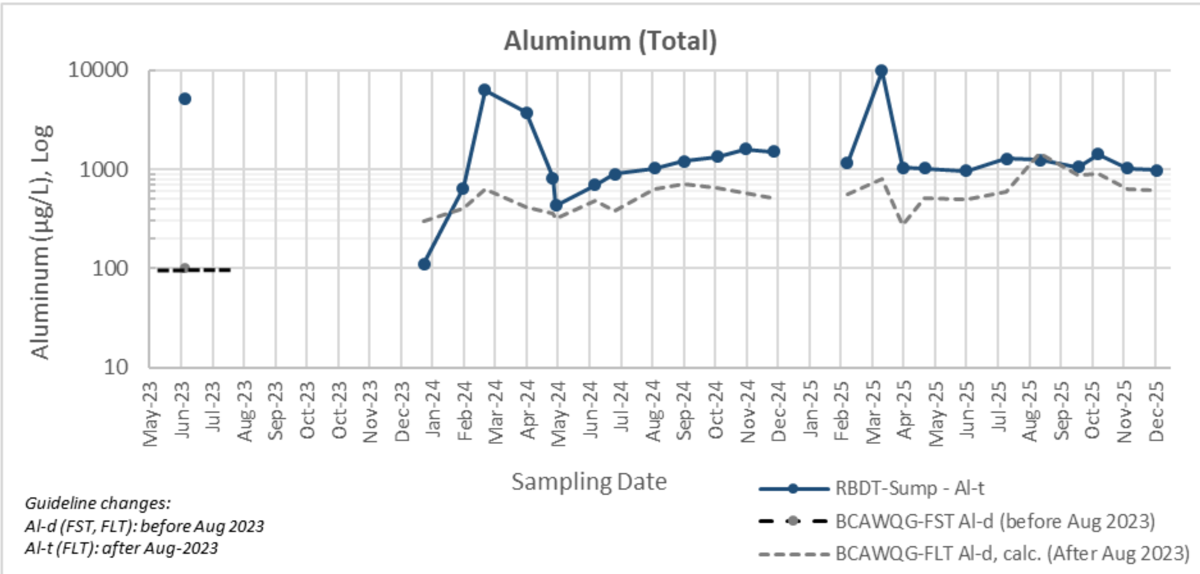


Figure 41b: Dissolved Aluminum at RBDT-Sump

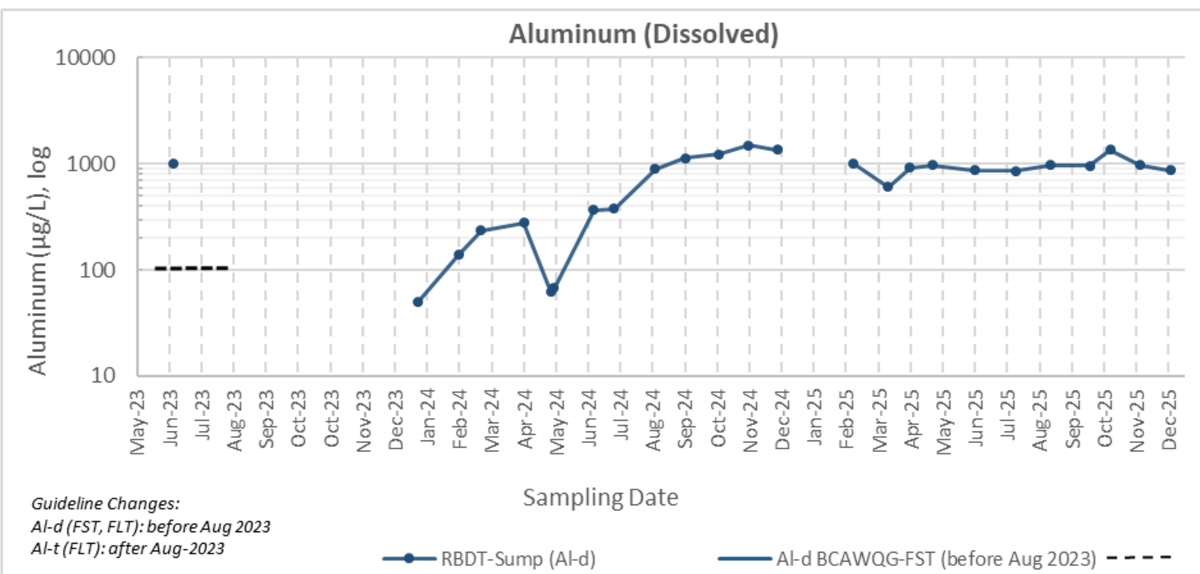


Figure 42a: Total Iron at RBDT-Sump

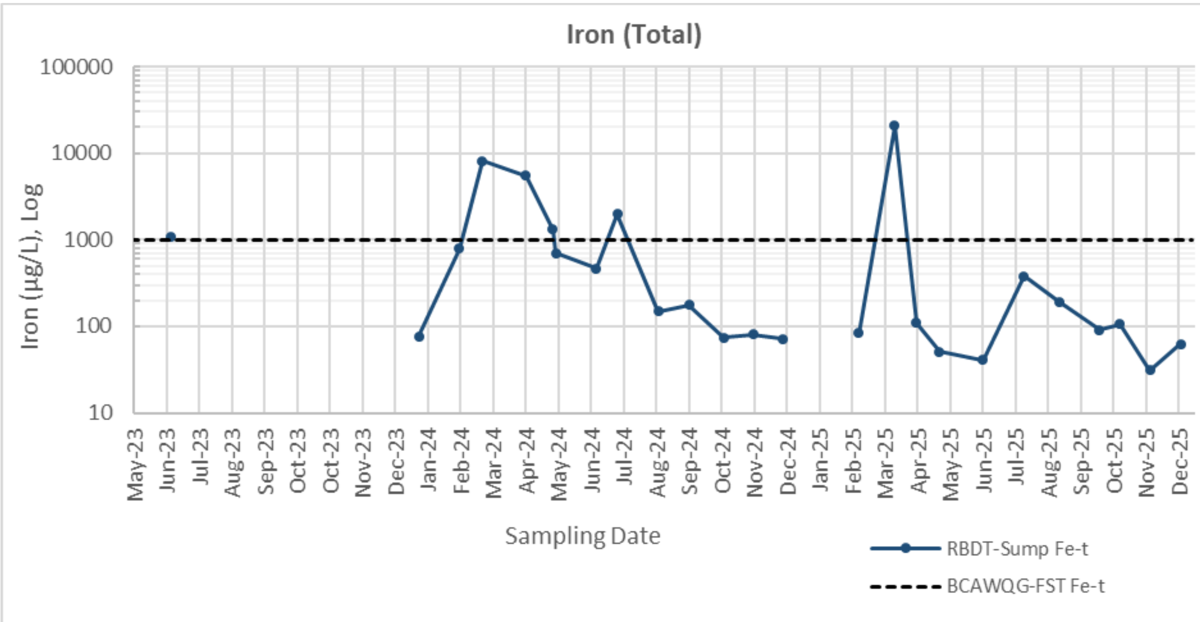


Figure 42b: Dissolved Iron at RBDT-Sump

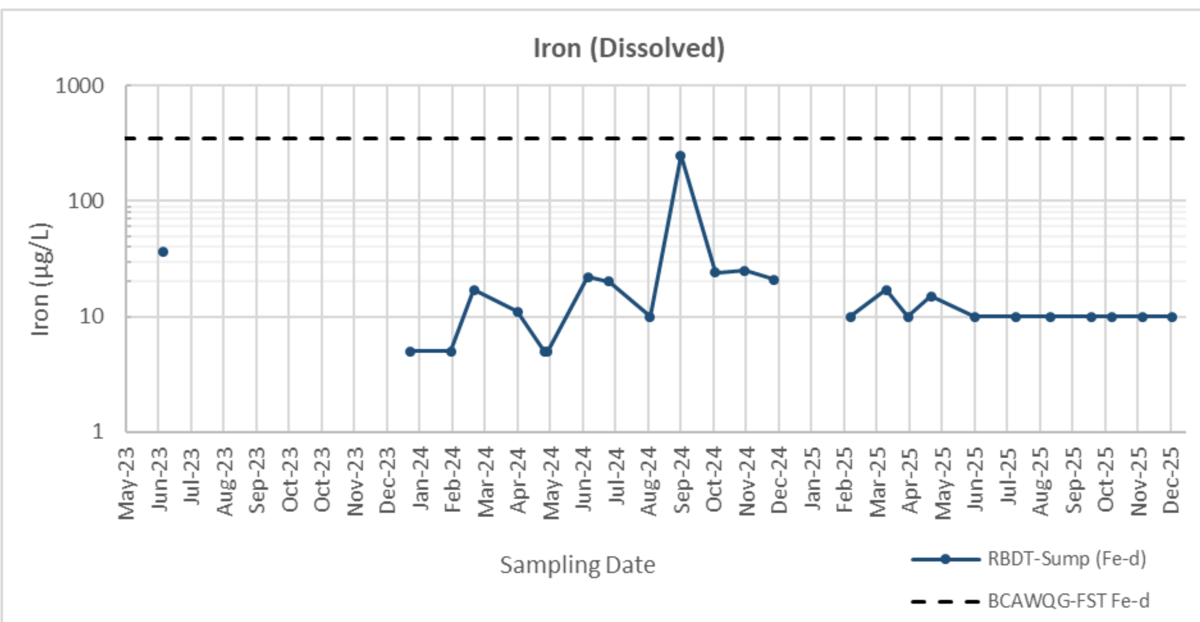


Figure 43a: Total Arsenic at RBDT-Sump

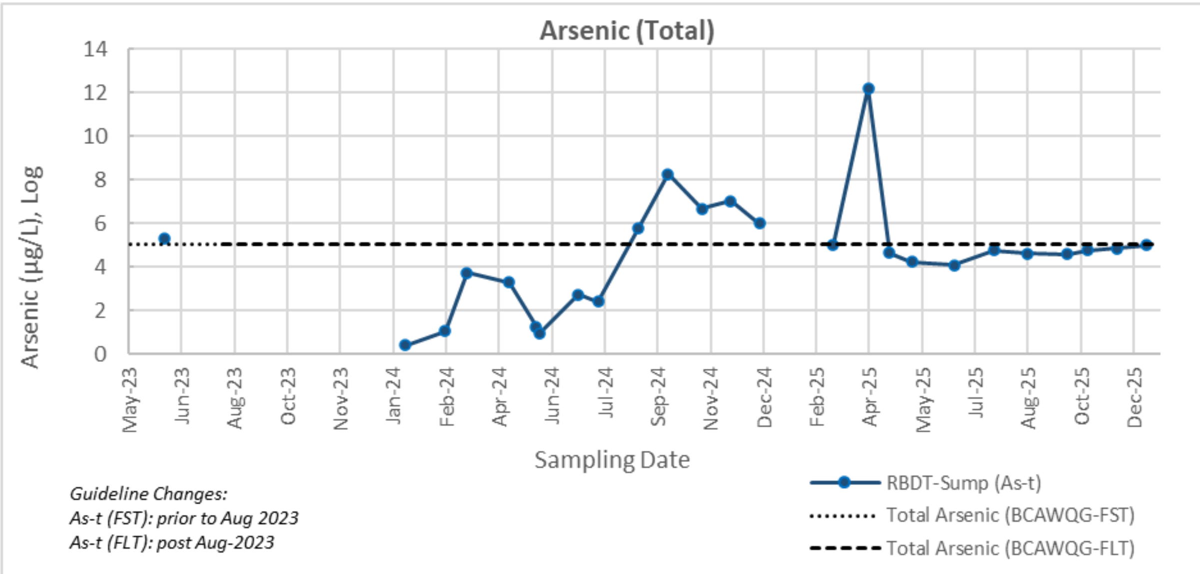


Figure 43b: Dissolved Arsenic at RBDT-Sump

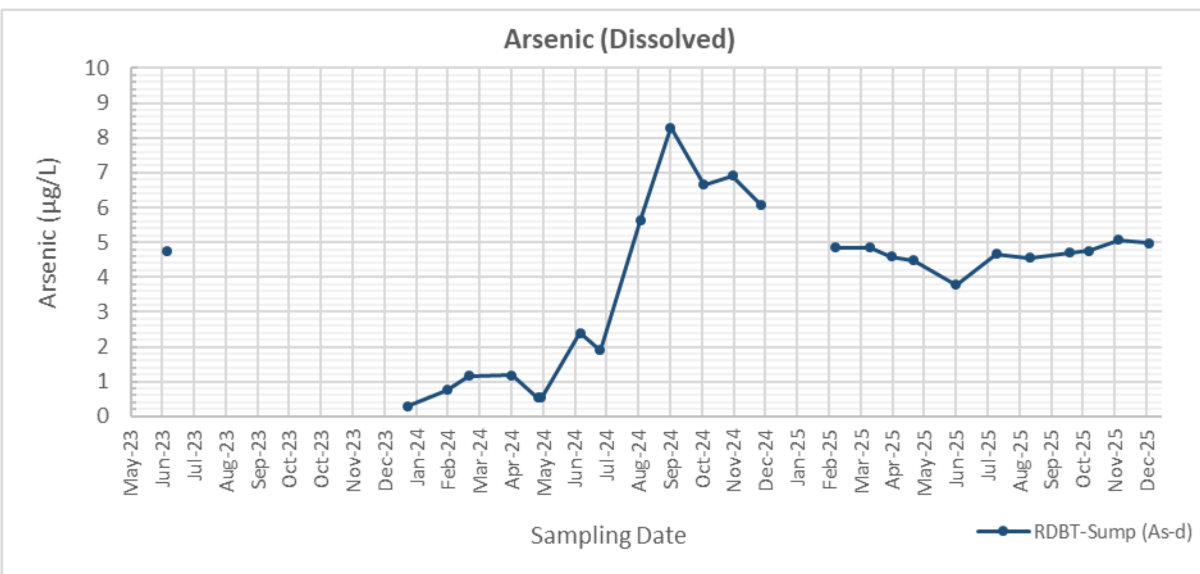


Figure 44a: Total Cadmium at RDBT-Sump

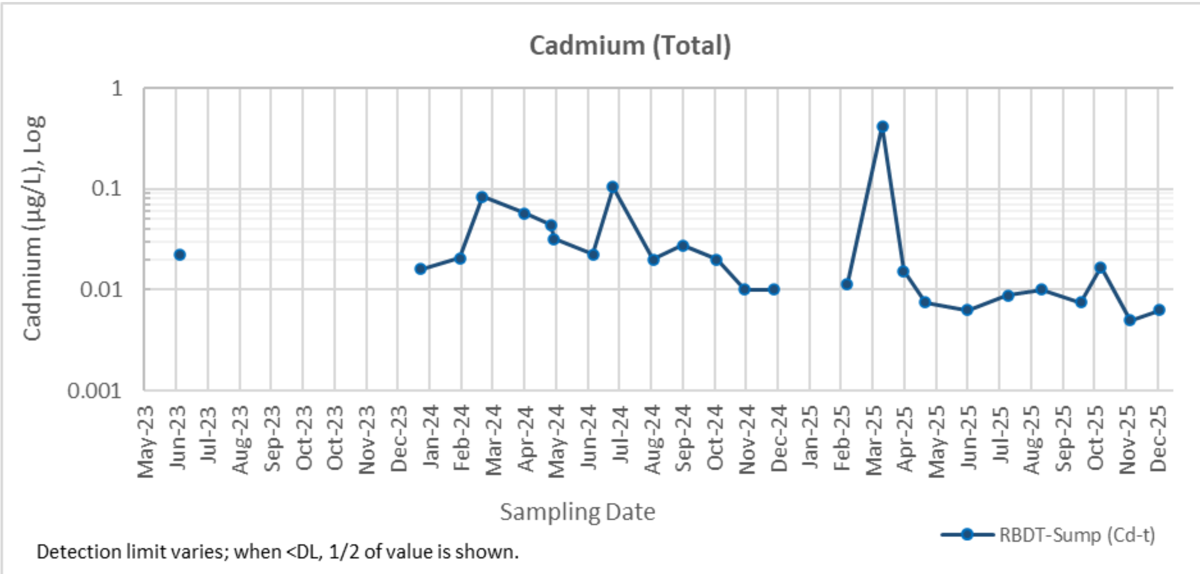


Figure 44b: Dissolved Cadmium at RBDT-Sump

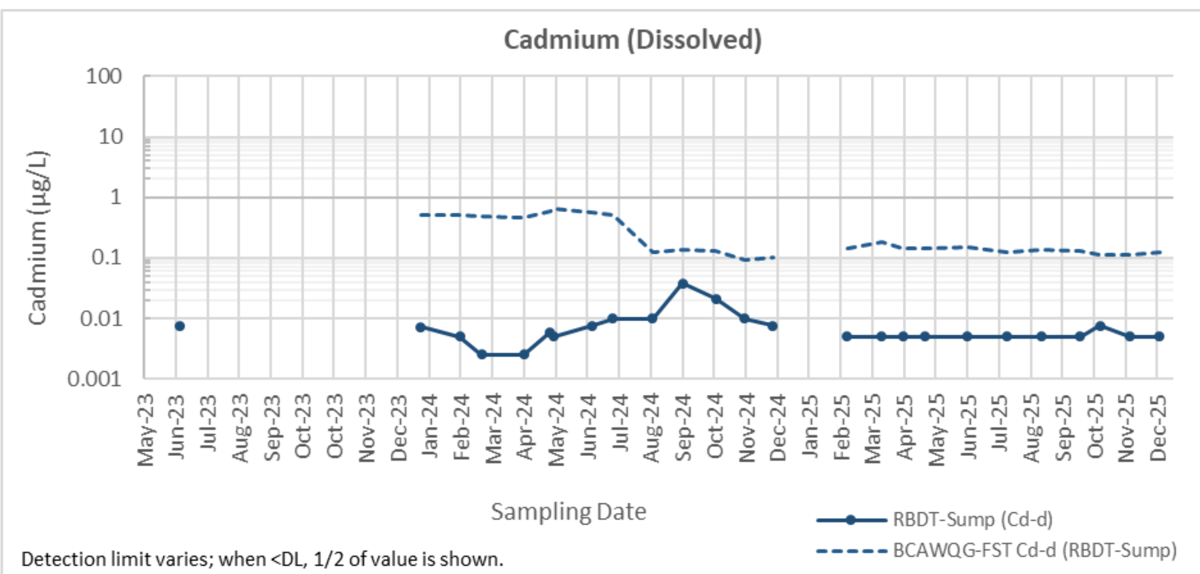


Figure 45a: Total Cobalt at RBDT-Sump

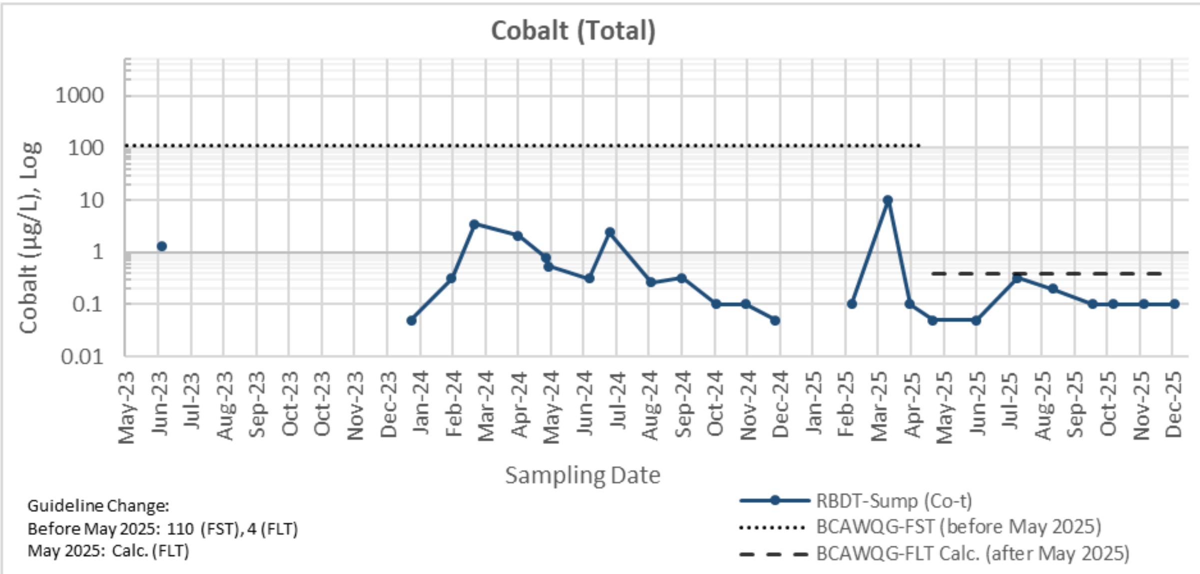


Figure 45b: Dissolved Cobalt at RBDT-Sump

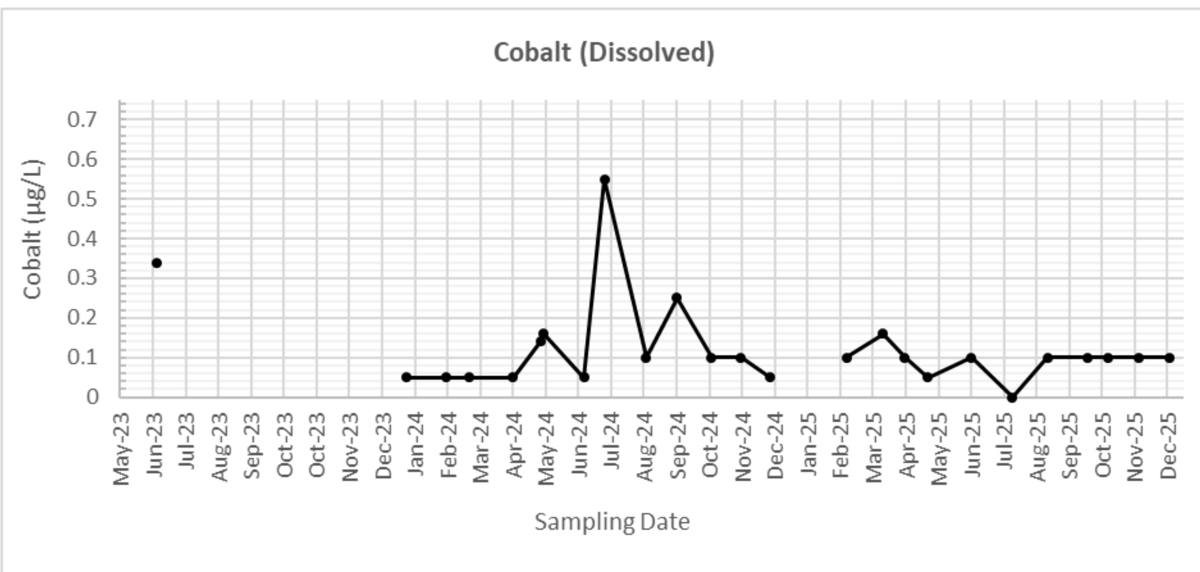


Figure 46a: Total Copper at RBDT-Sump

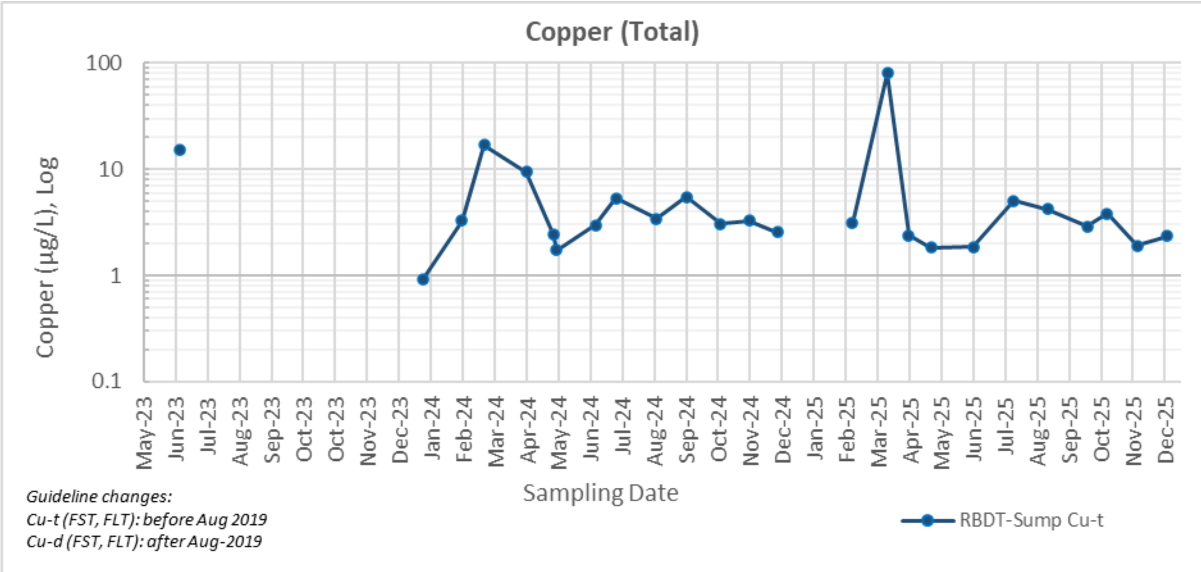


Figure 46b: Dissolved Copper at RBDT-Sump

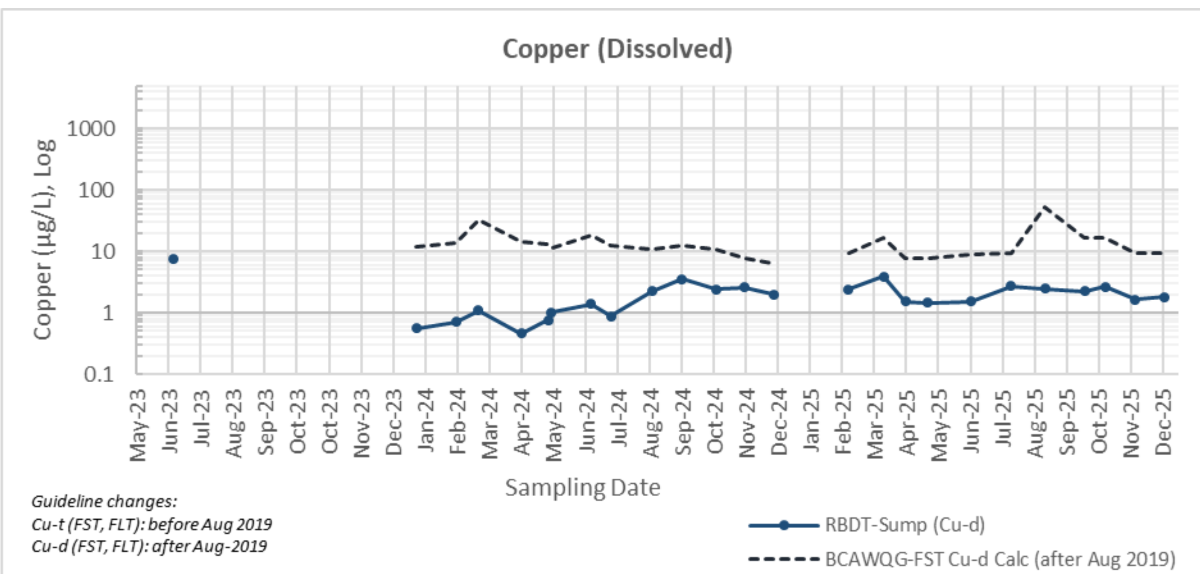


Figure 47a: Total Zinc at RBDT-Sump

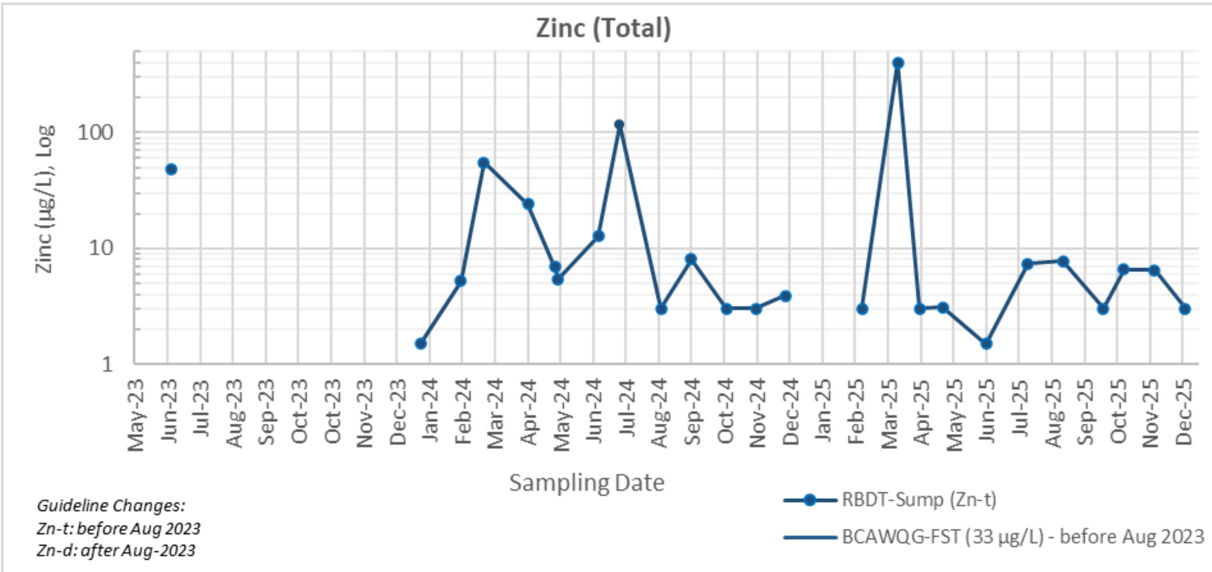


Figure 47b: Dissolved Zinc at RBDT-Sump

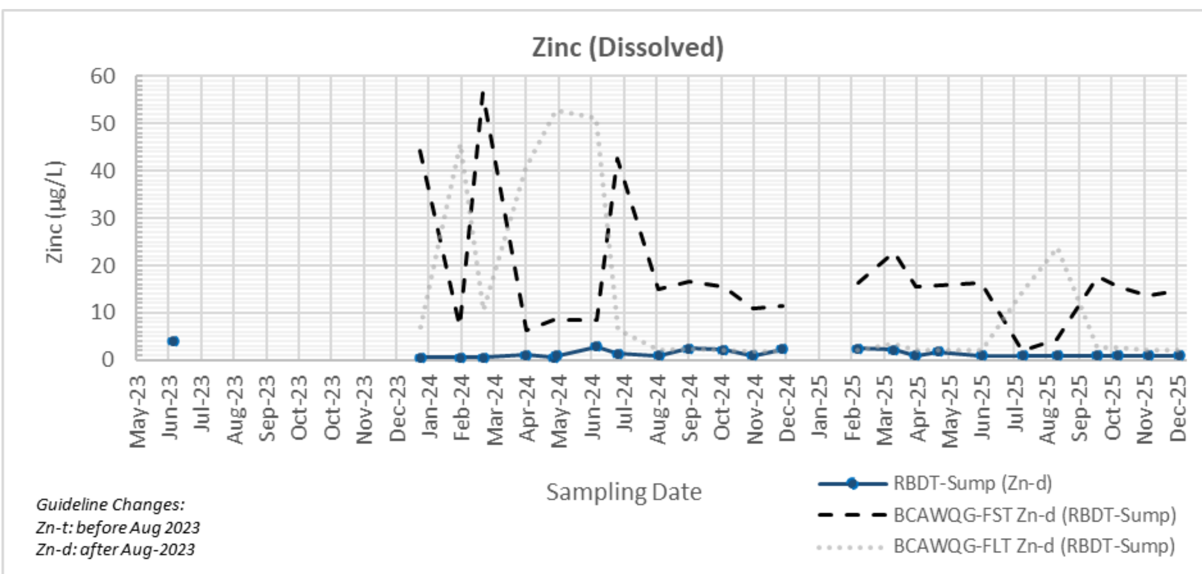


Figure 48: Total Manganese at RBDT-Sump

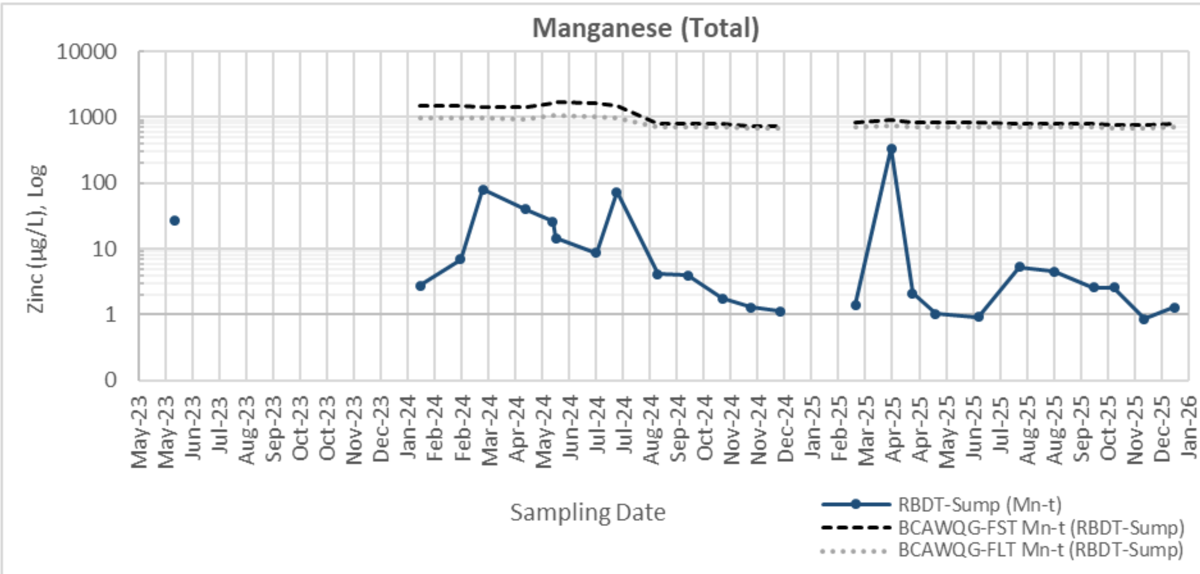


Figure 49: Total Selenium at RBDT-Sump

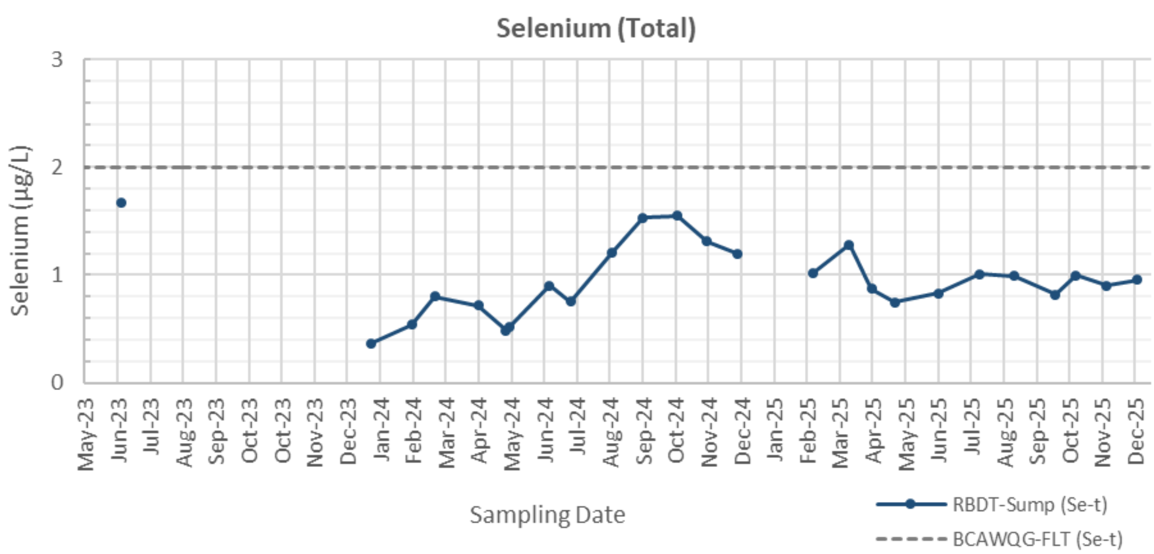


Figure 50: pH at Area 21-Sump

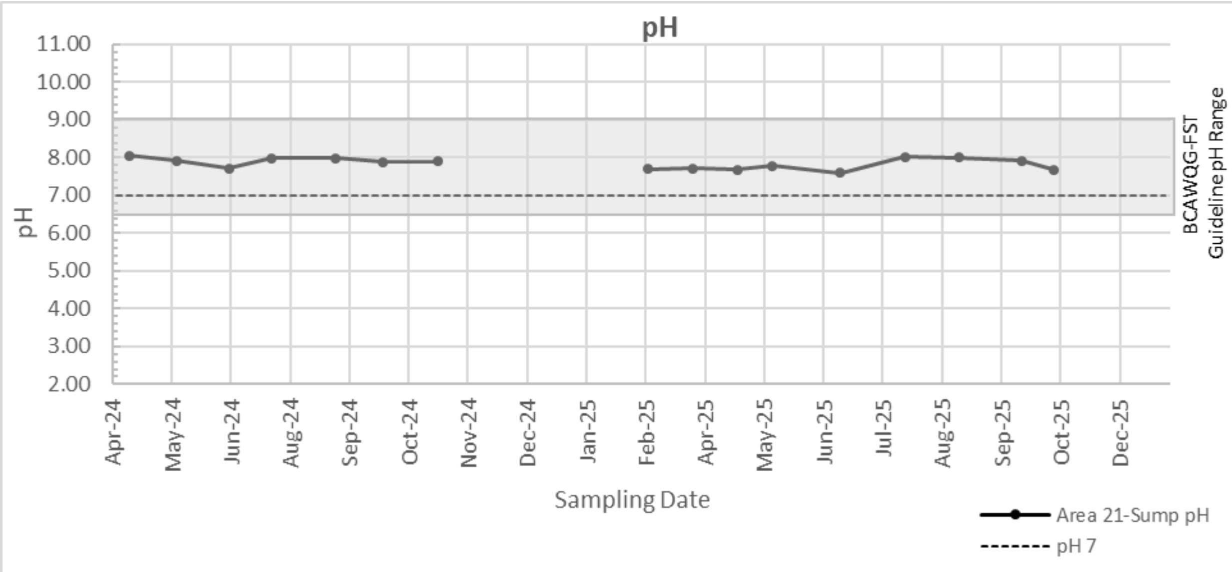


Figure 51: Total Alkalinity at Area 21-Sump

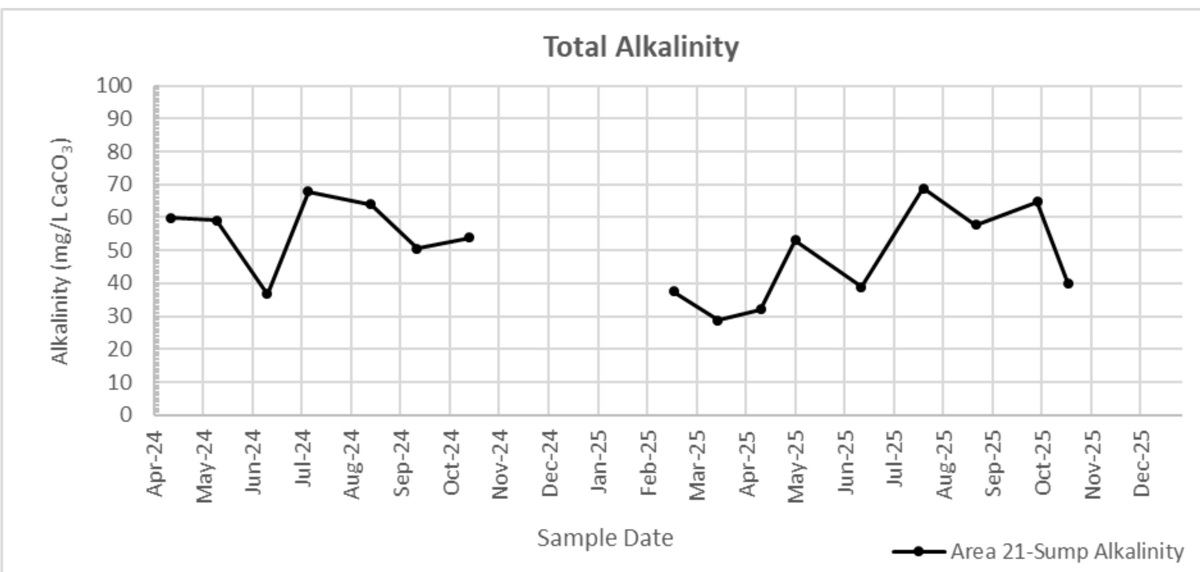


Figure 52: Acidity at Area 21-Sump

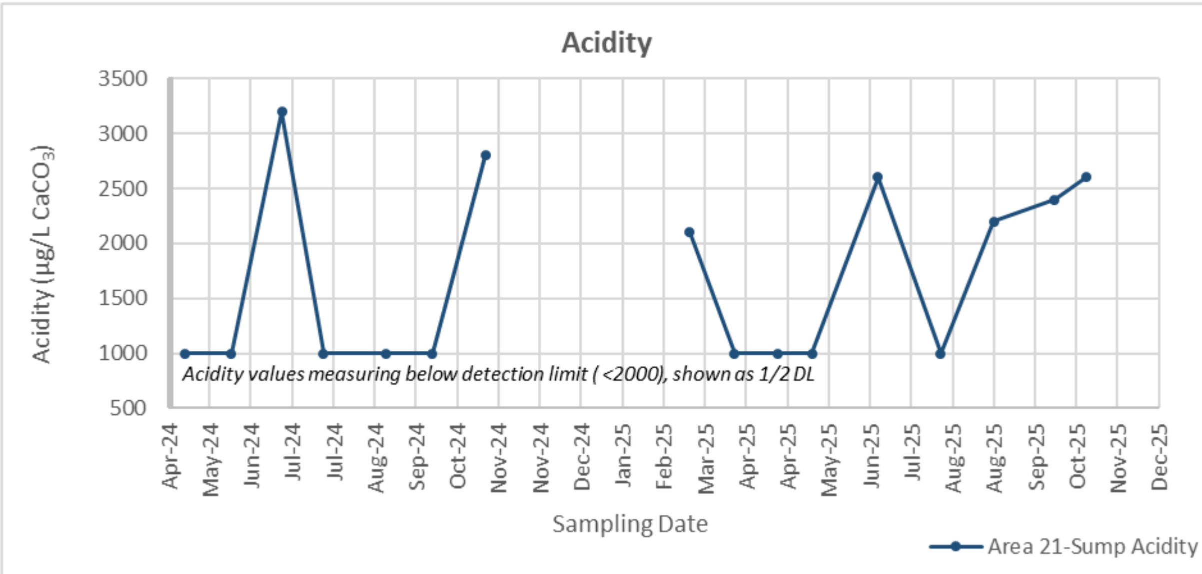


Figure 53: Sulphate at Area 21-Sump

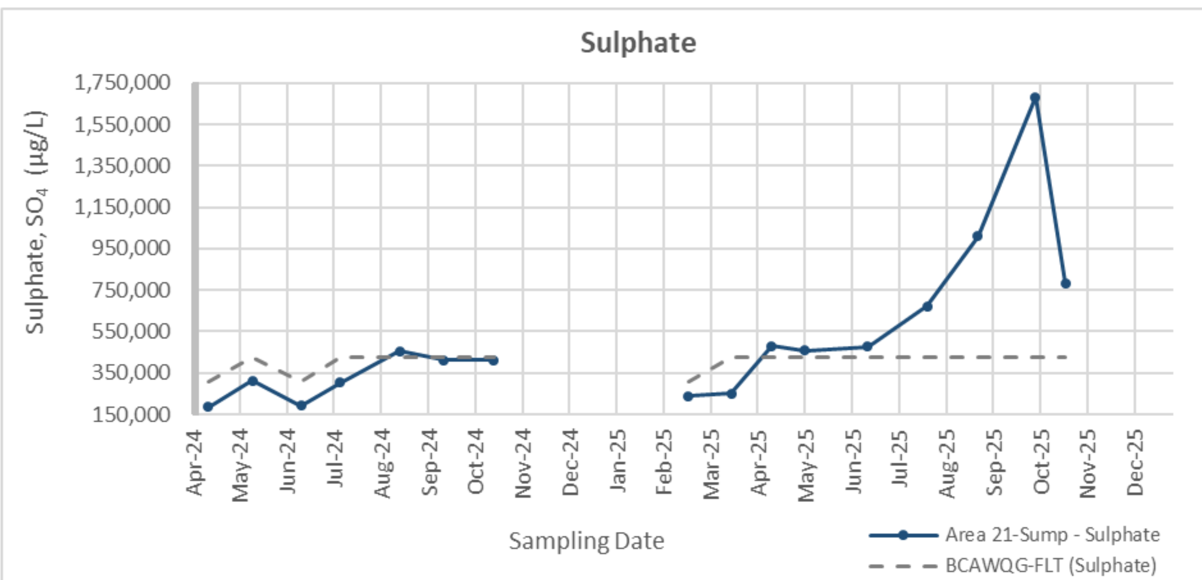


Figure 54a: TDS at Area 21-Sump

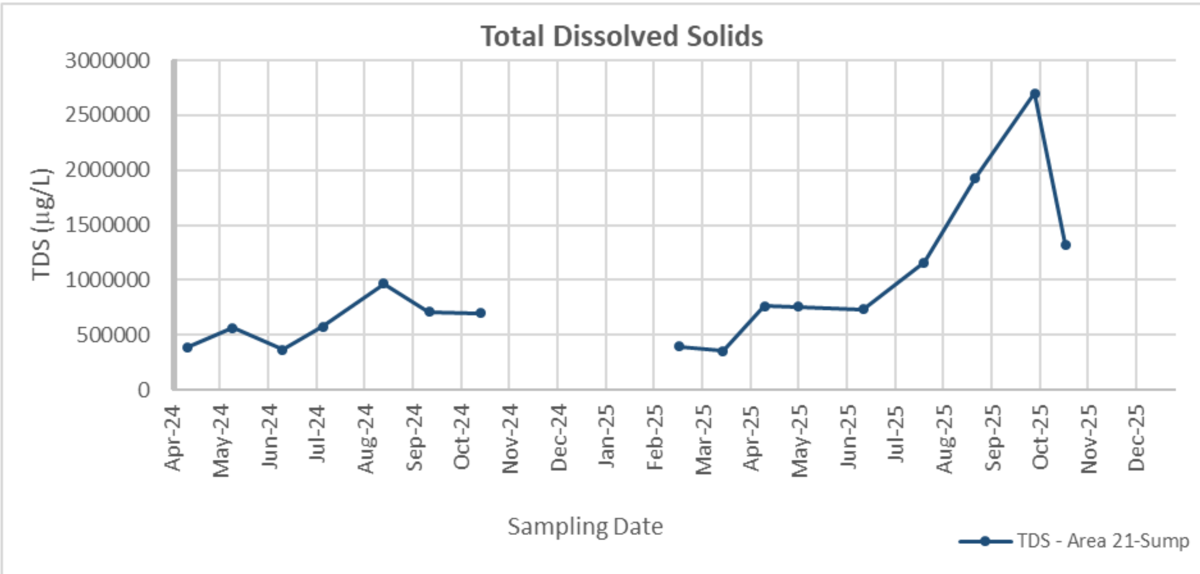


Figure 54b: TSS at Area 21-Sump

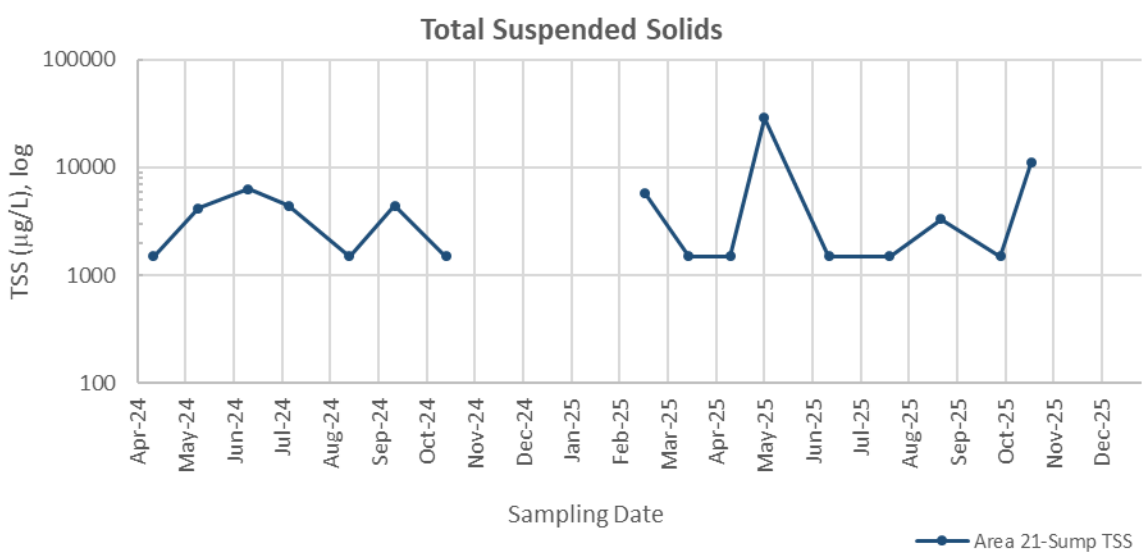


Figure 55: Ammonia at Area 21-Sump

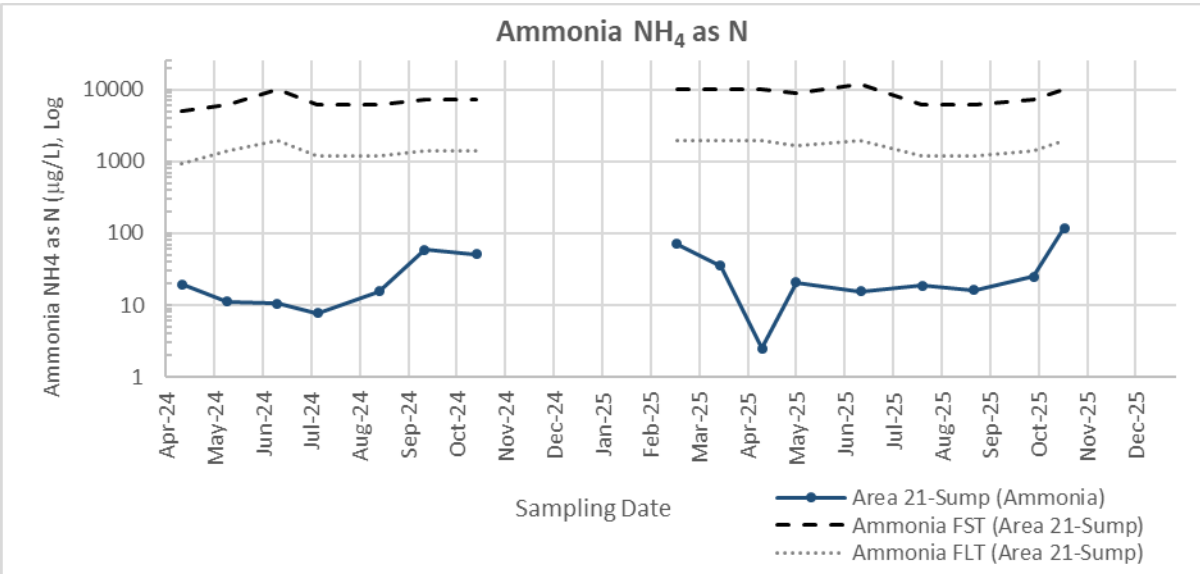


Figure 56a: Nitrate at Area 21-Sump

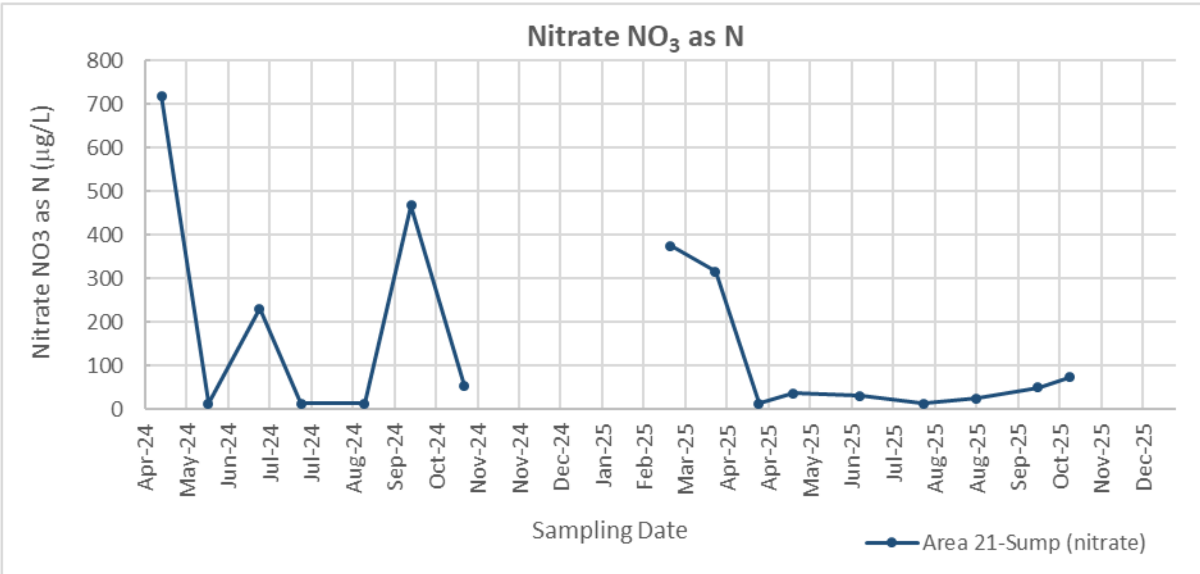


Figure 56b: Nitrite at Area 21-Sump

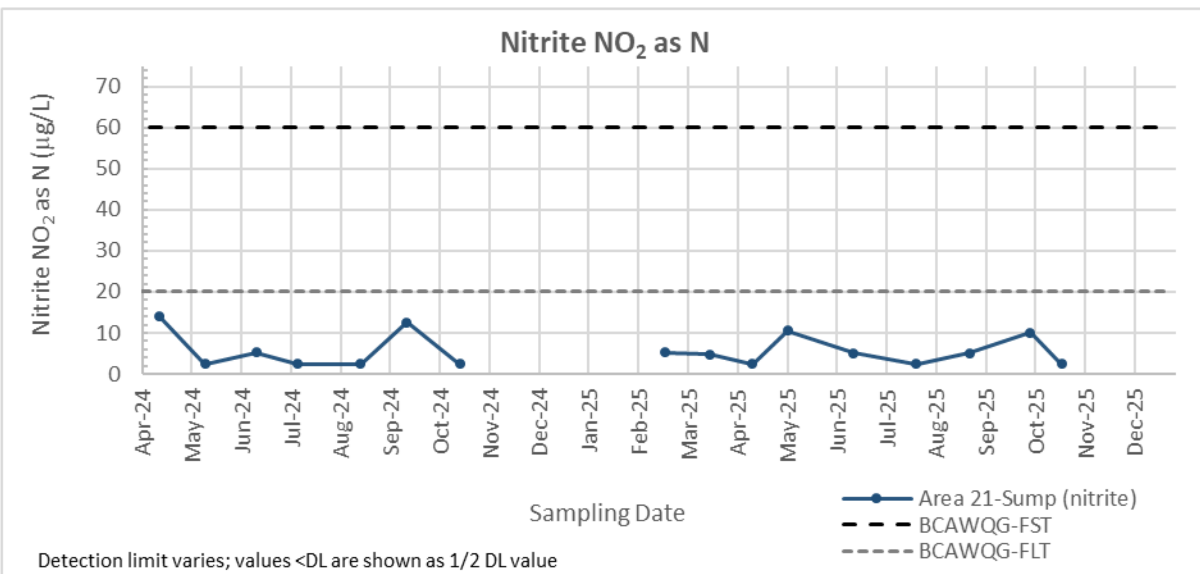


Figure 57a: Total Aluminum at Area 21-Sump

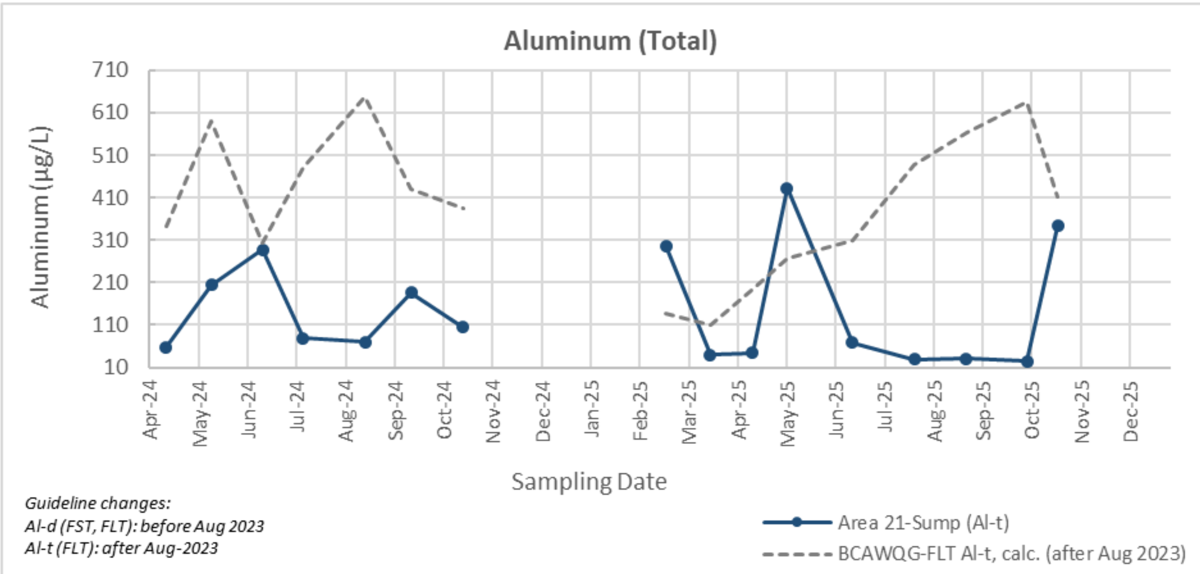


Figure 57b: Dissolved Aluminum at Area 21-Sump

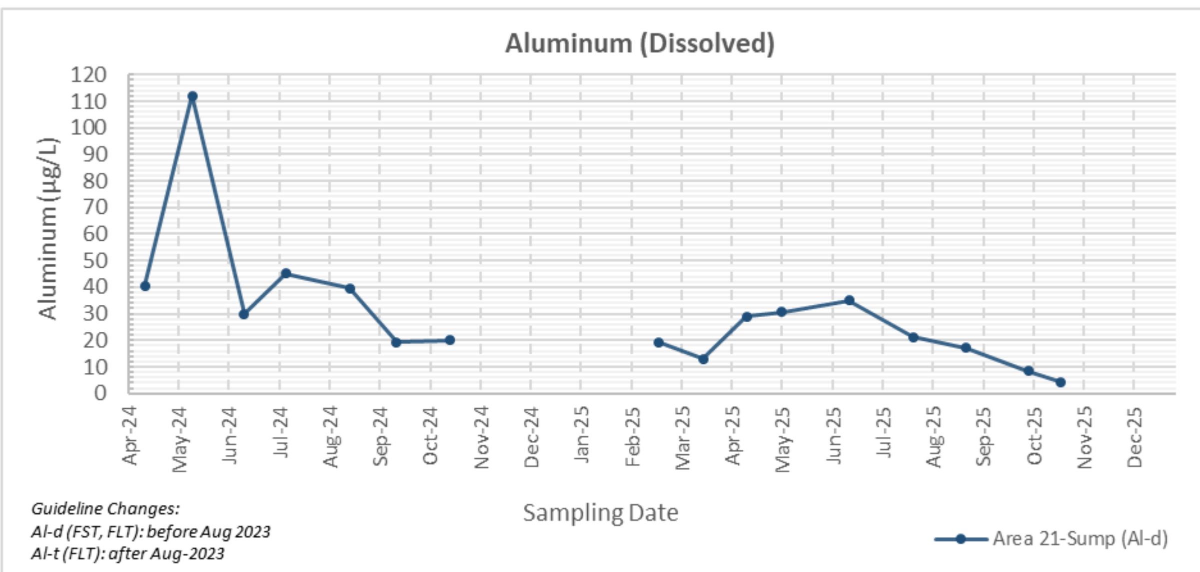


Figure 58a: Total Iron at Area 21-Sump

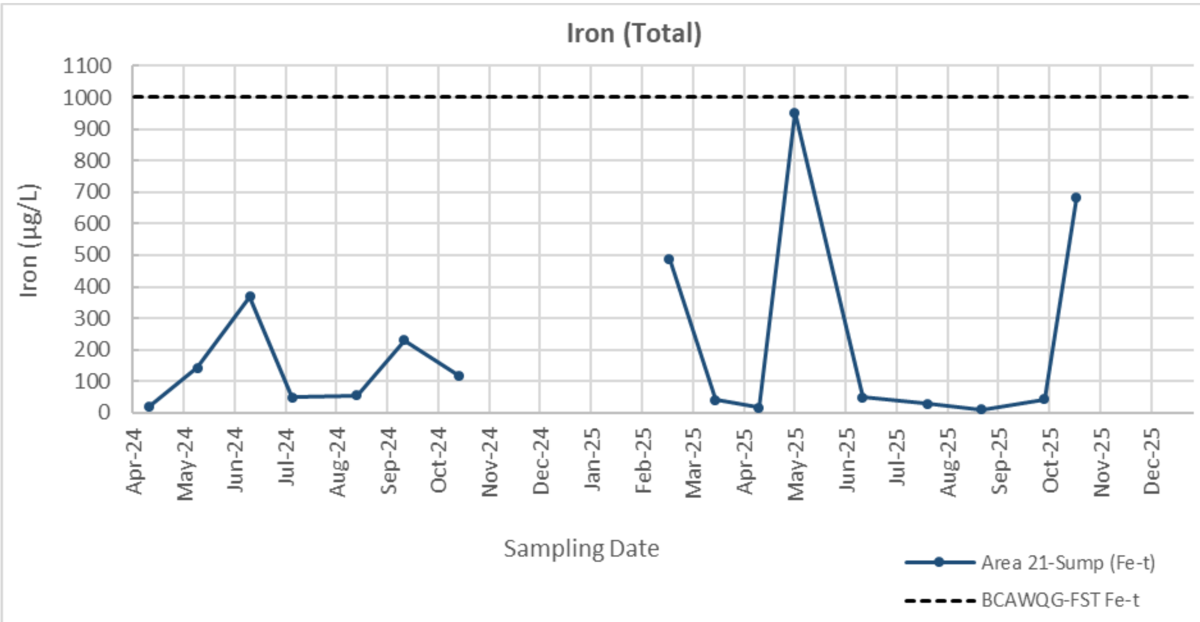


Figure 58b: Dissolved Iron at Area 21-Sump

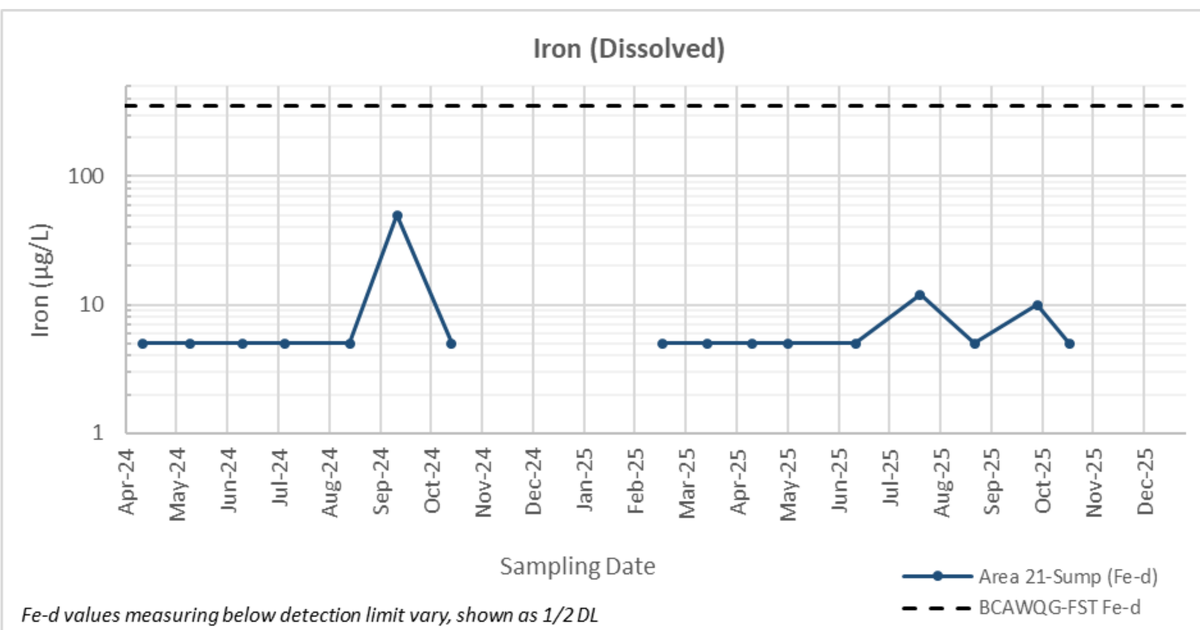


Figure 59a: Total Arsenic at Area 21-Sump

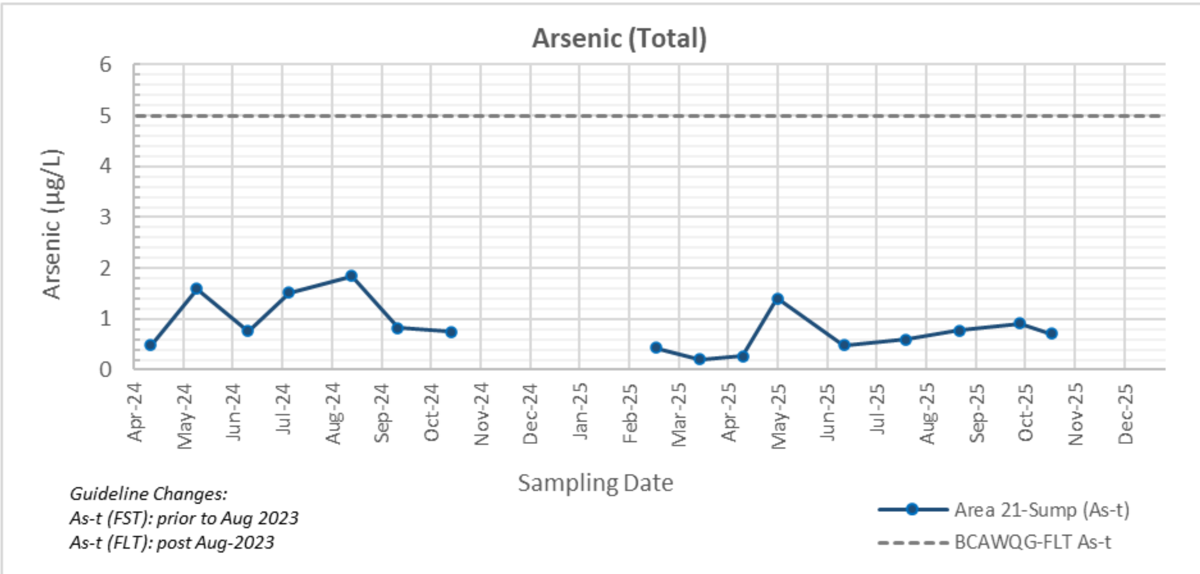


Figure 59b: Dissolved Arsenic at Area 21-Sump

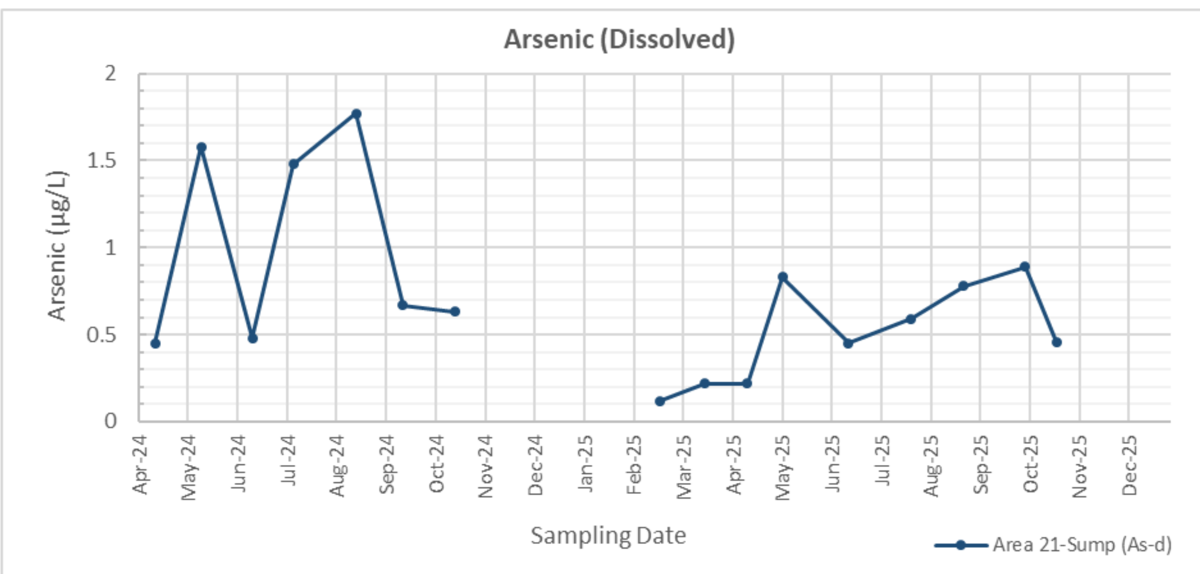


Figure 60a: Total Cadmium at Area 21-Sump

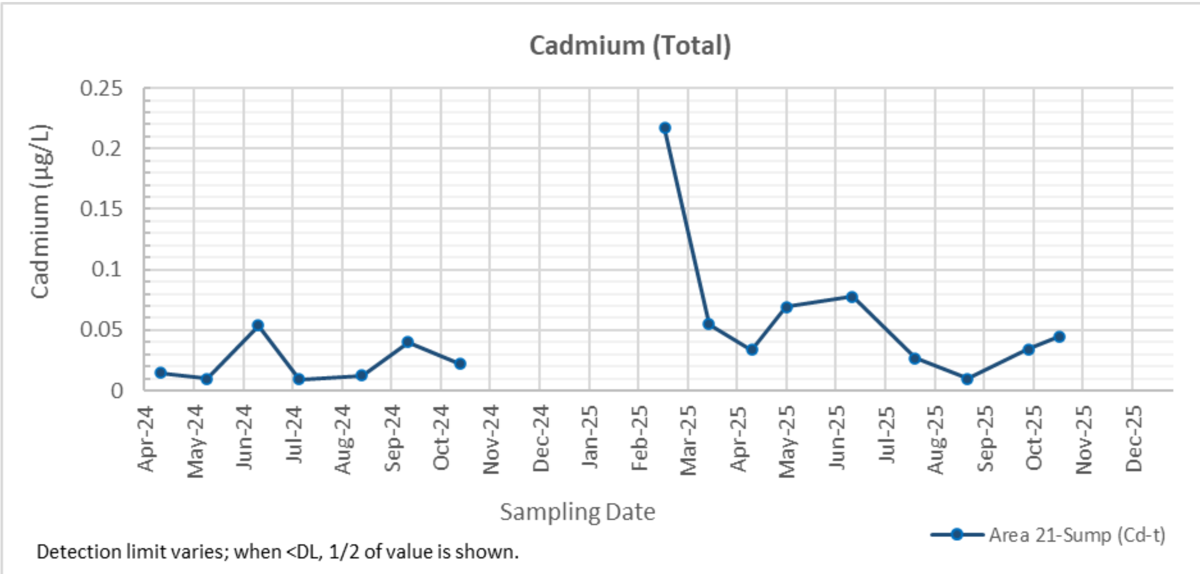


Figure 60b: Dissolved Cadmium at Area 21-Sump

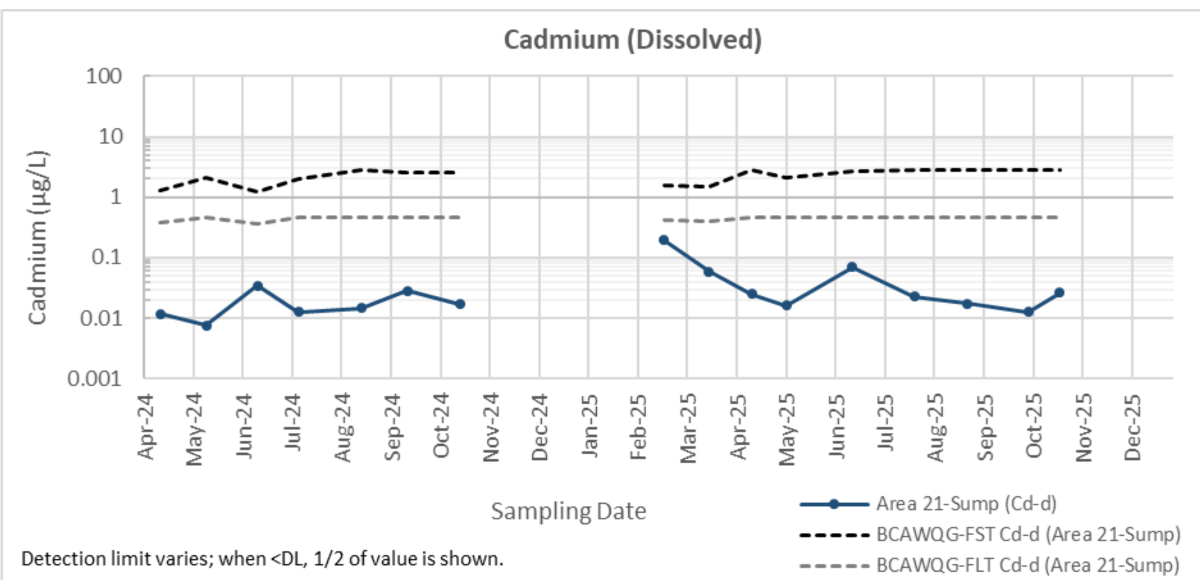


Figure 61a: Total Cobalt at Area 21-Sump

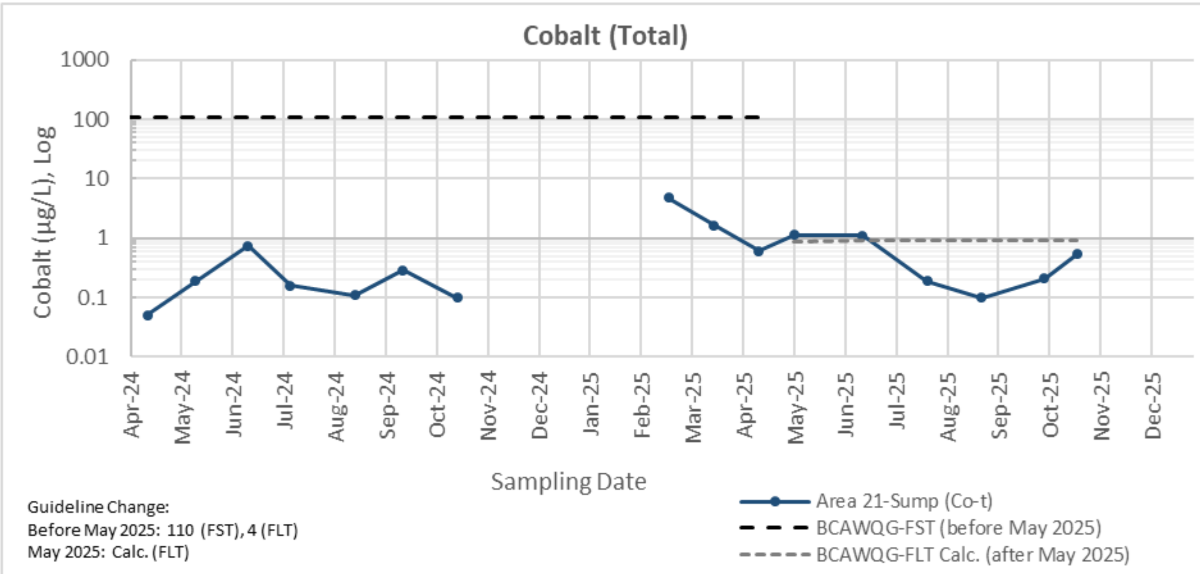


Figure 61b: Dissolved Cobalt at Area 21-Sump

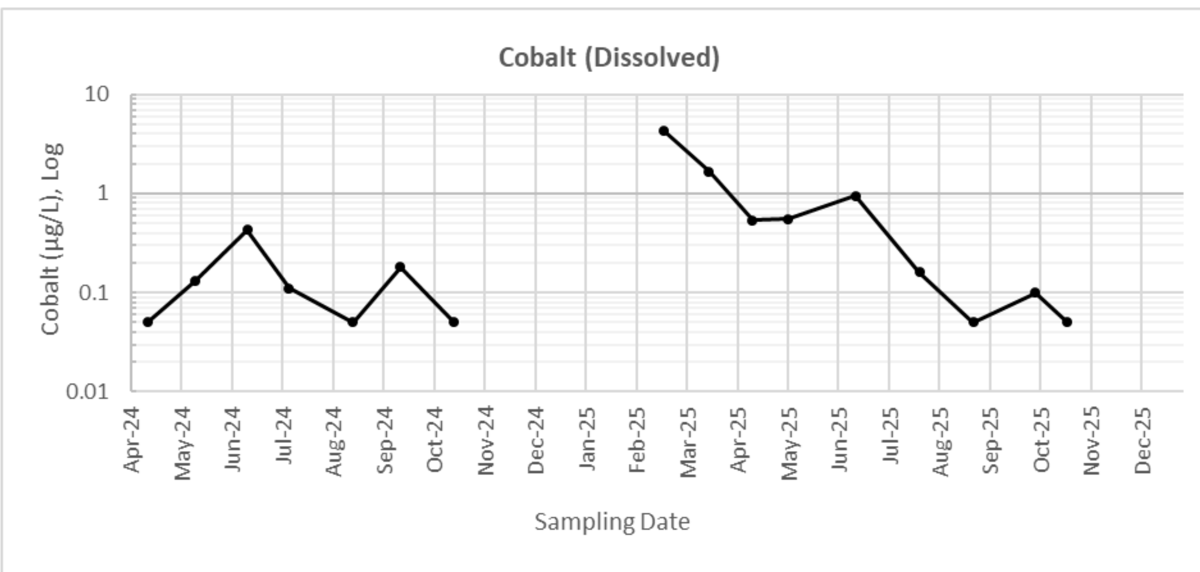


Figure 62a: Total Copper at Area 21-Sump

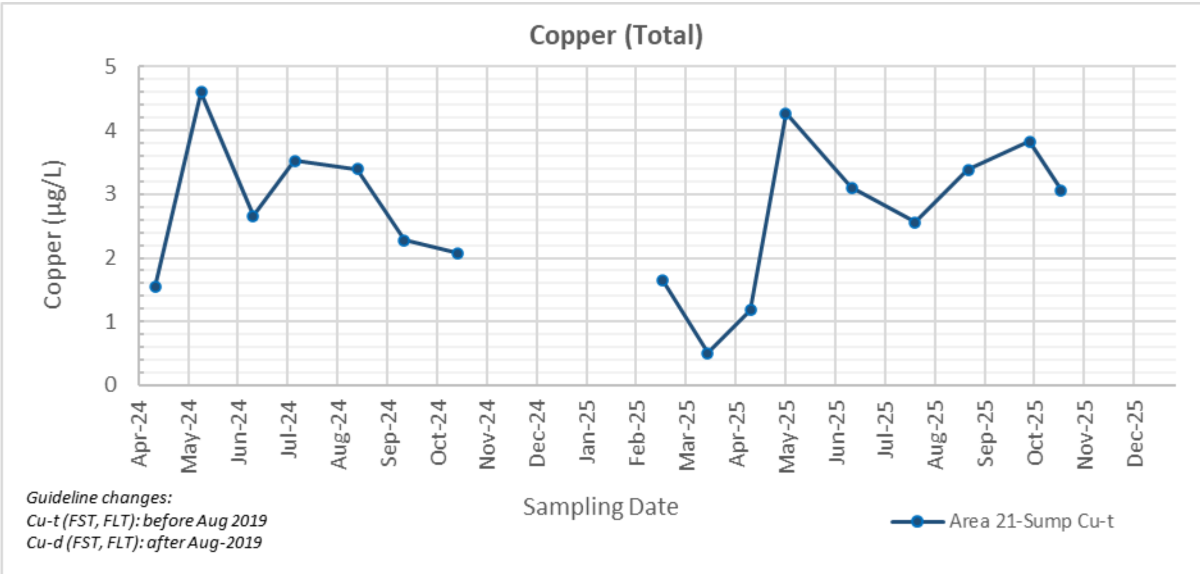


Figure 62b: Dissolved Copper at Area 21-Sump

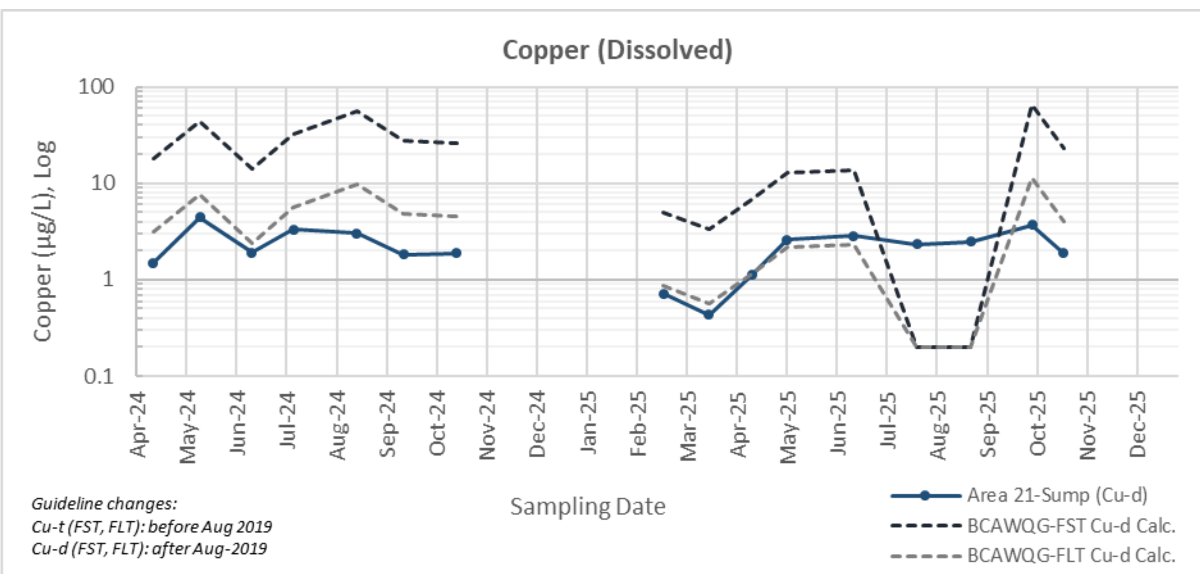


Figure 63a: Total Zinc at Area 21-Sump

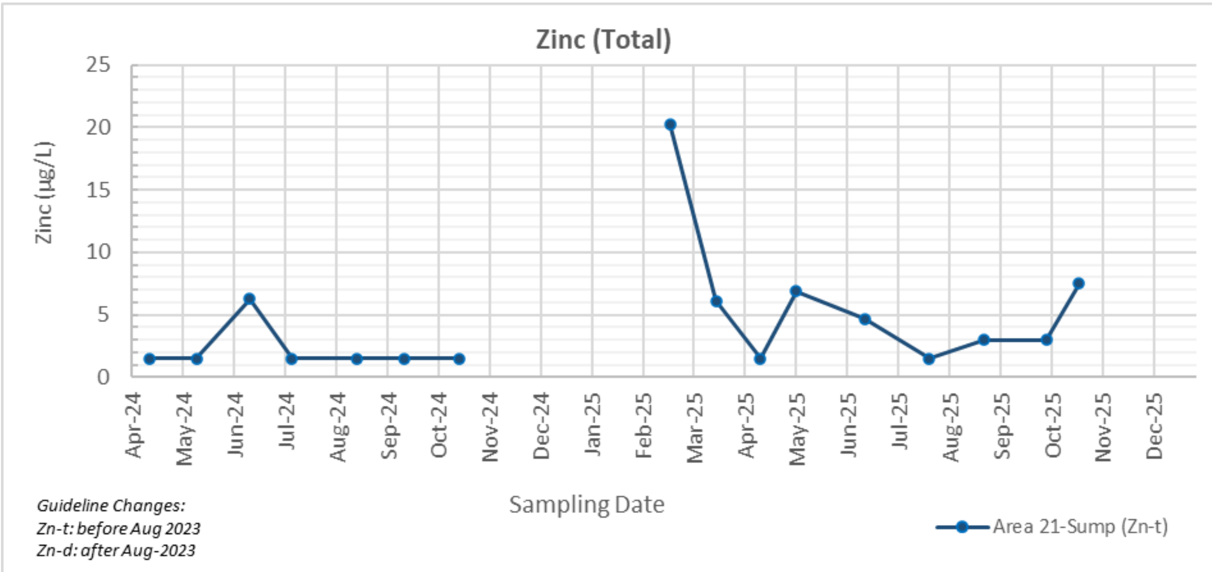


Figure 63b: Dissolved Zinc at Area 21-Sump

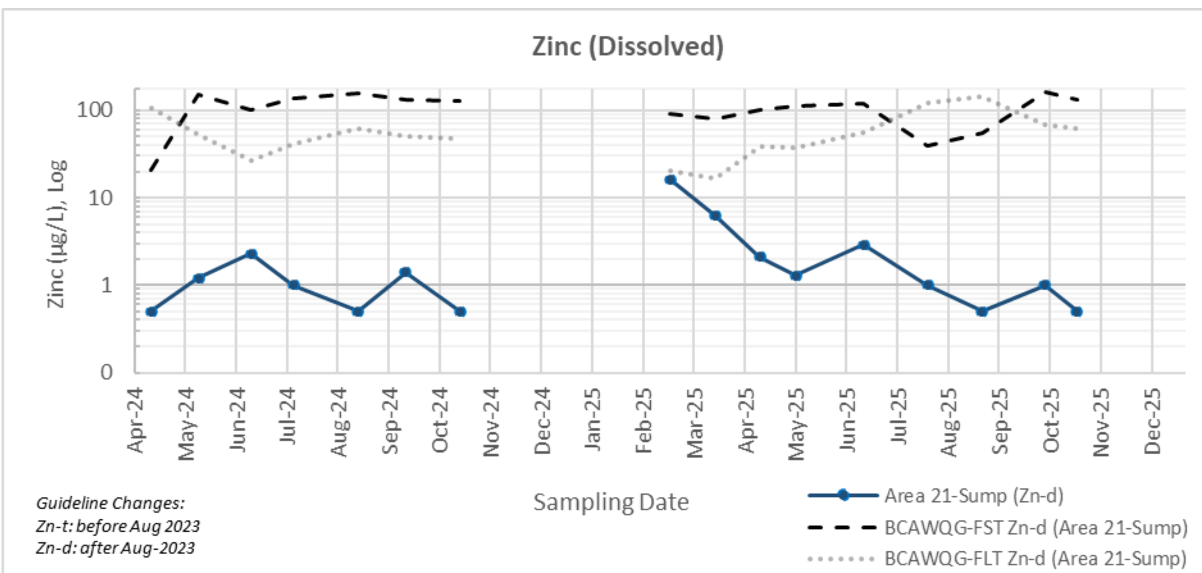


Figure 64: Total Manganese at Area 21-Sump

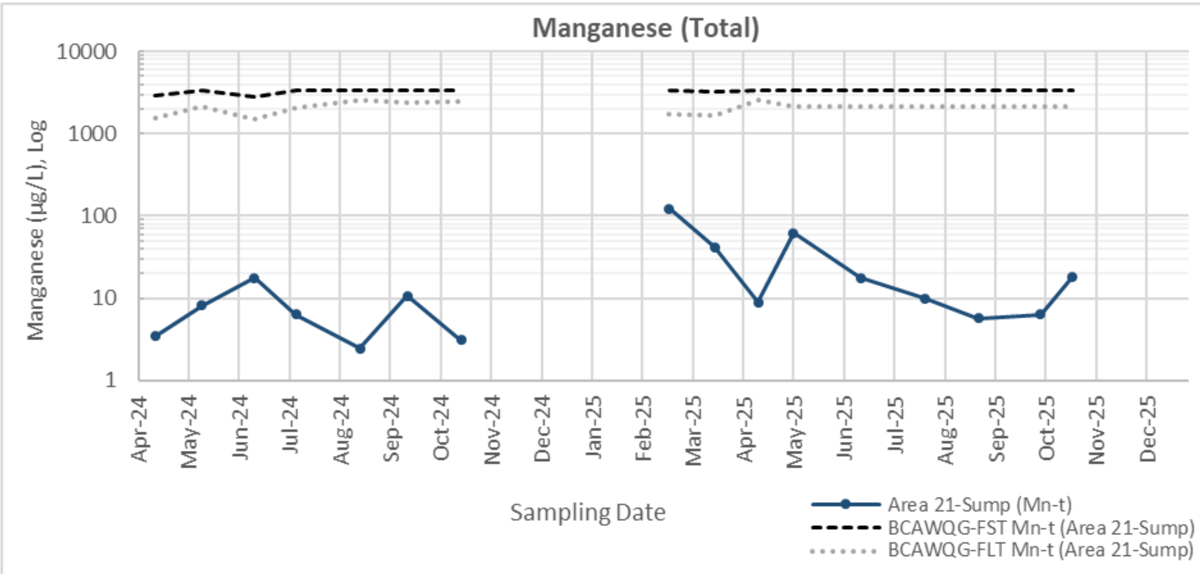
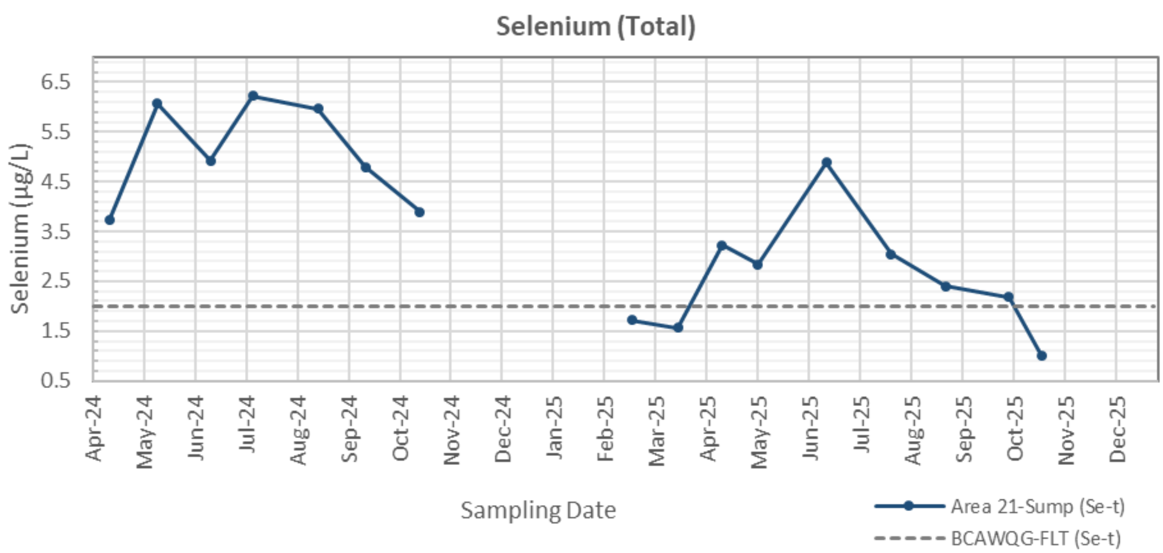


Figure 65: Total Selenium at Area 21-Sump



PHOTOGRAPHS

Photo 1: LBRR-12+920 location, dated July 30, 2025.

Photo 2: LBRR-12+920 location, dated October 27, 2025

Photo 3: LLRR-12+920 location, dated October 27, 2025

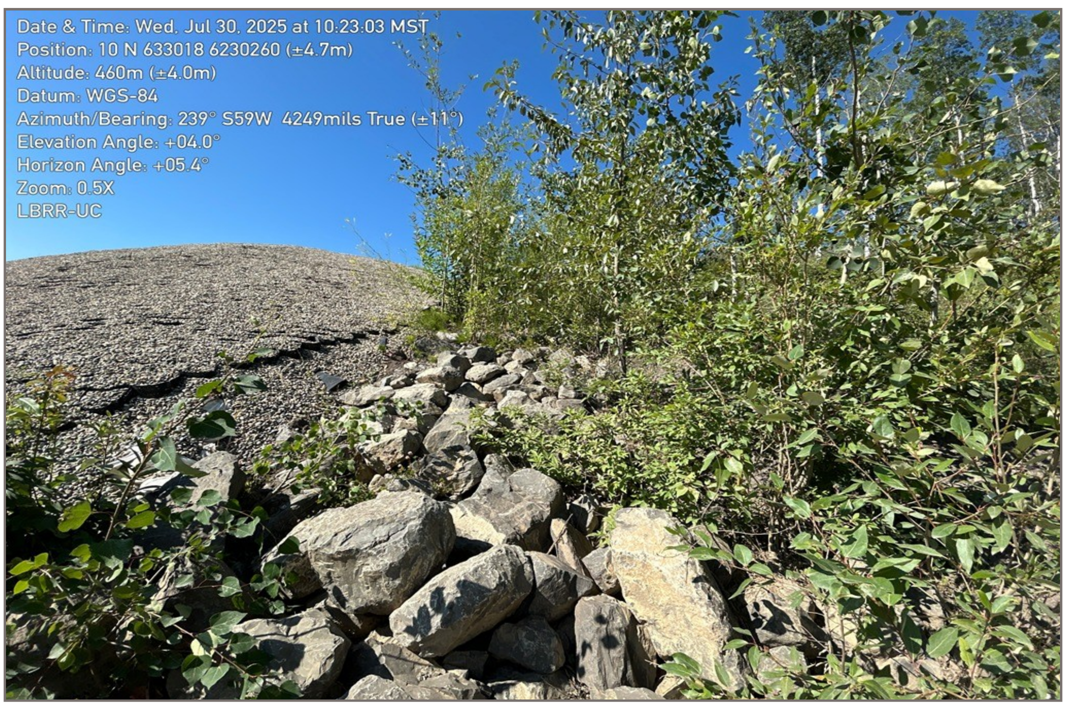


Photo 4: LBRR-UC location, dated July 30, 2025

Photo 5: LBRR-UC location, dated October 27, 2025

Photo 6: LBRR-LC location, dated October 27, 2025

Photo 7: LBRR-LC location, dated July 30, 2025

Photo 8: LBRR-LC location, dated October 27, 2025

Photo 9: LBRR-DD location, dated October 27, 2025

Photo 10: LBRR-DD location, dated July 30, 2025

Photo 11: LBRR-EDP location, dated October 27, 2025

Photo 12: LBRR-EDP location, dated October 27, 2025

Photo 13: RR8 location, dated October 27, 2025

Photo 14: RR8 location, dated March 27, 2025

Photo 15: RR9 location, dated March 27, 2025

Photo 16: RR9 location, dated October 27, 2025

Photo 17: RR9 location, dated October 27, 2025

Photo 18: RBSBIAR-US location, dated July 30, 2025

Photo 19: RBSBIAR-US location, dated July 30, 2025

Photo 20: RBSBIAR-US location, dated October 26, 2025

Photo 21: RBSBIAR-US location, dated October 26, 2025

Photo 22: RBSBIAR-DS location, dated July 30, 2025

Photo 23: RBSBIAR-DS location, dated October 26, 2025

Photo 24: RBSBIAR-EUS location, dated July 30, 2025

Photo 25: RBSBIAR-EUS location, dated October 26, 2025

Photo 26: RBSBIAR-EUS location, dated October 26, 2025

Photo 27: RBSBIAR-EDS location, dated October 26, 2025

Photo 28: RBSBIAR-EDS location, dated July 30, 2025

Photo 29: RBSBIAR-EDS location, dated October 26, 2025

Photo 30: RBDT-Sump location, dated October 26, 2025

Photo 31: Area 21-Sump location, dated July 30, 2025

Photo 32: Area 21-Sump location, dated October 26, 2025

Photo 33: Area 21-Sump location, dated October 26,2025

APPENDIX A

TETRA TECH'S LIMITATIONS ON THE USE OF THIS DOCUMENT

LIMITATIONS ON USE OF THIS DOCUMENT

GEOENVIRONMENTAL

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The Client, and any Authorized Party, acknowledges that the Professional Document is based on limited data and that the conclusions, opinions, and recommendations contained in the Professional Document are the result of the application of professional judgment to such limited data.

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1.7 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by TETRA TECH in its reasonably exercised discretion.

APPENDIX B

SURFACE WATER ANALYTICAL LABORATORY RESULT TABLES

B1 – 2025 Surface Water Laboratory Analytical Results from River Road Monitoring Locations Evaluated against the BCAWQG-FST Guidelines

B2 – 2025 Surface Water Laboratory Analytical Results from SBIAR Monitoring Locations Evaluated against the BCAWQG-FST Guidelines

B3 – 2025 Surface Water Laboratory Analytical Results from RBDT in Powerhouse Area Monitoring Locations Evaluated against the BCAWQG-FST Guidelines

B4 – 2025 Surface Water Laboratory Analytical Results from Area 21-Sump in Powerhouse Area Monitoring Locations Evaluated against the BCAWQG-FST Guidelines

Appendix B1: LBRR Surface Water Analytical Results

Parameter	Unit	RDL	BCAWQG - FST [1]	BCAWQG-FLT [2]	LBRR-DD	LBRR-LC	LBRR-EDP	LBRR-EDP	LBRR-EDP	LBRR-EDP	RR8	RR9
					27-Feb-25	27-Feb-25	27-Feb-25	22-Apr-25	22-Jun-25	26-Oct-25	27-Feb-25	27-Feb-25
Physical Parameters												
Acidity (Total as $CaCO_3$)	µg/L	1000	NG	NG	5000	12200	1000	1000	2200	3800	2000	1000
Alkalinity (Total as $CaCO_3$)	mg/L	1.0	NG	NG	77.4	108	110	144	161	97.4	71.8	90.8
Electrical Conductivity (EC)	µS/cm	2.0	NG	NG	1540	1450	496	2770	2570	2740	192	422
Hardness as CaCO3, dissolved	µg/L	500	NG (Acceptable ranges exist when calculating exceedances for Cd, Cu, Pb, Mn, Zn)	NG (Acceptable ranges exist when calculating exceedances for Cd, Cu, Pb, Mn, Zn)	840000	735000	172000	1760000	1610000	1340000	69500	152000
Hardness as CaCO3, from total Ca/Mg (Ne	µg/L	500			1130000	6390000	2070000	1630000	1650000	1220000	89600	633000
pH	pH Units	0.10	6.5 - 9.0	6.5-9.0	7.69	7.73	8.10	8.17	8.27	7.91	8.02	8.05
Total Dissolved Solids (TDS)	µg/L	10000	NG	NG	1300000	1100000	359000	2530000	2260000	3100000	168000	341000
Total Suspended Solids (TSS)	µg/L	3000	NG	NG	4860000	148000000	11800000	15100	4200	40700	36300	3000000
Alkalinity (Hydroxide) as $CaCO_3$	µg/L	1000	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	µg/L	1000	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	µg/L	1000	NG	NG	77400	108000	110000	144000	161000	97400	71800	90800
Anions and Nutrients (Matrix: Water)												
Ammonia (NH_4 as N)	µg/L	5.0	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	514	642	205	15.5	9.2	97.2	115	143
Ammonia FST Guideline	µg/L		pH dependent (at Temp 4 °C or in situ T)		10300	10300	4950	3950	3150	7420	6220	4950
Ammonia FLT Guideline	µg/L			pH dependent (at Temp 4 °C or in situ T)	1980	1980	952	759	606	1430	1200	932
Chloride (Cl^-)	µg/L	500	600,000	150,000	25200	25800	55400	83100	106000	**727000**	13400	40100
Nitrate (NO_3^- as N)	µg/L	5.0-100	NG	NG	1130	2180	697	<100	<25	1040	125	253
Nitrite (NO_2^- as N)	µg/L	1.0-20	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	34	170	16.4	<20	<5	<20	13.2	11.8
Sulphate (SO_4) [3]	µg/L	300	NG	309,000 - 429,000	768000	637000	62800	1550000	1390000	299000	1820	64800
SO4 FLT Guideline Calc	µg/L		NG	Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000 Hardness > 250,000 site-specific	429000	429000	309000	429000	429000	429000	309000	309000
Dissolved Organic Carbon (DOC)	mg/L	1.0	NG	NG	15.2	14	4.74	2.77	3.57	6.73	4.99	4.32
Metals, Total												
Aluminum	µg/L	3.00	NG		64300	852000	105000	247	94.6	1470	3280	36600
NEW FLT Guideline (no FST) - relevant August 2023 onwards	µg/L			pH, DOC, Hardness-dependent; valid hardness 10-430 mg/L, pH 6.0-8.7, DOC 0.8-12.3 mg/L	598	605	377	261	316	431	381	347
Antimony	µg/L	0.1-0.2	NG	NG	1.34	12.9	2.3	<0.2	0.29	0.46	0.34	1.3
Arsenic	µg/L	0.10	5, discontinued in Aug 2023	5.0	87.7	991	64.7	0.42	0.48	1.7	3.65	32.4
Barium	µg/L	0.10	NG	NG	2740	48200	5620	25.1	29.1	233	160	1780
Beryllium	µg/L	0.10	NG	NG	4.15	58.2	5.94	0.129	<0.1	<0.1	0.197	2.06
Bismuth	µg/L	0.05-0.10	NG	NG	1.44	21.9	1.88	<0.1	<0.1	<0.1	0.055	0.68
Boron	µg/L	10.0	1200	1200	98	1180	127	137	151	71	16	56
Cadmium	µg/L	0.005	NG	NG	5.8	71.8	9.52	2.86	1.15	0.233	0.183	3
Calcium	µg/L	50	NG	NG	317000	1740000	611000	432000	444000	364000	28100	186000
Cesium	µg/L	0.01		NG	7.83	128	9.42	0.033	0.028	0.157	0.597	3.75
Chromium [4]	µg/L	0.1-0.7	NG	NG	120	1620	277	<1	<1	3.48	6.84	83.9
Cobalt	µg/L	0.10	May 2025: N/A; (Prior to May 2025: 110 ug/L)		97.7	**975**	**123**	18.2	5.19	2.21	3.59	45.8
Co-t, FLT				May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)					0.9	0.9		
Copper [3]	µg/L	0.50	Calc. based on Hardness	2 to 10	176	2630	319	1.71	2.02	5.25	9.19	109
Cu FST Guideline Calc. - relevant prior to August 2019	µg/L		Hardness 13,000 - 400,000 : calc.; Hardness > 400,000 is Capped Value of 400,000									
Cu FLT Guideline Calc. - relevant prior to August 2019	µg/L			Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10								
Iron	µg/L	10	1000	NG	**176000**	**2260000**	**354000**	461	77	**4480**	**7400**	**119000**
Lead [3]	µg/L	0.05-0.1	Valid prior to August 2024	Valid prior to August 2024	105	**1560**	153	0.15	<0.1	1.45	3.62	52.2
Pb-t, FST	µg/L		Prior to Aug 2024: Hardness ≤ 8000 is 3; Hardness 8000-360,000: calc. Hardness>360,000 is Capped Value of 360,000		417	417	163	417	417	417	51	139
Pb-t, FLT	µg/L			Prior to Aug 2024: Hardness 8000-360,000: calc. Hardness > 360,000 is Capped Value of 360,000	20	20	10	20	20	20	5.3	8.7
Lithium	µg/L	1.0	NG	NG	102	1060	135	95	134	32.3	4.6	49.4
Magnesium	µg/L	5.0	NG	NG	81400	497000	133000	134000	132000	76700	4730	41000
Manganese [3]	µg/L	0.10	Calc. based on hardness	Calc. based on Hardness	**4270**	**37600**	**9850**	417	277	248	157	**2690**
Mn-t, FST	µg/L		Hardness 25,000 - 259,000 : calc.; Hardness > 259,000 is Capped Value of 259,000		3394	3394	2435	3394	3394	3394	1306	2215
Mn-t, FLT	µg/L			Hardness 37,000 - 450,000: calc.; Hardness > 450,000 is Capped Value of 450,000	2585	2585	1362	2585	2585	2585	911	1274
Mercury (Based on methyl Hg & total mass Hg)	µg/L	0.005	NG	Calc.	0.344	6.98	0.0206	<0.005	<0.005	0.0106	0.0122	0.044
Molybdenum	µg/L	0.05	2000	≤ 1000	25.8	170	7.26	0.777	1.79	4.79	1.96	5.68
Nickel	µg/L	0.5	NG		288	3110	363	330	221	15.5	9.35	122
Phosphorus	µg/L	50-100	NG	NG	5340	85100	14800	<100	<100	217	526	4070
Potassium	µg/L	50.0	NG	NG	20800	175000	22100	11200	10700	17200	4570	11500
Rubidium	µg/L	0.2	NG	NG	106	1440	103	3.82	3.62	5.93	6.88	50.1
Selenium	µg/L	0.05	NG	2.0	9.28	81.4	2.14	1.05	0.7	1.6	0.214	1.77
Silicon	µg/L	100		NG	91900	1200000	129000	6160	5740	5430	7320	56600
Silver [3]	µg/L	0.01-0.02	0.10 - 3.0	0.05 - 1.5	2.12	**30.6**	2.28	<0.02	<0.02	0.026	0.045	0.802
Ag-t FST Guideline Calc			**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		3.0	3.0	3.0	-	-	-	0.1	3.0
Ag-t FLT Guideline Calc				**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	1.50	1.50	1.50	0.12	0.12	0.12	0.05	1.50
Sodium	µg/L	50.0	NG	NG	19700	43800	25800	40100	45300	41600	4050	16500
Strontium	µg/L	0.2	NG	NG	865	5670	1950	1400	1400	5830	215	740
Sulfur	µg/L	500	NG	NG	299000	403000	28000	570000	514000	106000	940	27100
Tellerium	µg/L	0.2-0.4	NG	NG	<1	<20	<2	<0.4	<0.4	<0.4	<0.2	<1
Thallium	µg/L	0.01-0.055	NG	NG	2.18	30.9	2.47	0.032	0.032	0.058	0.097	1.01
Thorium	µg/L	0.1-0.2	NG	NG	24.6	246	44.7	<0.2	<0.2	0.49	1	15.8
Tin	µg/L	0.1-0.2	NG	NG	<0.5	<10	<1	<0.2	<0.2	<0.2	0.12	<0.5
Titanium	µg/L	0.3-1.2	NG	NG	178	1390	732	5.1	1.03	51.3	56.2	322
Tungsten	µg/L	0.1-0.2	NG	NG	<0.5	<10	5.85	<0.2	<0.2	0.55	1.95	11.1
Uranium	µg/L	0.01	NG	NG	9.7	135	14.8	3.32	4.01	2.92	0.564	4.93
Vanadium	µg/L	0.5-1.0	NG	NG	206	2730	319	<1	<1	5.22	12.1	122
Zinc [3]	µg/L	3.0	Calc. based on Hardness	Calc. based on Hardness	877	10000	1240	356	154	18.3	30.5	409
Zn FST Guideline Calc. - relevant prior to Aug 2023	µg/L		Hardness < 90,000 = 33.0 Hardness 90,000 - 500,000, Calc. Hardness > 500,000, Capped Value		340.5	340.5	94.5	340.5	340.5	340.5	33.0	79.5
Zn FLT Guideline Calc. - relevant prior to Aug 2023	µg/L			Hardness < 90,000 = 7.5 Hardness 90,000 - 330,000, Calc. Hardness > 330,000, Capped Value	187.5	187.5	69.0	187.5	187.5	187.5	7.5	54.0
Zirconium	µg/L	0.06-0.12	NG	NG	1.05	<20	<2	<0.4	<0.4	0.65	0.62	1.18
Metals, Dissolved												
Aluminum [5]	µg/L	1.0	100	50	164	7.7	7.0	61.1	60.1	18.9	21.3	20
Al FST Guideline Calc. (based on pH); relevant prior to Aug 2023	µg/L		pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); relevant prior to Aug 2023	µg/L			median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50	50	50	50
Antimony	µg/L	0.1-0.2	NG	NG	0.21	0.24	0.18	<0.2	0.3	0.23	<0.1	0.17
Arsenic	µg/L	0.10	NG	NG	0.41	0.3	0.31	0.1	0.43	0.35	0.35	0.36
Barium	µg/L	0.10	NG	NG	75.7	39	57	19	31.1	185	65.5	57.7
Beryllium	µg/L	0.1-0.2	NG	NG	<0.1	<0.1	<0.1	0.118	<0.1	<0.1	<0.1	<0.1
Bismuth	µg/L	0.05-0.1	NG	NG	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05
Boron	µg/L	10.0	NG	NG	40	22	23	124	139	68	<10	19
Cadmium [3]	µg/L	0.005	Calc. based on Hardness	Calc. based on hardness	0.583	0.119	0.0124	**2.80**	1.19	0.115	0.0257	0.0173
Cd-d, FST (acute)	µg/L		Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		2.80	2.80	1.03	2.80	2.80	2.80	0.40	0.91
Cd-d, FLT (chronic)	µg/L			Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.46	0.46	0.32	0.46	0.46	0.46	0.16	0.29
Calcium	µg/L	50.0	NG	NG	248000	224000	48600	460000	424000	402000	22800	45400
Cesium	µg/L	0.01	NG	NG	0.028	<0.01	<0.01	<0.02	0.027	<0.02	<0.01	<0.01
Chromium	µg/L	0.10	NG	NG	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
Cobalt	µg/L	0.10			22.8	2.14	0.49	17.7	5.37	0.91	0.24	0.66

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Appendix B1: LBRR Surface Water Analytical Results

Parameter	Unit	RDL	BCAWQG - FST [1]	BCAWQG-FLT [2]	LBRR-DD	LBRR-LC	LBRR-EDP	LBRR-EDP	LBRR-EDP	LBRR-EDP	RR8	RR9
					27-Feb-25	27-Feb-25	27-Feb-25	22-Apr-25	22-Jun-25	26-Oct-25	27-Feb-25	27-Feb-25
Copper [6]	µg/L	0.20	Calc. based on BLM Model	Calc. based on BLM Model	2.71	2.78	1.41	1.28	2.05	1.81	1.15	1.65
Cu-d, FST (acute)	µg/L		BLM Ligand Model value		49.7	46.4	19	15.0	18.7	25.8	15.3	18.3
Cu-d, FLT (chronic)	µg/L			BLM Ligand Model value	8.54	7.96	3.29	2.66	3.32	4.48	2.57	3.16
Iron	µg/L	10.0-20.0	350	NG	206	5	5	10	10	10	20	5
Lead	µg/L	0.05-0.1	NG	New Aug 2024/Feb 2025	0.211	<0.05	<0.05	<0.1	<0.1	<0.1	<0.05	<0.05
Pb-d, FLT (chronic)				hardnss and DOC-dependent calc.	13.2	12.3	5.17	6.46	7.22	9.61	4.38	4.80
Lithium	µg/L	1.0	NG	NG	29.4	8.2	8	97.2	131	30.4	1.6	7.9
Magnesium	µg/L	5.0	NG	NG	53700	42600	12400	149000	135000	81500	3050	9480
Manganese	µg/L	0.10	NG	NG	1460	254	52.8	430	285	147	21.6	68.8
Mercury	µg/L	0.005	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	NG	NG	2.3	4.38	2.99	0.722	1.87	4.8	1.31	2.48
Nickel	µg/L	0.50	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	50.4	9.29	3.61	**330**	231	11.3	0.77	4.12
Ni-d, FST (acute)			Based on pH, DOC, hardness		258	234	57.1	237	235	283	31.2	48.2
Ni-d, FLT (chronic)				Based on pH, DOC, hardness	17.1	15.7	4.10	12.7	13.2	16.6	2.70	3.40
Phosphorus	µg/L	50.0-100.0	NG	NG	<50	<50	<50	<100	<100	<100	239	<50
Potassium	µg/L	50.0	NG	NG	8660	7810	7420	10500	10800	18000	3540	4760
Rubidium	µg/L	0.20	NG	NG	2.15	1.81	1.36	3.25	3.64	4.27	0.58	1.04
Selenium	µg/L	0.05	NG	2.0	3.46	1.37	0.34	1.2	0.846	1.28	0.075	0.381
Silicon	µg/L	50.0	NG	NG	2620	1750	2150	5970	5590	3260	1180	1790
Silver	µg/L	0.01-0.02	NG	NG	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01
Sodium	µg/L	50.0	NG	NG	16700	19000	20300	41400	45000	42400	3330	12800
Strontium	µg/L	0.20	NG	NG	484	410	420	1420	1430	6290	175	272
Sulfur	µg/L	500	NG	NG	287000	218000	22500	555000	512000	111000	800	21600
Tellerium	µg/L	0.2-0.4	NG	NG	<0.2	<0.2	<0.2	<0.4	<0.4	<0.4	<0.2	<0.2
Thallium	µg/L	0.01	NG	NG	0.018	0.015	0.01	0.032	0.031	0.031	<0.01	<0.01
Thorium	µg/L	0.1-0.2	NG	NG	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.1
Tin	µg/L	0.1-0.2	NG	NG	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.1
Titanium	µg/L	0.3-0.6	NG	NG	<2.4	<0.3	<0.3	<0.6	<0.6	<0.6	0.43	<0.3
Tungsten	µg/L	0.1-0.2	NG	NG	<0.1	<0.1	0.58	<0.2	<0.2	<0.2	0.94	1.23
Uranium	µg/L	0.01	NG	NG	3.06	4.89	1.13	3.17	4.2	2.88	0.274	0.888
Vanadium	µg/L	0.5-1.0	NG	NG	0.52	<0.5	<0.5	<1	<1	<1	<0.5	<0.5
Zinc	µg/L	1.00	NG	NG	31.9	3.8	<1	**337**	**147**	2.2	<1	<1
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards	µg/L		Hardness and DOC-dependent, Capped Value; valid for Hardness 13.8-250.5 mg CaCO3/L, DOC 0.3-17.3 mg/L		162	159	89.5	108	114	133	42.6	79
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards	µg/L			Hardness and DOC-dependent, Capped Value; valid for Hardness 23.4-399 mg $CaCO_3$/L, pH 6.5-8.13, DOC 0.3-22.9 mg/L)	83	77.8	16.8	29.5	32.6	50.2	7.78	15
Zirconium	µg/L	0.06-0.12	NG	NG	<0.2	<0.2	<0.2	<0.4	<0.4	<0.4	<0.2	<0.2
Laboratory Work Order Number					FJ2500628	FJ2500628	FJ2500628	FJ2501134	FJ2501891	FJ2503336	FJ2500628	FJ2500628

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.

NG - No Guideline

Detection limit can vary as described in the COA. Detection limit can be raised when dilutation is required due to high Dissolved Solids/Electrical Conductivity (DLDS), e.g. nitrite.

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed

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Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS
			28-Feb-25	27-Mar-25	22-Apr-25	13-May-25	22-Jun-25	30-Jul-25	31-Aug-25	7-Oct-25	26-Oct-25
Physical Parameters											
Acidity (Total as $CaCO_3$)	NG	NG	5600	499000	1000	1000	122000	1000	1000	1000	3600
Alkalinity (Total as $CaCO_3$)	NG	NG	65.2	0.5	120	175	0.5	205	225	234	224
Electrical Conductivity (EC)	NG	NG	1600	2510	1320	1100	1750	1190	1040	1000	844
Hardness as CaCO3, dissolved	NG	NG	832000	1120000	578000	447000	810000	459000	380000	354000	387000
Hardness as CaCO3, from total Ca/Mg (New January 2020)			864000	1140000	556000	441000	839000	472000	392000	365000	654000
pH	6.5 - 9	6.5-9.0	7.57	**4.11**	7.98	8.26	**4.21**	8.26	8.35	8.29	7.79
Total Dissolved Solids (TDS)	NG	NG	1260000	2140000	940000	768000	1440000	870000	754000	642000	644000
Total Suspended Solids (TSS)	NG	NG	210000	203000	22900	1500	106000	8000	1500	1500	1640000
Alkalinity (Hydroxide) as $CaCO_3$	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	5600	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	NG	NG	65200	<1000	120000	175000	<1000	205000	219000	234000	224000
Anions and Nutrients											
Ammonia (NH_4 as N)	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	254	787	353	442	504	569	61.5	92.8	197
Ammonia FST Guideline	pH dependent (at Temp 4 °C or in situ T)		11900	27200	6220	3150	27200	3150	2520	3150	8770
Ammonia FLT Guideline		pH dependent (at Temp 4 °C or in situ T)	1970	1970	1200	606	1970	606	484	606	1690
Chloride (Cl^-)	600000	150,000	51200	43300	62100	59800	67500	61100	53800	45000	97800
Nitrate (NO_3^- as N)	NG	NG	382	793	1590	692	304	59.4	403	517	630
Nitrite (NO_2^- as N)	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	2.5	10	5.7	17.2	5	8.4	10.9	18.3	7.1
Sulphate (SO_4) [3]	NG	309,000 - 429,000	778000	1630000	497000	356000	947000	347000	238000	240000	188000
SO4 FLT Guideline Calc	NG	Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000 Hardness > 250,000 site-specific	429000	429000	429000	429000	429000	429000	309000	309000	309000
Dissolved Organic Carbon (DOC)	NG	NG	1.05	1.25	0.73	0.83	0.70	0.93	1.03	1.17	2.84
Metals, Total											
Aluminum	NG		7620	50800	4260	109	20900	1220	94.1	107	30500
NEW FLT Guideline (no FST) - relevant August 2023 onwards		pH, DOC, Hardness-dependent; valid hardness 10-430 mg/L, pH 6.0-8.7, DOC 0.8-12.3 mg/L	118	86.4	105	123	59.4	132	147	158	238
Antimony	NG	NG	0.19	<0.5	0.11	0.3	0.1	<0.1	<0.1	<0.1	1.34
Arsenic	5, discontinued Aug 2023	5.0	4.78	28.2	1.43	0.27	8.86	0.61	0.22	0.23	28.6
Barium	NG	NG	98.3	41.6	24.2	27.6	28.8	30.2	27.9	26.1	1190
Beryllium	NG	NG	2.13	12	1.25	<0.1	5.54	0.382	<0.1	<0.1	1.86
Bismuth	NG	NG	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.367
Boron	1200	1200	96	169	118	167	160	252	311	305	108
Cadmium	NG	NG	7.86	22.3	2.55	0.208	11.8	0.666	0.0407	0.0494	3.2
Calcium	NG	NG	224000	206000	149000	122000	207000	129000	105000	97600	191000
Cesium	NG	NG	0.268	0.204	0.052	0.065	0.076	0.052	0.035	0.029	3.48
Chromium [4]	NG	NG	5.57	38	2.29	<0.5	16.6	0.88	<0.5	<0.5	55
Cobalt	May 2025: N/A; (Prior to May 2025: 110 ug/L)		**118**	**485**	43.4	6.45	150	14.8	3.29	3.47	43.2
Co-t, FLT		May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)	-	-	-	0.90	0.90	0.90	0.886	0.86	0.893
Copper [3]	Calc. based on Hardness	2 to 10	102	412	58.2	1.18	245	11.9	0.97	0.86	96.6
Cu FST Guideline Calc. - relevant prior to August 2019	Hardness 13,000 - 400,000 : calc.; Hardness ≥ 400,000 is Capped Value of 400,000										
Cu FLT Guideline Calc. - relevant prior to August 2019		Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10									
Iron	1000	NG	**12400**	**64300**	**7040**	185	**55400**	**4170**	86	104	**73200**
Lead [3]	101 - 348	Calc. based on Hardness	1.29	1.21	0.175	<0.05	0.343	0.072	<0.05	<0.05	29.4
Pb-t, FST - applicable prior to Feb 2025	Based on Hardness 8000-360,000 Hardness ≤ 8000: 3 Hardness > 8000 : calc.		417.0	417.0	417.0	417.0	417.0	417.0	417.0	408.1	417.0
Pb-t, FLT - applicable prior to Feb 2025		Applies to Hardness 8000-360,000 Hardness ≤ 8000, NG Hardness > 8000 : calc.	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.2	19.6
Lithium	NG	NG	119	494	70.4	47.3	168	64.3	55.4	53.6	61.9
Magnesium	NG	NG	74000	152000	44800	33200	78300	36300	31600	29500	43000
Manganese [3]	Calc. based on Hardness	Calc. based on Hardness	1410	**4380**	471	150	1540	253	61.5	73.6	1650
Mn-t, FST	Applies to Hardness 25000-259000 µg/L Mn : calc.		3394	3394	3394	3394	3394	3394	3394	3394	3394
Mn-t, FLT		Applies to Hardness 37000-450000 µg/L Mn : calc.	2585	2585	2585	2572	2585	2585	2277	2163	2308
Mercury (Based on methyl Hg & total mass Hg)	NG	Calc.	0.0056	0.0093	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.164
Molybdenum	2000	≤ 1000	1.44	1.39	1.2	4.05	1.16	1.35	1.36	1.33	5.79
Nickel	NG	NG	381	1550	160	23.4	533	55.7	18	17.9	148
Phosphorus	NG	NG	383	3560	107	<50	1280	<50	<50	<50	3050
Potassium	NG	NG	3480	3940	3580	5860	3700	3750	3840	3390	9230
Rubidium	NG	NG	4.62	6.7	2.82	4.24	4.69	2.52	2.25	1.93	36
Selenium	NG	2.0	1.61	5.07	1.05	0.888	1.06	0.173	0.121	0.098	1.79
Silicon	NG	NG	7000	8040	4760	3350	11800	5280	4080	3790	41500
Silver [3] (Based on Hardness < or > 100000)	0.10 - 3.0	0.05 - 1.5	0.027	<0.05	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	0.485
Ag FST Guideline Calc	**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		3.0	-	-	-	-	-	-	-	-
Ag FLT Guideline Calc		**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	1.50	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Sodium	NG	NG	39600	128000	56900	63400	62600	76300	92000	87100	31700
Strontium	NG	NG	1050	1350	760	812	1040	812	711	719	1120
Sulfur	NG	NG	293000	580000	181000	119000	353000	132000	91400	87000	76900
Tellerium	NG	NG	0.26	<1	<0.2	<0.2	0.23	<0.2	<0.2	<0.2	<0.4
Thallium	NG	NG	0.049	0.074	0.028	0.037	0.05	0.016	<0.01	<0.01	0.604
Thorium	NG	NG	9.55	43.7	4.92	<0.1	29.5	0.97	<0.1	<0.1	14.3
Tin	NG	NG	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.58
Titanium	NG	NG	17.6	<7.95	1.33	<0.3	1.07	0.46	<0.3	<0.3	285
Tungsten	NG	NG	0.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.04
Uranium	NG	NG	7.72	34.9	3.66	1.49	15	1.49	0.778	0.77	5.48
Vanadium	NG	NG	3.48	3.04	<0.5	<0.5	3.12	<0.5	<0.5	<0.5	87.3
Zinc [3] (Based on Hardness < or > 90,000)	Calc. based on Hardness	Calc. based on Hardness	1290	5080	524	22.9	1950	142	7.5	7.5	505
Zn FST Guideline Calc. - relevant prior to Aug 2023	Hardness 90,000 - 500,000, Calc. Hardness > 500,000, is Capped Value of 500,000		341	341	341	301	341	310	251	231	256
Zn FLT Guideline Calc. - relevant prior to Aug 2023		Hardness 90,000 - 330,000, Calc. Hardness > 330,000, is Capped Value of 330,000	188	188	188	188	188	188	188	188	188
Zircronium	NG	NG	0.35	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.57
Metals, Dissolved											
Aluminum [5]	100	50	58.3	43200	126	74.6	8880	131	84	84.8	30.3
Al FST Guideline Calc. (based on pH); relevant prior to Aug 2023	pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); relevant prior to Aug 2023		median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50	50	50	50	50
Antimony	NG	NG	<0.1	<0.5	<0.1	0.29	<0.1	<0.1	<0.1	<0.1	0.24
Arsenic	NG	NG	0.14	9.13	<0.1	0.21	2.91	0.13	0.2	0.18	0.2
Barium	NG	NG	28.2	13.8	17	27.3	28.9	27.4	28.2	26.7	80.3
Beryllium	NG	NG	0.189	9.67	<0.1	<0.1	4.02	<0.1	<0.1	<0.1	<0.1
Bismuth	NG	NG	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	NG	NG	86	148	103	136	143	245	298	307	78

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Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS	RBSBIAR-DS
			28-Feb-25	**27-Mar-25**	**22-Apr-25**	**13-May-25**	**22-Jun-25**	**30-Jul-25**	**31-Aug-25**	**7-Oct-25**	**26-Oct-25**
Cadmium [3] (Based on Hardness as $CaCO_3$)	Calc. based on Hardness	Calc. based on hardness	**6.88**	**22.8**	1.69	0.208	**11.4**	0.236	0.0131	0.0025	0.133
Cd-d, FST (acute)	Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		2.80	2.80	2.80	2.75	2.80	2.80	2.33	2.16	2.37
Cd-d, FLT (chronic)		Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.457	0.457	0.457	0.457	0.457	0.457	0.457	0.457	0.457
Calcium	NG	NG	217000	194000	150000	119000	200000	123000	98600	94400	112000
Cesium	NG	NG	0.021	0.059	0.034	0.069	0.071	0.048	0.036	0.028	<0.01
Chromium	NG	NG	<0.5	2.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	NG	NG	113	480	41	6.5	150	12.7	2.93	2.63	1.18
Copper [6]	Calc. based on BLM Model	Calc. based on BLM Model	**7.29**	**381**	4.35	0.82	**209**	0.88	0.61	0.46	0.98
Cu-d, FST (acute)	BLM Ligand Model value		3.02	0.2	4.40	5.56	0.20	5.56	5.56	5.56	11
Cu-d, FLT (chronic)		BLM Ligand Model value	0.514	0.2	0.765	0.982	0.20	0.982	0.982	0.982	1.89
Iron	350	NG	**1580**	**14400**	**670**	5	**12200**	5	5	14	5
Lead	NG	New Aug 2024/Feb 2025	<0.05	<0.25	<0.05	<0.05	0.053	<0.05	<0.05	<0.05	<0.05
Pb-d, FLT (chronic)		DOC, Hardness dependent	5.41	5.84	4.74	4.77	2.7	2.76	2.8	2.94	4.73
Lithium	NG	NG	114	433	63	39.9	150	62.9	57.2	56.6	19
Magnesium	NG	NG	70600	155000	49300	36500	75500	36900	32600	28800	26100
Manganese	NG	NG	1300	4600	542	159	1530	241	48.4	33	267
Mercury	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	NG	NG	0.828	<0.25	0.997	4.14	<0.05	1.3	1.33	1.3	2.36
Nickel	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	**370**	**1510**	**152**	23.8	**541**	47.7	17.3	17.1	3.74
Ni-d, FST (acute)	Based on pH, DOC, hardness		219	319	136	94	233	95.2	83.9	75.6	108
Ni-d, FLT (chronic)		Based on pH, DOC, hardness	11.4	16.5	7.0	4.8	12	5.0	4.3	4	6
Phosphorus	NG	NG	<50	<250	<50	<50	<50	<50	<50	<50	<50
Potassium	NG	NG	3250	3980	3330	5960	3640	3830	3790	3660	5040
Rubidium	NG	NG	2.25	5.26	2.41	4.38	4.74	2.58	2.37	2.04	1.77
Selenium	NG	2.0	1.43	4.41	0.909	0.918	0.82	0.14	0.117	0.087	0.611
Silicon	NG	NG	4990	6470	4080	3300	11300	4220	4050	3620	2490
Silver	NG	NG	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	NG	NG	39200	132000	57300	64200	60400	75800	88900	82600	28800
Strontium	NG	NG	960	1160	803	796	1010	794	713	702	935
Sulfur	NG	NG	279000	515000	162000	112000	352000	112000	89200	81500	78200
Tellurium	NG	NG	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	NG	NG	0.019	0.051	0.03	0.039	0.048	0.016	<0.01	<0.01	0.017
Thorium	NG	NG	<0.1	0.59	<0.1	<0.1	0.14	<0.1	<0.1	<0.2	<0.1
Tin	NG	NG	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	NG	NG	<0.3	<1.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	NG	NG	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.19
Uranium	NG	NG	2.54	28.4	2.52	1.47	11.8	1.2	0.798	0.758	2.18
Vanadium	NG	NG	<0.5	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	NG	NG	**1090**	**4770**	**211**	17.9	1940	17	1.7	0.5	1.6
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards	Hardness and DOC-dependent, Capped Value; valid for Hardness 13.8-250.5 mg CaCO3/L, DOC 0.3-17.3 mg/L		85.3	88.9	78.1	80.6	77.3	5.0	83.9	87.5	108
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards		Hardness and DOC-dependent, Capped Value; valid for Hardness 23.4-399 mg $CaCO_3$/L, pH 6.5-8.13, DOC 0.3-22.9 mg/L)	31.6	81	19.6	18.2	64.3	95.2	4.3	18.7	38.1
Zirconium	NG	NG	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Laboratory Work Order Number			FJ2500628	FJ2500908	FJ2501134	FJ2501382	FJ2501891	FJ2502301	FJ2502690	FJ2503105	FJ2503336

Notes:

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.
NG - No Guideline
Detection limit can vary as described in the COA. Detection limit can be raised when dilution is required due to high Dissolved Solids/Electrical Conductivity (DLDS), e.g. nitrite.

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed

Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-DS	RBSBIAR-US	RBSBIAR-US	RBSBIAR-EDS	RBSBIAR-EDS
			23-Nov-25	28-Feb-25	26-Oct-25	22-Jun-25	26-Oct-25
Physical Parameters							
Acidity (Total as $CaCO_3$)	NG	NG	3100	1000	2000	2700	3400
Alkalinity (Total as $CaCO_3$)	NG	NG	191	58.4	108	206	61.3
Electrical Conductivity (EC)	NG	NG	1110	369	611	1480	2370
Hardness as CaCO3, dissolved	NG	NG	458000	142000	262000	637000	1080000
Hardness as CaCO3, from total Ca/Mg (New January 2020)			474000	144000	359000	644000	994000
pH	6.5 - 9	6.5-9.0	8.03	7.86	8.02	8.09	7.65
Total Dissolved Solids (TDS)	NG	NG	731000	253000	762000	1100000	2600000
Total Suspended Solids (TSS)	NG	NG	15500	42500	489000	1500	128000
Alkalinity (Hydroxide) as $CaCO_3$	NG	NG	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	NG	NG	<1000	<1000	<1000	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	NG	NG	191000	58400	108000	206000	61300
Anions and Nutrients							
Ammonia (NH_4 as N)	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	606	33.4	49.7	2.5	116
Ammonia FST Guideline	pH dependent (at Temp 4 °C or in situ T)		6220	7420	6220	4950	10300
Ammonia FLT Guideline		pH dependent (at Temp 4 °C or in situ T)	1200	1430	1200	952	1980
Chloride (Cl^-)	600000	150,000	40600	66900	138000	57800	**656000**
Nitrate (NO_3^- as N)	NG	NG	79.3	222	1070	58.2	2570
Nitrite (NO_2^- as N)	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	2.5	7.5	8.4	2.5	10
Sulphate (SO_4) [3]	NG	309,000 - 429,000	372000	12000	36300	552000	192000
SO4 FLT Guideline Calc	NG	Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000 Hardness > 250,000 site-specific	429000	309000	309000	429000	309000
Dissolved Organic Carbon (DOC)	NG	NG	0.74	2.03	5.07	1.44	4.38
Metals, Total							
Aluminum	NG		2690	472	10800	33.9	2790
NEW FLT Guideline (no FST) - relevant August 2023 onwards		pH, DOC, Hardness-dependent; valid hardness 10-430 mg/L, pH 6.0-8.7, DOC 0.8-12.3 mg/L	107	191	374	167	304
Antimony	NG	NG	<0.1	0.31	1.06	0.18	0.54
Arsenic	5, discontinued Aug 2023	5.0	1.51	0.73	11.1	0.27	3.48
Barium	NG	NG	21.3	135	547	34.4	265
Beryllium	NG	NG	0.593	<0.1	0.543	<0.1	0.153
Bismuth	NG	NG	<0.05	<0.05	0.143	<0.05	<0.05
Boron	1200	1200	187	25	39	196	43
Cadmium	NG	NG	1.16	0.0508	0.758	0.0066	0.323
Calcium	NG	NG	126000	46000	113000	169000	300000
Cesium	NG	NG	0.043	0.082	1.6	0.029	0.322
Chromium [4]	NG	NG	2	1.37	22	<0.5	5.79
Cobalt	May 2025: N/A; (Prior to May 2025: 110 ug/L)		20.7	0.56	9.63	0.25	2.91
Co-t, FLT		May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)	0.90	-	0.76	0.90	0.9
Copper [3]	Calc. based on Hardness	2 to 10	28.5	2.77	28.1	0.72	7.67
Cu FST Guideline Calc. - relevant prior to August 2019	Hardness 13,000 - 400,000 : calc.; Hardness ≥ 400,000 is Capped Value of 400,000						
Cu FLT Guideline Calc. - relevant prior to August 2019		Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10					
Iron	1000	NG	**6300**	**1060**	**27400**	29	**7500**
Lead [3]	101 - 348	Calc. based on Hardness	0.079	0.528	11.7	<0.05	2.97
Pb-t, FST - applicable prior to Feb 2025	Based on Hardness 8000-360,000 Hardness ≤ 8000: 3 Hardness > 8000 : calc.		417.0	127.58	278.25	417.0	417.0
Pb-t, FLT - applicable prior to Feb 2025		Applies to Hardness 8000-360,000 Hardness ≤ 8000, NG Hardness > 8000 : calc.	19.6	8.29	14.16	19.6	19.6
Lithium	NG	NG	68.1	4.4	17.6	53.2	15.6
Magnesium	NG	NG	38700	7020	18700	53800	59500
Manganese [3]	Calc. based on Hardness	Calc. based on Hardness	313	57.2	590	4.46	299
Mn-t, FST	Applies to Hardness 25000-259000 µg/L Mn : calc.		3394	2104.8	3394.2	3394.18	3394.18
Mn-t, FLT		Applies to Hardness 37000-450000 µg/L Mn : calc.	2585	1229.8	1757.8	2585	2585
Mercury (Based on methyl Hg & total mass Hg)	NG	Calc.	<0.005	<0.005	0.104	<0.005	<0.1
Molybdenum	2000	≤ 1000	1.07	2.1	3.86	1.58	5.15
Nickel	NG	NG	76	1.84	30.3	17.6	9.75
Phosphorus	NG	NG	189	74	1100	<50	369
Potassium	NG	NG	3040	3360	8060	4180	13200
Rubidium	NG	NG	1.96	1.42	16.4	2.04	4.85
Selenium	NG	2.0	0.195	0.176	0.748	0.569	1.58
Silicon	NG	NG	4680	2240	18800	4430	6410
Silver [3] (Based on Hardness < or > 100000)	0.10 - 3.0	0.05 - 1.5	<0.01	0.011	0.191	<0.01	0.049
Ag FST Guideline Calc	**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		-	3.0	-	-	-
Ag FLT Guideline Calc		**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	0.12	1.50	0.12	0.12	0.12
Sodium	NG	NG	76200	7040	9740	106000	53300
Strontium	NG	NG	804	591	1100	739	3130
Sulfur	NG	NG	142000	4300	13100	207000	66000
Tellerium	NG	NG	<0.2	0.25	<0.2	<0.2	<0.2
Thallium	NG	NG	<0.01	0.014	0.266	0.022	0.121
Thorium	NG	NG	2.99	0.16	3.92	<0.1	0.95
Tin	NG	NG	<0.1	<0.1	0.43	<0.1	0.14
Titanium	NG	NG	<1.2	12.1	186	0.37	82.6
Tungsten	NG	NG	<0.1	0.61	0.81	<0.1	0.33
Uranium	NG	NG	2.37	0.52	1.64	2.56	1.8
Vanadium	NG	NG	<0.5	1.81	37.5	<0.5	10.3
Zinc [3] (Based on Hardness < or > 90,000)	Calc. based on Hardness	Calc. based on Hardness	205	5.3	109	1.5	29
Zn FST Guideline Calc. - relevant prior to Aug 2023	Hardness 90,000 - 500,000, Calc. Hardness > 500,000, is Capped Value of 500,000		287	72	162	341	341
Zn FLT Guideline Calc. - relevant prior to Aug 2023		Hardness 90,000 - 330,000, Calc. Hardness > 330,000, is Capped Value of 330,000	188	47	137	188	188
Zirconium	NG	NG	<0.2	0.22	0.47	<0.2	0.46
Metals, Dissolved							
Aluminum [5]	100	50	229	7.9	19.4	21.4	10.4
Al FST Guideline Calc. (based on pH); relevant prior to Aug 2023	pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); relevant prior to Aug 2023		median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50
Antimony	NG	NG	<0.1	0.24	0.28	0.18	0.21
Arsenic	NG	NG	0.11	0.25	0.3	0.22	0.45
Barium	NG	NG	14.5	118	147	37.3	151
Beryllium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	NG	NG	<0.05	<0.05	<0.05	<0.05	<0.1
Boron	NG	NG	172	24	28	180	40

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Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-DS	RBSBIAR-US	RBSBIAR-US	RBSBIAR-EDS	RBSBIAR-EDS
			23-Nov-25	28-Feb-25	26-Oct-25	22-Jun-25	26-Oct-25
Cadmium [3] (Based on Hardness as $CaCO_3$)	Calc. based on Hardness	Calc. based on hardness	0.332	0.0266	0.018	0.0025	0.104
Cd-d, FST (acute)	Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		2.80	0.844	1.586	2.801	2.801
Cd-d, FLT (chronic)		Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.457	0.274	0.430	0.457	0.457
Calcium	NG	NG	120000	46100	84000	166000	324000
Cesium	NG	NG	0.032	<0.01	<0.01	0.027	<0.02
Chromium	NG	NG	<0.5	<0.5	<0.5	<0.5	<1
Cobalt	NG	NG	15.5	0.13	0.11	0.25	0.4
Copper [6]	Calc. based on BLM Model	Calc. based on BLM Model	2.94	1.37	0.91	0.74	0.98
Cu-d, FST (acute)	BLM Ligand Model value		4.4	8.58	21.5	7.07	15
Cu-d, FLT (chronic)		BLM Ligand Model value	0.765	1.46	3.76	1.24	2.56
Iron	350	NG	102	11	5	5	10
Lead	NG	New Aug 2024/Feb 2025	<0.05	<0.05	<0.05	<0.05	<0.1
Pb-d, FLT (chronic)		DOC, Hardness dependent	2.46	5.31	5.86	3.71	7.36
Lithium	NG	NG	64.1	4	6.6	52.6	13.2
Magnesium	NG	NG	38400	6500	12700	54000	65000
Manganese	NG	NG	297	33.8	24.5	3.99	137
Mercury	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	NG	NG	0.991	2.02	3.11	1.64	4.91
Nickel	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	56.1	0.63	0.74	17.9	2.15
Ni-d, FST (acute)	Based on pH, DOC, hardness		103	44.8	74.3	148	292
Ni-d, FLT (chronic)		Based on pH, DOC, hardness	5.4	2.8	5	7.7	15.8
Phosphorus	NG	NG	<50	<50	<50	<50	<100
Potassium	NG	NG	3180	3360	6230	4360	14400
Rubidium	NG	NG	1.85	0.59	1.13	2.24	1.79
Selenium	NG	2.0	0.176	0.128	0.367	0.504	1.56
Silicon	NG	NG	3180	1470	1920	4340	2160
Silver	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.02
Sodium	NG	NG	76200	7090	9030	106000	55500
Strontium	NG	NG	810	556	1090	766	3320
Sulfur	NG	NG	138000	4230	12800	199000	71200
Tellurium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.4
Thallium	NG	NG	<0.01	<0.01	0.01	0.022	0.021
Thorium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.2
Tin	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.2
Titanium	NG	NG	<0.3	0.34	<0.3	<0.3	<0.6
Tungsten	NG	NG	<0.1	0.5	0.34	<0.1	<0.2
Uranium	NG	NG	1.9	0.458	0.593	2.52	1.54
Vanadium	NG	NG	<0.5	<0.5	<0.5	<0.5	<1
Zinc	NG	NG	20.4	0.5	0.5	1.2	1
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards	Hardness and DOC-dependent, Capped Value; valid for Hardness 13.8-250.5 mg CaCO3/L, DOC 0.3-17.3 mg/L		78.4	62.2	124	92	120
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards		Hardness and DOC-dependent, Capped Value; valid for Hardness 23.4-399 mg $CaCO_3$/L, pH 6.5-8.13, DOC 0.3-22.9 mg/L)	18.9	12.2	27.5	23.5	52.3
Zirconium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.4
Laboratory Work Order Number			FJ2503610	FJ2500628	FJ2503336	FJ2501891	FJ2503336

Notes:

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.
NG - No Guideline
Detection limit can vary as described in the COA. Detection limit can be raised when dilutation is required due to high Dissolved Solids/Electrical

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed

Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS
			22-Apr-25	13-May-25	22-Jun-25	30-Jul-25	31-Aug-25	26-Oct-25	23-Nov-25
Physical Parameters									
Acidity (Total as $CaCO_3$)	NG	NG	1000	1000	1000	2300	1000	1000	4500
Alkalinity (Total as $CaCO_3$)	NG	NG	167	197	215	212	220	204	230
Electrical Conductivity (EC)	NG	NG	658	705	751	764	770	771	781
Hardness as CaCO3, dissolved	NG	NG	304000	334000	351000	346000	376000	367000	379000
Hardness as CaCO3, from total Ca/Mg (New January 2020)			287000	321000	366000	375000	348000	337000	393000
pH	6.5 - 9	6.5-9.0	8.28	8.24	8.26	8.14	8.27	7.99	7.92
Total Dissolved Solids (TDS)	NG	NG	409000	452000	438000	524000	526000	537000	446000
Total Suspended Solids (TSS)	NG	NG	4500	6900	1500	1500	1500	1500	1500
Alkalinity (Hydroxide) as $CaCO_3$	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	NG	NG	167000	197000	215000	212000	220000	204000	230000
Anions and Nutrients									
Ammonia (NH_4 as N)	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	2.5	5.9	2.5	2.5	2.5	2.5	7.1
Ammonia FST Guideline	pH dependent (at Temp 4 °C or in situ T)		3150	3950	3150	20400	3150	6220	7420
Ammonia FLT Guideline		pH dependent (at Temp 4 °C or in situ T)	606	759	606	952	606	1200	1430
Chloride (Cl^-)	600000	150,000	44800	51700	54400	54900	54300	63100	58300
Nitrate (NO_3^- as N)	NG	NG	519	127	57.1	<25	<25	<25	<25
Nitrite (NO_2^- as N)	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	0.5	2.5	2.5	2.5	2.5	2.5	2.5
Sulphate (SO_4) [3]	NG	309,000 - 429,000	107000	117000	117000	109000	98900	112000	111000
SO4 FLT Guideline Calc	NG	Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000 Hardness > 250,000 site-specific	309000	309000	309000	309000	309000	309000	309000
Dissolved Organic Carbon (DOC)	NG	NG	1.45	1.96	1.90	1.87	1.83	6.16	1.48
Metals, Total									
Aluminum	NG		5.3	17.5	3.7	5.2	5.0	7	10.5
NEW FLT Guideline (no FST) - relevant August 2023 onwards		pH, DOC, Hardness-dependent; valid hardness 10-430 mg/L, pH 6.0-8.7, DOC 0.8-12.3 mg/L	183	217	214	203	208	417	162
Antimony	NG	NG	0.1	0.14	0.13	0.12	0.1	<0.1	<0.1
Arsenic	5, discontinued Aug 2023	5.0	0.14	0.21	0.21	0.36	0.3	0.2	0.12
Barium	NG	NG	53.2	63.2	78.3	83.9	87.7	74.4	71.4
Beryllium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	NG	NG	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	1200	1200	19	29	36	43	44	32	26
Cadmium	NG	NG	0.0068	0.013	0.0066	0.0055	0.0057	0.0114	0.0113
Calcium	NG	NG	83800	93600	105000	110000	102000	95700	114000
Cesium	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium [4]	NG	NG	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	May 2025: N/A; (Prior to May 2025: 110 ug/L)		0.05	0.05	0.05	0.05	0.05	0.05	0.05
Co-t, FLT		May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)	-	0.84	0.857	0.852	0.882	0.873	0.89
Copper [3]	Calc. based on Hardness	2 to 10	0.25	0.25	0.25	0.25	0.51	0.25	0.25
Cu FST Guideline Calc. - relevant prior to August 2019	Hardness 13,000 - 400,000 : calc.; Hardness ≥ 400,000 is Capped Value of 400,000								
Cu FLT Guideline Calc. - relevant prior to August 2019		Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10							
Iron	1000	NG	15	50	17	22	5	18	11
Lead [3]	101 - 348	Calc. based on Hardness	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pb-t, FST - applicable prior to Feb 2025	Based on Hardness 8000-360,000 Hardness ≤ 8000: 3 Hardness > 8000 : calc.		336.2	379.0	403.7	396.4	417.0	417.0	417.0
Pb-t, FLT - applicable prior to Feb 2025		Applies to Hardness 8000-360,000 Hardness ≤ 8000, NG Hardness > 8000 : calc.	16.4	18.1	19.1	18.8	19.6	19.6	19.6
Lithium	NG	NG	5.1	6.8	8.5	9.5	10.4	7.1	7.7
Magnesium	NG	NG	19000	21200	25200	24400	22700	23700	26200
Manganese [3]	Calc. based on Hardness	Calc. based on Hardness	2.01	3.42	3.05	5.52	0.93	7.39	0.99
Mn-t, FST	Applies to Hardness 25000-259000 µg/L Mn : calc.		3394.2	3394	3394	3394	3394	3394.18	3394
Mn-t, FLT		Applies to Hardness 37000-450000 µg/L Mn : calc.	1942.6	2075	2149	2127	2259	2219.8	2220
Mercury (Based on methyl Hg & total mass Hg)	NG	Calc.	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	2000	≤ 1000	1.73	1.59	1.55	1.9	1.86	1.34	1.1
Nickel	NG	NG	0.8	0.55	0.66	0.64	0.85	0.9	0.62
Phosphorus	NG	NG	<50	<50	<50	<50	<50	<50	<50
Potassium	NG	NG	2700	3100	3620	4490	4960	6560	3360
Rubidium	NG	NG	0.3	0.45	0.63	0.76	0.83	0.72	0.38
Selenium	NG	2.0	0.367	0.376	0.266	0.097	0.068	0.114	0.268
Silicon	NG	NG	3310	3420	4490	6550	6950	4730	5150
Silver [3] (Based on Hardness < or > 100000)	0.10 - 3.0	0.05 - 1.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Ag FST Guideline Calc	**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		-	-	-	-	-	-	-
Ag FLT Guideline Calc		**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Sodium	NG	NG	13300	15800	17500	18400	18600	15900	17400
Strontium	NG	NG	151	185	210	200	217	216	217
Sulfur	NG	NG	39200	37400	44200	40600	39600	36800	42400
Tellerium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	NG	NG	<0.3	0.41	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	NG	NG	1.31	1.36	1.17	1.03	1.04	1.19	1.49
Vanadium	NG	NG	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc [3] (Based on Hardness < or > 90,000)	Calc. based on Hardness	Calc. based on Hardness	1.5	1.5	1.5	1.5	3.8	1.5	1.5
Zn FST Guideline Calc. - relevant prior to Aug 2023	Hardness 90,000 - 500,000, Calc. Hardness > 500,000, is Capped Value of 500,000		194	216	229	225	248	241	227
Zn FLT Guideline Calc. - relevant prior to Aug 2023		Hardness 90,000 - 330,000, Calc. Hardness > 330,000, is Capped Value of 330,000	168	188	188	188	188	188	188
Zircronium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Metals, Dissolved									
Aluminum [5]	100	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Al FST Guideline Calc. (based on pH); relevant prior to Aug 2023	pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); relevant prior to Aug 2023		median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50	50	50
Antimony	NG	NG	0.12	0.14	0.13	0.11	<0.1	<0.1	<0.1
Arsenic	NG	NG	0.11	0.17	0.2	0.29	0.3	0.2	0.13
Barium	NG	NG	54.2	58.6	81.7	87.1	87.7	77.7	72.6
Beryllium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	NG	NG	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	NG	NG	17	25	34	41	42	31	24

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Appendix B2: SBIAR Surface Water Analytical Results

Parameter	BCAWQG - FST 1	BCAWQG - FLT 2	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS	RBSBIAR-EUS
			22-Apr-25	13-May-25	22-Jun-25	30-Jul-25	31-Aug-25	26-Oct-25	23-Nov-25
Cadmium [3] (Based on Hardness as $CaCO_3$)	Calc. based on Hardness	Calc. based on hardness	0.0056	0.0085	0.007	0.0052	0.005	0.0142	0.0053
Cd-d, FST (acute)	Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		1.849	2.037	2.144	2.112	2.301	2.245	2.320
Cd-d, FLT (chronic)		Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.457	0.457	0.457	0.457	0.457	0.457	0.457
Calcium	NG	NG	85800	94700	101000	101000	109000	105000	108000
Cesium	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chromium	NG	NG	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	NG	NG	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Copper [6]	Calc. based on BLM Model	Calc. based on BLM Model	0.32	0.38	0.39	0.23	0.1	0.27	0.23
Cu-d, FST (acute)	BLM Ligand Model value		8.18	10.1	10.8	9.38	10.8	25.8	6.02
Cu-d, FLT (chronic)		BLM Ligand Model value	1.45	1.78	1.92	1.65	1.92	4.51	1.04
Iron	350	NG	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead	NG	New Aug 2024/Feb 2025	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pb-d, FLT (chronic)		DOC, Hardness dependent	5.28	5.76	3.77	3.73	3.75	6.96	3.37
Lithium	NG	NG	4.8	5.9	8.2	9.3	10.2	7	7.2
Magnesium	NG	NG	21800	23700	23900	22700	25300	25400	26600
Manganese	NG	NG	1.95	0.96	2.73	2.69	<0.1	6.88	0.96
Mercury	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	NG	NG	1.68	1.69	1.64	1.82	1.87	1.36	1.08
Nickel	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	0.78	0.55	0.58	0.62	0.52	0.85	0.63
Ni-d, FST (acute)	Based on pH, DOC, hardness		65.8	84	81.3	78.4	91.2	110	98.5
Ni-d, FLT (chronic)		Based on pH, DOC, hardness	3.5	4.9	4.8	4.2	5.3	7.1	5.2
Phosphorus	NG	NG	<50	<50	<50	<50	<50	<50	<50
Potassium	NG	NG	2500	2880	3690	4410	5010	7130	3540
Rubidium	NG	NG	0.35	0.44	0.63	0.66	0.78	0.72	0.38
Selenium	NG	2.0	0.251	0.372	0.359	0.085	0.118	0.159	0.281
Silicon	NG	NG	3230	3450	4540	6170	6810	5190	4890
Silver	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sodium	NG	NG	13500	15700	17400	17600	18900	16200	17400
Strontium	NG	NG	159	183	213	207	224	227	222
Sulfur	NG	NG	35100	37500	41800	35300	36200	38500	40900
Tellurium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thorium	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Titanium	NG	NG	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Tungsten	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Uranium	NG	NG	1.29	1.31	1.19	0.99	1	1.17	1.37
Vanadium	NG	NG	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc	NG	NG	1.2	1	0.5	0.5	0.5	0.5	0.5
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards	Hardness and DOC-dependent, Capped Value; valid for Hardness 13.8-250.5 mg CaCO3/L, DOC 0.3-17.3 mg/L		92.1	99	98.3	84	91.2	130	92.6
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards		Hardness and DOC-dependent, Capped Value; valid for Hardness 23.4-399 mg $CaCO_3$/L, pH 6.5-8.13, DOC 0.3-22.9 mg/L)	17.6	21.7	22.5	4.9	5.3	41.9	25.9
Zircronium	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Laboratory Work Order Number			FJ2501134	FJ2501382	FJ2501891	FJ2502301	FJ2502690	FJ2503336	FJ2503610

Notes:

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.
NG - No Guideline
Detection limit can vary as described in the COA. Detection limit can be raised when dilutation is required due to high Dissolved Solids/Electrical

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed

Appendix B3: Right Bank Drainage Tunnel (RBDT) Water Analytical Results

Parameter	Unit	RDL	BCAWQG - FST 1	BCAWQG - FLT 2	RBDT-Sump 28-Feb-25	RBDT-Sump 2-Apr-25	RBDT-Sump 22-Apr-25	RBDT-Sump 13-May-25	RBDT-Sump 22-Jun-25	RBDT-Sump 30-Jul-25	RBDT-Sump 31-Aug-25	RBDT-Sump 7-Oct-25	RBDT-Sump 26-Oct-25	RBDT-Sump 23-Nov-25	RBDT-Sump 21-Dec-25
Physical Parameters															
Temperature	°C														
Flow Rate	L/sec														
Acidity (Total as $CaCO_3$)	µg/L	1000	NG	NG	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Alkalinity (Total as $CaCO_3$)	mg/L	1.0	NG	NG	306	321	307	308	329	308	374	392	384	404	368
Electrical Conductivity (EC)	µS/cm	2.0	NG	NG	1620	1420	1600	1540	1650	1690	2090	2040	2150	2210	1960
Hardness as CaCO3, dissolved	µg/L	500	NG	NG	25500	32400	25900	25900	27000	22300	24000	23400	19900	20100	22300
Hardness as CaCO3, from total Ca/Mg (New January 2020)	µg/L				26400	166000	27100	25900	28000	29100	27800	24700	26300	20800	23800
pH	pH Units	0.10	6.5 - 9.0	6.5-9.0	**9.33**	**9.5**	**9.52**	**9.44**	**9.35**	**9.66**	**9.29**	**9.41**	**9.55**	**9.41**	**9.23**
Total Dissolved Solids (TDS)	µg/L	10000	NG	NG	961000	877000	866000	910000	778000	973000	1240000	1210000	1280000	1300000	1150000
Total Suspended Solids (TSS)	µg/L	3000	NG	NG	1500	854000	1500	4700	1500	18400	11300	6400	9100	1500	1500
Alkalinity (Hydroxide) as $CaCO_3$	µg/L	1000	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	µg/L	1000	NG	NG	77600	92400	101000	95000	88800	122000	87100	112000	135000	119000	80600
Alkalinity (Bicarbonate as $CaCO_3$)	µg/L	1000	NG	NG	229000	229000	206000	213000	240000	185000	286000	280000	249000	286000	287000
Anions and Nutrients															
Ammonia (NH_4 as N)	µg/L	5.0	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	211	333	582	288	165	223	75	290	229	140	219
Ammonia FST Guideline	µg/L		pH dependent (**at Temp 4 °C** or in situ T)		685	685	685	685	685	685	685	685	685	685	685
Ammonia FLT Guideline				pH dependent (**at Temp 4 °C** or in situ T)	132	132	132	132	132	132	132	132	132	132	132
Chloride (Cl^-)	µg/L	500	600000	150,000	247000	236000	245000	257000	272000	277000	362000	395000	397000	409000	346000
Nitrate (NO_3^- as N)	µg/L	5.0-25.0	NG	NG	1240	877	555	933	952	998	843	786	1020	1360	2730
Nitrite (NO_2^- as N)	µg/L	1.0-5.0	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	61.3	214	197	61.6	56.9	83.9	112	137	101	64.4	23.6
Sulphate (SO_4) [3]	µg/L	300	NG	309,000 - 429,000	116000	96200	83000	87500	82700	90600	89400	109000	111000	107000	101000
SO4 FLT Guideline Calc	µg/L		NG	Hardness 0-30,000 = 128,000 Hardness 30,000-76,000 = 218,000 Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000; Hardness > 250,000 site-specific	309000	309000	309000	309000	309000	309000	309000	309000	309000	309000	309000
Dissolved Organic Carbon (DOC)	mg/L		NG	NG	2.85	5.28	2.35	2.43	2.36	2.9	17.8	5.47	5.52	3.12	3.06
Metals, Total															
Aluminum	µg/L	3.00	NG	NG	1150	9930	1040	1030	964	1290	1250	1060	1420	1030	976
NEW FLT Guideline (no FST) - relevant August 2023 onwards					565	798	271	508	494	588	1470	876	913	630	609
Antimony	µg/L	0.10	NG	NG	2.06	3.68	1.7	1.53	1.52	2.62	2.42	1.94	1.88	1.71	1.99
Arsenic	µg/L	0.10	5.0	5.0	5.02	12.2	4.62	4.22	4.08	4.76	4.6	4.56	4.75	4.84	4.97
Barium	µg/L	0.10	NG	NG	128	1170	110	119	125	111	117	107	109	126	138
Beryllium	µg/L	0.10	NG	NG	<0.1	0.538	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	µg/L	0.05	NG	NG	<0.1	0.262	<0.1	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	µg/L	10.0	1200	1200	300	261	311	271	269	302	366	398	342	383	399
Cadmium	µg/L	0.005	NG	NG	0.0115	0.419	0.0154	0.0075	0.00625	0.00875	0.01	0.0075	0.0167	0.005	0.00625
Calcium	µg/L	50	NG	NG	6720	54000	7170	6690	7030	8260	7360	6390	7520	5060	6270
Cesium	µg/L	0.01	NG	NG	0.071	2.32	0.052	0.052	0.061	0.151	0.088	0.07	0.207	0.074	0.081
Chromium [4]	µg/L	0.1-1.0	NG	NG	1.26	23.3	<1	1	1.15	3.14	2.36	1.58	4.03	1.04	<1
Cobalt	µg/L	0.10	May 2025: N/A; (Prior to May 2025: 110 ug/L)		0.1	10.1	0.1	0.05	0.05	0.32	0.20	0.1	0.1	0.1	0.1
Co-t, FLT	µg/L			May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)	-	-	-	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Copper [3]	µg/L	0.50	Calc. based on Hardness	2 to 10	3.09	80.5	2.37	1.84	1.85	5.06	4.23	2.91	3.83	1.91	2.35
Cu FST Guideline Calc. - **relevant prior to August 2019**	µg/L		Hardness 13,000 - 400,000 : calc.; Hardness ≥ 400,000 is Capped Value of 400,000						0.00625						
Cu FLT Guideline Calc. - **relevant prior to August 2019**	µg/L			Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10											
Iron	µg/L	10	1000	NG	84	**20800**	110	51	41	380	191	91	106	31	62
Lead [3]	µg/L	0.05	valid only before Aug 2024/Feb 2025	valid only before Aug 2024/Feb 2025	0.231	12.5	0.302	0.19	0.399	0.402	0.363	0.123	0.222	<0.1	0.138
Pb-t, FST	µg/L		Based on Hardness 8000-360,000 Hardness ≤ 8000: 3 Hardness > 8000 : calc.		14.34	19.45	14.62	14.6	15.4	12.1	13.3	12.9	10.5	10.6	12.1
Pb-t, FLT	µg/L			Applies to Hardness 8000-360,000 Hardness ≤ 8000, NG Hardness > 8000 : calc.	3.87	4.07	3.88	3.88	3.91	3.78	3.83	3.81	3.72	3.72	3.78
Lithium	µg/L	1.0	NG	NG	76.4	83	81.4	77.1	84.9	82.3	112	114	108	120	108
Magnesium	µg/L	5.0	NG	NG	2330	7600	2240	2240	2550	2060	2290	2120	1820	1990	1980
Manganese [3]	µg/L	0.10	Calc. based on Hardness	Calc. based on Hardness	1.42	339	2.13	1.03	0.93	5.35	4.56	2.62	2.6	0.86	1.28
Mn-t, FST	µg/L		Applies to Hardness 25000-259000 µg/L Mn : calc.		821.0	897	825	825	838	786	804	798	759	762	786
Mn-t, FLT	µg/L			Applies to Hardness 37000-450000 µg/L Mn : calc.	717.2	748	719	719	724	703	711	708	693	693	703
Mercury (Based on methyl Hg & total mass Hg)	µg/L	0.005	NG	Calc.	<0.005	0.0352	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	2000	≤ 1000	21.7	16.9	20.4	20	22.7	25.7	32.7	39.4	42.7	39.5	31.1
Nickel	µg/L	0.50	NG		<1	22.4	<1	0.56	0.69	1.39	1.12	1.04	<1	<1	1.03
Phosphorus	µg/L	50.0	NG	NG	100	801	<100	82	90	<100	<100	<100	<100	109	<100
Potassium	µg/L	50.0	NG	NG	6360	7770	5360	5210	6100	8010	8780	8070	7870	7620	7940
Rubidium	µg/L	0.2	NG	NG	6.83	24.5	5.97	5.77	6.92	11.2	10.8	10.3	11.1	9.53	8.84
Selenium	µg/L	0.05	NG	2.0	1.02	1.28	0.869	0.748	0.83	1.01	0.989	0.817	0.996	0.9	0.953
Silicon	µg/L	100.0	NG	NG	5330	21400	4810	4880	4830	6330	5800	5920	6880	5970	5720
Silver [3] (Based on Hardness < or > 100000)	µg/L	0.01	0.10 - 3.0	0.05 - 1.5	<0.02	0.60	<0.02	<0.01	0.011	<0.02	0.021	<0.02	<0.02	<0.02	<0.02
Ag FST Guideline Calc	µg/L		**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		0.10	-	-	-	-	-	-	-	-	-	-
Ag FLT Guideline Calc	µg/L			**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	0.05	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Sodium	µg/L	50.0	NG	NG	342000	318000	312000	314000	349000	335000	463000	483000	445000	486000	420000
Strontium	µg/L	0.2	NG	NG	120	303	103	107	120	119	132	131	144	138	121
Sulfur	µg/L	500.0	NG	NG	43000	35500	32300	31100	33800	34900	37600	42000	39900	41600	36100
Tellerium	µg/L	0.2	NG	NG	<0.4	<0.4	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Thallium	µg/L	0.01	NG	NG	<0.02	0.125	<0.02	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thorium	µg/L	0.10	NG	NG	<0.2	3.06	<0.2	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Tin	µg/L	0.10	NG	NG	<0.2	5.56	<0.2	0.17	0.16	0.44	0.45	0.29	0.41	<0.2	0.2
Titanium	µg/L	0.3-4.5	NG	NG	3.1	126	2.63	1.78	1.3	6.22	7.4	3.65	5.37	1.06	1.63
Tungsten	µg/L	0.10	NG	NG	2.21	2.74	1.99	1.71	1.92	2.49	3.19	2.89	3.18	3.39	3.32
Uranium	µg/L	0.01	NG	NG	0.851	1.84	0.709	0.668	0.661	0.651	0.704	0.681	0.597	0.654	0.693
Vanadium	µg/L	0.50	NG	NG	8.42	29.3	7.95	7.1	7.58	9.94	10.2	10.1	10.7	10.5	9.12
Zinc [3] (Based on Hardness < or > 90,000)	µg/L	3.0	Calc. based on Hardness	Calc. based on Hardness	3	401	3	3.1	1.5	7.4	7.7	3	6.6	6.5	3
Zn FST Guideline Calc. - **relevant prior to Aug 2023**	µg/L		Hardness 90,000 - 500,000, Calc. Hardness > 500,000, is Capped Value of 500,000		33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0	33.0
Zn FLT Guideline Calc. - **relevant prior to Aug 2023**				Hardness 90,000 - 330,000, Calc. Hardness > 330,000, is Capped Value of 330,000	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Zirconium	µg/L	0.06	NG	NG	<0.4	<0.8	<0.4	<0.2	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Metals, Dissolved															
Aluminum [5]	µg/L	1.0	100	50	1020	609	926	970	871	855	976	958	1350	979	871
Al FST Guideline Calc. (based on pH); **relevant prior to Aug 2023**	µg/L		pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100	100	100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); **relevant prior to Aug 2023**	µg/L			median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50	50	50	50	50	50	50
Antimony	µg/L	0.10	NG	NG	1.95	2.56	1.7	1.56	1.54	2.71	2.35	1.9	1.86	1.58	1.97
Arsenic	µg/L	0.10	NG	NG	4.85	4.85	4.58	4.48	3.78	4.67	4.55	4.7	4.76	5.07	4.98
Barium	µg/L	0.10	NG	NG	112	55.1	98	106	115	83.6	83.2	99.4	83.2	122	123
Beryllium	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth		0.05	NG	NG	<0.1	<0.05	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Boron	µg/L	10.0	NG	NG	280	224	273	245	252	276	330	388	362	357	317
Cadmium [3] (Based on Hardness as $CaCO_3$)	µg/L	0.005	Calc. based on Hardness	Calc. based on hardness	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.0075	0.005	0.005
Cd-d, FST (acute)	µg/L		Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		0.1440	0.1842	0.1463	0.1463	0.1527	0.1254	0.1353	0.1318	0.1115	0.1127	0.1254
Cd-d, FLT (chronic)	µg/L			Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.0774	0.0923	0.0782	0.0782	0.0807	0.0701	0.0740	0.0726	0.0645	0.0649	0.0701
Calcium	µg/L	50.0	NG	NG	6480	8770	6740	6690	6840	5710	5830	6030	4920	4780	5790
Cesium		0.01	NG	NG	0.042	0.032	0.035	0.04	0.059	0.054	0.068	0.066	0.214	0.065	0.047
Chromium	µg/L	0.10	NG	NG	<1	1.49	<1	0.83	1.05	2.47	1.79	1.43	3.94	<1	<1
Cobalt	µg/L	0.10	NG	NG	0.1	0.16	0.1	0.05	0.1	<0.2	0.1	0.1	0.1	0.1	0.1
Copper [6]	µg/L	0.20	Calc. based on BLM Model	Calc. based on BLM Model	2.41	3.84	1.54	1.46	1.53	2.7	2.48	2.24	2.65	1.62	1.81
Cu-d, FST (acute)	µg/L		BLM Ligand Model value		9.29	16.5	7.85	7.85	8.99	9.29	51.6	16.5	16.5	9.29	9.29
Cu-d, FLT (chronic)	µg/L			BLM Ligand Model value	1.51	2.69	1.27	1.27	1.48	1.51	8.5	2.69	2.69	1.51	1.51
Iron	µg/L	10.0	350	NG	10	17	10	15	10	10	10	10	10	10	10
Lead	µg/L	0.05	NG	New Aug 2024/Feb 2025	0.106	0.065	0.134	0.11	0.372	<0.1	0.124	<0.1	<0.1	<0.1	<0.1
Pb-d, FLT (chronic)					2.65	3.83	2.41	2.45	2.43	2.6	6.7	3.63	3.53	2.64	2.67
Lithium	µg/L	1.0	NG	NG	72	62.7	74	71.1	79.3	81.4	108	122	108	115	97.2
Magnesium	µg/L	5.0	NG	NG	2260	2540	2200	2240	2420	1960	2290	2030	1850	1980	1910
Manganese	µg/L	0.10	NG	NG	0.59	1.08	0.69	0.49	0.51	0.66	0.26	0.25	<0.2	0.44	0.55
Mercury	µg/L	0.005	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	NG	NG	20.8	18.1	19.9	20.4	22.4	25.6	31.9	39.3	44.2	37.7	30.2
Nickel	µg/L	0.50	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	<1	0.86	<1	0.58	<1	<1	<1	<1	<1	<1	1.01
Ni-d, FST (acute)			Based on pH, DOC, hardness		12.4	23.7	12.4	12.4	15.5	12.4	60	20.5	20.5	12.4	12.4
Ni-d, FLT (chronic)				Based on pH, DOC, hardness	0.60	1.30	0.60	0.60	0.7	0.6	4.1	1.2	1.2	0.6	0.6
Phosphorus	µg/L	50.0	NG	NG	<100	60	<100	85	<100	<100	<100	<100	<100	106	<100
Potassium	µg/L	50.0	NG	NG	6270	6040	4880	5210	5820	7950	8750	8550	8650	7990	7790
Rubidium	µg/L	0.20	NG	NG	6.54	5.87	5.36	6.02	7.3	9.75	10.7	10.6	11.1	8.84	8.5
Selenium	µg/L	0.05	NG	2.0	0.989	0.824	0.837	0.814	0.95	0.866	0.709	0.857	0.828	0.939	0.84
Silicon	µg/L	50.0	NG	NG	4970	3540	4770	4860	4670	5220	5060	5510	7090	5790	5760
Silver	µg/L	0.01	NG	NG	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sodium	µg/L	50.0	NG	NG	333000	304000	311000	308000	333000	337000	448000	459000	446000	485000	411000
Strontium	µg/L	0.20	NG	NG	117	92.6	104	110	122	107	118	132	127	138	126
Sulfur	µg/L	500	NG	NG	41200	29200	31800	30000	33700	31300	37400	39800	41600	40200	38300
Tellurium	µg/L	0.20	NG	NG	<0.4	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Thallium	µg/L	0.01	NG	NG	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Thorium	µg/L	0.10	NG	NG	<0.2	<0.1	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Parameter	Unit	RDL	BCAWQG - FST 1	BCAWQG - FLT 2	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump	RBDT-Sump
					28-Feb-25	2-Apr-25	22-Apr-25	13-May-25	22-Jun-25	30-Jul-25	31-Aug-25	7-Oct-25	26-Oct-25	23-Nov-25	21-Dec-25
Tin	µg/L	0.10	NG	NG	<0.2	2.3	<0.2	0.15	<0.2	0.34	0.31	0.23	0.26	<0.2	<0.2
Titanium	µg/L	0.30	NG	NG	0.63	0.92	0.72	0.62	<0.6	0.6	<0.6	0.63	0.95	<0.6	<0.6
Tungsten	µg/L	0.10	NG	NG	2.14	2.79	1.84	1.7	2.01	2.36	3.08	2.88	3.3	3.38	3.1
Uranium	µg/L	0.01	NG	NG	0.843	0.79	0.686	0.655	0.722	0.586	0.728	0.699	0.626	0.61	0.64
Vanadium	µg/L	0.50	NG	NG	7.87	7.52	7.44	6.92	7.12	8.89	9.75	9.88	11	10.2	8.67
Zinc	µg/L	1.00	NG	NG	2.4	2.10	1	1.7	1	1	1	1	1	1	1
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards					16.2	22.9	15.6	15.7	16.2	2.04	4.31	17.6	15.4	13.5	14.7
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards					2.2	3.53	2.07	2.1	2.16	14.5	23.7	2.63	2.64	2.11	2.09
Zircronium	µg/L	0.06	NG	NG	<0.4	<0.2	<0.4	<0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Laboratory Work Order Number					FJ2500628	FJ2500948	FJ2501134	FJ2501382	FJ2501891	FJ2502301	FJ2502690	FJ2503105	FJ2503336	FJ2503610	FJ2503845

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.

NG - No Guideline

Detection limit can vary as described in the COA. Detection limit can be raised when dilutation is required due to high Dissolved Solids/Electrical Conductivity (DLDS), e.g. nitrite.

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed

Appendix B4 - Area 21-Sump Water Analytical Results

Parameter	Unit	RDL	BCAWQG - FST 1	BCAWQG - FLT 2	Area 21-Sump 28-Feb-25	Area 21-Sump 27-Mar-25	Area 21-Sump 22-Apr-25	Area 21-Sump 13-May-25	Area 21-Sump 22-Jun-25	Area 21-Sump 30-Jul-25	Area 21-Sump 31-Aug-25	Area 21-Sump 7-Oct-25	Area 21-Sump 26-Oct-25
Physical Parameters													
Temperature	°C												
Flow Rate	L/sec												
Acidity (Total as $CaCO_3$)	µg/L	1000	NG	NG	2100	1000	1000	1000	2600	1000	2200	2400	2600
Alkalinity (Total as $CaCO_3$)	mg/L	1.0	NG	NG	37.6	28.8	32.1	53	38.8	68.9	57.8	64.7	40
Electrical Conductivity (EC)	µS/cm	2.0	NG	NG	596	605	1070	1080	1040	1450	2020	3020	1560
Hardness as CaCO3, dissolved	µg/L	500	NG	NG	254000	244000	473000	347000	443000	648000	1040000	1550000	647000
Hardness as CaCO3, from total Ca/Mg (New January 2020)	µg/L				257000	260000	450000	350000	460000	686000	1050000	1590000	599000
pH	pH Units	0.10	6.5 - 9.0	6.5-9.0	7.70	7.72	7.68	7.79	7.60	8.02	8.00	7.91	7.68
Total Dissolved Solids (TDS)	µg/L	10000	NG	NG	396000	352000	762000	756000	734000	1160000	1930000	2700000	1320000
Total Suspended Solids (TSS)	µg/L	3000	NG	NG	5700	1500	1500	28700	1500	1500	3300	1500	11100
Alkalinity (Hydroxide) as $CaCO_3$	µg/L	1000	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Carbonate as $CaCO_3$)	µg/L	1000	NG	NG	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Alkalinity (Bicarbonate as $CaCO_3$)	µg/L	1000	NG	NG	37600	28800	32100	53000	38800	68900	57800	64700	40000
Anions and Nutrients													
Ammonia (NH_4 as N)	µg/L	5.0	pH dependent (6.5-9.0)	pH dependent (6.5-9.0)	70.4	35	2.5	20.7	15.4	18.8	16.3	24.7	119
Ammonia FST Guideline	µg/L		pH dependent (**at Temp 4 °C** or in situ T)		10300	10300	10300	8770	11900	6220	6220	7420	10300
Ammonia FLT Guideline				pH dependent (**at Temp 4 °C** or in situ T)	1980	1980	1980	1690	1970	1200	1200	1430	1980
Chloride (Cl^-)	µg/L	500	600000	150,000	7220	15000	28100	46800	29500	43200	66200	109000	50200
Nitrate (NO_3^- as N)	µg/L	5.0-25.0	NG	NG	375	316	12.5	35.8	29.8	12.5	25	50	72.6
Nitrite (NO_2^- as N)	µg/L	1.0-5.0	Cl-dependent (> 10,000 µg/L) Guideline: 600 ug/L	Cl-dependent (> 10,000 µg/L) Guideline: 200 ug/L	5.3	4.7	2.5	10.6	5	2.5	5	10	2.5
Sulphate (SO_4) [3]	µg/L	300	NG	309,000 - 429,000	239000	251000	480000	457000	477000	671000	1010000	1680000	785000
SO4 FLT Guideline Calc	µg/L		NG	Hardness 76,000-180,000 = 309,000 Hardness 181,000-250,000 = 429,000 Hardness > 250,000 site-specific	309000	429000	429000	429000	429000	429000	429000	429000	429000
Dissolved Organic Carbon (DOC)	mg/L		NG	NG	1.33	0.93	2.14	3.41	4.57	7.77	9.8	15	6.96
Metals, Total													
Aluminum	µg/L	3.00	NG	NG	296	39.4	44.9	432	67.8	29.4	31.3	25.3	343
NEW FLT Guideline (no FST) - relevant August 2023 onwards					138	110	193	266	308	487	563	636	413
Antimony	µg/L	0.10	NG	NG	0.48	0.2	0.49	1.58	0.8	0.81	0.72	0.64	0.38
Arsenic	µg/L	0.10	5.0	5.0	0.43	0.21	0.27	1.41	0.48	0.6	0.78	0.91	0.71
Barium	µg/L	0.10	NG	NG	53	27.1	35.9	78.2	63.9	78.6	74.7	44	32.3
Beryllium	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth	µg/L	0.05	NG	NG	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.1	<0.05
Boron	µg/L	10.0	1200	1200	24	19	33	62	57	87	133	188	66
Cadmium	µg/L	0.005	NG	NG	0.217	0.055	0.0337	0.0692	0.0777	0.0267	0.01	0.0342	0.0449
Calcium	µg/L	50	NG	NG	76800	77200	128000	105000	129000	194000	295000	446000	163000
Cesium	µg/L	0.01	NG	NG	0.067	<0.01	<0.01	0.068	0.01	<0.01	<0.02	<0.02	0.063
Chromium [4]	µg/L	0.1-1.0	NG	NG	1.09	<0.5	<0.5	13.6	0.73	<0.5	<1	<1	0.82
Cobalt	µg/L	0.10	May 2025: N/A; (Prior to May 2025: 110 ug/L)		4.75	1.64	0.61	1.14	1.09	0.19	0.1	0.21	0.53
Co-t, FLT				May 2025: Calc based on hardness (Prior to May 2025: 4 ug/L)	-	-	-	0.853	0.9	0.9	0.9	0.90	0.90
Copper [3]	µg/L	0.50	Calc. based on Hardness	2 to 10	1.64	0.51	1.18	4.27	3.1	2.56	3.38	3.83	3.06
Cu-t, FST - valid prior to August 2019	µg/L		Hardness 13,000 - 400,000 : calc.; Hardness ≥ 400,000 is Capped Value of 400,000		-	-	-	-					
Cu-t, FLT - valid prior to August 2019	µg/L			Hardness 50,000 - 250,000: calc.; Hardness > 250,000, Cu = 10	-	-	-	-					
Iron	µg/L	10	1000	NG	489	41	17	952	49	29	10	43	683
Lead [3]	µg/L	0.05	Only Applicable Prior to Aug 2024/Feb 2025	Only Applicable Prior to Aug 2024/Feb 2025	0.413	<0.05	<0.05	0.527	<0.05	<0.05	<0.1	<0.1	0.372
Pb-t, FST	µg/L		Based on Hardness 8000-360,000 Hardness ≤ 8000: 3 Hardness > 8000 : calc.		267.5	254.1	417.0	397.9	417.0	417.0	417.0	417.0	417.0
Pb-t, FLT	µg/L			Applies to Hardness 8000-360,000 Hardness ≤ 8000, NG Hardness > 8000 : calc.	13.7	13.2	19.6	10	14	15	16	17	18
Lithium	µg/L	1.0	NG	NG	5.9	5.9	11.5	16.7	17.1	24.6	38.1	60	20.8
Magnesium	µg/L	5.0	NG	NG	15800	16300	31700	21300	33500	48900	77200	116000	46700
Manganese [3]	µg/L	0.10	Calc. based on Hardness	Calc. based on Hardness	123	41.8	8.97	61.6	17.6	9.96	5.74	6.31	18.3
Mn-t, FST	µg/L		Applies to Hardness 25000-259000 µg/L Mn : calc.		3339	3229	3394	3394.18	3394.18	3394.18	3394.18	3394	3394
Mn-t, FLT	µg/L			Applies to Hardness 37000-450000 µg/L Mn : calc.	1723	1679	2585	2131.8	2131.8	2131.8	2131.8	2132	2132
Mercury (Based on methyl Hg & total mass Hg)	µg/L	0.005	NG	Calc.	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	2000	≤ 1000	2.45	1.29	2.84	30.2	11.1	14.3	18.9	29.4	10.8
Nickel	µg/L	0.50	NG	NG	15.6	6.6	5.9	5.39	9.87	5.73	6.17	9.03	5.97
Phosphorus	µg/L	50.0	NG	NG	<50	<50	<50	70	<50	<50	<100	<100	<50
Potassium	µg/L	50.0	NG	NG	1640	1440	2400	26100	11300	16100	25400	38800	16200
Rubidium	µg/L	0.2	NG	NG	1.01	0.36	0.59	9.86	3.29	4.49	6.76	10.4	4.61
Selenium	µg/L	0.05	NG	2.0	1.72	1.57	3.22	2.84	4.88	3.05	2.4	2.18	1.01
Silicon	µg/L	100.0	NG	NG	1680	800	170	3040	480	<100	<200	<200	710
Silver [3] (Based on Hardness < or > 100000)	µg/L	0.01	0.10 - 3.0	0.05 - 1.5	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.02	<0.02	<0.01
Ag FST Guideline Calc	µg/L		**March 2025 onwards: N/A** (Prior to March 2025: 0.10 or 3.0 (Hardness-dependent))		3.00	-	-	-	-	-	-	-	-
Ag FLT Guideline Calc	µg/L			**After March 2025: FLT = 0.12 ug/L** (Prior to March 2025: 0.05 or 1.5 (hardness-dependent))	1.50	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Sodium	µg/L	50.0	NG	NG	14700	26600	39600	75500	47300	67400	112000	172000	65400
Strontium	µg/L	0.2	NG	NG	227	188	347	754	597	865	1410	2280	890
Sulfur	µg/L	500.0	NG	NG	83800	91800	170000	152000	182000	252000	388000	635000	231000
Tellerium	µg/L	0.2	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2
Thallium	µg/L	0.01	NG	NG	0.01	<0.01	<0.01	0.019	<0.01	0.014	0.027	0.032	0.028
Thorium	µg/L	0.10	NG	NG	0.1	<0.1	<0.1	<0.15	<0.1	<0.1	<0.2	<0.2	<0.1
Tin	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1
Titanium	µg/L	0.3-4.5	NG	NG	<5.4	<0.75	0.37	8.88	1.25	<0.3	<0.6	0.87	7.24
Tungsten	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	0.56	<0.1	<0.1	<0.2	<0.2	<0.1
Uranium	µg/L	0.01	NG	NG	1.31	1.41	2.28	1.63	1.74	2.16	2.79	3.93	1.83
Vanadium	µg/L	0.50	NG	NG	1.07	<0.5	<0.5	2.56	<0.5	<0.5	<1	<1	1.24
Zinc [3] (Based on Hardness < or > 90,000)	µg/L	3.0	Calc. based on Hardness	Calc. based on Hardness	20.3	6.1	1.5	6.9	4.7	1.5	3	3	7.5
Zn FST Guideline Calc. - relevant prior to Aug 2023	µg/L		Hardness 90,000 - 500,000, Calc. Hardness > 500,000, is Capped Value of 500,000		156.0	148.5	320.3	203.25	203.25	203.25	203.25	203.25	203.25
Zn FLT Guideline Calc. - relevant prior to Aug 2023				Hardness 90,000 - 330,000, Calc. Hardness > 330,000, is Capped Value of 330,000	130.5	123.0	187.5	187.5	187.5	187.5	187.5	187.5	187.5
Zirconium	µg/L	0.06	NG	NG	<0.2	<0.2	<0.2	<0.3	<0.2	<0.2	<0.4	<0.4	<0.2
Metals, Dissolved													
Aluminum [5]	µg/L	1.0	100	50	19.4	13.1	29	30.6	35	21.2	17.2	8.4	4.3
Al FST Guideline Calc. (based on pH); relevant prior to Aug 2023	µg/L		pH < 6.5 : calc. Al pH ≥ 6.5 : 100.0 Al		100	100	100	100	100	100	100	100	100
Al FLT Guideline Calc. (based on median pH); relevant prior to Aug 2023	µg/L			median pH < 6.5 : calc. Al median pH ≥ 6.5 : 50.0 Al	50	50	50	50	50	50	50	50	50
Antimony	µg/L	0.10	NG	NG	0.44	0.18	0.49	1.52	0.82	0.8	0.71	0.63	0.34
Arsenic	µg/L	0.10	NG	NG	0.12	0.22	0.22	0.83	0.45	0.59	0.78	0.89	0.46
Barium	µg/L	0.10	NG	NG	45.1	27.3	34.6	62	63	83.3	75	45.6	27.9
Beryllium	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bismuth		0.05	NG	NG	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
Boron	µg/L	10.0	NG	NG	22	16	30	52	53	91	123	204	62
Cadmium [3] (Based on Hardness as $CaCO_3$)	µg/L	0.005	Calc. based on Hardness	Calc. based on hardness	0.193	0.0589	0.0251	0.01625	0.0691	0.0226	0.0175	0.0125	0.0262
Cd-d, FST (acute)	µg/L		Hardness 7,000 - 455,000, Calc. Hardness > 455,000, is Capped Value of 455,000		1.54	1.47	2.80	2.12	2.72	2.80	2.80	2.80	2.80
Cd-d, FLT (chronic)				Hardness 3,400 - 285,000, Calc. Hardness > 285,000, is Capped Value of 285,000	0.42	0.41	0.46	0.46	0.46	0.46	0.46	0.46	0.46

Parameter	Unit	RDL	BCAWQG - FST 1	BCAWQG - FLT 2	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump	Area 21-Sump
					28-Feb-25	27-Mar-25	22-Apr-25	13-May-25	22-Jun-25	30-Jul-25	31-Aug-25	7-Oct-25	26-Oct-25
Calcium	µg/L	50.0	NG	NG	76200	70700	132000	102000	123000	185000	283000	436000	177000
Cesium		0.01	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	<0.02	<0.01
Chromium	µg/L	0.10	NG	NG	0.54	<0.5	<0.5	12.2	0.69	<0.5	<0.5	<1	<0.5
Cobalt	µg/L	0.10	NG	NG	4.3	1.67	0.54	0.55	0.95	0.16	0.05	0.1	0.05
Copper [6]	µg/L	0.20	Calc. based on BLM Model	Calc. based on BLM Model	0.72	0.43	1.11	2.58	2.85	2.32	2.46	3.69	1.89
Cu-d, FST (acute)	µg/L		BLM Ligand Model value		5.01	3.35	6.67	12.8	13.5	0.2	0.2	64.2	23.2
Cu-d, FLT (chronic)	µg/L			BLM Ligand Model value	0.856	0.572	1.14	2.20	2.3	0.2	0.2	11.2	3.98
Iron	µg/L	10.0	350	NG	5	5	5	5	5	12	5	10	5
Lead	µg/L	0.05	NG	New Aug 2024 and Feb 2025	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
Pb-d, FLT (chronic)					2.93	2.41	4.27	5.08	6.22	8.86	11	15	8.37
Lithium	µg/L	1.0	NG	NG	5.9	5.2	10.5	14.2	16.2	24.1	39.3	64.9	19.8
Magnesium	µg/L	5.0	NG	NG	15600	16400	34800	22400	33100	45300	80100	113000	49900
Manganese	µg/L	0.10	NG	NG	110	39.5	6.76	21.2	9.18	5.6	0.23	1.29	0.63
Mercury	µg/L	0.005	NG	NG	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	µg/L	0.05	NG	NG	2.34	1.25	2.65	31	11.5	14.2	17.7	28.4	11.3
Nickel	µg/L	0.50	**New Feb 2025** (Calc based on BC BLM)	**New Feb 2025** (Calc based on BC BLM)	14.4	6.45	5.59	3.84	9.3	5.5	5.47	9.23	4.41
Ni-d, FST (acute)			Based on pH, DOC, hardness		66.5	66.5	124	100	131	171	283	312	188
Ni-d, FLT (chronic)				Based on pH, DOC, hardness	3.5	3.5	6.7	5.9	7.5	10.9	17.6	20.9	11
Phosphorus	µg/L	50.0	NG	NG	<50	<50	<50	<50	<50	<50	<50	<100	<50
Potassium	µg/L	50.0	NG	NG	1560	1440	2180	25800	11200	15400	26100	41000	17300
Rubidium	µg/L	0.20	NG	NG	0.42	0.37	0.56	9.94	3.24	4.17	7.25	10.7	4.13
Selenium	µg/L	0.05	NG	2.0	1.58	1.44	3.34	2.8	4.84	2.82	2.6	2.02	0.904
Silicon	µg/L	50.0	NG	NG	1220	664	122	2280	366	<50	54	<100	159
Silver	µg/L	0.01	NG	NG	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01
Sodium	µg/L	50.0	NG	NG	14200	25100	40200	74900	45300	64100	104000	165000	66700
Strontium	µg/L	0.20	NG	NG	218	177	356	752	585	868	1350	2160	983
Sulfur	µg/L	500	NG	NG	86700	82400	162000	143000	174000	238000	385000	591000	250000
Tellurium	µg/L	0.20	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
Thallium	µg/L	0.01	NG	NG	<0.01	<0.01	<0.01	0.011	<0.01	0.013	0.03	0.037	0.018
Thorium	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Tin	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1
Titanium	µg/L	0.30	NG	NG	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.6	<0.3
Tungsten	µg/L	0.10	NG	NG	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	<0.1	<0.2	<0.1
Uranium	µg/L	0.01	NG	NG	1.2	1.27	2.38	1.58	1.72	2.06	2.71	4.02	1.92
Vanadium	µg/L	0.50	NG	NG	<0.5	<0.5	<0.5	0.85	<0.5	<0.5	<0.5	<1	<0.5
Zinc	µg/L	1.00	NG	NG	16.2	6.2	2.1	1.3	2.9	1	0.5	1	0.5
Zn FST Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards					90.2	81	101	113	121	39.3	54.2	161	134
Zn FLT Guideline Calc. - NEW GUIDELINE relevant Aug 2023 onwards					20.4	16.7	38.4	37	55.4	121	146	69	61.3
Zirconium	µg/L	0.06	NG	NG	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2
Laboratory Work Order Number					FJ2500628	FJ2500948	FJ2501134	FJ2501382	FJ2501891	FJ2502301	FJ2502690	FJ2503105	FJ2503336

Screening completed on BCAWQG-FST [1] and FLT [2] guideline values.

[1] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG), Freshwater Aquatic Life - Short Term Maximum (FST) guidelines. May 2025

[2] BC Ministry of Environment (2025). British Columbia Approved Water Quality Guidelines (BCAWQG): Freshwater Aquatic Life - Long Term Maximum (FLT) guidelines. May 2025

[3] Guideline is hardness dependant. Where results are above laboratory reportable detection limits, guideline limits have been evaluated based on individual sample hardness. Sample-specific guideline values are listed in parentheses after the laboratory result, where applicable.

[4] Guideline is pH dependant.

NG - No Guideline

Detection limit can vary as described in the COA. Detection limit can be raised when dilution is required due to high Dissolved Solids/Electrical Conductivity (DLDS), e.g. nitrite.

BOLD and shaded dark gray: Exceeds BCAWQG-FST (Freshwater Short Term) guideline.

Shaded Light Gray: Exceeds BCAWQG-FLT (Freshwater Long Term) guideline.

RED - Measured value is below detection limit (DL); value shown is 50% of DL

Blank - Not analyzed