

## Appendix A. Figures

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Figure 1. Back River Project Overview

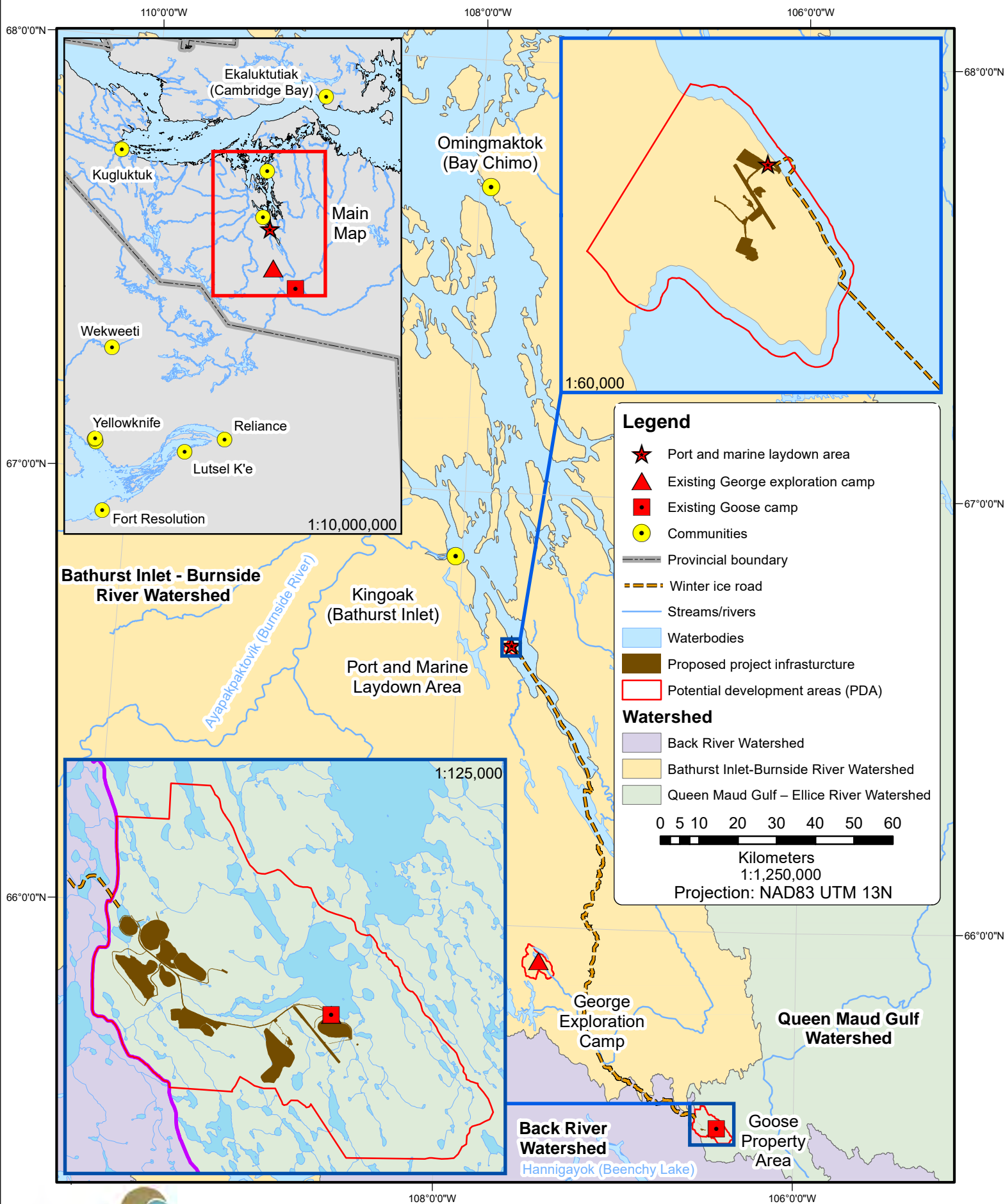


Figure 1

## **Appendix B. 2022 Annual Geotechnical Inspection Report**

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March 31, 2023

Environmental Permitting Manager  
Sabina Gold & Silver Corp.  
# 1800 – 555 Burrard Street  
Box 220  
Vancouver, BC,  
Canada, V7X 1M9

**Attention** Merle Keefe, Environmental Permitting Manager &  
Vincy Benjamin, Director of Engineering, for Sabina Gold and Silver

**Subject** **Goose & MLA Project Sites – 2022 Annual Geotechnical Inspection**

**Project** CAPR002290

Dear Merle and Vincy

SRK Consulting (Canada) Inc. was retained by Sabina Gold & Silver Corp. to conduct a geotechnical site inspection for the active development areas at the Back River Project (Project). The Project is a proposed gold mine located in the territory of Nunavut, roughly 525 km northeast of Yellowknife. The current areas of active development are the Goose project site (Goose), located approximately 160 km south of Bathurst inlet (Figure 1), and the Marine Laydown Area (MLA or port area), located on the southern portion of Bathurst Inlet (Figure 2).

## Background

This annual geotechnical inspection (AGI) is an annual requirement in response to Part 1, Item 10 of Sabina's Water Licence 2AM-BRP1831 – Amendment No. 1, issued by the Nunavut Water Board (NWB) on October 15, 2021. The objective of the geotechnical inspection is to ensure that the project's surface infrastructure is performing as intended from a geotechnical perspective and in the context of the project site use. The emphasis is to a large extent, based on the project's location in a cold climate continuous permafrost area, is ensuring permafrost integrity is upheld, reviewing water management, and looking at more classical geotechnical and civil earthworks development (many of which are in an interim or active in progress construction stage).

The 2022 AGI for the Goose, and the Marine Laydown Area (MLA) sites are the subject of this memorandum



## 2022 Annual Geotechnical Inspection

### Overview

A site visit was carried out to comprise the 2022 annual geotechnical inspection (AGI). The site visit was carried out by John Kurylo, MSc, PEng, from SRK Consulting, between September 12<sup>th</sup> and September 15<sup>th</sup>, 2022. John first went to the MLA on September 12<sup>th</sup> and then on September 13<sup>th</sup>, partly through the day, flew to the Goose site. SRK was then on the Goose site from September 13<sup>th</sup> to 15<sup>th</sup>. Access to the site for all inspections was fly-in / fly-out based on the remote location. Weather conditions during the inspection were cool with periods of light winds and precipitation. A photo log showing an overview of the September 2022 inspection is provided in Attachment 3 for Goose, and in Attachment 4 for the MLA site.

At the Goose site the inspections were focused on the water management infrastructure and, at the time, the portions of the camp pad and partially completed tank farm (one of the four planned tanks erected). The portal and decline areas were outside the scope of this inspection and were not looked at or included as part of this AGI. Only surface infrastructure was inspected. The inspection of the airstrip, culverts, bridges, access roads, tank farm foundations and the future Camp Contact Water Pond footprint were carried out by pickup truck. Frequent stops were made for physical (on foot) inspections. No drone photography or helicopter access was available at the time of these inspection (helicopters were not operating around the Goose site when the AGI was completed).

At the MLA site the inspections were focused on the roads, pads, airstrip and the partially completed tank farm (again one of the four planned tanks were erected). All inspections at the MLA were completed on foot (entire site walked over).

Following the site visit Sabina was able to provide some drone photography (for both the MLA and Goose sites) which was also reviewed as part of this AGI.

### Design and Operating Considerations

In addition to the specific observations and recommendations, as overviewed in Attachments 1 and 2, SRK would like to reiterate a few overarching design and operating principles as it relates to geotechnical stability, design and performance, while specifically focusing on the permafrost integrity at the project site:

- **Underbuilt (lower fill thickness) Pads and Roads**
  - Design and construction of all pads and roads at Back River are intended to minimize permafrost damage and are designed based on specific thermal criteria. Underbuilding of roads and pads will result in permafrost damage because of thermal erosion, which will require ongoing maintenance and notable remediation costs at closure. SRK currently is not involved in scopes of work beyond the water management infrastructure at the Goose site, and the MLA Tank Farm, and therefore are unable to further comment on all of the current pad, airstrip and road designs. SRK are only able to comment on what has been communicate and what is visible on site. Sabina is reminded to consult the appropriate site-specific reference materials

when designing and constructing new pads and roads. Specific areas of interest are noted in the 2022 AGI, and often key observations are near areas where surface water was noted to be flowing into or below infrastructure, along the toes and outside crest of the roads, or at the outside edges of the airstrip and pads. See Attachment 1 and 2.

- In general, the roads and pads are still in a partially built state. In some areas (when compared to 2021) the road widths have been expanded (typically more in the 8 to 16m width range) and in some areas the roads have been built up and are approaching the expected design thickness. However, the vast majority of the roads are typically only in the fill thickness range of 1m thick, with some areas thicker and some areas thinner (typically fills always at least 0.5m thick). Many of these roads continue to be in process of being expanded (widened) and /or being built up as more material became available from the developments around the: MLA tank farm (former quarry location), Echo Pit (at Goose area), and Goose Camp pad areas. Required fill thickness will ultimately be related to the underlying foundation conditions (i.e. thicker fill thickness required over areas with more ice rich overburden permafrost) however at the current thicknesses ongoing maintenance should be expected. Sabina is in the process of developing a site-specific thermal monitoring plan. This is a positive and proactive step and will assist to provide more concrete recommendations (linked to the roads and pads) for future AGIs.

#### ■ **Consideration of Heated Building on Rockfill Pads**

- Care needs to be taken when constructing permanently heated buildings on the rockfill pads. Prolonged heat generated from these buildings will result in the active layer below the pad deepening (specifically important for any areas where portions of the buildings are built over overburden permafrost). Heated building directly on rockfill pads could in turn could lead to degradation of the underlying permafrost, and manifestation of undue settlement.
- No specific new observations related to new heated structures (outside of the historic exploration camp area) were noted as part of the 2022 AGI. However, building to ground heat transfer, should be closely considered as the areas around the permanent camp pad and plant site area (areas expected to be advanced in 2023).
  - Where possible it should be considered if structures can be situated on bedrock, elevated to allow air flow below the buildings, or if this is not possible if additional insulation material, or in extreme case thermosyphons may be required (specifically in the foundation areas built on overburden permafrost that has been identified as having massive ice).
  - The impact of heat transfer to the foundation will be directly linked to the design tolerance of the buildings and structures and can be considered accordingly. For example foundation below tanks would have very low tolerance, whereas general roads and pads below items like trailer buildings or seacans would have higher tolerances and would be able to accommodate more foundation movements.
  - Most of the Goose Camp site, or at least the critical mechanical or fuel storage components, appear to have been so far built on fill pads that were primarily constructed over blasted areas (inferred to be bedrock below the majority of the fill pads around the plant site for example). Towards the outside of the current pads there appears to be more overburden and may require additional considerations.

■ **Consideration of Seasonal Active Layer Fluctuations**

- Sabina is reminded that the maximum active layer thickness occurs around August at the end of the summer season. All road and pad shoulders are at their most vulnerable during this period as the thermal protection at these shoulders are less than the minimum required (by standard geometry), resulting in localized deepening of the active layer. As a result, tension cracks and general softening are most prevalent at the shoulders (outer sides). Sabina should take special precautions to limit vehicle traffic (specifically loaded haul trucks or vehicles carrying larger loads) within 1 to 3 m from all shoulders.

■ **Consideration of the Impacts of Surface Water Flow Paths**

- As outlined in Attachment 1, tension cracking along the western side of the airstrip and portions of the roads and pads, continues to be noted. This cracking is especially prevalent where any of the pre-existing surface water flow paths have been intercepted by earthworks activities. These cracks in the fill material are not atypical but should be monitored.
- Specifically, the airstrip(s) shoulders (both and Goose and the MLA) should continue to be closely monitored to ensure that any additional maintenance is able to be conducted as required. Routine airstrip inspections should occur year-round by site staff but would be suggested to be increased in frequency over the spring to fall months (around June to November). In addition to any observations at the airstrip shoulder any areas of larger undulations or settlements that require ongoing maintenance should be noted and records kept to assist with long term performance monitoring.
- Sabina should take extra care to consider the location of existing surface water flow paths in the infrastructure plans and earthwork constructions. One example of this would again be at both airstrip locations (for the Goose and MLA sites). Due to the long linear nature of the airstrip they will inevitably cross some ephemeral surface flow paths.
- It is understood that the Goose airstrip will be expanded to the South. As this airstrip extends to the south it will intersect some more notable surface water flow pathways / ephemeral streams. Ideally the Rascal Diversion would be constructed before the airstrip expansion work is completed through this area. If this construction is done in the winter months then the need for the Rascal Diversion may be deferred but the Rascal Diversion would still be suggested to be constructed before freshet.
- At the MLA there is ponding water again the southern-to-southern western edges of the airstrip. Sabina should monitor these areas (specifically as temperatures annually warm on site from winter to spring to summer conditions). Some consideration should be given to redirecting or trying to push any ponding water further away from the toes of the existing MLA airstrip. Pumping down / removal of any ponded water at the toes of the airstrip in the fall (before winter freeze up) would increase the cold ambient air and ground heat transfer to help slow down permafrost degradation (reduce thawing rates and slow deepening of the active layer). This increased water management may help to reduce overall short and long-term maintenance activities.

## Observations and Recommendations

The most critical and / or time sensitive observations were communicated to Sabina in late September 2022, shortly after the AGI site visit. The observations and the progress on these items are outlined in the list below.

1. **Goose Tank Farm** - Fix (add more fill / buttress and slope) the side slopes of the pedestal for the Goose fuel tank before it is filled.
  - *Status – COMPLETE.* Site communicated that additional material was placed at this buttress and the pedestal slopes were reduced. Based on this, this recommendation should now have been addressed.
  - *Original observation –* The pedestals below the one erected tank in the Goose Tank farm was noted to have been over steepened and / or eroded in areas. This led to the edges of the tank being on or very near to steep fill slopes. The tank was empty at the time of the AGI but if the tank was filled (weight in tank and force on the pedestals notably increased), and the pedestals were lefts in an over steepened state, this could potentially have led to a bearing failure through the pedestal fill. As outlined above Sabina has now completed additional work on this pedestal.
2. **Abutment of the West Temporary Gander Bridge** – Either remove the temporary bridges and / or implement measures to strengthen the northeast abutment of the second temporary Gander bridge (most west or furthest from the existing exploration camp).
  - *Status – IN PROGRESS.* Sabina has communicated that the permanent Gander culverts are planned to be installed at these locations before freshet 2023. If the culverts are not installed before freshet 2023 then monitoring should be put in place to check for any ongoing movements at the Gander temporary bridge abutments and if / as required repairs should be completed at the current bridge abutments. If the culverts are not installed to replace the bridges, then it is expected that a risk of additional settlement or displacement at the bridges will increase as the active layer increases to its maximum depth (annual maximum active layer depth projected to be reached around August).
  - *Comments –* If the planned (long term) culverts are installed on site then priority should be given to replacing the bridge with a culvert at this location (most west bridge). Installation of the planned and designed long term culverts at the Gander stream crossing area would address and should remove any remaining abutment concerns (as there will no longer be a bridge an instead would be a culverts surrounded by backfill).
3. **Camp Pad Pond** - Survey the top of the liner at the Camp Pad Pond area.
  - *Status – COMPLETE.* Site staff have communicated that this has been done. SRK is not the design engineer for this pond and thus has not reviewed this survey data in detail. SRK have seen evidence that this survey was completed.
  - *Original observations –* It was not apparent in the field (based on visual checks) that the top liner-tie in / design elevation had been achieved in the field. SRK had suggested that this survey be complete to confirm that the overall containment volumes were met and not being impacted by low elevations (i.e. get the info so others can confirm that the top liner elevations

are at or above design). The Camp Pad Pond was in a partially completed state when the AGI was complete. The construction of the pond is ongoing and projected to be completed later in 2023. This pond was therefore not yet operational in 2022.

4. **Material Stockpile Samples** – Collect samples and submit for laboratory testing. Gather samples, specifically for the crush and screened materials, to get particle size distribution (PSD) curves / data to confirm the quality of various fill materials being produced on site.
- *Status – COMPLETE.* Sabina has collected samples from the various stockpile around site and completed laboratory PSD testing (testing done through the Tetra Tech Yellowknife laboratory).
  - *Comments* – The purpose of these samples was to allow for checks to be completed for the existing site produced materials against the current earthwork technical specifications, and / or to potentially use that information to update those technical specifications. This information has now been gathered and will be used to help support the 2023 construction activities.

Many additional, typically secondary, observations and recommendations were made as part of the AGI. These observations and recommendations are summarized in Attachment 1 and 2.

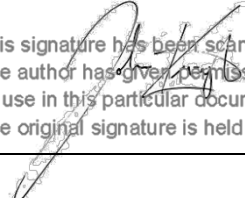
## Final Remarks

Notwithstanding the observations and recommendations provided in this AGI (see Attachment 1 and 2), the Back River site is performing in reasonable accordance with predicted geotechnical expectations. The main observation from the 2022 AGI were fairly similar to the 2021 AGI (with the exception of the four observations outlined in the previous section of this letter). The site continues to be in a transition, and more pre-mining development, stage. This means that many of the pads, roads, and water conveyance (culvert) structures were at an interim state and / or not yet fully completed at the time of the 2022 AGI. Observations of the interim state of the construction have been made in attempt to allow them to improve the final configuration of the earthworks and water management infrastructure.

Figure 1 shows recent earthwork progress at the Goose site, and Figure 2 and 3 shows the information for the MLA site. These figures show a high-level overview and comparison to the more final design footprints or working areas. These figures also highlight some of the current in progress areas that Sabina is working on as Goose moves from exploration towards a development and operational stage, and as the MLA continues to evolve as a port location that can be utilized to bring in supporting equipment, supplies and buildings.

For completeness, additional comments and observations are provided in Attachments 1 to 4.

Regards,  
SRK Consulting (Canada) Inc.

  
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its use in this particular document.  
The original signature is held on file.

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John Kurylo, MSc, PEng  
Principal Consultant (Geotechnical)

**Attachments:**

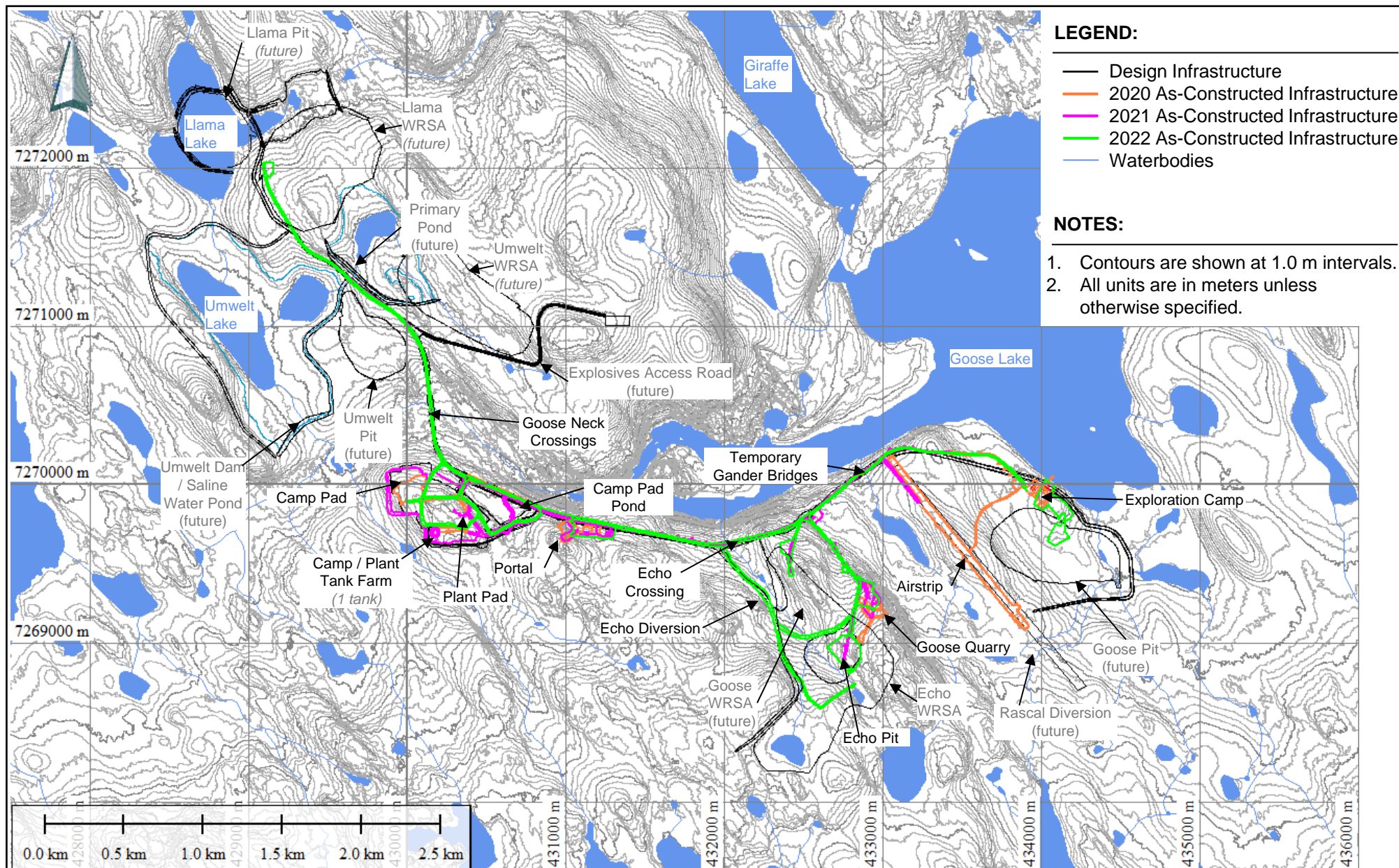
Figures

Attachment 1	Summary of Observation and Recommendations – Goose
Attachment 2	Summary of Observation and Recommendations – MLA
Attachment 3	Photolog from 2022 Site Visit - Goose
Attachment 4	Photolog from 2022 Site Visit - MLA

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# Figures





**srk consulting**

Job No: CAPR002290  
Filename: 2022AGI\_Figures.pptx

**Sabina**  
GOLD & SILVER CORP.

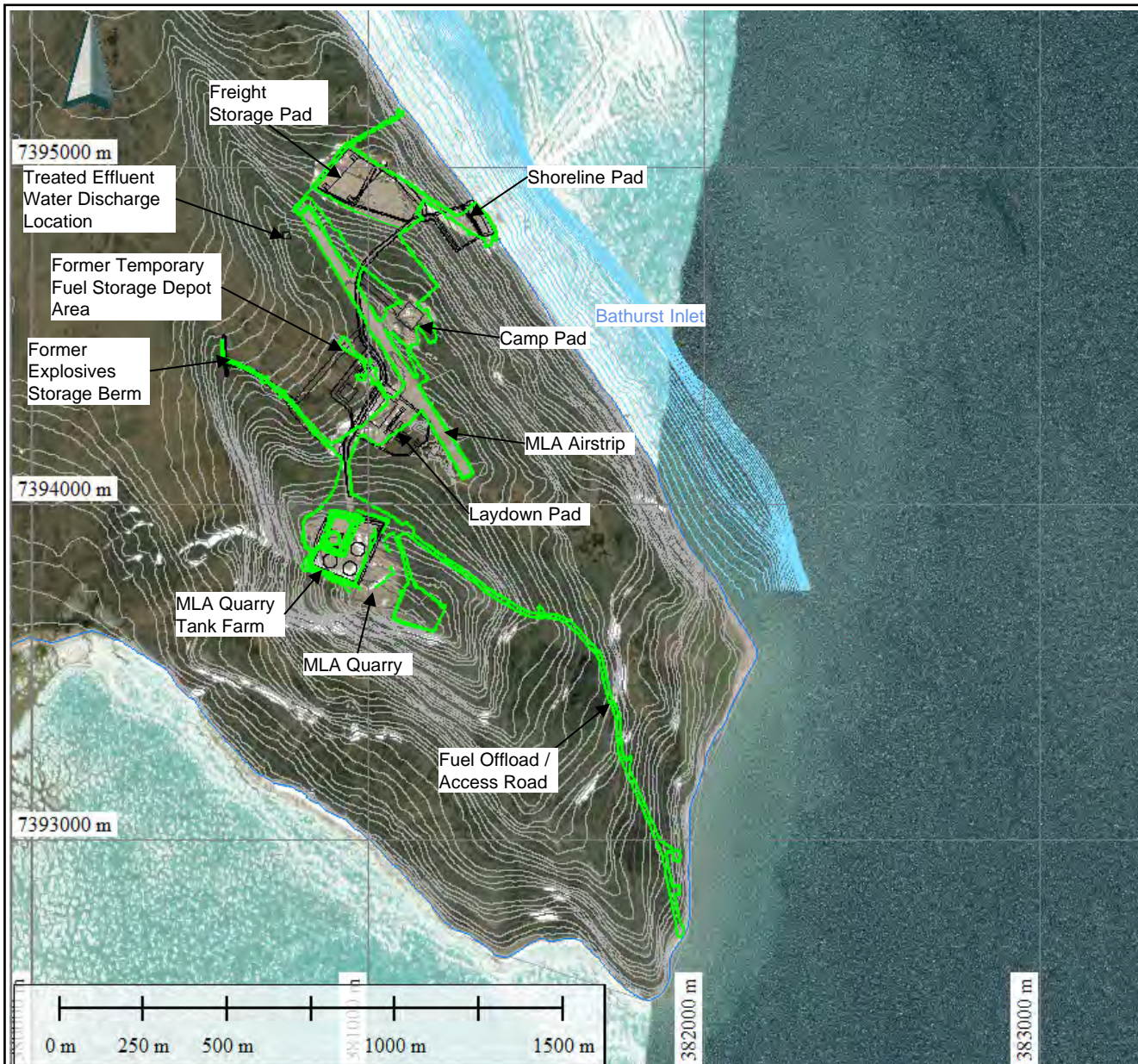
Back River Project

2022 Annual Geotechnical Inspection

**MLA Site  
General Arrangement**

Date: March 30, 2023	Approved: JBK	Figure: <b>1</b>
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#### LEGEND:

- Design Infrastructure
- As-Constructed Infrastructure
- Waterbodies

#### NOTES:

1. Contours are shown at 1.0 m intervals.
2. All units are in meters unless otherwise specified.

#### REFERENCES:

- NAD UTM Zone 13
- As-constructed drawing / survey files provided by Sabina in March 2023. Files from folder 'SBR7OUTC-00-C-SU-0002 MLA BASE MAP'
- Plan view imagery extracted from World Imagery (approx. 2020-2021 time range). Reference: source: "Esri, USGS | Northwest Territories, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCan, Parks Canada"



2022 Annual Geotechnical Inspection

#### MLA Site General Arrangement

Job No: CAPR002290  
Filename: 2022AGI\_Figures.pptx

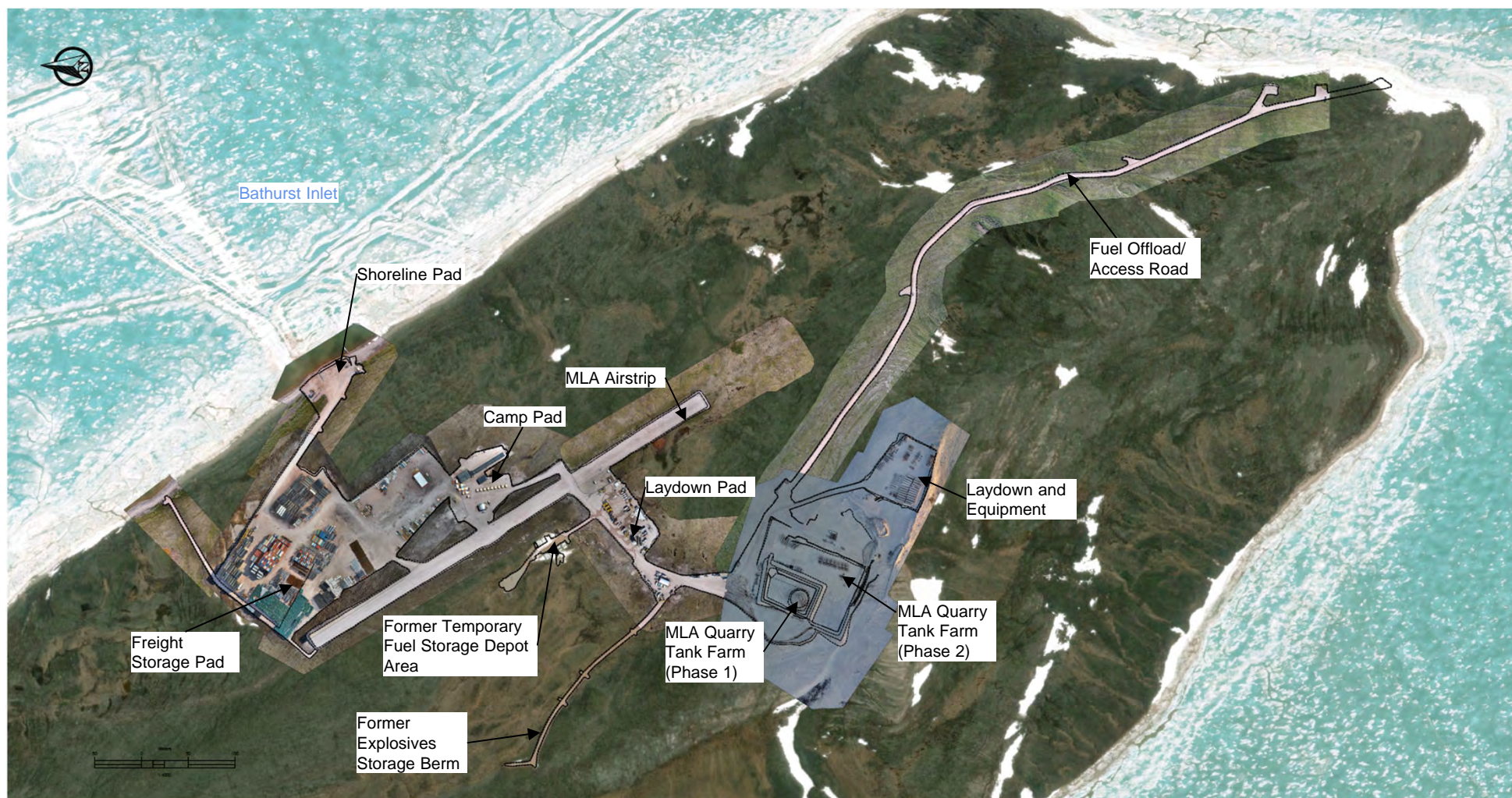
Back River Project

Date:  
March 30, 2023

Approved:  
JBK

Figure: **2**





#### LEGEND:

— As-Constructed Infrastructure

#### REFERENCES:

- NAD UTM Zone 13
- As-constructed survey and UAV files provided by Sabina in March 2023. Files from folder 'SBR7OUTC-00-C-SU-0002 MLA BASE MAP'



Job No: CAPR002290  
Filename: 2022AGI\_Figures.pptx



Back River Project

2022 Annual Geotechnical Inspection

#### MLA Site General Arrangement (with UAV Imagery)

Date:  
March 30, 2023

Approved:  
JBK

Figure: **3**

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**Attachment 1**

**Summary of Observation and  
Recommendations – Goose**

## Attachment 1 – Summary of 2022 AGI Observations and Recommendations - Goose

Inspection Item	2022 Observations and Recommendations
General Comment / Overview	<ul style="list-style-type: none"> <li>■ The main observation as part of the 2021 and again in the 2022 Annual Geotechnical Inspection (AGI) for the Goose area was that, as the site is currently in a transition stage and that many of the pads and roads and water conveyance (culvert) structures were at an interim state. Site is currently in a transition from exploration towards an operating site (development stage). So many of the comments in the Annual Geotechnical Inspection are linked to items that should continue to be monitored or considerations for some of the key water management areas that should be considered as the site infrastructure construction advances.</li> <li>■ Site still in a transition stage. Continued monitoring is still recommended.</li> </ul>
Goose Airstrip	<ul style="list-style-type: none"> <li>■ SRK's review of the airstrip focused on identifying distress of the airstrip embankment and changes in the natural terrain, based on the available imagery data and visual inspections. Distress of the airstrip embankment, mainly near the immediate edges / shoulders, was identified as small linear tension cracks or depressions, inferred to be caused by permafrost degradation in the underlying foundation. In areas this is enhanced by ponding water against the side of the airstrip (some from natural flow paths).</li> <li>■ Prior to landing any aircraft on the runway, the aircraft operators should conduct their own assessment of the runway conditions (in terms of functionality) and make recommendations for maintenance. Ultimately it will be at the discretion of the aircraft operators if the airstrip surface is acceptable for their aircraft.</li> <li>■ Water is ponding against the southwest-south (SWS) end of the airstrip. Some softer shoulders were noted when walking around the perimeter of the airstrip. Additional and ongoing settlement is expected at the airstrip (specifically at the southern end). Before the expansion of the airstrip is completed Sabina should consider the construction of the Rascal Diversion. The Rascal Diversion should be installed at the time of, or before, the airstrip expansion is completed to ensure that the water flow in this area does not impact the airstrip. If the airstrip expansion is carried out in the winter months, then the Rascal Diversion may not be required immediately but should be constructed before the following freshet.</li> <li>■ Temporary access area / roadway to the airstrip to be expanded (thicker). Current access thickness is thin (in areas less than 1m and less than 0.5m in areas).</li> <li>■ Continue visual and drone image monitoring. Due to the critical and higher risk nature of the Goose airstrip, drone photographs and photos taken from ground level should be taken again in the summer of 2023 and compared to the information collected in 2022. Drone images were taken in 2022 however they were at isometric views, and / or orthorectified images were taken when the ground was covered with snow. Additional orthorectified drone imagery is suggested to be collected in the summer of 2023 for use as part of the 2023 AGI and to help improve the ongoing monitoring, tracking, and review.</li> </ul>

## Attachment 1 – Summary of 2022 AGI Observations and Recommendations - Goose

Inspection Item	2022 Observations and Recommendations
Culverts and Surface Water Flow Management	<ul style="list-style-type: none"> <li>■ The temporary Gander bridge abutment are starting to show signs of movement – new larger diameter culverts are planned to be installed at these locations in 2023 to replace these temporary bridges. If the culverts are not installed before freshet 2023 then a careful inspection of the bridge abutments should be completed, and any required maintenance or upgrades to be completed at the bridge abutments before the bridges area continued to be used. If the culverts are not installed at this location and the bridges continue to be used then the allowable bridge loadings (loaded truck weight limits etc..) should be revisited. This is a main area to watch from a health and safety point of view as displacement of the bridge abutments could lead to vehicle damage or equipment going off the road.</li> <li>■ Continue inspections at the outlet of the culverts. Suggest survey points at inlet and outlet of the culverts to assist with this.</li> <li>■ Cover over some of the culverts is low (thin) in areas. Larger equipment would need a larger cover (thickness) over the culverts to avoid damage or compression of the underlying culverts. <ul style="list-style-type: none"> <li>○ <i>Sabina has outlined that since the summer 2022 inspection additional material has been placed over these are and this comment has been addressed. Sabina has also outlined that in many areas the culverts have now been built out / extended to the full road widths required for 775 CAT haul trucks. Sabina also indicated that they would revisit the Goose Neck crossing area to see if additional culvert or drainage measures will be required or suggested to avoid any excessive ponding and / or to reduce the likelihood of the road washing out in a larger storm event.</i></li> </ul> </li> </ul>



## Attachment 1 – Summary of 2022 AGI Observations and Recommendations - Goose

Inspection Item	2022 Observations and Recommendations
Road Thickness	<ul style="list-style-type: none"> <li>■ An updated as-built pick-up of the road suggested (all roads) are suggested to be completed to compare the current road surface to the pre-development topography surface. This could be used to check the thicknesses and width of the existing roads to the original design criteria to highlight main area of interest (or areas to look at in more detail as part of the 2023 AGI).</li> <li>■ Sabina should watch the shoulders of the road and do inspections closer to freshet and throughout the summer. Specifically, 1 to 3m from the edge of each road. Care should be given for loaded equipment not to travelling too close to the edges of the roadways, and for loads or equipment not to be storage to close to the edges of the roadways and pads (specifically where any tension cracking has been observed). Also storage of freight or travel of equipment near the edges of oversteepened slopes [slope typically steeper than 2H:1V in thicker fill or steeper than 1.5H:1V in thinner fill areas (1.5 m or lower thickness)] should be avoid; as these areas are expected to relax (slopes to slough or shallow) over time.</li> <li>■ Overburden has been used in some of the roads. The ice content in these overburden soils is unknow. Typically, it looks like the overburden placed in the main haul roadways has been 'encapsulated' by coarser blast rock, run-of-mine (ROM) or run-of-quarry (ROQ) material. For areas where fills are less than 1.5 to 2m increased maintenance may be expected as the overburden materials thaw (if frozen) or consolidate and settle. An inspection should be done in the snow free months to mark / delineate any areas where overburden is visible on the outside toes of the roads (or pads if overburden has been used as part of the construction of any pads). Areas with exposed overburden should be monitored for stability and to ensure that there is not increased sedimentation resulting.</li> <li>■ It appears that some of the underground waste rock (from portal / decline development) may have been used to temporarily widen the road by the portal location. SRK is unaware of the Sabina quarry, run of mine, and underground rock geochemical sampling and monitoring plans. Therefore, SRK is unable to comment on the quality of this rockfill material or suitability for use as construction material. It is suggested that Sabina implement a program to track where any underground waste rock (or if / when PAG encountered in the pit pre-stripping and early development activities) is placed. <i>Sabina has indicated to SRK that the do now have a tracking plan in place and that site geochemical sampling plans and programs (as have been submitted as part of license submissions) have been followed in 2022. A review of the geochemical sampling and tracking plan was not done as part of the 2022 AGI but is suggested to be completed in 2023.</i></li> </ul>

## Attachment 1 – Summary of 2022 AGI Observations and Recommendations - Goose

Inspection Item	2022 Observations and Recommendations
Goose Camp and Plant Area	<ul style="list-style-type: none"> <li>■ One tank has now been installed / erected at the Goose / camp tank farm. Erosion and steep slopes were noted at part of the inspection that required repair. <i>Sabina has indicated that they have now added additional material and cleaned up / updated these tank pedestals. This comment has been addressed.</i> <ul style="list-style-type: none"> <li>• Additional context: the pedestals below the one erected tank in the Goose Tank farm was noted to have been over steepened and / or eroded in areas. This led to the edges of the tank being on or very near to steep fill slopes. The tank was empty at the time of the AGI but if the tank was filled (weight in tank and force on the pedestals notably increased), and the pedestals were left in an over steepened state, this could potentially have led to a bearing failure through the pedestal fill. As outlined above Sabina has now completed additional work on this pedestal.</li> </ul> </li> <li>■ There is limited overline crush (or bedding material) that has been placed over the liner in the Goose Tank Farm. Overliner material appears to have been placed in select routes to allow for vehicle traffic into and out of the bunded area. This tank farm is in progress and was inspected in an interim state. This noted, Sabina is reminded that overliner fill thicknesses should be surveyed and checked (once completed) and typically fill thicknesses are required to be at least 0.6m in thickness in any area where equipment or vehicles will travel over the liner. Overline fill thicknesses should be checked as part of the final as-built review and compilation (once the tank farm completed) so that traffic route or 'no-go' areas can be delineated within the bunded area.</li> </ul>
Quarry	<ul style="list-style-type: none"> <li>■ As construction material for site is currently being sourced from the NPAG ROM material from the initial Echo Pit pre-stripping development, there has been no notable activity at the Goose quarry. As a result, the former Goose quarry is currently being used as a temporary landfill / storage site. Increase signage should be placed at entrance to this quarry to inform and limit vehicle traffic into this area. <i>Sabina has outlined that this quarry is already a restricted access area on site. However, additional signage can be placed.</i></li> </ul>
Camp Pad Pond	<ul style="list-style-type: none"> <li>■ Camp pad pond liner installation was in progress at the time of the 2022 AGI inspection. It was suggested that the top elevation of the pond should be surveyed and compared to the design elevations to ensure the design capacity of the pond are being met, or at least Sabina is aware of what the as-built capacity will be expected to be. <i>Sabina site staff have communicated that this has been done. SRK is not the design engineer for this pond and thus has not reviewed this survey data in detail. SRK have seen evidence that this survey was completed.</i></li> </ul>

## Attachment 1 – Summary of 2022 AGI Observations and Recommendations - Goose

Inspection Item	2022 Observations and Recommendations
Ground Temperature Cables	<ul style="list-style-type: none"> <li>■ Sabina is in the process of developing a site-specific thermal monitoring plan. This is a positive and proactive step and will assist to provide more concrete recommendations (linked to the roads and pads) for future AGIs. There is no specific recommendations for this 2022 AGI. More acknowledgement that this is in progress and past 2021 AGI recommendations are in the process of being addressed. Generally, the site wide thermal monitoring plan is expected to consist of:               <ol style="list-style-type: none"> <li>1. Site visit – collect data and check historic equipment, visit areas outside of development and infrastructure footprints</li> <li>2. Data Review and Analysis                   <ul style="list-style-type: none"> <li>– Update of ground thermal database</li> <li>– QC data and provide analysis of permafrost attributes</li> <li>– Evaluation of sites and permafrost conditions in context of terrain conditions to support refinement of long-term monitoring sites</li> </ul> </li> <li>3. Development and Documentation of Thermal Monitoring Plan.</li> </ol> </li> </ul>
Echo Pit (Initial Pre-stripping / development)	<ul style="list-style-type: none"> <li>■ Temporary overburden stockpile was noted in the Echo Pit catchments. At the time of the inspection SRK was not aware of the downstream sediment management plans.               <p><i>Sabina has outlined that silt fence or rock berms have been in stalled downstream of overburden for sediment control. Overburden will not be kept in the current locations long term. Sabina has indicted that this is temporary stockpile and was only being used to allow for the overburden to be moved from the Echo Pit catchment area (more of staging location). The overburden from this area will either be blended with the other rockfill being used for general road construction, used upstream of liner key trench tie-ins to help create a more watertight seal, or relocated to a more permanent storage location (such as near the center of the designated WRSAs). The silt fences and local sediment control should be checked before freshet 2023.</i></p> </li> </ul>



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## **Attachment 2**

## **Summary of Observation and Recommendations – MLA**

## Attachment 2 – Summary of 2022 AGI Observations and Recommendations - MLA

Inspection Item	2022 Observations and Recommendations
General Comment / Overview	<ul style="list-style-type: none"> <li>The main observation, as part of the 2022 Annual Geotechnical Inspection (AGI), was that the MLA area was in a functional but still in a transitional / developing state. The MLA is continuing to evolve as a port location that can be utilized to bring in supporting equipment, supplies and buildings to support the main life for the Back River project. Similar to the Goose area of site, many of the comments in the Annual Geotechnical Inspection are linked to items that should continue to be monitored or specific considerations for water ponding, improving thermal protection of the permafrost, as the MLA port construction and associated infrastructure advances.</li> </ul>
Road and Pad Thickness	<ul style="list-style-type: none"> <li>The main areas and roadways inspected at the MLA included: <ul style="list-style-type: none"> <li>Shoreline Pad (<i>discussed further below</i>)</li> <li>Freight Storage Pad</li> <li>Camp Pad</li> <li>MLA Airstrip / Runway (<i>discussed further below</i>)</li> <li>Laydown Pad (located south of the camp pad area)</li> <li>Former Temporary Fuel Storage Depot Area (<i>discussed further below</i>)</li> <li>Former Explosives Storage Berm / Area</li> <li>MLA Quarry area. This includes: <ul style="list-style-type: none"> <li>Existing Phase 1 Quarry Tank Farm (<i>discussed further below</i>)</li> <li>In-Progress Phase 2 Quarry Tank Farm Area (likely could add a dashed line around the whole area and outlined as 'MLA Quarry Area')</li> </ul> </li> <li>Fuel Offload / Access Road</li> </ul> </li> <li>In general, the pads and roadways at the MLA are similar to what has been constructed at Goose. They are in a transitional state and most of the fill thicknesses are at the minimum ranges, or just below, to avoid or slow deepening of the active layer on site. The main difference is that all the roads and pads and the MLA were constructed from Run-Of-Quarry material that was sourced from the MLA Quarry Area (see figure 2). In general, this blasted material has a much greater sand content (much finer gradation when compared to the harder blast rock at the Goose area). The higher sand content appears to create a more tightly packed top road surface. This fine gradation material however may be subject to a bit more settlement through the mine line. Ongoing maintenance should be expected on the roads and pads.</li> <li>The general observation is that the road thickness are quite thin (in many areas 1 m or less) and settlement and ongoing maintenance should be expected. A compiled and updated as-built pick-up of the roads and infrastructure was completed at the MLA in early quarter one of 2023. As part of the 2023 AGI it suggested that that data be used to compare to the pre-development topography surface. This would be used as a more formal check of the thicknesses and width of the existing roads to highlight main area of interest for further monitoring or investigation in 2023. This check can be documented as part of the 2023 AGI.</li> <li>At the MLA Sabina should again watch the shoulders of the road and do inspections closer to freshet and throughout the summer. Specifically, 1 to 3m from the edge of each road. Care should be given for loaded equipment not to travelling too close to the edges of the roadways (specifically in the summer), and for loads or equipment not to be storage to close to the edges of the roadways and pads (specifically where any tension cracking has been observed or where there is ponding water against the pads). Also, storage of freight or travel of equipment near the edges of over steepened slopes [slope typically steeper than 2H:1V in thicker fill or</li> </ul>

## Attachment 2 – Summary of 2022 AGI Observations and Recommendations - MLA

Inspection Item	2022 Observations and Recommendations
	<p>steeper than 1.5H:1V in thinner fill areas (1.5m or lower thickness)] should be avoid; as these areas are expected to relax (shallow) over time.</p>
MLA Airstrip	<ul style="list-style-type: none"> <li>■ Similar to the Goose airstrip, SRK's review of the MLA airstrip focused on identifying distress of the airstrip embankment and changes in the natural terrain, based on the available imagery data and visual inspections. Distress of the airstrip embankment, mainly near the immediate edges / shoulders, was identified as small linear tension cracks or depressions, inferred to be caused by permafrost degradation in the underlying foundation. In areas this is enhanced by ponding water against the side of the airstrip (some from natural flow paths). This ponding is most prevalent near the south and southwestern portions (specifically near the edges) of the airstrip. <ul style="list-style-type: none"> <li>– Sabina should monitor these areas (specifically as temperatures annually warm on site from winter to spring to summer conditions). Some consideration should be given to redirecting or trying to push any ponding water further away from the toes of the existing MLA airstrip. Pumping down / removal of any ponded water at the toes of the airstrip in the fall (before winter freeze up) would increase the cold ambient air and ground heat transfer to help slow down permafrost degradation (reduce thawing rates and slow deepening of the active layer). This increased water management may help to reduce overall short and long-term maintenance activities.</li> </ul> </li> <li>■ Prior to landing any aircraft on the runway, the aircraft operators should conduct their own assessment of the runway conditions (in terms of functionality) and make recommendations for maintenance. Ultimately it will be at the discretion of the aircraft operators if the airstrip surface is acceptable for their aircraft.</li> <li>■ Continued visual and drone image monitoring should be completed at this airstrip. This was done in 2022 and is suggested to be done again in 2023 for comparison. Additional orthorectified drone imagery is suggested to be collected in the summer of 2023 for use as part of the 2023 AGI and to help improve the ongoing monitoring, tracking, and review.</li> </ul>
Shoreline Pad	<ul style="list-style-type: none"> <li>■ The Shoreline Pad is a critical piece of infrastructure that is required to offload the barges at the MLA site. As the Shoreline Pad extends to and slightly into Bathurst Inlet it is more prone to wave erosion and settlement from ongoing use and fluctuating water levels. At the time of the geotechnical inspection there were barges anchored to the Shoreline Pad on site. It was therefore hard to fully inspect the upstream face of the Shoreline Pad however it appeared as if in some area some the outside rock and rip-rap material had settled. The Shoreline Pad is suggested to be inspected by site staff before the 2023 sealift and likely some additional maintenance activities performed, which likely would include adding some additional rip-rap / coarser rockfill off the upstream (in or near water) slope of this pad. This would be done to help minimize erosion to the pad.</li> <li>■ Currently this Shoreline Pad appears to be of a reasonable fill thickness (in the range of 2 to 4m). The outside / upstream (or in water) slope is quite steep (more in the 1.5HL1V range based on visual inspections). These steeper slopes appear to have been constructed to allow the barges to dock closer to the fill material. Care should be taken to ensure that any offloading ramps from the barges to the pad are offset at least a few meter inwards from the pad crest to avoid and offloading leading to some slope relaxation or sloughing. At this stage this is more of an operational consideration.</li> <li>■ The underlying foundation below the Shoreline Pad is typically comprised (based on available geotechnical drilling information) of sand to silty sand overburden. The top active layer likely now has consolidated (as most of this fill has been in place since 2018) and assisted to increase the foundation strength below this pad. This noted, the sandy foundation would be more prone to elevated pore pressure generation (thereby decreasing the effective stress of the foundation soil) if large loads are place over this pad. If loads larger than this pad has experience / seen to date from the barge offloading, and / or if additional fill material is placed to raise this pad</li> </ul>

## Attachment 2 – Summary of 2022 AGI Observations and Recommendations - MLA

Inspection Item	2022 Observations and Recommendations
	<p>in the future then the impacts on the foundation should be looked at in closer detail to ensure that a failure through the foundation does not occur. At this time this is not a critical concern but should be considered as this area evolves and develops. Sabina should consider including this area (Shoreline Pad) as part of their site wide thermal monitoring plan (which is currently in development).</p>
MLA Quarry and Fuel Tank Farm	<ul style="list-style-type: none"> <li>■ The MLA quarry development slowed down in 2022. For the most part the quarry now is separated into three main areas (see Figure 2 for additional details): <ul style="list-style-type: none"> <li>– Phase 1 Tank Farm – this area has been constructed and one tank had been erected in the lined and bunded area (constructed within the footprint for the mined-out quarry).</li> <li>– Phase 2 Tank Farm – this area is in progress and is the construction of additional containment area to accommodate the future construction of additional fuel tanks on site.</li> <li>– East-southeast (ESE) quarry area – loose material (previously drilled and blasted) still exists in this area and this the one of the current sources for additional fill material for the MLA construction activities if / as needed. At the time of the AGI this area was also being used to temporarily park some of the equipment that was not in use. If there was additional quarry development at the MLA area, this development would be expected to be in this area and likely result further to the ESE.</li> </ul> </li> <li>■ For the Phase 1 Tank Farm area overliner fill material have been placed over the base of the tank farm but not on the slopes. To finish the construction of this tank farm to design overliner material will also be required to be placed over the slope.</li> <li>■ During the inspection there was water accumulated in the northwest (NW) corner of the bunded area (i.e. where the tank farm base was designed to grade to). Upon closer inspection of this area, evidence that pipes had gone over the slope into this area was apparent. In this portion of the slope (NW corner of Phase 1 bunded area) some of the coarser blasted fill material was noted to have been pushed from the top of the Phase 1 MLA berm onto the slope (speculatively from management and operation activities in the area). To avoid liner damage, it is suggested that priority be given to placing the overline fill in this NE corner of the Phase 1 Tank Farm. <ul style="list-style-type: none"> <li>– It is also suggested that in the summer of 2023, when all water is removed from the tank farm, that a visual inspection be done around the design sump area to check the liner integrity. This was unable to be inspected at the time of the AGI. This could be done by Sabina site staff and photographs taken to document the current tank farm base conditions in that area. This is suggested as areas where water pool and water level fluctuate are typically more prone to erosion of overliner material.</li> </ul> </li> <li>■ At this time there are no additional recommendations for the Phase 2 Tank Farm area or ESE area of the quarry. Those areas were areas of active development and at an interim state. Sabina has been doing ongoing survey checks to compare against the design in these areas. These survey checks should continue as the construction of the Phase 2 Tank Farm progresses, as per the available Issued For Construction drawings for this area.</li> </ul>
Former Temporary Fuel Storage Depot Area	<ul style="list-style-type: none"> <li>■ Previously there were multiple EnviroTanks (fuel tanks) that had been placed in this area; placed within tertiary containment (see Figure 2). This area was used for temporary fuel storage during initial development of the MLA area. The majority of these fuel tanks have been removed / pulled out of this area. There is still one bermed section (and corresponding empty tanks) left at this location that is planned to be removed from this area in 2023. Sabina has outlined that there is no longer any traffic in or around this area. As the tanks in this area were placed on very thin fill, and or on the tundra, and as this low lying area appears to have had more</li> </ul>

**Attachment 2 – Summary of 2022 AGI Observations and Recommendations - MLA**

<b>Inspection Item</b>	<b>2022 Observations and Recommendations</b>
	<p>surface water accumulation and natural ground ice in the foundation soils, increased ponding and degradation of the permafrost was noted as part of the AGI. This area is in the process of being decommissioned.</p> <ul style="list-style-type: none"><li>– Ongoing monitoring of this location should occur to track the permafrost degradation in this area, to assist with the development of long term remediation plans (for this former temporary fuel storage depot area). From discussions with site staff they noted that they had not observed any notable worsening / degradation of the this area since it stopped being used, and as Sabina actively works to decommission this area. At this time this area is being flagged as one of the primary areas at the MLA for more active data collection and monitoring.</li></ul>

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**Attachment 3****Photolog from 2022 Site Visit - Goose**





#### LEGEND:

- As-Constructed Infrastructure
- Points Along the 2022 Inspection Track

Plan view imagery extracted from World Imagery (approx. 2020-2021 time range). Reference: source: "Esri, USGS | Northwest Territories, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCAN, Parks Canada"



Job No: CAPR002290

Filename: 2022AGI\_Goose\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

#### Goose Inspection Areas and Photo Log

Date:  
March 30, 2023

Approved:  
JBK

Figure:  
**A3.1**





Plan view imagery extracted from World Imagery (approx. 2020-2021 time range). Reference: source: "Esri, USGS | Northwest Territories, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCan, Parks Canada"



Job No: CAPR002290  
Filename: 2022AGI\_Goose\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

### Goose Photo Locations

Date: March 30, 2023	Approved: JBK	Figure: <b>A3.2</b>
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Photo **G1**



Photo **G2**



Photo **G3**



Photo **G4**



Job No: CAPR002290  
Filename: 2022AGI\_Goose\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

### Goose Photo Log

Date:  
March 30, 2023

Approved:  
JBK

Figure: **A3.3**





Photo **G5**



Photo **G6**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.4</b>



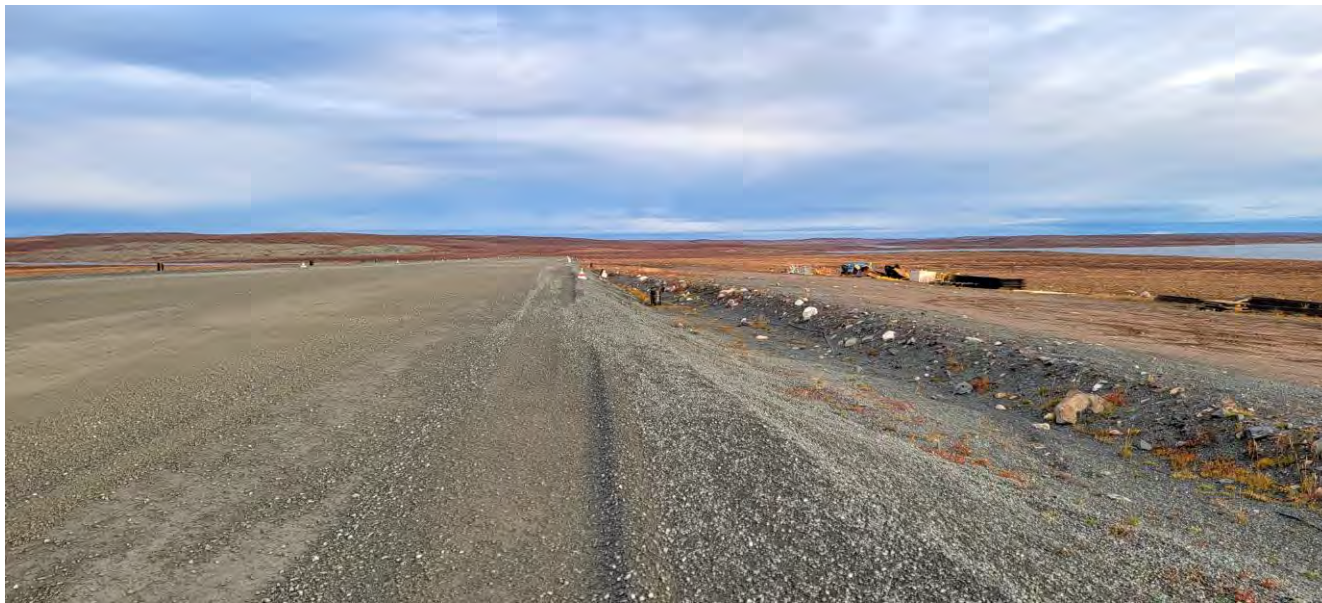


Photo **G7**



Photo **G8**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.5</b>





Photo **G9**



Photo **G10**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.6</b>





Photo **G11**



Photo **G12**



Photo **G13**

			2022 Annual Geotechnical Inspection	
	Back River Project		<b>Goose Photo Log</b>	
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx			Date: March 30, 2023	Approved: JBK
				Figure: <b>A3.7</b>





Photo **G14**



Photo **G15**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.8</b>





Photo **G16**



Photo **G17**

			2022 Annual Geotechnical Inspection	
	<p><b>Goose Photo Log</b></p>		Date: March 30, 2023	Approved: JBK
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project		Figure:	<b>A3.9</b>





Photo **G18**



Photo **G19**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.10</b>





Photo **G20**



Photo **G21**

		2022 Annual Geotechnical Inspection		
		Goose Photo Log		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: A3.11





Photo **G22**



Photo **G23**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.12</b>





Photo **G24**



Photo **G25**



Photo **G26**



Job No: CAPR002290  
 Filename: 2022AGI\_Goose\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

**Goose  
Photo Log**

Date:  
March 30, 2023

Approved:  
JBK

Figure: **A3.13**





Photo **G27**



Photo **G28**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.14</b>





Photo **G29**



Photo **G30**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.15</b>





Photo **G31**



Photo **G32**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.16</b>



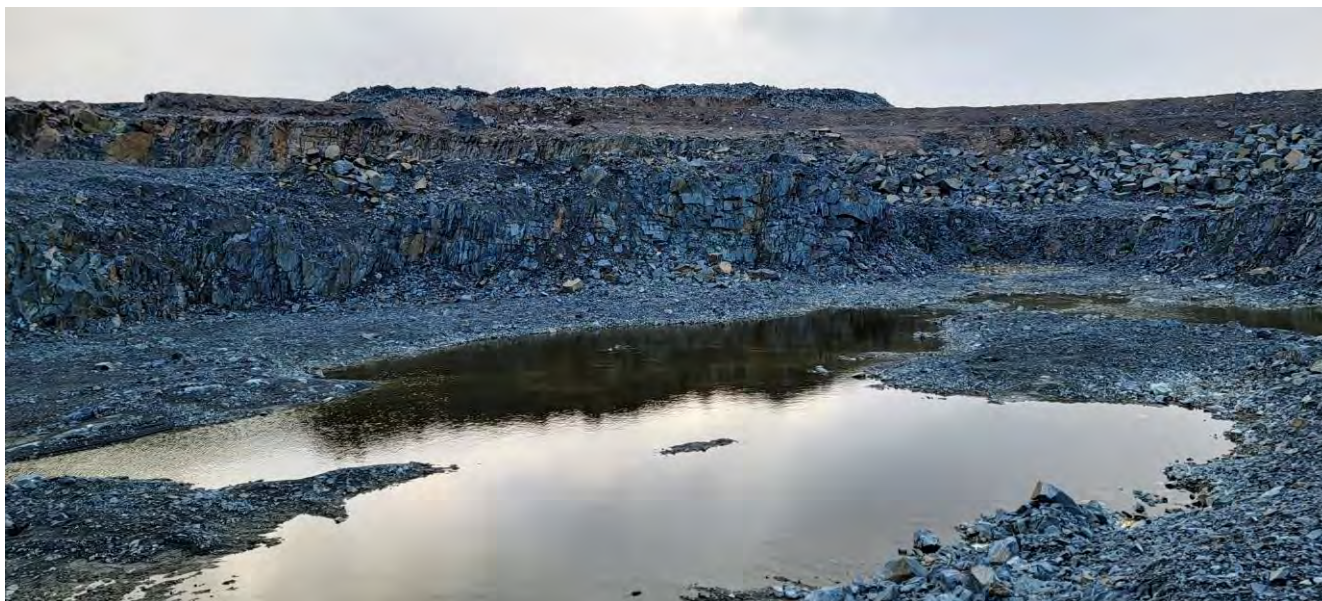


Photo **G33**



Photo **G34**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.17</b>





Photo **G35**



Photo **G36**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.18</b>





Photo **G37**



Photo **G38**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.19</b>





Photo **G39**



Photo **G40**



Photo **G41**

		2022 Annual Geotechnical Inspection		
		Goose Photo Log		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: A3.20





Photo **G42**



Photo **G43**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.21</b>



Photo **G44**



Photo **G45**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.22</b>





Photo **G46**



Photo **G47**

		2022 Annual Geotechnical Inspection		
		<b>Goose Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.23</b>





Photo **G48**



Photo **G49**



Photo **G50**

		2022 Annual Geotechnical Inspection		
		Goose Photo Log		
Job No: CAPR002290 Filename: 2022AGI_Goose_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A3.24</b>



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**Attachment 4      Photolog from 2022 Site Visit - MLA**



#### LEGEND:

- As-Constructed Infrastructure
- Points Along the 2022 Inspection Track

Plan view imagery extracted from World Imagery (approx. 2020-2021 time range). Reference: source: "Esri, USGS | Northwest Territories, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCAN, Parks Canada"



Job No: CAPR002290  
Filename: 2022AGI\_MLA\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

#### MLA Inspection Areas and Photo Log

Date:  
March 30, 2023

Approved:  
JBK

Figure:  
**A4.1**





Plan view imagery extracted from World Imagery (approx. 2020-2021 time range). Reference: source: "Esri, USGS | Northwest Territories, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, US Census Bureau, USDA, NRCan, Parks Canada"



Job No: CAPR002290  
Filename: 2022AGI\_MLA\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

### MLA Photo Locations

Date:  
March 30, 2023

Approved:  
JBK

Figure:  
**A4.2**





Photo M1



Photo M2

		2022 Annual Geotechnical Inspection		
		MLA Photo Log		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.3</b>





Photo M3



Photo M4

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.4</b>





Photo M5



Photo M6



Photo M7

		2022 Annual Geotechnical Inspection		
		MLA Photo Log		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.5</b>





Photo M8



Photo M9

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.6</b>





Photo **M10**



Photo **M11**

			2022 Annual Geotechnical Inspection	
	<b>MLA Photo Log</b>			
	Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK
			Figure:	<b>A4.7</b>





Photo M12



Photo M13



Photo M14



2022 Annual Geotechnical Inspection

**MLA  
Photo Log**

Job No: CAPR002290  
Filename: 2022AGI\_MLA\_PhotoLog.pptx

Back River Project

Date:  
March 30, 2023

Approved:  
JBK

Figure: **A4.8**





Photo **M15**



Photo **M16**

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.9</b>





Photo **M17**



Photo **M18**

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.10</b>





Photo M19



Photo M20

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.11</b>





Photo **M21**



Photo **M22**

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.12</b>





Photo M23



Photo M24



Photo M25



Job No: CAPR002290  
Filename: 2022AGI\_MLA\_PhotoLog.pptx



Back River Project

2022 Annual Geotechnical Inspection

### MLA Photo Log

Date:  
March 30, 2023

Approved:  
JBK

Figure: **A4.13**





Photo **M26**



Photo **M27**

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.14</b>

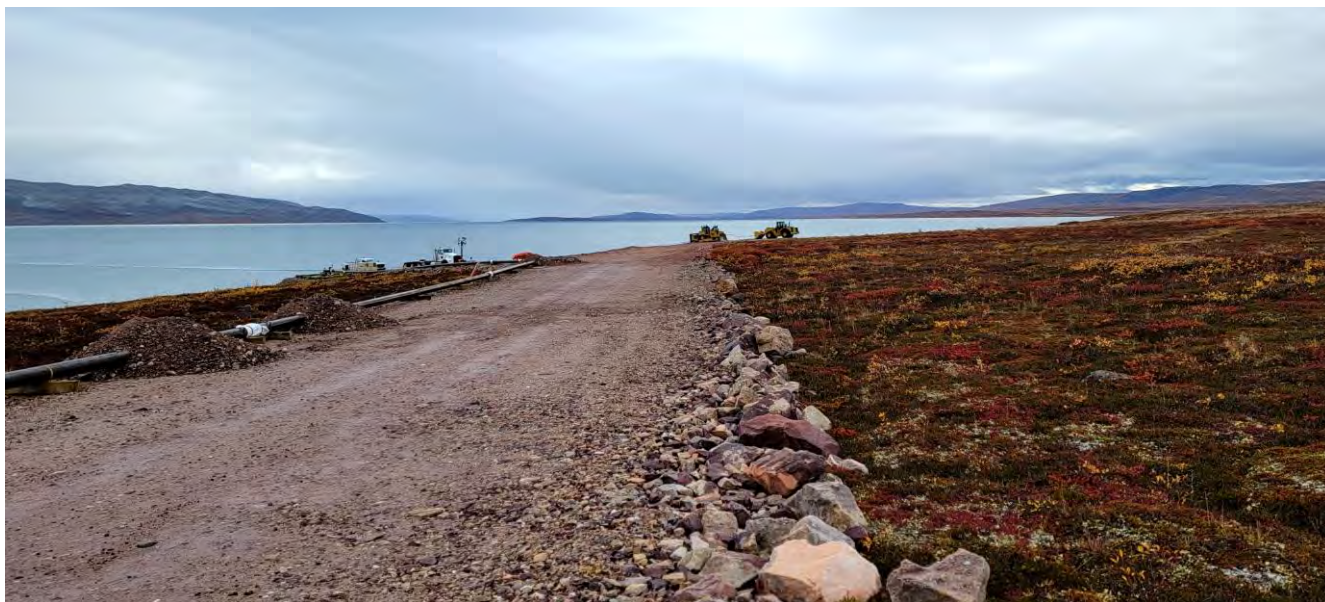


Photo M28



Photo M29

		2022 Annual Geotechnical Inspection		
		<b>MLA</b> <b>Photo Log</b>		
Job No: CAPR002290 Filename: 2022AGI_MLA_PhotoLog.pptx	Back River Project	Date: March 30, 2023	Approved: JBK	Figure: <b>A4.15</b>



## Appendix C. Aquatic Baseline Report

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## REPORT

# Sabina Gold & Silver Corp. Back River Project - 2022 Aquatic Baseline Report

Submitted to:

**Sabina Gold & Silver Corp.**

Submitted by:

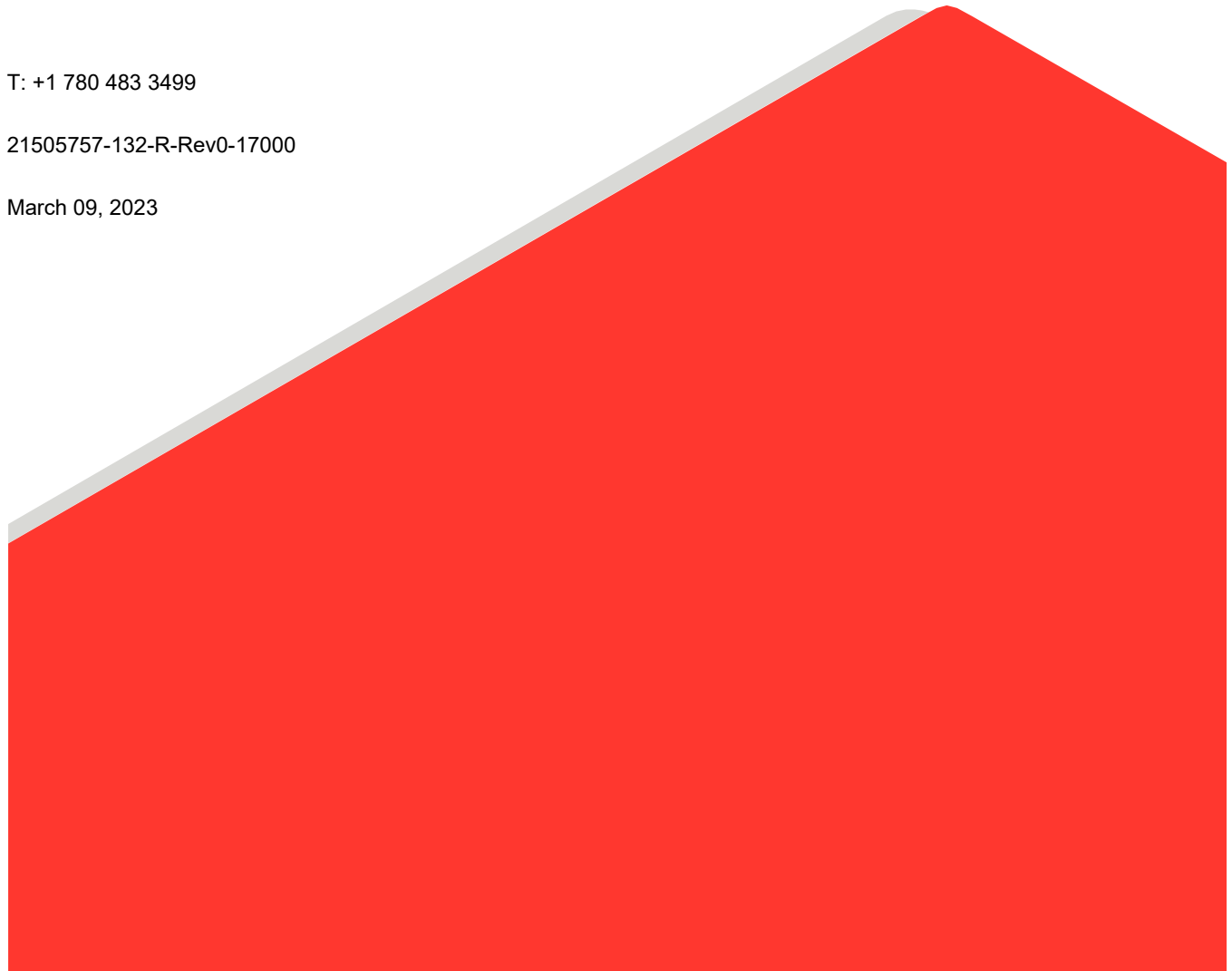
**WSP Canada Inc.**

16820 107 Avenue Edmonton, Alberta T5P 4C3 Canada

T: +1 780 483 3499

21505757-132-R-Rev0-17000

March 09, 2023





## Distribution List

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## 1.0 INTRODUCTION

The Back River Project (the Project) is a gold project owned by Sabina Gold & Silver Corp. (Sabina) within the West Kitikmeot region of southwestern Nunavut. It is situated approximately 400 kilometres (km) southwest of Cambridge Bay, 95 km southeast of the southern end of Bathurst Inlet, and 520 km northeast of Yellowknife, Northwest Territories. The Project, as updated in the Modification Package (Sabina 2020), involves the Construction, Operations, Closure, and Post-Closure of three open pit mines and one underground mine at the Goose Property. A Marine Laydown Area (MLA) was established at Bathurst Inlet to deliver supplies, via a 160 km winter ice road connecting the MLA to the Goose Property.

The Project will be subject to both an Aquatic Effects Management Plan (AEMP) as required by the Type A Water Licence (2AM-BRP1831) and an Environmental Effects Monitoring (EEM) program under the Metal and Diamond Mining Effluent Regulations (MDMER). Baseline studies were undertaken to support the environmental assessment process from 2010 to 2015 (Sabina 2015). Supplemental baseline studies were carried out in 2017 and 2018 to support the design and implementation of the AEMP, address relevant commitments made by Sabina through the water licensing process, and support the future EEM in accordance with the MDMER. An Aquatic Baseline Synthesis Report was prepared to evaluate the overall baseline dataset in terms of sampling area compatibility, suitability of the compiled baseline dataset to support the AEMP design, and sufficiency of baseline data to support normal range calculations (Golder 2019). This synthesis report generally confirmed the capability, suitability, and sufficiency of the compiled baseline dataset, but recommended the following data collection to support the AEMP:

- Collect additional under-ice water quality data prior to the implementation of the AEMP to augment the ice-cover season dataset.
- Collect additional data for all components from Propeller Lake prior to the end of the Operations phase, before pit overflow discharge will result in a potential Project-related influence on this lake.

The Nunavut Water Board (NWB) completed its technical review of the Aquatic Baseline Synthesis Report in November 2020 (NWB 2020). Sabina made the following commitments in response to technical comments by Kitikmeot Inuit Association (KIA), Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), and Environment and Climate Change Canada (ECCC):

- To collect water quality data in Propeller Lake starting in Year 8 to accumulate at least three years of data before a potential Project-related influence on Propeller Lake water quality is expected to be observable.
- To collect another year of under-ice water quality data for Goose Lake and Reference B Lake.
- To collect additional Lake Trout data during the fish health surveys to augment the baseline dataset for normal range calculations.
- To replace non-detect analytical chemistry results with one-half the detection limit when calculating summary statistics and normal ranges, and before the data are statistically analyzed.

Additional baseline data were collected in 2021 and 2022 to address these commitments, to support the next update to the AEMP, and to support the hydrodynamic (HD) model. Several field programs occurred in 2021 including:

- ice-cover and open-water water quality sampling in Goose Lake, Propeller Lake, and Reference B Lake
- open-water water quality in Goose Lake streams
- sediment and benthic invertebrate community in Propeller Lake
- fish health and fish tissue chemistry of Lake Trout (*Salvelinus namaycush*) in Goose and Propeller lakes
- fish health and fish tissue chemistry of Slimy Sculpin (*Cottus cognatus*) in Propeller Lake

The methods and results of these field programs were presented in the 2021 Aquatic Baseline Report (Golder 2022).

The current report summarizes baseline data collected in 2022. The following field programs occurred in 2022:

- ice-cover and open-water water quality sampling in Goose Lake, Propeller Lake, and Reference B Lake
- open-water water quality sampling in the outflow streams from Goose Lake, Propeller Lake, and Reference B Lake

Water quality sampling in 2022 occurred during three field programs (one conducted under ice-covered conditions and two during open-water conditions) and consisted of field measurements and sample collection from three lakes and three lake outflow streams. Collection of water quality samples followed the updated AEMP study design (Sabina 2022).

## 2.0 METHODS

### 2.1 Lake Sampling Locations

Lake water quality sampling locations are summarized in Table 2-1 and Figure 2-1. The ice-cover season water quality sampling program was conducted in April 2022 and consisted of collection of water quality samples, in situ physico-chemical measurements as depth profiles in the three AEMP lakes (i.e., Goose Lake, Propeller Lake, and Reference B Lake). Sampling locations consisted of three areas within Goose Lake (i.e., West Bay, Central Basin, and Southeast Basin), one area in Reference B Lake, and two areas in Propeller Lake (South Basin [PLSB] and North Basin [PLNB]). The five previously sampled stations were sampled in each area.

During the ice-cover season, under-ice depth profile measurements were recorded and water quality samples were collected at each station, with exceptions shown in Table 2-1. Depth profile data and water samples for total dissolved solids (TDS) analysis were also collected at a sixth station at the deepest area of Goose Lake West Bay (BRP-29-6) and in the Goose Lake Tail (GLTL). Additional near-bottom total dissolved solids (TDS) samples and in situ physico-chemical measurements were taken at two stations in Goose Lake West Bay (BRP-29-2 and BRP-29-6), one station in Goose Lake Central Basin (BRP-32-3), and Goose Lake Southeast Basin (BRP-33-3); these data were collected to support the HD model.

During the open-water season, depth profile measurements were recorded and water quality samples were collected in August at five previously sampled stations in each area (Table 2-1).



**Table 2-1: Lake Water Quality Sampling Locations, 2022**

Lake Area	Station ID	UTM Coordinates (Zone 13N, NAD 83)		April 10 to 14, 2022 (ice-cover)	August 6 to 13, 2022 (open water)
		Easting (m)	Northing (m)		
Goose Lake West Bay (GLWB)	BRP-29-1 <sup>(a)</sup>	431313	7269941	WQ, depth profile	WQ, depth profile
	BRP-29-2	431372	7270008	WQ, TDS near bottom, depth profile	WQ, depth profile
	BRP-29-3	431335	7269962	WQ, depth profile	WQ, depth profile
	BRP-29-4	431425	7269938	WQ, depth profile	WQ, depth profile
	BRP-29-5	431507	7269922	WQ, depth profile	WQ, depth profile
	BRP-29-6	431425	7269980	WQ, TDS near bottom, depth profile	_(c)
Goose Lake Central Basin (GLCB)	BRP-32-1 <sup>(b)</sup>	433690	7270849	WQ, depth profile	WQ, depth profile
	BRP-32-2 <sup>(b)</sup>	433681	7270890	WQ, depth profile	WQ, depth profile
	BRP-32-3	433673	7270944	WQ, TDS near bottom, depth profile	WQ, depth profile
	BRP-32-4	433652	7270835	WQ, depth profile	WQ, depth profile
	BRP-32-5	433653	7270898	WQ, depth profile	WQ, depth profile
Goose Lake Southeast Basin (GLSE)	BRP-33-1	434322	7270030	_(d)	WQ, depth profile
	BRP-33-2	434290	7270051	_(d)	WQ, depth profile
	BRP-33-3	434295	7270004	WQ, TDS near bottom, depth profile	WQ, depth profile
	BRP-33-4	434263	7270040	_(d)	WQ, depth profile
	BRP-33-5	434265	7270072	_(d)	WQ, depth profile
Goose Lake Tail	GLTL	434611	7271480	TDS near surface, TDS near bottom, depth profile	_(c)
Propeller Lake South Basin (PLSB; near center)	BRP-35-1	435261	7272824	WQ, depth profile	WQ, depth profile
	BRP-35-2	435269	7272857	WQ, depth profile	WQ, depth profile
	BRP-35-3	435338	7272909	WQ, depth profile	WQ, depth profile
	BRP-35-4	435340	7272865	WQ, depth profile	WQ, depth profile
	BRP-35-5	435288	7272889	WQ, depth profile	WQ, depth profile
Propeller Lake North Basin (PLNB)	BRP-36-1	434636	7279140	WQ, depth profile	WQ, depth profile
	BRP-36-2	434738	7278750	WQ, depth profile	WQ, depth profile
	BRP-36-3	434818	7278586	WQ, depth profile	WQ, depth profile
	BRP-36-4	434143	7278584	WQ, depth profile	WQ, depth profile
	BRP-36-5	434615	7279207	WQ, depth profile	WQ, depth profile
Reference B Lake (REFB)	BRP-40-1	442060	7258569	WQ, depth profile	WQ, depth profile
	BRP-40-2	442026	7258591	WQ, depth profile	WQ, depth profile
	BRP-40-3	441978	7258616	WQ, depth profile	WQ, depth profile
	BRP-40-4	441983	7258658	WQ, depth profile	WQ, depth profile
	BRP-40-5	441971	7258689	WQ, depth profile	WQ, depth profile

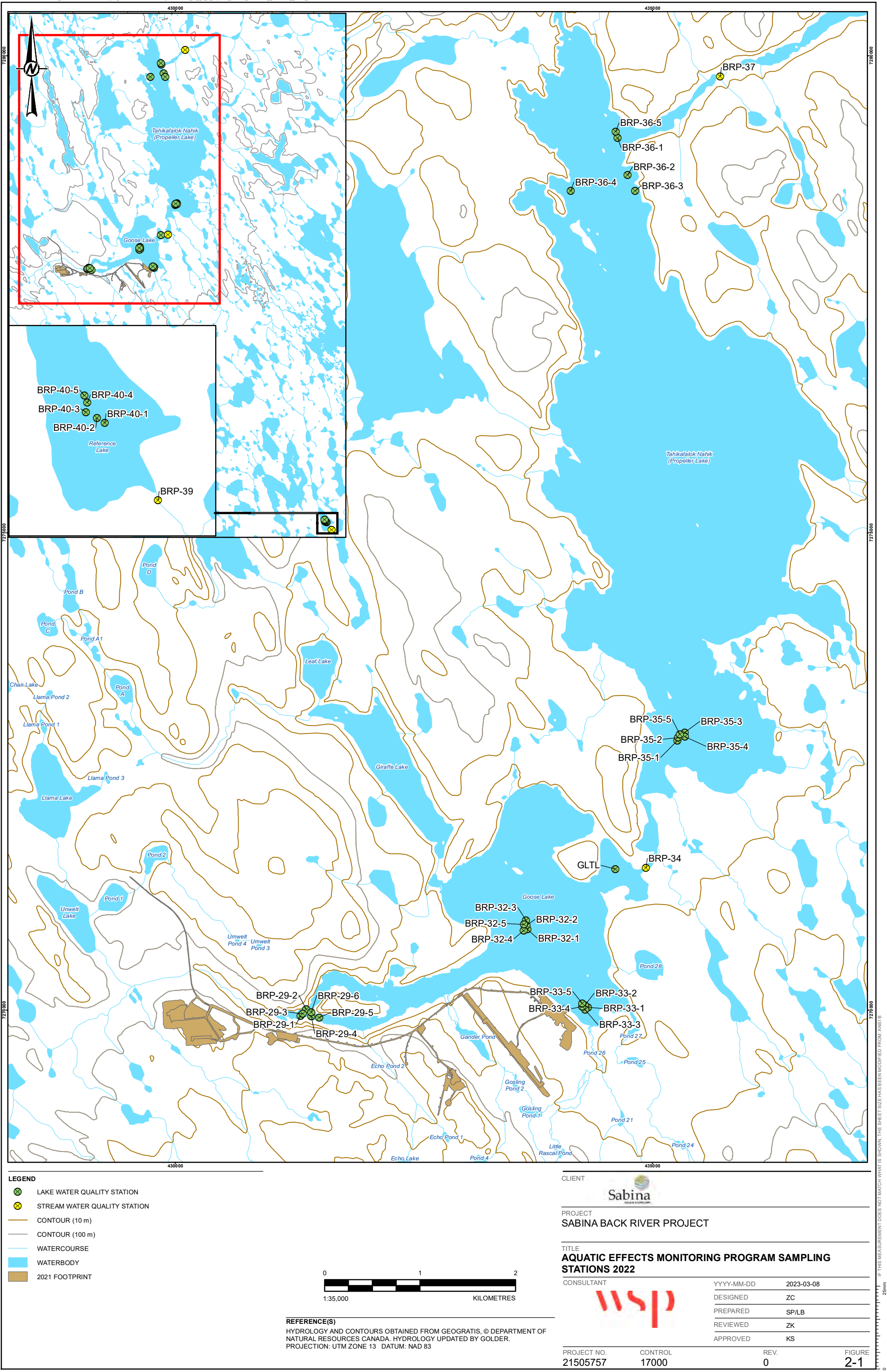
(a) In April, BRP-29-1 was sampled approximately 30 m east of reported coordinates due to a technical issue.

(b) In April, BRP-31-1 and BRP-31-2 were sampled approximately 200 m east of reported coordinates due to air strip interference (often the case during ice-cover conditions).

(c) Open-water sampling followed the updated AEMP design plan (Sabina 2022), which did not include sampling the deepest station in GLWB or GLTL.

(d) Only one station was sampled in GLSE during the ice-cover program to provide additional information for the hydrodynamic model.

WQ = water quality sample collected at 1 m below surface and analyzed for the entire suite of parameters; TDS near bottom = water sample collected at 1 m above the bed for TDS analysis; - = not sampled and no field measurements made (see footnotes for details).





## 2.2 Stream Sampling Locations

Streams were sampled in 2022 during two open-water programs and consisted of in situ physico-chemical measurements and collection of water samples for water quality analysis. Samples were collected from three streams, consisting of the outflow of Goose Lake, Propeller Lake, and Reference B Lake, with the June program targeting freshet conditions and the August program targeting summer conditions (Table 2-2 and Figure 2-1). The primary purpose of the stream sampling was to provide data for the HD model. The Propeller Lake and Reference B Lake outflows were not sampled in June, because of unsafe ice conditions. Due to low water levels in August, the sampling location in the Propeller Lake outflow stream was moved approximately 60 m west of the location sampled in previous years.

**Table 2-2: Stream Water Quality Sampling Locations, 2022**

Streams Description	Station ID	UTM Coordinates (Zone 13N, NAD 83)		June 7, 2022	August 6 to 13, 2022
		Easting (m)	Northing (m)		
Goose Lake Outflow	BRP-34	434932	7271495	WQ and Field measurements	WQ and Field measurements
Propeller Lake Outflow	BRP-37 <sup>(a)</sup>	435652	7279817	-	WQ and Field measurements
Reference B Lake Outflow	BRP-39	442294	7258229	-	WQ and Field measurements

Notes: Field measurements include pH, dissolved oxygen, water temperature, conductivity, and water depth.

(a) BRP-37 sampling location was moved approximately 60 m West of the original coordinates due to low water levels.

- = not sampled and no field measurements made due to unsafe ice conditions.

## 2.3 Field Methods

Water quality sample collection followed the procedures detailed in the AEMP study design (Sabina 2022) and methods published by the Canadian Council of Ministers of the Environment (CCME 2011).

Water samples were processed on site and those requiring filtration were filtered through a syringe with a 0.45 µm filter head supplied by the laboratory, before being preserved (if needed) with laboratory-provided preservative based on the required analysis and as instructed by the laboratory. Samples for low level metals and mercury analyses were not preserved in the field (they were preserved by the laboratory upon receipt). Processed samples were kept on site in a designated refrigerator before shipping; ice packs were added to the coolers to keep the samples as cool as possible (without freezing) during shipping. Samples were shipped by air to ALS Yellowknife as soon as practical after sample collection and processing, and taking into consideration the parameter-specific holding time constraints prescribed by the laboratory.

### Lake Sampling

One discrete water quality sample was collected at each lake sampling stations. Samples were generally collected at 1.0 metre (m) below the water or ice surface. At some stations during the ice-cover sampling event, there was insufficient water depth under the ice so samples were collected at between 0.5 and 0.8 m below the ice surface. For some open-water samples, samples were collected at between 1.5 and 3 m below the water surface due to field crew error. However, review of the data indicates that variation in sample depth did not impact results (Appendix C). Sample depths are noted in Appendix C, Tables C-1 to C-6. In April, samples for TDS only were collected at two depths in the water column (i.e., 1.0 m below surface and 1.0 m above the bottom) at a subset of the lake stations to provide information at different depths for the HD model.

During the ice-covered program, an ice auger was used to drill the sampling hole, and snow and loose ice were cleared from the hole using a stainless-steel slotted spoon prior sampling. Snow cover depth (m), ice thickness (m), and effective water depth (m) were recorded at each station. Effective water depth (water depth under the ice layer) was measured using a depth sounder lowered in a slow and controlled manner to minimize disturbance of the water column or mobilizing of fine sediment from the lake bottom into the water column prior to profiling and sampling. Ice thickness was measured at each station from the bottom of the ice to the top (excluding the snowpack) using a measuring stick or tape.

During open-water conditions, field measurements and lake samples were collected from a boat. Total water depth (m), Secchi depth (m), sample depth (m), and field depth profiles were recorded at each sampling station. Turbidity measurements were also collected in the field using a calibrated LaMotte 2020 turbidity meter.

Samples were collected as grabs using a Kemmerer sampler. A polyvinyl Kemmerer sampler was used to sample water for most analyses, with the exception of ultra-low metals and ultra-low mercury, which were collected using a Teflon Kemmerer sampler. During the ice-cover program, some water quality samples originally intended to be collected using the Teflon Kemmerer sampler were collected using the PVC Kemmerer due to very cold conditions that caused the Teflon Kemmerer to freeze and become inoperable. The sampler was rinsed with lake water, lowered to the required depth, triggered by the messenger to collect a sample, retrieved to the surface, and used to fill in the laboratory sample bottles.

### **Lake Depth Profiles**

At each lake sampling station, water column profiling was conducted prior to sample collection. In situ measurements of pH, dissolved oxygen (milligrams per litre [mg/L] and percent saturation), water temperature (degree Celsius [°C]), and specific conductivity (microsiemens per centimetre [µS/cm]) were recorded at each station at 0.5 m intervals throughout the water column to approximately 1 m above lakebed using a submersible multi-probe water quality meter. The meter was calibrated prior to use and maintained as required by the manufacturer's instructions (details about meter calibration are included in Appendix A). During the ice-cover season program, the depth profile started at 0.3 m below the bottom of the ice layer following a brief period (i.e., 10 minutes approximately) of equilibration after ice augering. During open-water conditions, the depth profile started just below the water surface, at 0.1 m. Measurements were taken only on the way down, moving slowly to allow the sensors to stabilize prior recording the measurements. This helped to avoid hysteresis (differences in readings on the way down and the way up) and produced more accurate readings.

### **Stream Sampling**

In situ physico-chemical measurements of specific conductivity, pH, temperature, dissolved oxygen, and turbidity, and water samples for analysis of TDS were collected from outflow streams of Goose Lake, Propeller Lake, and Reference B Lake. Stream samples were collected as grabs from within or as close as possible to the centre of the channel, at mid-depth.



## 2.4 Laboratory Methods

Sample bottles were provided by ALS Canada Ltd. (ALS; Yellowknife location), an analytical laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA). Lake water quality samples were analyzed for:

- conventional parameters (i.e., conductivity, hardness, laboratory pH, total suspended solids [TSS], total dissolved solids [TDS], alkalinity, total organic carbon (TOC), dissolved organic carbon [DOC], and turbidity)
- major ions (i.e., calcium, chloride, fluoride, potassium, magnesium, sodium, sulphate, sulphide, and silicate)
- nutrients (i.e., nitrite, nitrate, total ammonia, total Kjeldahl nitrogen, orthophosphate, total dissolved phosphorus [TDP], total phosphorus [TP],)
- low-level total and dissolved metals (i.e., aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lanthanum, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, selenium, silicon, silver, strontium, thallium, tin, titanium, uranium, vanadium, zinc and zirconium)
- cyanides (total cyanide, free cyanide, and weak acid dissociable [wad] cyanide)
- radium-226 (August program only)

During the April program, some water samples were collected for TDS analysis only (Section 2.2.1). Other parameters analyzed to aid in TDS calculations were alkalinity, major ions, and nitrate. Laboratory certificates of analysis (COAs) are provided in Appendix A.

## 2.5 Data Analysis

Depth profiles measured at lake stations are summarized in tables and graphs. Water chemistry data collected at lakes and streams were summarized in tables showing comparisons to regulatory water quality guidelines to identify exceedances that exist prior to mine development. Data were compared to the acute and chronic Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 1999) and Canadian drinking water quality guidelines (Health Canada 2020).

## 3.0 QUALITY ASSURANCE CONTROL

Quality assurance (QA) encompasses management and technical practices designed to generate data of known and appropriate quality, and quality control (QC) is a specific aspect of the QA process that incorporates internal techniques used to measure and assess data quality. The QA/QC procedures, assessment criteria, and QC results are presented in Appendix A.

QA/QC procedures were applied to field sampling, laboratory analyses, data entry, data analyses, and report preparation. Specific work instructions outlining each field task in detail were provided to field personnel and a pre-field meeting was held to review the instructions for the field data collection, and to confirm that all field personnel were familiar with the expectations of the sampling plan. Field equipment were calibrated throughout the field program following the manufacturer's specifications and samples were collected by appropriately trained and experienced personnel. Detailed field notes were recorded in waterproof field books and on pre-printed waterproof field data sheets in either pencil or indelible ink. Data sheets and sample labels were checked at the end of each field day for completeness and accuracy and were scanned into electronic copies at the completion of

the field program. Samples were labelled, preserved, and shipped according to standard protocols. Chain-of-custody (COC) forms were used to track shipment and receipt of samples. Upon entry of the field data into electronic databases, the data were checked against field datasheets by an another, independent person to verify the accuracy of data entry and to check for transcription errors.

Quality control samples collected during the 2022 water sampling programs consisted of three field blanks, two travel blanks, and seven duplicate samples, which accounted for 17% of the total number of water samples collected. Quality control samples were collected following the QA/QC procedures described in the AEMP study design (Sabina 2022). Results for QC samples and interpretation of those results are presented in detail in Appendix A.

The QC results indicate that, overall, the water quality data collected in 2022 were of acceptable quality. Key outcomes were as follows:

- Samples were received by the analytical laboratory in good condition, and were analyzed for all specified parameters with the exception of dissolved metals in the August travel blank; however, concentrations of dissolved metals in the August field blank were all below detection limits (DLs), indicating the reliability of the August dissolved metals results.
- No issues were identified in analytical methods used or DLs reported by the laboratory.
- A number of total metal concentrations in the August sample from BRP-40-3 (most notably total chromium) were elevated relative to the other four BRP-40 samples and are therefore not considered to be representative of Reference B Lake, and should be interpreted with caution.
- Holding times recommended by the laboratory were exceeded for some parameters (i.e., pH, nitrite, nitrate, orthophosphate, turbidity, TSS, TDS, and sulphide) due to logistical constraints and/or laboratory inability to initiate testing promptly following sample receipt. Most of the holding time exceedances were of one to seven days duration, and although this should be taken into consideration during interpretation of the results, it is not expected to negatively affect data quality.
- The ammonia concentration in the April field blank was notable (i.e., more than five times the DL), as were two dissolved zinc and one total zinc concentrations. Ammonia and zinc concentrations in 2022 field samples were within the range of concentrations observed in previous years. Therefore, these notable concentrations are not expected to be of concern regarding the results for the surface water quality samples.
- Relative percent differences (RPD)<sup>1</sup> between field and duplicate samples were notable for 5% of the entire dataset, and indicate a *high* level of analytical precision based on the assessment criteria detailed in Appendix A.
- Dissolved metal concentrations were greater (notable) than the corresponding total metal concentration for less than 1% of the metals results, with zinc and uranium failing to meet the quality criteria more frequently than the rest of the metals (i.e., for 20% of the zinc results and 7% of the uranium results). Zinc and uranium data should be interpreted with this in mind.

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<sup>1</sup> RPD = absolute value of  $[100 \times (\text{sample} - \text{duplicate})/(\text{sample} + \text{duplicate})/2]$ .



The overall quality of the water quality dataset was acceptable and the results reported are considered reliable and meet the needs of the program; however, caution should be exercised during interpretation of zinc and uranium results that failed the quality criteria.

## 4.0 RESULTS

### 4.1 Lake Sampling Locations

Depth profiles measured at lake stations are presented in Appendix B. In general, dissolved oxygen concentrations declined with increasing depth during the ice-cover season and had little vertical variation during the open-water season. Multiple lake stations exhibited dissolved oxygen concentrations above saturation, particularly the Propeller Lake stations. Concentrations of dissolved oxygen above saturation have been observed in past years (Golder 2019). Water temperature increased with increasing depth during the ice-cover season and displayed little vertical variation during the open-water season. During both ice-cover and open-water seasons, pH had little variability and remained generally consistent with increasing depth. Specific conductivity did not have a consistent positive or negative trend with depth, but was generally higher during ice-cover season as a result of solute exclusion during ice formation.

Water chemistry data collected at lakes and streams are summarized in Appendix C. Tables presented in Appendix C show the results of comparing the 2022 baseline dataset to the acute and chronic Canadian water quality guidelines for the protection of freshwater aquatic life (CCME 1999) and Canadian drinking water quality guidelines (Health Canada 2020).

At Goose Lake stations, guideline exceedances were observed for pH, with values below the recommended chronic pH ranges for the protection of freshwater aquatic life and drinking water, and total aluminum and copper, with values above the chronic guideline for the protection of freshwater aquatic life. Similar exceedances of pH, total aluminum, and total copper guidelines were observed in baseline data collected in previous years (Golder 2019).

Guideline exceedances for pH and total aluminium were also observed at Propeller Lake during ice-cover and open-water (Appendix C; Table C-5). The pH values measured in the field at all stations were below the aquatic life and drinking water guideline ranges. It is unknown whether these guideline exceedances occurred in previous years as pH was not measured in the field in Propeller Lake during the 2011 to 2015 baseline studies. Total aluminum concentrations at most stations in Propeller Lake exceeded the chronic guideline for the protection of aquatic life; however, concentrations of total aluminum were within or nearly within the range of previously observed concentrations (Golder 2019).

At Reference B Lake, pH values measured in the field at all stations were lower than the drinking water aesthetic objective (Appendix C; Table C-6). Similar pH exceedances have been observed in Reference B Lake in previous years (Golder 2019). Total chromium was above the chronic guideline for the protection of aquatic life in one of the five samples collected from Reference B Lake in August, but results from this sample appear to be irregular and are not considered to be representative of Reference B Lake (Appendix A; Section 4.1.2).

### 4.2 Stream Sampling Locations

In the Goose Lake Outflow, field- and laboratory-measured pH were below the drinking water aesthetic objective in June and August (Appendix C; Table C-7). Water temperature in the Goose Lake Outflow was above the drinking water aesthetic temperature objective of 15°C in August. Temperature and pH exceedances of the drinking water aesthetic objectives in the Goose Lake Outflow have been observed in past years (Golder 2019).

In the Propeller Lake Outflow, field-measured pH was below the aquatic life and drinking water guideline ranges (Appendix C; Table C-7), which is consistent with observed exceedances in the past (Golder 2019).

In the Reference B Lake Outflow, laboratory-measured pH was below the drinking water aesthetic objective range (Appendix C; Table C-7). Water temperature in the Reference B Lake Outflow also exceeded the drinking water aesthetic objective of 15°C in August. The temperature and pH exceedances of the drinking water aesthetic objectives in the Reference B Lake Outflow are consistent with previously collected baseline data (Golder 2019).

## 5.0 SUMMARY AND CONCLUSIONS

In the 2022 baseline year, water quality in Goose Lake, Propeller Lake, Reference B Lake, and their outflows from these lakes was generally consistent with results from previous baseline years (Golder 2019). Depth profile data indicate that multiple parameters including dissolved oxygen, temperature, and specific conductivity exhibited seasonal or depth-related variation. Water quality guideline exceedances for pH, temperature, total aluminum, and total copper were observed in one or more of the sampled lakes or streams. Baseline conditions for the AEMP are still being characterized and variability is expected within the baseline dataset as the data accumulate over time.



## Signature Page

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**APPENDIX A**

**2022 Quality Assurance and  
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## TABLES

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Table A-2: Summary of Field Duplicate Sample Results, 2022

Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

## ATTACHMENT

Certificate of Analysis



## 1.0 INTRODUCTION

This appendix describes the quality assurance (QA) and quality control (QC) procedures implemented during the 2022 baseline water quality program completed to support the Aquatic Effects Management Program (AEMP) for the Sabina Back River Project (Project) and the hydrodynamic model for Goose Lake. An evaluation of the QC data and implications for the interpretation of results is also included.

Data integrity is determined by the QA/QC procedures that are applied during all aspects of a monitoring program, from sample collection to data analysis and reporting. Quality assurance procedures include training of personnel, data management, and other technical practices designed to confirm that data of appropriate quality are consistently generated. Quality control procedures include steps to measure and evaluate data quality, as well as the corrective actions that are applied when data quality objectives are not achieved.

## 2.0 QUALITY ASSURANCE

Quality assurance procedures implemented during the 2021 baseline program are classified into three categories: field operations, laboratory analyses, and office operations.

### 2.1 Field Operations

Quality assurance procedures for field operations involve field crew training, pre-field meetings, and the use of standardized methods, and providing clear instructions for collecting and handling field data. Field staff for the Project were trained to be proficient in standardized sampling procedures, data recording, and equipment operation. Field work was completed according to approved specific work instructions (SWI) that were developed for the Project based on standardized technical procedures developed by WSP Canada Inc. (WSP). WSP's technical procedures are consistent with field protocols described in relevant scientific literature (e.g., CCME 2011).

The SWI for the water and sediment sampling programs included the exact locations of sampling sites and detailed step-by-step instructions for field tasks such as sample collection, handling, preservation, labelling, storage, and shipping, record keeping and sample tracking.

A multi-probe YSI water quality meter was used to collect in-situ measurements of water temperature, pH, dissolved oxygen (concentration and percent saturation), and specific conductivity throughout the water column at each lake sampling station, and at the sample depth at each stream station. Turbidity measurements were made on a subsample of the water quality sample, using a LaMotte 2020 turbidity meter. The field meters were factory-calibrated once per year, and by the field crew at the beginning of each field program. Calibration of the meters was then verified daily using standard calibration solutions. Calibration checks were also done when readings were outside of expected ranges. Calibration records were documented in the field and saved in the Project file.

Field data were recorded on standardized field data sheets or in a bound field notebook. Chain-of-custody forms included the list of parameters requested for analysis, sample identification information, date and time of sample collection, information regarding field filtering and preservation, and names of field crew members. After delivery to the laboratory, a chain-of-custody process was used to track samples sent to the analytical laboratory and confirm receipt of the samples at the laboratory. The crew lead was responsible for tracking samples, to confirm that all required samples were collected, chain-of-custody and analytical request forms were complete and correct, and that labelling, and documentation procedures were followed. Field crews checked in with component leads as needed and submitted daily reports to provide updates on completed tasks. Contact information for members of the Project team and the analytical laboratory were included in the SWI, along with references to applicable technical procedures.

Quality assurance procedures also included pre-field meetings held with the field crew and project/component manager prior to the start of each field program. The purpose of the field program, health and safety protocols, the role of each crew member, specific details of the SWI, equipment needs, field logistics, and contingency plans were discussed at each meeting.

## 2.2 Laboratory Analyses

Water samples collected in 2021 were submitted for analysis to ALS Environmental, a laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for the analytical suite for this project; therefore, confidence in the reliability of the analytical data produced by the laboratory is considered high. To receive accreditation, a laboratory must pass an evaluation of its internal procedures, analytical methods, and QA/QC processes. Parameters were analyzed by the laboratory using standard methods published by internationally recognized agencies, such as the American Public Health Association (APHA) and the United States Environmental Protection Agency (US EPA).

## 2.3 Office Operations

Quality assurance procedures implemented for office-based tasks included the following:

- having trained personnel complete data management, analysis, and reporting tasks
- using standardized data storage, manipulation, and summary tools, as required
- establishing a data management system to support consistency, QC, and data storage and retrieval
- senior review of data deliverables at appropriate milestones

A designated member of the Project team was responsible for liaising with the laboratory. Analytical results were uploaded to the EQULS database directly by the laboratory. Laboratory certificates, field forms, and field notes were stored in the Project file.

## 3.0 QUALITY CONTROL

Similar to QA procedures, QC procedures implemented during the 2022 water and sediment quality baseline program can be classified into three categories: field operations, laboratory analyses, and office operations.

### 3.1 Field Operations

Quality control procedures implemented during field operations included the collection of QC samples that are defined as follows:

- **Travel blanks:** These samples were used to detect sample contamination that could have resulted from ambient conditions in the field, during shipping, or at the laboratory. Travel blanks were provided by the laboratory and consisted of sealed sample bottles filled with deionized water. They accompanied the water samples during all stages of storage and transportation but remained unopened.
- **Field blanks:** These samples were used to detect potential sample contamination during sample collection, handling, shipping, and analysis. Field blanks consisted of deionized water provided by the analytical laboratory; the water was transported to a field sampling site, processed the same as the other surface water quality samples (e.g., filtered, preserved).



- **Duplicate samples:** These samples were used to check the precision of field sampling methods and laboratory analyses. Duplicate samples consisted of paired water samples collected at the same time (separate grabs) and location, using the same methods.

Quality control samples were submitted “blind” to the analytical laboratory and analyzed for the same set of parameters as the other water samples.

During the 2022 water sampling program, a total of five blank samples (three field blanks and two travel blanks) and seven duplicate samples were collected. Quality control samples collected in 2022 represented approximately 17% the total number of water samples submitted for analysis.

## 3.2 Laboratory Analysis

Internal QC samples were prepared by the analytical laboratory and analyzed along with the field-collected samples to confirm the quality and reliability of the analytical results. Quality control sample types included duplicate samples, spiked samples, and method blanks. The laboratory QC results were reviewed to confirm the quality of the data and to determine if the laboratory identified any questionable results.

## 3.3 Office Operations

Quality control operations implemented in the office focussed on evaluating the quality of in-situ measurement data and analytical results, completeness of data, as well as verifying the accuracy of data summaries (i.e., summary statistics and plots). Field data entered into the Project database were compared against the field data sheets and field notebook to confirm their accuracy. Unaltered data files from the laboratory were saved to the Project file and used as a reference to confirm the accuracy of the data entered into the Project EQUIS database. Laboratory data were also screened for quality (Section 3.3.1). Backup files were created before each major data analysis operation and calculations were reviewed to confirm the accuracy of the results.

### 3.3.1 Laboratory Data Screening

A series of standard data screening steps were completed upon receipt of water and sediment chemistry results from the analytical laboratory to identify potential data quality issues:

- verification that all requested parameters and samples were analyzed
- verification that the appropriate detection limits (DLs) were used, and data were reported in the appropriate units
- verification of holding time exceedances and follow up discussions with the laboratory
- data logic checks (e.g., comparison of measured and calculated results for total dissolved solids; comparison of dissolved to total metals)
- calculation of total dissolved solids using the APHA (2005) equation<sup>1</sup> and comparison to the calculated total dissolved solids results provided by the laboratory
- identification of anomalous values
- review of blank samples for evidence of contamination

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<sup>1</sup> $TD S_{calc} \left( \frac{mg}{L} \right) = \Sigma [Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 4.42 * NO_3^- (as \text{ nitrogen}), 0.6 * \text{total alkalinity (as } CaCO_3)]$

- review of duplicate sample results for unacceptable variation
- review of laboratory QC results (i.e., sample temperature and integrity of containers upon receipt, holding times, laboratory blanks and recoveries from spiked samples, internal duplicates, review of laboratory qualifiers and notes)
- Confirmation that sources of unexpected values and trends have been identified

Prompt completion of the screening steps allowed for potential re-analysis of samples by the laboratory to verify questionable data or generate data for missing parameters. If samples were re-analyzed by the laboratory and the data were still considered questionable, qualifiers for consideration during data summary and analysis steps were added to the dataset.

### 3.3.2 Quality Control Data Evaluation

#### 3.3.2.1 Water Blanks

Analytical results for travel and field blanks were reviewed and considered notable if concentrations were greater than or equal to five times the corresponding DL. This criterion is based on the US EPA Practical Quantitation Limit, which accounts for the potential for reduced accuracy when concentrations approach or are below the DL (US EPA 2000). This criterion was not applied to all parameters (e.g., pH, conductivity).

In the event that concentrations in the blanks exceeded five times the DL, the results were examined to determine if:

- the concentration in a blank QC sample was higher than the concentrations measured in corresponding surface water samples
- the notable result was limited to a single blank sample or if it was apparent in corresponding water samples
- there was a consistent bias in the results for the parameter across all samples
- if the notable result was severe enough to warrant invalidating the affected data

#### 3.3.2.2 Duplicate Samples

Differences between concentrations measured in duplicate water and sediment samples were evaluated based on the relative percent difference (RPD):

$$RPD = \frac{|C1 - C2|}{\left[ \frac{(C1 + C2)}{2} \right]} * 100$$

Where: RPD is relative percent difference

C1 is the concentrations in the first sample

C2 is the concentration in the second (or duplicate) sample



The RPD was only calculated if one or more of the paired concentrations in the duplicate samples are greater than five times the DL. The RPD for a given water quality parameter was flagged if it was greater than 20% (USEPA 2017). The number of flagged parameters was compared to the total number of analyzed parameters to evaluate analytical precision. Results of the duplicate samples were also used to assess within-station variability and field sampling precision. Analytical precision was rated as follows:

- *high*, if less than 10% of parameters included in the duplicate sample analysis were notably different from one another
- *moderate*, if 10 to 30% of parameters included in the duplicate sample analysis were notably different from one another
- *low*, if more than 30% of parameters included in the duplicate sample analysis were notably different from one another

### 3.3.2.3 Dissolved and Total Concentrations

Dissolved nutrient and metal concentrations in water samples were compared to their corresponding total concentrations as a measure of analytical precision. Where results of the total and dissolved concentrations were more than five times the DL and the RPD between the dissolved and total concentration was more than or equal to 20%, the dissolved concentration was considered notable.

## 4.0 RESULTS

### 4.1.1 Water Quality Field Measurements

In situ field measurements were collected during each field program in 2022 using a calibrated multi-parameter YSI Pro Plus water quality meter and a LaMotte 2020 turbidity meter. Calibration records were documented in the Project file. No issues with the field meters were encountered during the 2022 water quality programs with the exception of an apparent YSI Pro Plus malfunction in temperature readings during the April sampling of BRP-32. Water temperature readings at BRP-32 stations were higher (5.5°C to 7.9°C) than temperature readings at other Goose Lake stations (Appendix B; Figure B-6) and expected under-ice temperatures (0°C to 5°C) and should be interpreted with caution. In situ field measured DO concentration was above saturation at multiple stations in the three lakes sampled. Concentrations of DO above saturation have been observed in past years of monitoring at the site (Golder 2019).

### 4.1.2 Laboratory Report Review

Required parameters were analyzed by the laboratory using the standard analytical methods requested during the program per the AEMP design. Dissolved metals were not analyzed in the August travel blank; however, concentrations of dissolved metals in the August field blank were all below detection limits, indicating the reliability of the August dissolved metals results. Detection limits of water quality results were adequate and below relevant water quality guidelines, with the exception of two results consisting of less than 1% of the dataset (Appendix C; Table C1 to C7). Laboratory QC samples were generally within acceptable limits for parameters analyzed, with some exceptions. The laboratory method blank results for total ammonia and dissolved zinc associated with the field blank collected in April were five times greater than their respective detection limits. Total ammonia and dissolved zinc results in the field sample collected during these events were within expected values and considered acceptable.

A number of total metal concentrations in the August sample from BRP-40-3 were elevated relative to concentrations observed in BRP-40-1, BRP-40-2, BRP-40-4, and BRP40-5. Most notable was the concentration of total chromium in the BRP-40-3 sample (16 µg/L) compared to the concentrations observed in samples from the other four BRP-40 stations (<0.04 µg/L) which were lower by two orders of magnitude (Appendix C; Table 6). Therefore, the identified total metal concentrations in the August sample from BRP-40-3 (Appendix C; Table C6) are not considered to be representative of Reference Lake B and should be interpreted with caution.

Copies of the analytical reports (certificates of analysis), with a statement of methods and summaries of laboratory quality control results, are attached to this appendix.

### 4.1.3 Holding Time Exceedances

To maintain sample integrity, water and sediment samples for laboratory analyses were submitted as soon as possible after collection. However, holding time exceedances are a common issue for unpreserved water samples collected during water quality programs in remote areas, because transport of samples to the laboratory is subject to the availability of scheduled charter flights. Analytical holding times were met for most water quality parameters in 2022, with some exceptions:

- Recommended holding time for pH (0.25 hours) was exceeded in all April and August water samples. Measurement of pH in the field is preferred for interpreting water quality results.
- Recommended holding time for nitrate, nitrite, orthophosphate, and turbidity of three days was exceeded in all April water samples and multiple August water samples.
- Recommended holding time for TDS, TSS, and sulphide of seven days was exceeded in all April water samples and multiple August water samples.

Most of the holding time exceedances were of one to seven days duration. These exceedances were not expected to negatively affect data quality.

### 4.1.4 Field Quality Control Results

During the 2022 water quality program, five blank samples and seven duplicate samples were collected.

#### 4.1.4.1 Field and Travel Blanks

Five QC water blank samples were collected and analyzed during the 2022 water quality monitoring program, consisting of three field blanks and two travel blanks (Table A1). Most results for the water blank samples were non-detect. Concentrations above the corresponding DLs in the blanks were reviewed individually. The total ammonia and total zinc concentrations in the field blank sample collected in April 2022 as well as the total zinc and dissolved zinc concentrations in the field blank sample collected in June 2022 were higher than five times their respective DLs. Concentrations of these parameters in the 2022 field samples were within the range of values measured in previous years. Concentrations in blanks found to be five times greater than their respective DLs accounted for less than 1% of results in 2022 blank samples. The total ammonia and zinc concentrations in the blanks discussed most likely represent contamination limited to the blanks and are not of concern regarding the results for the surface water quality samples.



#### 4.1.4.2 Duplicate Samples

Seven duplicate samples were collected during the 2022 sampling program (Table A.2). Notable RPDs were observed during all field programs, however, all seven paired duplicate samples had *high* analytical precision (i.e., less than 10% of RPD results were notable in individual samples). The overall percentage of RPD values over 20% in the 2022 water quality duplicate sample dataset was 5%. Therefore, based on the assessment criteria described in Section 3.3.2.2, analytical precision is classified as *high*.

#### 4.1.5 Dissolved to Total Results Comparison

It is reasonable to assume that where total and dissolved parameter concentrations are measured in a water sample, the dissolved fraction should be less than or equal to the corresponding total concentration. However, there are instances when the dissolved concentration of a parameter may be higher than the total concentration. These can be attributed to low concentrations, analytical variation and sensitivity, inconsistency or inadequate sampling, and sample handling processes (e.g., filtering and preserving outside the required timeframe, or filtering-related contamination).

During the 2022 water quality sampling programs, less than 1% of the metals results in the dataset failed to meet quality criteria (i.e., total and dissolved concentrations were more than five times the DL and dissolved concentrations were more than 20% higher than total concentrations). This was predominantly observed for zinc and uranium in 20% and 7% of the samples, respectively, and was noted throughout the year. Other metals such as antimony, cadmium, lead, and tin had occasional (typically single instances) dissolved concentrations above the total concentrations. In 2022, dissolved metals samples were filtered in the field using syringes and filter heads provided by laboratory and were preserved in the laboratory upon sample receipt. Dissolved metals data that failed the quality control criteria are highlighted in Table A3 and should be interpreted with caution.

### 4.2 Conclusions

Review of field and laboratory data indicated that field measurements and laboratory data are of high quality. Key findings from the 2022 QA/QC results are as follows:

- Samples were received by the laboratory in good condition and were analyzed for all specified parameters with the exception of dissolved metals parameters in the August travel blank; however, concentrations of dissolved metals in the August field blank were all below detection limits, indicating the reliability of the August dissolved metals results.
- No issues were identified in analytical methods used or DLs reported by the laboratory.
- A number of total metal concentrations in the August sample from BRP-40-3 (most notably total chromium) were elevated relative to the other four BRP-40 samples and are therefore not considered to be representative of Reference Lake B and should be interpreted with caution.
- Holding times recommended by the laboratory were exceeded for some parameters (i.e., pH, nitrite, nitrate, orthophosphate, turbidity, TSS, TDS, and sulphide) due to logistical constraints and/or laboratory inability to initiate testing promptly following sample receipt. Most of the holding time exceedances were of one to seven days duration, and although this should be taken into consideration during interpretation of the results, it is not expected to negatively affect data quality.

- The ammonia concentration in the April field blank was notable (i.e., more than five times the DL), as were two dissolved zinc and one total zinc concentrations. Ammonia and zinc concentrations in 2022 field samples were within the range of concentrations observed in previous years. Therefore, these notable concentrations are not expected to be of concern regarding the results for the surface water quality samples.
- Analytical precision in water duplicate samples was rated as *high*.
- Dissolved metal concentrations were notably greater than the corresponding total metal concentrations for less than 1% of the metals results, with zinc and uranium failing to meet the quality criteria more frequently than the rest of the metals (i.e., for 20% of the zinc results and 7% of the uranium results). Zinc and uranium data should be interpreted with this in mind.

The overall quality of the water quality data was acceptable, and most results reported are considered reliable for use in future AEMP data analyses. Consideration should be applied to the parameters that exceeded the recommended holding times, and the interpretation of zinc and uranium results that failed the quality criteria should be conducted with caution.

## 5.0 REFERENCES

- APHA (American Public Health Association) 2005. Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.
- CCME (Canadian Council of Ministers of the Environment) 2011. Protocol Manual for Water Quality Sampling in Canada. Canadian Council of Ministers of the Environment. 2011.
- Golder (Golder Associates Ltd.). 2019. Back River Project – Aquatic Baseline Synthesis Report. Appendix A to the Aquatic Effects Management Plan. July 2019.
- US EPA (United States Environmental Protection Agency). 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation. Washington, DC 20460. January 2017.
- US EPA. 2000. EPA Quality Manual for Environmental Programs. CIO 2105-P-01-0 (formerly 5360 A1).



**TABLES**

Table A-1: Field and Travel Blank Sample Results, 2022

Table A-2: Summary of Field Duplicate  
Sample Results, 2022

Table A-3: Comparison of Total and Dissolved  
Parameters in Water, 2022

Table A-1: Field and Travel Blank Sample Results, 2022

Parameter	Unit	DL	Field Blank	Travel Blank	Field Blank	Field Blank	Travel Blank
			12-Apr-22	13-Apr-22	7-Jun-22	12-Aug-22	13-Aug-22
			Ice-cover	Ice-cover	Open-water	Open-water	Open-water
Conventional Parameters							
pH	-	0.1	5.72	5.34	5.51	5.61	5.67
Specific conductivity	µS/cm	2	<2	<2	<2	<2	<2
Hardness, as CaCO <sub>3</sub>	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Total alkalinity, as CaCO <sub>3</sub>	mg/L	1	<1	<1	<1	<1	<1
Total dissolved solids	mg/L	10	<10	<10	<10	<10	<10
Total dissolved solids (calculated)	mg/L	1	<1	<1	<1	<1	-
Total suspended solids	mg/L	3	<3	<3	<3	<3	<3
Total organic carbon	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	1.79
Dissolved organic carbon	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Turbidity	NTU	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Radium-226	Bq/l	0.0053	-	-	2.1	<0.005	<0.005
Major Ions							
Calcium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	-
Chloride	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cyanide (free)	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (WAD)	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Magnesium	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	-
Potassium	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	-
Sodium	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	-
Sulphate	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulphide	mg/L	0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Silica	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nutrients and Chlorophyll a							
Nitrate	mg-N/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite	mg-N/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	0.005	0.0537 <sup>(a)</sup>	<0.005	<0.005	0.0082	<0.005
Total Kjeldahl nitrogen	mg-N/L	0.05	0.058	<0.05	<0.05	<0.2	<0.2
Total phosphorus	mg-P/L	0.001	<0.001	0.0012	<0.001	0.0013	-
Dissolved phosphorus	mg-P/L	0.001	<0.001	<0.001	<0.01	<0.01	-
Orthophosphate	mg-P/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Metals							
Aluminum	µg/L	0.2	<0.2	<0.2	0.28	<0.2	<0.2
Antimony	µg/L	0.005	0.0061	<0.005	<0.005	<0.005	<0.005
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Barium	µg/L	0.02	<0.02	<0.02	0.067	<0.02	<0.02
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Calcium	µg/L	10	<10	<10	<10	<10	<10
Chromium	µg/L	0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Iron	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lanthanum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium	µg/L	1	<1	<1	<1	<1	<1
Manganese	µg/L	0.005	<0.005	<0.005	0.0072	<0.005	<0.005
Mercury	µg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Potassium	µg/L	5	<5	<5	<5	<5	<5
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	50	<50	<50	<50	<50	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sodium	µg/L	10	<10	<10	<10	<10	<10
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Sulphur	µg/L	500	<500	<500	<500	<500	<500
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tin	µg/L	0.01	<0.01	<0.01	0.018	<0.01	<0.01
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	µg/L	0.1	0.45	0.14	0.88 <sup>(a)</sup>	<0.1	<0.1
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01



Table A-1: Field and Travel Blank Sample Results, 2022

Parameter	Unit	DL	Field Blank	Travel Blank	Field Blank	Field Blank	Travel Blank
			12-Apr-22	13-Apr-22	7-Jun-22	12-Aug-22	13-Aug-22
			Ice-cover	Ice-cover	Open-water	Open-water	Open-water
Dissolved Metals							
Aluminum	µg/L	0.2	<0.2	0.29	0.23	<0.2	_(b)
Antimony	µg/L	0.005	0.0068	<0.005	<0.005	<0.005	_(b)
Arsenic	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	_(b)
Barium	µg/L	0.02	<0.02	<0.02	0.067	<0.02	_(b)
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	_(b)
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	_(b)
Boron	µg/L	5	<5	<5	<5	<5	_(b)
Cadmium	µg/L	0.0025	<0.0025	<0.0025	<0.0025	<0.0025	_(b)
Chromium	µg/L	0.04	<0.04	<0.04	<0.04	<0.04	_(b)
Cobalt	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	_(b)
Copper	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	_(b)
Iron	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	_(b)
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	_(b)
Lithium	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	_(b)
Manganese	µg/L	0.005	<0.005	<0.005	0.0055	<0.005	_(b)
Mercury	µg/L	0.0005	0.00072	<0.0005	<0.0005	<0.0005	_(b)
Molybdenum	µg/L	0.01	0.019	<0.01	<0.01	<0.01	_(b)
Nickel	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	_(b)
Rhenium	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	_(b)
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	_(b)
Silicon	µg/L	50	<50	<50	<50	<50	_(b)
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	_(b)
Strontium	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	_(b)
Sulphur	µg/L	500	<500	<500	<500	<500	_(b)
Thallium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	_(b)
Tin	µg/L	0.01	0.012	<0.01	0.016	<0.01	_(b)
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	_(b)
Uranium	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	_(b)
Vanadium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	_(b)
Zinc	µg/L	0.1	<b>0.58</b> <sup>(a)</sup>	0.16	<b>0.8</b> <sup>(a)</sup>	<0.1	_(b)
Zirconium	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	_(b)
Calculated Quantities							
Values over five times the DL	%	-	2.1	0	2.1	0	0

**Notes:**

(a) = value exceeds the corresponding field sample value by 10% or more and is greater than five times the method detection limit.

(b) = Missing dissolved metals data in August travel blank.

The percentage of values over five times the DL for the entire dataset is 0.7%.

DL = detection limit; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; NTU = nephelometric turbidity unit; mg-N/L = milligrams per litre as nitrogen; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre; Bq/L = becquerels per litre; - = no data.

Table A-2: Summary of Field Duplicate Sample Results from Lakes, 2022

Parameter	Unit	DL	Goose Lake (BRP-29-3)			Goose Lake (BRP-32-1)			Goose Lake (BRP-34)			Goose Lake (BRP-33-2)			Goose Lake Outflow (BRP-34)			Propeller Lake Outflow (BRP-37)			Reference Lake B Outflow (BRP-39)			
			Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	
			14-Apr-22	14-Apr-22		15-Apr-21	15-Apr-21		7-Jun-22	7-Jun-22		10-Aug-22	10-Aug-22		10-Aug-22	10-Aug-22		16-Aug-21	16-Aug-21		16-Aug-21	16-Aug-21		
Conventional Parameters																								
pH	-	0.1	6.93	6.91	4.6%	7.1	7.1	0.0%	6.81	6.85	9.2%	6.9	6.88	4.6%	6.91	6.92	2.3%	6.97	6.96	2.3%	6.9	6.89	2.3%	
Specific conductivity	µS/cm	2	72.5	72.5	0.0%	54.2	55.5	2.4%	36.3	36.5	0.5%	34.1	33.9	0.6%	33.5	33.5	0.0%	26.2	26.0	0.8%	23.3	23.3	0.0%	
Hardness, as CaCO <sub>3</sub>	mg/L	0.5	29	29.3	1.0%	23.1	22.9	0.9%	13.7	13.7	0.0%	12	12.3	2.5%	11.8	11.9	0.8%	9.39	9.35	0.4%	9.12	8.95	1.9%	
Total alkalinity, as CaCO <sub>3</sub>	mg/L	1	6.9	7.3	5.6%	11	17.5	45.6%	6	5.1	16.2%	4.9	4.8	-	4.8	5	-	4.6	4.4	-	5.7	5.9	3.4%	
Total dissolved solids	mg/L	13	48	48	-	40	37	-	23	24	-	27	28	-	22	28	-	32	29	-	22	20	-	
Total dissolved solids (calculated)	mg/L	1	42.7	43.2	1.2%	36.2	40	10.0%	24.3	25	2.8%	20.3	20.1	1.0%	20.1	20.2	0.5%	17	21.8	24.7%	15.9	17	6.7%	
Total suspended solids	mg/L	3	<3	<3	-	<3	<3	-	<3	<3	-	3	<3	-	4.6	<3	-	<3	<3	-	4.6	<3	-	
Total organic carbon	mg/L	0.5	4.14	4.39	5.9%	6.41	6.25	2.5%	5.6	5.09	9.5%	3.42	3.74	8.9%	3.59	3.41	5.1%	2.55	2.4	6.1%	4.55	4.95	8.4%	
Dissolved organic carbon	mg/L	0.5	4.32	4.4	1.8%	6.66	6.48	2.7%	5.79	6.96	18.4%	3.6	3.33	7.8%	3.92	3.89	0.8%	6.52	5.35	19.7%	4.37	5.49	22.7%	
Turbidity	NTU	0.1	<0.1	<0.1	-	0.15	0.27	-	0.48	0.46	-	0.27	0.28	-	0.38	0.4	-	0.17	0.12	-	0.76	0.68	11.1%	
Radium-226	Bq/L	0.005	-	-	-	-	-	-	<0.0067	<0.0055	-	-	-	-	-	-	-	-	-	-	<0.0055	<0.0058	-	
Major Ions																								
Calcium	mg/L	0.01	5.94	6.1	2.7%	4.44	4.31	3.0%	2.73	2.64	3.4%	2.35	2.44	3.8%	2.29	2.33	1.7%	1.83	1.83	0.0%	1.45	1.46	0.7%	
Chloride	mg/L	0.5	6.43	6.34	1.4%	2.34	2.38	-	2.47	2.46	-	2	2	-	2.04	2.02	-	<10	<10	-	0.53	0.53	-	
Cyanide (free)	mg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.02	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	
Cyanide (WAD)	mg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.02	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	
Cyanide	mg/L	0.005	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.02	<0.005	-	<0.005	<0.005	-	<0.005	<0.005	-	
Fluoride	mg/L	0.02	0.021	0.021	-	0.025	0.026	-	<0.02	<0.02	-	0.023	0.023	-	0.026	0.026	-	<0.4	<0.4	-	<0.02	<0.02	-	
Magnesium	mg/L	0.001	3.44	3.42	0.6%	2.91	2.95	1.4%	1.61	1.5	7.1%	1.48	1.51	2.0%	1.49	1.47	1.4%	1.17	1.16	0.9%	1.18	1.17	0.9%	
Potassium	mg/L	0.005	0.601	0.616	2.5%	0.67	0.656	2.1%	0.447	0.433	3.2%	0.336	0.344	2.4%	0.344	0.352	2.3%	0.32	0.308	3.8%	0.29	0.29	0.0%	
Sodium	mg/L	0.01	1.16	1.15	0.9%	1.16	1.12	3.5%	0.648	0.589	9.5%	0.584	0.592	1.4%	0.61	0.609	0.2%	0.484	0.484	0.0%	0.562	0.56	0.4%	
Sulphate	mg/L	0.05	13.5	13.6	0.7%	10.6	10.7	0.9%	5.58	5.61	0.5%	6.74	6.74	0.0%	6.21	6.22	0.2%	3.01	3.14	4.2%	3.26	3.25	0.3%	
Sulphide	mg/L	0.0015	<0.0015	0.0015	-	0.002	0.002	-	<0.0015	<0.0015	-	<0.0015	<0.0015	-	<0.0015	<0.0015	-	<0.0015	<0.0015	-	0.0029	0.0035	-	
Silica	mg/L	0.5	1.9	1.85	-	0.56	0.55	-	0.64	0.64	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	
Nutrients and Chlorophyll a																								
Nitrate	mg-N/L	0.005	0.19	0.192	1.0%	0.0115	0.0119	-	0.0827	0.0735	11.8%	<0.005	<0.005	-	<0.005	<0.005	-	0.132	1.49	167.4%	<0.005	<0.005	-	
Nitrite	mg-N/L	0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.02	<0.02	-	<0.001	<0.001	-	
Total ammonia	mg-N/L	0.005	0.0217	0.0212	-	0.0097	0.0092	-	0.0825	0.0729	12.4%	<0.005	0.0078	-	0.0059	0.0055	-	<0.005	<0.005	-	0.0084	0.0085	-	
Total Kjeldahl nitrogen	mg-N/L	0.05	0.199	0.203	-	0.286	0.282	1.4%	0.314	0.264	17.3%	<0.2	<0.2	-	0.218	0.229	-	<0.2	<0.2	-	0.67	0.415	47.0%	
Total phosphorus	mg-P/L	0.001	0.0032	0.0061	62.4%	0.004	0.0043	-	0.0059	0.006	1.7%	0.0031	0.0025	-	0.0035	0.0037	-	-	-	-	0.0082	0.0082	0.0%	
Dissolved phosphorus	mg-P/L	0.001	0.0018	0.0013	-	0.0016	0.0014	-	<0.01	<0.01	-	0.0025	0.0023	-	0.0034	0.0029	-	<0.01	<0.01	-	0.0043	0.0051	17.0%	
Orthophosphate	mg-P/L	0.001	0.0025	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	
Total Metals																								
Aluminum	µg/L	0.2	16.8	17.8	5.8%	12.2	11.4	6.8%	30.1	28.1	6.9%	11.3	8.71	25.9%	7.88	8.17	3.6%	4.56	4.32	5.4%	10	10.3	3.0%	
Antimony	µg/L	0.005	0.0579	0.0127	128.0%	0.0319	0.0454	34.9%	0.0108	0.0096	-	0.0059	0.0063	-	0.0069	0.0075	-	<0.005	<0.005	-	0.0051	0.0057	-	
Arsenic	µg/L	0.01	0.243	0.255	4.8%	0.286	0.282	1.4%	0.217	0.216	0.5%	0.202	0.201	0.5%	0.214	0.208	2.8%	0.127	0.124	2.4%	0.356	0.376	5.5%	
Barium	µg/L	0.02	10.9	10.7	1.9%	9.06	8.74	3.6%	6.57	6.38	2.9%	4.69	4.33	8.0%	4.39	4.28	2.5%	4.12	4.14	0.5%	3.23	3.39	4.8%	
Beryllium	µg/L	0.002	0.0046	0.0049	-	0.0027	0.0022	-	0.0042	0.0046	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	
Bismuth	µg/L	0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	
Boron	µg/L	5	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	
Cadmium	µg/L	0.0025	0.0158	0.0126	22.5%	0.0086	0.007	-	0.007	0.0072	-	<0.0025	0.0042	-	0.0033	0.0036	-	<0.0025	<0.0025	-	<0.0025	<0.0025	-	
Calcium	µg/L	10	5830	5880	0.9%	4440	4350	2.0%	2730	2780	1.8%	2380	2230	6.5%	2370	2350	0.8%	1930	1870	3.2%	1580	1550	1.9%	
Chromium	µg/L	0.04	0.107	0.102	-	0.123	0.121	-	0.11	0.11	-	0.053	0.045	-	0.05	0.05	-	0.066	0.042	-	0.056	0.058	-	
Cobalt	µg/L	0.005	0.311	0.359	14.3%	0.0954	0.094	1.5%	0.407	0.409	0.5%	0.0941	0.0821	13.6%	0.151	0.158	4.5%	0.0364	0.0324	11.6%	0.0521	0.062	17.4%	
Copper	µg/L	0.05	2.22	2.16	2.7%	1.9	1.83	3.8%	1.43	1.46	2.1%	1.29	1.2	7.2%	1.24	1.22	1.6%	0.896	0.885	1.2%	0.805	0.824	2.3%	
Iron	µg/L	0.5	12.2	17.2	34.0%	25	23.4	6.6%	48	50.6	5.3%	30.1	24.4	20.9%	85.6	90	5.0%	14.4	13.6	5.7%	243	265	8.7%	
Lanthanum	µg/L	0.01	0.258	0.288	11.0%	0.101	0.102	1.0%	0.213	0.218	2.3%	0.088	0.079	10.8%	0.08	0.08	0.0%	0.064	0.063	1.6%	0.068	0.084	21.1%	
Lead	µg/L	0.005	0.0859	0.0264	106.0%	0.0551	0.0819	39.1%	0.0193	0.0162	-	<0.005	<0.005	-	0.0073	0.0062	-	<0.005	<0.005	-	0.0147	0.0206	-	
Lithium	µg/L																							



Table A-2: Summary of Field Duplicate Sample Results from Lakes, 2022

Parameter	Unit	DL	Goose Lake (BRP-29-3)			Goose Lake (BRP-32-1)			Goose Lake (BRP-34)			Goose Lake (BRP-33-2)			Goose Lake Outflow (BRP-34)			Propeller Lake Outflow (BRP-37)			Reference Lake B Outflow (BRP-39)		
			Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD	Sample	Duplicate	RPD
			14-Apr-22	14-Apr-22		15-Apr-21	15-Apr-21		7-Jun-22	7-Jun-22		10-Aug-22	10-Aug-22		10-Aug-22	10-Aug-22		16-Aug-21	16-Aug-21		16-Aug-21	16-Aug-21	
Potassium	µg/L	5	591	581	1.7%	676	654	3.3%	453	451	0.4%	349	320	8.7%	367	349	5.0%	320	314	1.9%	313	312	0.3%
Selenium	µg/L	0.025	<0.025	0.03	-	0.035	0.032	-	<0.025	<0.025	-	<0.025	<0.025	-	<0.025	<0.025	-	<0.025	<0.025	-	0.031	<0.025	-
Silicon	µg/L	50	819	889	8.2%	275	269	2.2%	272	291	6.7%	73	71	-	78	80	-	111	110	-	167	173	-
Silver	µg/L	0.002	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-
Sodium	µg/L	10	1170	1070	8.9%	1140	1090	4.5%	620	593	4.5%	578	555	4.1%	613	611	0.3%	491	491	0.0%	589	582	1.2%
Strontium	µg/L	0.02	26	26.9	3.4%	18.4	17.7	3.9%	13.1	13	0.8%	11	10.4	5.6%	11	10.8	1.8%	8.22	8.34	1.4%	5.73	5.71	0.3%
Sulphur	µg/L	500	4340	4340	0.0%	3560	3600	1.1%	2000	2010	-	2210	2330	-	2060	2000	-	1430	1470	-	1250	1210	-
Thallium	µg/L	0.001	0.0012	0.0012	-	0.0014	0.0013	-	0.0017	0.0021	-	0.0016	0.0014	-	0.0014	0.0014	-	<0.001	<0.001	-	0.0011	<0.001	-
Tin	µg/L	0.01	<0.01	0.012	-	0.019	0.012	-	0.015	0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-
Titanium	µg/L	0.05	0.065	0.071	-	0.079	0.069	-	0.232	0.331	35.2%	<0.05	<0.05	-	0.054	0.054	-	<0.05	<0.05	-	0.067	0.079	-
Uranium	µg/L	0.001	0.009	0.0114	23.5%	0.0074	0.008	7.8%	0.01	0.0085	16.2%	0.0058	0.0047	21.0%	0.0042	0.0041	-	0.0034	0.0035	-	0.0019	0.0034	-
Vanadium	µg/L	0.01	0.026	0.027	-	0.033	0.032	-	0.062	0.052	17.5%	0.03	0.025	-	0.033	0.036	-	0.019	0.019	-	0.05	0.066	27.6%
Zinc	µg/L	0.1	3.48	2.84	20.3%	2.96	3.51	17.0%	4.73	2.51	61.3%	0.89	0.61	37.3%	0.86	0.78	9.8%	1.43	1.07	28.8%	0.52	0.48	8.0%
Zirconium	µg/L	0.01	0.059	0.064	8.1%	0.047	0.047	-	0.124	0.047	90.1%	0.024	0.024	-	0.018	0.018	-	0.013	0.01	-	0.022	0.022	-
Dissolved Metals																							
Aluminum	µg/L	0.2	15.2	15.3	0.7%	10.2	10.6	3.8%	22.5	21.4	5.0%	6.31	6.46	2.3%	4.17	4.38	4.9%	3.61	3.9	7.7%	6.61	6.67	0.9%
Antimony	µg/L	0.005	0.0155	0.0168	-	0.0229	0.0181	-	0.0094	0.0175	-	0.0086	0.0076	-	0.0078	0.0076	-	0.0065	0.0053	-	0.0073	0.0058	-
Arsenic	µg/L	0.01	0.246	0.256	4.0%	0.282	0.266	5.8%	0.204	0.216	5.7%	0.202	0.201	0.5%	0.206	0.2	3.0%	0.124	0.124	0.0%	0.311	0.328	5.3%
Barium	µg/L	0.02	10.7	10.7	0.0%	8.8	8.49	3.6%	6.35	6.29	0.9%	4.55	4.59	0.9%	4.21	4.22	0.2%	4.15	4.11	1.0%	3.06	2.99	2.3%
Beryllium	µg/L	0.002	0.0051	0.0054	-	<0.002	0.0023	-	0.0037	0.0047	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-
Bismuth	µg/L	0.001	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-	<0.001	<0.001	-
Boron	µg/L	5	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-
Cadmium	µg/L	0.0025	0.0131	0.0168	24.7%	0.0098	0.0072	-	0.0084	0.0055	-	<0.0025	<0.0025	-	<0.0025	<0.0025	-	<0.0025	0.0026	-	0.0067	<0.0025	-
Chromium	µg/L	0.04	0.102	0.1	-	0.112	0.107	-	0.085	0.091	-	0.049	0.046	-	0.04	0.041	-	0.041	0.042	-	0.046	0.047	-
Cobalt	µg/L	0.005	0.301	0.309	2.6%	0.0771	0.0752	2.5%	0.387	0.37	4.5%	0.0625	0.0588	6.1%	0.103	0.103	0.0%	0.0282	0.0269	4.7%	0.0511	0.0609	17.5%
Copper	µg/L	0.05	2.23	2.24	0.4%	1.86	1.83	1.6%	1.41	1.36	3.6%	1.23	1.25	1.6%	1.12	1.13	0.9%	0.854	0.928	8.3%	0.782	0.78	0.3%
Iron	µg/L	0.5	5.72	5.5	3.9%	11.5	12.6	9.1%	29.1	28.4	2.4%	9.86	9.6	2.7%	37.1	39.4	6.0%	7.91	7.86	0.6%	162	173	6.6%
Lead	µg/L	0.005	0.0494	0.0456	8.0%	0.0415	0.0258	46.7%	0.0078	0.0088	-	<0.005	<0.005	-	<0.005	<0.005	-	<0.005	0.0052	-	0.0093	0.0082	-
Lithium	µg/L	0.1	1.07	1.08	0.9%	0.88	0.91	3.4%	0.67	0.69	2.9%	0.68	0.69	1.5%	0.66	0.66	0.0%	0.5	0.49	-	0.42	0.41	-
Manganese	µg/L	0.005	2.83	2.87	1.4%	5.51	5.47	0.7%	10	9.4	6.2%	1.42	1.42	0.0%	4.17	4.37	4.7%	0.597	0.594	0.5%	1.35	1.69	22.4%
Mercury	µg/L	0.0005	0.00078	<0.0005	-	0.00076	0.00058	-	0.00157	0.00144	-	0.0006	0.00078	-	0.00068	0.0007	-	0.0007	0.00072	-	0.00089	0.00105	-
Molybdenum	µg/L	0.01	0.012	0.013	-	<0.01	<0.01	-	0.013	0.011	-	0.01	<0.01	-	0.01	0.012	-	<0.01	<0.01	-	<0.01	<0.01	-
Nickel	µg/L	0.02	7.35	7.34	0.1%	4.53	4.53	0.0%	4.26	4.15	2.6%	2.58	2.63	1.9%	2.09	2.08	0.5%	1.52	1.59	4.5%	0.88	0.951	7.8%
Rhenium	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	-
Selenium	µg/L	0.025	0.029	<0.025	-	0.033	0.038	-	<0.025	0.035	-	0.026	<0.025	3.9%	<0.025	<0.025	-	<0.025	<0.025	-	0.026	<0.05	63.2%
Silicon	µg/L	50	831	832	0.1%	275	271	1.5%	270	288	6.5%	70	70	-	74	76	-	108	110	-	158	167	-
Silver	µg/L	0.002	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-	<0.002	<0.002	-
Strontium	µg/L	0.02	27	27.1	0.4%	18.2	17.7	2.8%	13.3	12.8	3.8%	11.2	11.1	0.9%	11.3	10.9	3.6%	8.1	7.81	3.6%	5.68	5.66	0.4%
Sulphur	µg/L	500	4490	4570	1.8%	3680	3510	4.7%	2040	2080	-	2260	2220	-	2050	2010	-	1500	1500	-	1240	1240	-
Thallium	µg/L	0.001	0.0012	0.0013	-	0.0013	0.0011	-	0.0017	0.0016	-	0.0026	0.0018	-	0.0025	0.0018	-	0.0013	<0.001	-	<0.001	<0.001	-
Tin	µg/L	0.01	<0.01	<0.01	-	0.012	<0.01	-	0.017	0.016	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	-
Titanium	µg/L	0.05	<0.05	<0.05	-	0.162	<0.05	-	0.089	0.117	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	<0.05	-
Uranium	µg/L	0.001	0.0085	0.0079	7.3%	0.0074	0.0069	7.0%	0.0084	0.0092	9.1%	0.0041	0.0058	34.3%	0.004	0.0041	-	0.0044	0.0025	-	0.0025	0.0023	-
Vanadium	µg/L	0.01	0.024	0.025	-	0.03	0.027	-	0.036	0.031	-	0.023	0.022	-	0.023	0.023	-	0.018	0.016	-	0.037	0.045	-
Zinc	µg/L	0.1	3.73	3.38	9.8%	3.82	2.86	28.7%	2.21	1.74	23.8%	0.81	0.56	36.5%	0.52	0.5	3.9%	0.5	0.67	29.1%	0.39	40.8%	
Zirconium	µg/L	0.01	0.066	0.066	0.0%	0.047	0.044	-	0.05	0.049	-	0.022	0.021	-	0.017	0.016	-	0.016	0.014	-	0.014	0.015	-
Calculated Quantities																							
RPD values over 20%	%	-	-	-	9.4	-	-	5.3	-	-	4.2	-	-	6.3	-	-	0.0	-	-	4.3	-	-	8.3
RPD values over 20%	#	-	-	-	9	-	-	5	-	-	4	-	-	6	-	-	0	-	-	4	-	-	8

Notes:  
RPDs greater than 20% with concentrations in both samples greater than five times the DL are shown in bold.  
(a) = value is greater than five times the method detection limit and is paired with a duplicate value below the method detection limit.  
DL = detection limit; µS/cm = microsiemens per centimetre; mg/L = milligrams per litre; NTU= nephelometric turbidity unit; mg-N/L = milligrams per litre as nitrogen; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre; Bq/L = becquerels per litre; - = no data; # = number.

Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-29-1	BRP-29-2	BRP-29-3	DUP-2	BRP-29-4	BRP-29-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	BRP-35-1	DUP-1	BRP-35-2	BRP-35-3	BRP-35-4	BRP-35-5	BRP-36-1	BRP-36-2	BRP-36-3	BRP-36-4	BRP-36-5	FB-1
			2022-04-14 Sample	2022-04-14 Sample	2022-04-14 Sample	2022-04-14 Duplicate (BRP-29-3)	2022-04-14 Sample	2022-04-14 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-11 Sample	2022-04-11 Duplicate (BRP-35-1)	2022-04-11 Sample	2022-04-11 Sample	2022-04-11 Sample	2022-04-11 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-11 Sample
Total Nutrients																									
Phosphorus	mg-P/L	0.001	0.0031	0.0031	0.0032	0.0061	0.004	0.004	0.0037	0.0039	0.0035	0.0032	0.0037	0.004	0.0043	0.0043	0.0045	0.0031	0.0047	0.0033	0.0029	0.0032	0.005	0.0033	<0.001
Total Metals																									
Aluminum	µg/L	0.2	15.8	16.4	16.8	17.8	16.3	15.9	10.9	11.2	10.2	10.7	9.83	12.2	11.4	11.4	11.1	11.8	10.8	14.3	9.25	8.67	11	21.1	<0.2
Antimony	µg/L	0.005	0.0145	0.0495	0.0579	0.0127	0.0271	0.0162	0.0269	0.026	0.0196	0.0137	0.0196	0.0319	0.0454	0.0432	0.024	0.0341	0.0226	0.0487	0.0451	0.0324	0.0786	0.029	0.0061
Arsenic	µg/L	0.01	0.262	0.258	0.281	0.255	0.262	0.257	0.281	0.27	0.266	0.262	0.26	0.286	0.282	0.288	0.287	0.292	0.288	0.245	0.219	0.225	0.245	0.22	<0.01
Barium	µg/L	0.02	11	10.8	10.9	10.7	10.7	11.1	7.94	7.83	7.77	8.64	7.36	9.06	8.74	9.18	8.65	8.78	8.59	6.96	6.3	6.66	7.59	7.73	<0.02
Beryllium	µg/L	0.002	0.0039	0.0052	0.0046	0.0049	0.0047	0.0049	0.0026	<0.002	0.002	0.0028	0.0028	0.0027	0.0022	0.0025	0.0026	0.0026	<0.002	0.0023	0.002	0.0021	<0.002	0.0028	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	0.0157	0.0152	0.0158	0.0126	0.0137	0.0134	0.0068	0.006	0.0054	0.0068	0.0072	0.0086	0.007	0.0106	0.0057	0.0064	0.0078	0.0093	0.0062	0.0069	0.0061	0.0073	<0.0025
Calcium	µg/L	10	5930	5830	5830	5880	5970	5900	4130	4210	4140	4300	3900	4440	4350	4470	4360	4320	4440	3250	3080	3370	3820	3220	<10
Chromium	µg/L	0.04	0.1	0.106	0.107	0.102	0.103	0.1	0.098	0.095	0.088	0.093	0.091	0.123	0.121	0.119	0.114	0.122	0.123	0.115	0.13	0.092	0.106	0.129	<0.04
Cobalt	µg/L	0.005	0.323	0.322	0.311	0.359	0.323	0.365	0.0735	0.0863	0.0864	0.0854	0.07	0.0954	0.094	0.101	0.0949	0.102	0.0944	0.0656	0.0558	0.0587	0.0794	0.0796	<0.005
Copper	µg/L	0.05	2.24	2.21	2.22	2.16	2.2	2.1	2.22	2.08	2.01	2.07	1.95	1.88	1.83	1.8	1.89	1.8	1.84	1.53	1.41	1.47	1.66	1.66	<0.05
Iron	µg/L	0.5	12.7	13	12.2	17.2	11.6	13.3	8.72	9.6	7.86	10.5	7.81	25	23.4	23.6	23.6	26	23	16.9	12.3	12.8	15	22.5	<0.5
Lanthanum	µg/L	0.01	0.268	0.265	0.258	0.288	0.273	0.28	0.15	0.151	0.147	0.162	0.144	0.101	0.102	0.106	0.1	0.102	0.102	0.116	0.078	0.083	0.1	0.148	<0.01
Lead	µg/L	0.005	0.0123	0.145	0.0859	0.0264	0.0664	0.0056	0.392	0.186	0.0234	0.0208	0.0391	0.0551	0.0819	0.0695	0.0412	0.0544	0.0375	0.0863	0.0529	0.0282	0.0379	0.299	<0.005
Lithium	µg/L	0.1	1.02	1.02	1.02	0.98	1.07	1.02	0.97	0.93	0.94	0.95	0.88	0.87	0.93	0.9	0.9	0.87	0.9	0.73	0.69	0.72	0.81	0.7	<0.1
Magnesium	µg/L	1	3440	3320	3360	3280	3460	3380	2720	2810	2690	2840	2620	2940	2830	2980	2840	2890	2870	2180	2080	2200	2590	2170	<1
Manganese	µg/L	0.005	3.47	3.32	3.2	4.35	3.25	4.01	1.9	2.26	1.74	2.32	1.82	6.8	6.5	6.77	7.18	8.06	6.92	2.29	2.05	2.18	3.08	2.75	<0.005
Mercury	µg/L	0.0005	0.00071	0.0007	0.0007	0.00071	0.0011	0.00076	0.00067	0.00058	<0.0005	0.00065	0.00051	0.00089	-	-	0.00094	0.00079	0.00073	0.00051	0.00118	0.00057	0.0009	0.00085	<0.0005
Molybdenum	µg/L	0.01	0.012	0.011	0.013	0.012	0.013	0.012	0.023	0.015	0.014	0.011	0.014	0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Nickel	µg/L	0.02	7.35	7.16	7.16	7.24	7.27	7.37	5.5	5.61	5.47	5.8	5.25	4.62	4.44	4.66	4.44	4.51	4.38	3.37	3.16	3.4	3.87	3.42	<0.02
Potassium	µg/L	5	586	589	591	581	597	580	562	572	549	560	515	676	654	679	658	665	656	528	494	539	618	519	<5
Selenium	µg/L	0.025	<0.025	0.028	<0.025	0.03	0.031	0.032	0.031	0.032	0.031	0.031	0.026	0.035	0.032	0.036	0.031	0.034	0.034	0.025	0.03	0.027	0.028	0.028	<0.025
Silicon	µg/L	50	836	817	819	889	853	899	342	343	331	342	332	275	269	285	291	290	286	250	214	226	291	231	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Sodium	µg/L	10	1140	1100	1170	1070	1160	1150	989	1000	959	998	921	1140	1090	1150	1070	1100	1080	862	794	871	990	845	<10
Strontium	µg/L	0.02	27.2	26	26	26.9	27.1	27.7	17.7	18.2	17.6	18.3	17.2	18.4	17.7	18.4	17.6	18.3	17.9	13.4	13	13.6	15.9	13.5	<0.02
Sulphur	µg/L	500	4520	4590	4340	4340	4650	4510	4010	3760	3720	3840	3640	3560	3600	3720	3690	3580	3640	2890	2730	2800	3260	2680	<500
Thallium	µg/L	0.001	0.0012	0.0013	0.0012	0.0012	0.0013	<0.001	0.0012	0.0012	0.0013	0.001	0.0011	0.0014	0.0013	0.0013	<0.001	0.001	0.0011	<0.001	0.001	<0.001	0.001	<0.001	<0.001
Tin	µg/L	0.01	0.019	0.022	<0.01	0.012	0.016	<0.01	0.045	0.011	<0.01	<0.01	<0.01	0.013	0.019	0.012	0.013	0.012	0.016	0.027	0.019	0.051	0.017	0.012	<0.01
Titanium	µg/L	0.05	<0.05	0.058	0.065	0.071	<0.05	<0.05	0.058	<0.05	<0.05	<0.05	<0.05	0.079	0.069	<0.05	0.094	<0.05	0.236	0.07	0.052	0.058	0.391	<0.05	<0.05
Uranium	µg/L	0.001	0.0079	0.0073	0.009	0.0114	0.0088	0.0082	0.0076	0.0071	0.0091	0.0071	0.0068	0.0074	0.008	0.0078	0.0077	0.007	0.0075	0.0067	0.0056	0.0069	0.0057	0.0083	<0.001
Vanadium	µg/L	0.01	0.026	0.026	0.026	0.027	0.028	0.027	0.027	0.027	0.027	0.027	0.023	0.033	0.032	0.034	0.033	0.032	0.033	0.035	0.027	0.025	0.029	0.044	<0.01
Zinc	µg/L	0.1	2.72	3.58	3.48	2.84	3.17	2.82	1.65	1.66	1.22	1.39	1.43	2.96	3.51	3.4	3.14	2.29	2.3	2.82	2.75	1.77	1.72	2.04	0.45
Zirconium	µg/L	0.01	0.062	0.06	0.059	0.064	0.059	0.062	0.049	0.044	0.044	0.044	0.039	0.047	0.047	0.048	0.046	0.049	0.047	0.039	0.035	0.035	0.034	0.034	<0.01
Dissolved Nutrients																									
Phosphorus	mg-P/L	0.001	0.0022	0.0019	0.0018	0.0013	0.0014	0.0015	0.0015	0.0022	0.0018	0.001	0.0015	0.0016	0.0014	0.0024	0.0018	0.0016	0.0014	0.001	0.0014	0.0018	0.0016	0.0017	<0.001



Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-29-1	BRP-29-2	BRP-29-3	DUP-2	BRP-29-4	BRP-29-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5	BRP-35-1	DUP-1	BRP-35-2	BRP-35-3	BRP-35-4	BRP-35-5	BRP-36-1	BRP-36-2	BRP-36-3	BRP-36-4	BRP-36-5	FB-1
			2022-04-14 Sample	2022-04-14 Sample	2022-04-14 Sample	2022-04-14 Duplicate (BRP-29-3)	2022-04-14 Sample	2022-04-14 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-10 Sample	2022-04-11 Sample	2022-04-11 Duplicate (BRP-35-1)	2022-04-11 Sample	2022-04-11 Sample	2022-04-11 Sample	2022-04-11 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-12 Sample	2022-04-11 Sample	2022-04-12 Field Blank	
Dissolved Metals																									
Aluminum	µg/L	0.2	15.4	15	15.2	15.3	15	16	9.9	11	9.73	10.7	9.65	10.2	10.6	10.2	9.89	9.83	9.84	8.42	8.02	8.04	9.09	7.89	<0.2
Antimony	µg/L	0.005	0.0168	0.0194	0.0155	0.0168	0.0131	0.0251 <sup>(m)</sup>	0.0183	0.0177	0.0139	0.0198	0.0158	0.0229	0.0181	0.0144	0.0154	0.0154	0.0143	0.0202	0.0186	0.0137	0.0154	0.0122	0.0068
Arsenic	µg/L	0.01	0.258	0.245	0.279	0.246	0.246	0.265	0.279	0.273	0.265	0.269	0.259	0.282	0.266	0.279	0.282	0.265	0.226	0.203	0.213	0.24	0.209	<0.01	
Barium	µg/L	0.02	10.9	10.8	10.7	10.7	10.9	11.4	7.91	7.96	7.68	8.86	7.39	8.8	8.49	8.4	8.44	8.41	7.95	6.48	6.2	6.35	7.22	6.11	<0.02
Beryllium	µg/L	0.002	0.005	0.0049	0.0051	0.0054	0.0038	0.006	0.0032	0.0036	0.0032	0.0028	0.0022	<0.002	0.0023	<0.002	0.0024	0.0024	0.0023	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	0.015	0.0162	0.0131	0.0168 <sup>(m)</sup>	0.0128	0.0164 <sup>(m)</sup>	0.0069	0.0066	0.0065	0.0043	0.0074	0.0098	0.0072	0.0063	0.0046	0.007	0.0041	0.0054	0.0032	0.0027	0.0035	0.0046	<0.0025
Chromium	µg/L	0.04	0.1	0.096	0.102	0.1	0.097	0.106	0.092	0.097	0.087	0.096	0.091	0.112	0.107	0.115	0.113	0.102	0.104	0.092	0.085	0.089	0.092	0.082	<0.04
Cobalt	µg/L	0.005	0.299	0.292	0.301	0.309	0.273	0.354	0.053	0.0561	0.0472	0.059	0.0492	0.0771	0.0752	0.069	0.0606	0.0668	0.0636	0.0449	0.045	0.0488	0.0649	0.0437	<0.005
Copper	µg/L	0.05	2.22	2.23	2.23	2.24	2.19	2.28	2.14	2.22	2.04	2.2	2.04	1.86	1.83	1.82	1.82	1.78	1.74	1.47	1.41	1.42	1.56	1.38	<0.05
Iron	µg/L	0.5	5.95	6.11	5.72	5.5	5.9	8.2	4.02	4.47	3.86	5.08	4.23	11.5	12.6	11.4	10.9	11.3	11.5	7.07	6.08	7.54	7.11	6.55	<0.5
Lead	µg/L	0.005	0.0129	0.0422	0.0494	0.0456 <sup>(m)</sup>	0.0063	0.0173	0.152	0.114	0.0121	0.0325	0.0415	0.0258	0.0178	0.0137	0.0106	0.007	0.0192	0.0118	<0.005	0.0061	0.0491	<0.005	<0.005
Lithium	µg/L	0.1	1.06	1.07	1.07	1.08	1.07	1.13	0.98	0.98	0.94	1.02	0.92	0.88	0.91	0.91	0.93	0.85	0.88	0.73	0.7	0.74	0.84	0.72	<0.1
Manganese	µg/L	0.005	3	2.81	2.83	2.87	2.87	3.55	0.915	0.962	0.775	1.18	0.842	5.51	5.47	5.48	5.47	5.9	5.33	1.53	1.5	1.82	2.11	1.52	<0.005
Mercury	µg/L	0.0005	0.00051	0.00062	0.00078	<0.0005	0.00156	0.00052	0.00134	0.00099	0.00062	0.00057	0.00055	0.00076	0.00058	0.00125	0.00076	0.00064	0.00073	0.00053	<0.0005	0.0006	0.00138	0.0014	0.00072
Molybdenum	µg/L	0.01	0.011	0.011	0.012	0.013	0.012	0.012	0.017	0.014	0.013	0.015	0.015	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.019
Nickel	µg/L	0.02	7.36	7.27	7.35	7.34	7.21	7.79	5.67	6.02	5.42	6.24	5.48	4.53	4.53	4.58	4.47	4.4	4.34	3.48	3.22	3.41	3.79	3.31	<0.02
Rhenium	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	<0.005
Selenium	µg/L	0.025	0.028	0.03	0.029	<0.025	0.034	0.035	0.034	0.03	0.032	0.034	0.03	0.033	0.038	0.038	0.035	0.032	0.036	0.026	<0.025	0.034	0.028	0.025	<0.025
Silicon	µg/L	50	849	811	831	832	839	892	346	349	337	355	326	275	271	270	287	284	267	234	222	217	246	220	<50
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	0.02	27	26.2	27	27.1	26.5	28.2	19.5	19.5	17.7	19.9	17.7	18.2	17.7	17.8	18.2	17.6	17.5	14	13.5	13.6	15.5	13	<0.02
Sulphur	µg/L	500	4780	4560	4490	4570	4460	4780	3970	4060	3800	4200	3720	3680	3510	3620	3720	3530	3490	2800	2690	2860	3220	2690	<500
Thallium	µg/L	0.001	0.0012	0.001	0.0012	0.0013	0.0012	0.0013	0.0012	0.0013	0.001	<0.001	<0.001	0.0013	0.0011	0.0011	0.0012	0.0011	0.0011	<0.001	<0.001	<0.001	0.0012	<0.001	<0.001
Tin	µg/L	0.01	0.03	0.015	<0.01	<0.01	<0.01	0.014	0.014	<0.01	<0.01	0.06 <sup>(m)</sup>	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.023	<0.01	<0.01	<0.01	0.012
Titanium	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	0.162	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	0.001	0.009	0.009 <sup>(p)</sup>	0.0085	0.0079	0.0072	0.0078	0.0077	0.0076	0.0069	0.0087 <sup>(m)</sup>	0.008	0.0074	0.0069	0.008	0.0054	0.0064	0.0054	0.0069	0.0055	0.005	0.0061	0.0062	<0.001
Vanadium	µg/L	0.01	0.023	0.025	0.024	0.025	0.022	0.026	0.026	0.026	0.024	0.024	0.024	0.03	0.027	0.029	0.031	0.026	0.023	0.021	0.023	0.023	0.025	0.022	<0.01
Zinc	µg/L	0.1	3.27 <sup>(m)</sup>	3.37	3.73	3.38	2.68	3.78 <sup>(m)</sup>	1.51	1.61	1.22	1.88 <sup>(m)</sup>	1.8 <sup>(m)</sup>	3.82 <sup>(m)</sup>	2.86	2.62	3.14	1.77	1.48	2.04	2.01	1.38	1.32	1.19	0.58 <sup>(m)</sup>
Zirconium	µg/L	0.01	0.067	0.069	0.066	0.066	0.061	0.073	0.048	0.049	0.044	0.049	0.049	0.047	0.044	0.05	0.051	0.047	0.045	0.038	0.033	0.034	0.038	0.032	<0.01

Notes:  
- = no data or not applicable.  
Bolded values failed to pass one or more quality control checks.  
(m) = value exceeds the corresponding total metal value by 20% or more.  
(p) = value exceeds the corresponding total phosphorus value by 20% or more.  
DL = detection limit; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre.

Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-40-1 2022-04-13 Sample	BRP-40-2 2022-04-13 Sample	BRP-40-3 2022-04-13 Sample	BRP-40-4 2022-04-13 Sample	BRP-40-5 2022-04-13 Sample	TB-1 2022-04-13 Travel Blank	BRP-34 2022-06-07 Sample	DUP-1 2022-06-07 Duplicate (BRP-34)	FB-1 2022-06-07 Field Blank	BRP-40-5 2022-08-06 Sample	BRP-40-4 2022-08-06 Sample	BRP-40-3 2022-08-06 Sample	BRP-40-2 2022-08-06 Sample	BRP-40-1 2022-08-06 Sample	BRP-39-A 2022-08-06 Sample	BRP-39-B 2022-08-06 Duplicate (BRP-39-A)	BRP-35-3 2022-08-07 Sample	BRP-35-4 2022-08-07 Sample	BRP-35-5 2022-08-07 Sample	BRP-35-2 2022-08-07 Sample	BRP-35-1 2022-08-08 Sample	BRP-36-4 2022-08-08 Sample	BRP-36-2 2022-08-08 Sample	BRP-36-3 2022-08-08 Sample	BRP-36-1 2022-08-08 Sample	
Total Nutrients																												
Phosphorus	mg-P/L	0.001	0.0049	0.0046	0.0046	0.0047	0.0053	0.0012	0.0059	0.006	<0.001	0.005	0.0042	0.0038	0.0035	0.005	0.0082	0.0082	0.005	0.005	0.004	0.0062	0.005	0.0042	0.0052	0.0042	0.0049	
Total Metals																												
Aluminum	µg/L	0.2	1.61	1.77	1.8	2.58	2.15	<0.2	30.1	28.1	0.28	3.41	2.93	3.02	3.3	3.4	10	10.3	6.77	5.85	6.13	6.17	6.97	5.63	5.46	5.92	5.43	
Antimony	µg/L	0.005	0.0095	0.0187	0.0384	0.046	0.175	<0.005	0.0108	0.0096	<0.005	0.0138	0.0058	0.0097	<0.005	<0.005	0.0051	0.0057	0.0056	0.0051	<0.005	0.0052	0.0051	0.0054	0.0061	0.0055	0.0061	
Arsenic	µg/L	0.01	0.268	0.29	0.29	0.297	0.295	<0.01	0.217	0.216	<0.01	0.158	0.155	0.179	0.176	0.168	0.356	0.376	0.131	0.132	0.129	0.13	0.131	0.128	0.125	0.13		
Barium	µg/L	0.02	7.68	8	8	8.12	8.43	<0.02	6.57	6.38	0.067	2.85	2.8	2.81	2.79	2.8	3.23	3.39	3.3	3.24	3.24	3.26	3.27	3.29	3.36	3.29	3.33	
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0042	0.0046	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Cadmium	µg/L	0.0025	<0.0025	0.0026	<0.0025	0.0028	0.0026	<0.0025	0.007	0.0072	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	
Calcium	µg/L	10	3970	4150	4040	4370	4370	<10	2730	2780	<10	1570	1560	1530	1540	1550	1580	1680	1740	1640	1690	1700	1660	1650	1700	1670		
Chromium	µg/L	0.04	0.051	0.057	0.052	0.061	0.057	<0.04	0.11	0.11	<0.04	<0.04	<0.04	16.2	<0.04	<0.04	0.056	0.058	0.042	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		
Cobalt	µg/L	0.005	0.0866	0.0964	0.111	0.0892	0.0881	<0.005	0.407	0.409	<0.005	0.0358	0.0327	0.0568	0.0318	0.03	0.0521	0.062	0.0626	0.0482	0.0612	0.0582	0.0677	0.06	0.0531	0.0627	0.0562	
Copper	µg/L	0.05	0.862	0.901	0.873	0.93	0.939	<0.05	1.43	1.46	<0.05	0.568	0.523	1.12	0.537	0.547	0.805	0.824	0.796	0.842	0.796	0.814	0.824	0.822	0.783	0.82	0.788	
Iron	µg/L	0.5	62.2	55.4	50.4	51.4	53.2	<0.5	48	50.6	<0.5	42.2	36.2	173	46.7	41.9	243	265	18.4	14.9	17.4	18.2	18.3	16.1	16.1	16.5	15.9	
Lanthanum	µg/L	0.01	0.024	0.026	0.024	0.027	0.028	<0.01	0.213	0.218	<0.01	0.022	0.02	0.021	0.022	0.023	0.068	0.084	0.046	0.043	0.044	0.045	0.045	0.046	0.046	0.045	0.044	
Lead	µg/L	0.005	0.039	0.206	0.567	0.943	0.139	<0.005	0.0193	0.0162	<0.005	0.0052	<0.005	<0.005	<0.005	<0.005	0.0147	0.0206	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
Lithium	µg/L	0.1	0.71	0.79	0.76	0.77	0.77	<0.1	0.7	0.66	<0.1	0.39	0.37	0.37	0.38	0.38	0.43	0.42	0.39	0.41	0.4	0.4	0.39	0.4	0.4	0.4	0.4	
Magnesium	µg/L	1	2960	3240	3100	3150	3360	<1	1560	1540	<1	1290	1240	1260	1250	1230	1250	1240	1130	1150	1100	1100	1140	1130	1100	1130	1090	
Manganese	µg/L	0.005	7.76	9.72	13.8	8.18	7.26	<0.005	10.4	10.7	0.0072	1.42	1.15	2.69	1.24	1.3	1.34	1.79	2.9	2.21	2.82	2.81	2.98	3.16	3.03	3.28	3.18	
Mercury	µg/L	0.0005	<0.0005	<0.0005	<0.0005	0.00069	0.00052	<0.0005	0.00206	0.00198	<0.0005	<0.0005	0.00056	<0.0005	0.0005	<0.0005	0.0011	0.00123	0.00073	0.00069	0.0008	0.00063	0.00056	0.00068	0.00068	0.00066		
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.011	<0.01	0.092	<0.01	0.092	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Nickel	µg/L	0.02	1.76	1.83	1.77	1.85	2.4	<0.02	4.28	4.35	<0.02	0.636	0.592	0.972	0.594	0.582	0.907	0.936	1.65	1.66	1.62	1.6	1.64	1.68	1.69	1.69		
Potassium	µg/L	5	633	675	652	669	708	<5	453	451	<5	296	281	291	293	289	313	312	291	293	285	290	290	288	278	297	279	
Selenium	µg/L	0.025	0.034	0.031	0.03	0.032	0.033	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.028	0.031	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025		
Silicon	µg/L	50	274	282	288	286	304	<50	272	291	<50	134	132	136	134	133	167	173	62	59	63	68	70	69	69	72		
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		
Sodium	µg/L	10	1080	1160	1100	1160	1220	<10	620	593	<10	525	499	509	507	509	589	582	492	496	462	457	465	465	455	465	444	
Strontium	µg/L	0.02	13.5	14.1	13.8	14.1	14.7	<0.02	13.1	13	<0.02	5.59	5.39	5.39	5.48	5.46	5.73	5.71	7.29	7.58	7.35	7.57	7.42	7.44	7.34	7.47	7.25	
Sulphur	µg/L	500	2420	2540	2510	2550	2660	<500	2000	2010	<500	1100	1150	1180	1120	1150	1210	1210	1450	1410	1430	1430	1430	1460	1440	1440	1440	
Thallium	µg/L	0.001	<0.001	<0.001	0.0013	0.0012	0.001	<0.001	0.0017	0.0021	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Tin	µg/L	0.01	0.012	<0.01	0.018	0.013	0.012	<0.01	0.015	0.01	0.018	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.232	0.331	<0.05	<0.05	<0.05	<0.05	<0.05	0.108	0.067	0.079	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
Uranium	µg/L	0.001	0.0024	0.003	0.0026	0.0024	0.0045	<0.001	0.01	0.0085	<0.001	0.0024	0.0012	0.0032	0.0011	0.0023	0.0019	0.0034	0.0037	0.0032	0.0035	0.0039	0.0023	0.003	0.0034	0.0036		
Vanadium	µg/L	0.01	0.015	0.018	0.016	0.018	<0.01	0.062	0.052	0.052	<0.01	0.017	0.088	0.017	0.05	0.066	0.066	0.022	0.022	0.02	0.02	0.02	0.02	0.018	0.019	0.02		
Zinc	µg/L	0.1	0.72	1.97	1.09	1.29	1.91	0.14	4.73	2.51	0.88	0.84	0.5	0.35	0.54	0.92	0.52	0.48	0.3	0.26	0.45	0.24	0.6	0.24	0.78	0.55		
Zirconium	µg/L	0.01	0.012	0.013	0.014	0.014	0.014	<0.01	0.124	0.047	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.022	0.022	0.019	0.017	0.018	0.017	0.017	0.018	0.017	0.02		
Dissolved Nutrients																												
Phosphorus	mg-P/L	0.001	0.0035	0.0032	0.0053	0.0032	0.0031	<0.001	<0.01	<0.01	<0.01	0.0035	0.0041	0.0031	0.0037	0.0039	0.0043	0.0051	0.0048	0.0048	0.003	0.0033	0.0034	0.0032	0.0042	0.0033	0.0047	



Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-40-1 2022-04-13 Sample	BRP-40-2 2022-04-13 Sample	BRP-40-3 2022-04-13 Sample	BRP-40-4 2022-04-13 Sample	BRP-40-5 2022-04-13 Sample	TB-1 2022-04-13 Travel Blank	BRP-34 2022-06-07 Sample	DUP-1 2022-06-07 Duplicate (BRP-34)	FB-1 2022-06-07 Field Blank	BRP-40-5 2022-08-06 Sample	BRP-40-4 2022-08-06 Sample	BRP-40-3 2022-08-06 Sample	BRP-40-2 2022-08-06 Sample	BRP-40-1 2022-08-06 Sample	BRP-39-A 2022-08-06 Sample	BRP-39-B 2022-08-06 Duplicate (BRP-39-A)	BRP-35-3 2022-08-07 Sample	BRP-35-4 2022-08-07 Sample	BRP-35-5 2022-08-07 Sample	BRP-35-2 2022-08-07 Sample	BRP-35-1 2022-08-08 Sample	BRP-36-4 2022-08-08 Sample	BRP-36-2 2022-08-08 Sample	BRP-36-3 2022-08-08 Sample	BRP-36-1 2022-08-08 Sample
Dissolved Metals																											
Aluminum	µg/L	0.2	1.38	1.32	1.72	1.43	1.48	0.29	22.5	21.4	0.23	1.77	1.68	1.55	1.78	1.63	6.61	6.67	3.96	3.77	3.76	3.86	4.04	3.5	3.68	3.62	3.59
Antimony	µg/L	0.005	0.0134	0.0127	0.0175	0.0229	0.022	<0.005	0.0094	0.0175	-0.005	0.005	<0.005	<0.005	0.0052	<0.005	0.0073	0.0058	0.0078	0.0056	0.0085	0.0067	0.0143	0.0063	0.0075	0.0083	0.0068
Arsenic	µg/L	0.01	0.283	0.283	0.307	0.289	0.299	<0.01	0.204	0.216	-0.01	0.144	0.152	0.139	0.141	0.147	0.311	0.328	0.127	0.122	0.123	0.126	0.132	0.123	0.121	0.119	0.127
Barium	µg/L	0.02	7.59	8.01	8.23	8.05	8.34	<0.02	6.35	6.29	0.067	2.71	2.74	2.68	2.68	2.72	3.06	2.99	3.34	3.28	3.34	3.3	3.33	3.37	3.36	3.3	3.31
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0037	0.0047	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0019	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	0.0027	0.0032	0.0036	<0.0025	0.0029	<0.0025	0.0084	0.0055	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0067	<0.0025	<0.0025	<0.0025	0.0029	<0.0025	0.0068	<0.0025	<0.0025	<0.0025	<0.0025
Chromium	µg/L	0.04	0.052	0.057	0.058	0.058	0.06	<0.04	0.085	0.091	-0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.046	0.047	<0.04	<0.04	<0.04	<0.04	0.04	<0.04	<0.04	<0.04	<0.04
Cobalt	µg/L	0.005	0.0299	0.031	0.0402	0.0352	0.0347	<0.005	0.387	0.37	-0.005	0.0203	0.0175	0.017	0.0224	0.0174	0.0511	0.0609	0.029	0.0193	0.0273	0.018	0.0229	0.0238	0.0181	0.0235	0.0205
Copper	µg/L	0.05	0.917	0.919	0.956	0.932	0.946	<0.05	1.41	1.36	-0.05	0.535	0.529	0.515	0.536	0.523	0.782	0.78	0.777	0.753	0.776	0.784	0.846	0.777	0.779	0.781	0.785
Iron	µg/L	0.5	15.2	14.4	14.4	14.3	12.9	<0.5	29.1	28.4	-0.5	18.9	19.6	18.6	20	19.5	162	173	4.16	4.06	4.31	4.27	4.24	3.76	3.44	3.56	3.63
Lead	µg/L	0.005	0.0332	0.0741	0.05	0.0321	0.0219	<0.005	0.0078	0.0088	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0093	0.0082	<0.005	<0.005	<0.005	<0.005	0.0055	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	0.1	0.8	0.8	0.84	0.82	0.85	<0.1	0.67	0.69	-0.1	0.38	0.37	0.37	0.38	0.36	0.42	0.41	0.4	0.4	0.41	0.4	0.42	0.4	0.4	0.4	0.39
Manganese	µg/L	0.005	1.12	1.45	4.5	2.1	2.41	<0.005	10	9.4	0.0055	0.621	0.58	0.6	0.66	0.632	1.35	1.69	0.703	0.533	0.619	0.565	0.592	0.839	0.633	0.731	0.899
Mercury	µg/L	0.0005	0.00131	0.0011	<0.0005	0.00075	<0.0005	<0.0005	0.00157	0.00144	-0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.00089	0.00105	0.0006	<0.0005	<0.0005	<0.0005	0.00056	<0.0005	0.00052	<0.0005	<0.0005
Molybdenum	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.013	0.011	-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
Nickel	µg/L	0.02	1.82	1.82	1.98	1.89	1.96	<0.02	4.26	4.15	-0.02	0.591	0.591	0.572	0.604	0.584	0.88	0.951	1.6	1.56	1.62	1.58	1.61	1.68	1.66	1.67	1.65
Rhenium	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	<0.005	<0.005	<0.005
Selenium	µg/L	0.025	0.029	0.041	0.038	0.038	0.032	<0.025	<0.025	0.035	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.026	<0.05	<0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.027
Silicon	µg/L	50	271	286	292	285	314	<50	270	288	-50	129	129	130	129	127	158	167	62	60	61	59	62	69	68	67	68
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	0.02	13.7	14.2	14.8	14.5	14.8	<0.02	13.3	12.8	-0.02	5.48	5.44	5.34	5.45	5.55	5.68	5.66	7.17	7.1	7.15	7.16	6.99	7.19	7.23	7.3	7.25
Sulphur	µg/L	500	2530	2610	2680	2740	2720	<500	2040	2080	-500	1140	1140	1120	1120	1080	1240	1240	1450	1450	1450	1460	1500	1440	1440	1420	1460
Thallium	µg/L	0.001	<0.001	<0.001	0.0011	0.0011	0.001	<0.001	0.0017	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tin	µg/L	0.01	0.014	<0.01	0.012	<0.01	<0.01	<0.01	0.017	0.016	-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
Titanium	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.089	0.117	-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
Uranium	µg/L	0.001	0.0023	0.0031	0.0019	0.0022	0.0027	<0.001	0.0084	0.0092	-0.001	0.0015	<0.001	<0.001	0.0013	<0.001	0.0025	0.0023	0.0039	0.0028	0.0031	0.0019	0.0029	0.0041	0.0024	0.0024	0.0022
Vanadium	µg/L	0.01	0.016	0.015	0.016	0.016	0.014	<0.01	0.036	0.031	-0.01	0.011	0.011	0.012	<0.01	0.037	0.045	0.017	0.016	0.014	0.016	0.014	0.016	0.014	0.015	0.014	0.014
Zinc	µg/L	0.1	1.61 <sup>(m)</sup>	2.01	1.59 <sup>(m)</sup>	1.28	1.73	0.16	2.21	1.74	0.8	0.46	0.37	0.32	0.44	0.22	0.59	0.39	0.41	0.24	0.59 <sup>(m)</sup>	0.35	1.26 <sup>(m)</sup>	0.33	0.62	0.51	1.46 <sup>(m)</sup>
Zirconium	µg/L	0.01	0.015	0.016	0.016	0.017	0.017	<0.01	0.05	0.049	-0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	0.015	0.016	0.016	0.015	0.017	0.016	0.03	0.018	0.018	0.017

Notes:  
- = no data or not applicable.  
**Bolded** values failed to pass one or more quality control checks.  
(m) = value exceeds the corresponding total metal value by 20% or more.  
(p) = value exceeds the corresponding total phosphorus value by 20% or more.  
DL = detection limit; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre.

Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-36-5 2022-08-08 Sample	BRP-32-4 2022-08-09 Sample	BRP-32-1 2022-08-09 Sample	BRP-32-5 2022-08-09 Sample	BRP-32-2 2022-08-09 Sample	BRP-32-3 2022-08-09 Sample	BRP-34-A 2022-08-10 Sample	BRP-34-B 2022-08-10 uplicate (BRP-34	BRP-33-5 2022-08-10 Sample	BRP-33-4 2022-08-10 Sample	BRP-33-3 2022-08-10 Sample	BRP-33-2 2022-08-10 Sample	BRP-QC-1 2022-08-10 Duplicate (BRP-33-2)	BRP-37-A 2022-08-11 Sample	BRP-37B 2022-08-11 Duplicate (BRP-37-A)	FB 2022-08-12 Field Blank	BRP-TB 2022-08-13 Travel Blank	BRP-29-5 2022-08-13 Sample	BRP-29-4 2022-08-13 Sample	BRP-29-2 2022-08-13 Sample	BRP-29-3 2022-08-13 Sample	BRP-29-1 2022-08-13 Sample	BRP-33-1 2022-08-13 Sample
Total Nutrients																									
Phosphorus	mg-P/L	0.001	0.0041	0.0018	0.0056	0.0031	0.0033	0.006	0.0035	0.0037	0.0031	0.0026	0.0029	0.0031	0.0025	-	-	0.0013	-	0.004	-	-	-	-	-
Total Metals																									
Aluminum	µg/L	0.2	5.92	10.2	9.69	9.44	9.23	9.84	7.88	8.17	9.9	9.85	9.74	11.3	8.71	4.56	4.32	<0.2	<0.2	15.3	12.6	16.2	15.6	15.4	9.88
Antimony	µg/L	0.005	<0.005	0.0069	0.0067	0.0066	0.0064	0.0066	0.0069	0.0075	0.0069	0.0072	0.0067	0.0059	0.0063	<0.005	<0.005	<0.005	<0.005	0.0074	0.007	0.0076	0.0075	0.0066	0.0071
Arsenic	µg/L	0.01	0.132	0.198	0.209	0.205	0.19	0.209	0.214	0.208	0.202	0.194	0.204	0.202	0.201	0.127	0.124	<0.01	<0.01	0.261	0.253	0.254	0.257	0.258	0.208
Barium	µg/L	0.02	3.26	4.69	4.72	4.7	4.54	4.61	4.39	4.28	4.61	4.78	4.66	4.69	4.33	4.12	4.14	<0.02	<0.02	6.85	6.22	7	6.97	7.08	4.7
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0021	<0.002	0.002	<0.002	0.0025	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	0.0038	0.0038	0.003	0.0031	<0.0025	0.0033	0.0036	0.0037	<0.0025	0.0037	<0.0025	0.0042	<0.0025	<0.0025	<0.0025	<0.0025	0.0071	0.005	0.0076	0.007	0.0067	0.0041
Calcium	µg/L	10	1690	2400	2400	2340	2380	2400	2370	2350	2400	2400	2390	2380	2230	1930	1870	<10	<10	3330	3030	3350	3340	3400	2450
Chromium	µg/L	0.04	<0.04	0.051	0.057	0.051	0.05	0.053	0.05	0.05	0.05	0.052	0.053	0.045	0.066	0.042	<0.04	<0.04	0.056	0.05	0.056	0.056	0.056	0.057	0.057
Cobalt	µg/L	0.005	0.0623	0.0912	0.0956	0.0887	0.0921	0.0917	0.151	0.158	0.0946	0.0932	0.0926	0.0941	0.0821	0.0364	0.0324	<0.005	<0.005	0.303	0.255	0.328	0.334	0.345	0.109
Copper	µg/L	0.05	0.806	1.3	1.29	1.28	1.28	1.29	1.24	1.22	1.29	1.29	1.28	1.29	1.2	0.896	0.885	<0.05	<0.05	1.5	1.38	1.53	1.54	1.53	1.3
Iron	µg/L	0.5	17.1	27.5	29.2	27.5	26.4	28.1	85.6	90	29.1	29.3	28.9	30.1	24.4	14.4	13.6	<0.5	<0.5	39.6	30.4	39.6	40.2	40.4	36.2
Lanthanum	µg/L	0.01	0.046	0.086	0.087	0.087	0.082	0.088	0.08	0.08	0.087	0.087	0.088	0.088	0.079	0.064	0.063	<0.01	<0.01	0.134	0.119	0.142	0.139	0.142	0.091
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0073	0.0062	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.0068	0.0054	0.0058	<0.005
Lithium	µg/L	0.1	0.4	0.71	0.71	0.7	0.69	0.73	0.7	0.69	0.7	0.7	0.71	0.7	0.67	0.49	0.48	<0.1	<0.1	0.8	0.75	0.79	0.82	0.81	0.65
Magnesium	µg/L	1	1150	1500	1500	1490	1510	1510	1500	1490	1520	1500	1500	1490	1420	1200	1200	<1	<1	1780	1630	1800	1820	1800	1570
Manganese	µg/L	0.005	3.44	2.62	2.62	2.58	2.55	2.64	5.79	6.08	2.72	2.68	2.66	2.67	2.32	1.13	1.04	<0.005	<0.005	4.33	3.59	4.42	4.55	4.64	2.89
Mercury	µg/L	0.0005	0.00068	0.0008	0.00062	0.00093	0.0009	0.00106	0.00102	0.00096	0.00105	0.00093	0.00073	0.00086	0.00086	0.00112	0.00142	<0.0005	<0.0005	0.00102	0.001	0.00095	0.00112	0.00112	0.00099
Molybdenum	µg/L	0.01	<0.01	<0.01	0.011	0.01	<0.01	<0.01	0.011	0.011	<0.01	0.011	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.012	0.012	0.014	0.012	0.013	0.012
Nickel	µg/L	0.02	1.72	2.66	2.67	2.61	2.6	2.62	2.17	2.16	2.62	2.63	2.64	2.62	2.43	1.52	1.52	<0.02	<0.02	2.97	2.78	3.12	3.1	3.14	2.56
Potassium	µg/L	5	298	349	348	339	344	346	367	349	346	343	347	349	320	320	314	<5	<5	413	361	424	413	416	352
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	<0.025	<0.025	<0.025	<0.025	0.026
Silicon	µg/L	50	72	71	72	71	69	69	78	80	74	74	73	73	71	111	110	<50	<50	157	154	165	161	159	71
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.0031	<0.002	0.002	<0.002	<0.002	<0.002
Sodium	µg/L	10	473	592	580	578	586	590	613	611	582	578	581	578	555	491	491	<10	<10	672	620	677	684	672	612
Strontium	µg/L	0.02	7.58	11.4	11	11	10.8	11	11	10.8	11.3	10.9	10.9	11	10.4	8.22	8.34	<0.02	<0.02	17.8	16.6	18.4	18.5	17.9	11.1
Sulphur	µg/L	500	1400	2190	2160	2180	2210	2110	2060	2000	2230	2190	2260	2210	2330	1430	1470	<500	<500	2380	2540	2310	2340	2310	2150
Thallium	µg/L	0.001	<0.001	0.0015	0.0015	0.0015	0.0017	0.0014	0.0014	0.0014	0.0013	0.0016	0.0016	0.0016	0.0014	<0.001	<0.001	<0.001	<0.001	0.0019	0.0015	0.0022	0.0018	0.0017	0.0016
Tin	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	<0.01
Titanium	µg/L	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	0.054	0.054	0.062	0.059	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.12	<0.05	0.589	0.144	0.115	0.078
Uranium	µg/L	0.001	0.0026	0.0069	0.0056	0.0051	0.0057	0.0062	0.0042	0.0041	0.0056	0.0049	0.0054	0.0058	0.0047	0.0034	0.0035	<0.001	<0.001	0.0064	0.007	0.0061	0.0061	0.0068	0.0056
Vanadium	µg/L	0.01	0.021	0.026	0.028	0.025	0.027	0.028	0.033	0.036	0.028	0.027	0.03	0.025	0.019	0.019	0.019	<0.01	<0.01	0.039	0.032	0.036	0.037	0.035	0.033
Zinc	µg/L	0.1	0.47	0.54	0.96	0.47	1.27	0.66	0.86	0.78	0.82	0.53	0.52	0.89	0.61	1.43	1.07	<0.1	<0.1	1.04	0.83	1.09	0.81	0.86	0.34
Zirconium	µg/L	0.01	0.018	0.021	0.021	0.022	0.023	0.023	0.018	0.018	0.022	0.021	0.022	0.024	0.024	0.013	0.01	<0.01	<0.01	0.028	0.028	0.027	0.027	0.026	0.02
Dissolved Nutrients																									
Phosphorus	mg-P/L	0.001	0.0036	0.004	0.0071 <sup>(a)</sup>	0.002	0.0031	0.0017	0.0034	0.0029	0.0017	0.0024	0.0024	0.0025	0.0023	<0.01	<0.01	<0.01	-	0.0022	<0.01	<0.01	<0.01	<0.01	<0.01



Table A-3: Comparison of Total and Dissolved Parameters in Water, 2022

Parameter	Unit	DL	BRP-36-5	BRP-32-4	BRP-32-1	BRP-32-5	BRP-32-2	BRP-32-3	BRP-34-A	BRP-34-B	BRP-33-5	BRP-33-4	BRP-33-3	BRP-33-2	BRP-QC-1	BRP-37-A	BRP-37B	FB	BRP-TB	BRP-29-5	BRP-29-4	BRP-29-2	BRP-29-3	BRP-29-1	BRP-33-1
			2022-08-08 Sample	2022-08-09 Sample	2022-08-09 Sample	2022-08-09 Sample	2022-08-09 Sample	2022-08-09 Sample	2022-08-10 Sample	2022-08-10 uplicate (BRP-34	2022-08-10 Sample	2022-08-10 Sample	2022-08-10 Sample	2022-08-10 Sample	2022-08-10 Duplicate (BRP-33-2)	2022-08-11 Sample	2022-08-11 Duplicate (BRP-37-A)	2022-08-12 Field Blank	2022-08-13 Travel Blank	2022-08-13 Sample	2022-08-13 Sample	2022-08-13 Sample	2022-08-13 Sample	2022-08-13 Sample	2022-08-13 Sample
Dissolved Metals																									
Aluminum	µg/L	0.2	3.54	6.4	6.2	6.46	6.6	6.45	4.17	4.38	6.41	6.58	6.45	6.31	6.46	3.61	3.9	<0.2	-	9.76	9.76	9.8	10.2	10	5.33
Antimony	µg/L	0.005	0.0059	0.0091	0.0092	0.0072	0.0082	0.0088	0.0078	0.0076	0.0084	0.0118	0.0084	0.0086	0.0076	0.0065	0.0053	<0.005	-	0.0089	0.0088	0.0084	0.01	0.0073	0.0083
Arsenic	µg/L	0.01	0.126	0.193	0.196	0.197	0.202	0.206	0.206	0.2	0.195	0.195	0.199	0.202	0.201	0.124	0.124	<0.01	-	0.252	0.251	0.244	0.245	0.24	0.2
Barium	µg/L	0.02	3.34	4.62	4.37	4.64	4.6	4.67	4.21	4.22	4.64	4.48	4.65	4.55	4.59	4.15	4.11	<0.02	-	6.96	6.89	6.96	7.16	7.15	4.65
Beryllium	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002	0.003	<0.002	<0.002	0.0027	<0.002
Bismuth	µg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5
Cadmium	µg/L	0.0025	<0.0025	0.0029	0.0026	0.0031	0.0032	0.0032	<0.0025	<0.0025	0.0037	0.0033	<0.0025	<0.0025	<0.0025	<0.0025	0.0026	<0.0025	-	0.0064	0.0059	0.0062	0.0078	0.0075	0.0028
Chromium	µg/L	0.04	<0.04	0.052	0.047	0.045	0.047	0.048	0.04	0.041	0.045	0.05	0.05	0.049	0.046	0.041	0.042	<0.04	-	0.046	0.051	0.046	0.048	0.044	0.043
Cobalt	µg/L	0.005	0.0219	0.0522	0.0558	0.0522	0.0548	0.057	0.103	0.103	0.0538	0.0607	0.0534	0.0625	0.0588	0.0282	0.0269	<0.005	-	0.232	0.237	0.229	0.268	0.275	0.0674
Copper	µg/L	0.05	0.783	1.25	1.22	1.28	1.29	1.28	1.12	1.13	1.27	1.3	1.28	1.23	1.25	0.854	0.928	<0.05	-	1.48	1.48	1.46	1.47	1.49	1.24
Iron	µg/L	0.5	3.73	9.72	9.14	9.67	9.71	9.71	37.1	39.4	9.87	10.1	9.83	9.86	9.6	7.91	7.86	<0.5	-	15.6	15.3	14.7	15.6	15.2	10.3
Lead	µg/L	0.005	<0.005	<0.005	<0.005	<0.005	0.0054	<0.005	<0.005	<0.005	<0.005	<0.0057	0.0055	<0.005	<0.005	<0.005	0.0052	<0.005	-	<0.005	<0.005	<0.005	0.0056	<0.005	<0.005
Lithium	µg/L	0.1	0.39	0.68	0.67	0.67	0.67	0.66	0.66	0.66	0.7	0.66	0.68	0.68	0.69	0.5	0.49	<0.1	-	0.79	0.79	0.78	0.8	0.82	0.65
Manganese	µg/L	0.005	0.893	1.35	1.33	1.33	1.35	1.4	4.17	4.37	1.38	1.43	1.36	1.42	1.42	0.597	0.594	<0.005	-	3.08	3.09	3.02	3.35	3.39	1.55
Mercury	µg/L	0.0005	0.00052	0.00086	0.00054	0.00102	0.00072	0.00069	0.00068	0.0007	0.00064	0.00096	0.00056	0.0006	0.00078	0.0007	0.00072	<0.0005	-	0.00075	0.00078	0.00079	0.00088	0.00087	0.00061
Molybdenum	µg/L	0.01	<0.01	0.011	0.011	0.01	<0.01	0.011	0.01	0.012	<0.01	0.012	0.011	0.01	<0.01	<0.01	<0.01	<0.01	-	0.013	0.013	0.013	0.015	0.011	0.011
Nickel	µg/L	0.02	1.63	2.63	2.57	2.65	2.65	2.66	2.09	2.08	2.61	2.66	2.64	2.58	2.63	1.52	1.59	<0.02	-	3.05	3.06	2.99	3.15	3.2	2.52
Rhenium	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
Selenium	µg/L	0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.025	0.025	0.027	0.025	<0.025	<0.025
Silicon	µg/L	50	69	70	68	68	70	69	74	76	68	67	70	70	108	108	110	<50	-	150	151	154	162	158	69
Silver	µg/L	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.002	0.0022	<0.002	<0.002	<0.002
Strontium	µg/L	0.02	7.08	10.9	10.6	11.2	10.9	11.4	11.3	10.9	11.2	11	11	11.2	11.1	8.1	7.81	<0.02	-	18	18.2	18.2	18.3	18.8	11.3
Sulphur	µg/L	500	1450	2220	2250	2160	2200	2170	2010	2050	2190	2190	2220	2260	2220	1500	1500	<500	-	2360	2360	2350	2360	2340	2190
Thallium	µg/L	0.001	<0.001	0.0019	0.0017	0.0017	0.0016	0.0019	0.0025	0.0018	0.0027	0.0024	0.0019	0.0026	0.0018	0.0013	<0.001	<0.001	-	0.0019	0.0018	0.0022	0.0032	0.002	0.002
Tin	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
Titanium	µg/L	0.05	0.063	<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
Uranium	µg/L	0.001	0.0037	0.0044	0.0047	0.0045	0.0052	0.0047	0.004	0.0041	0.005	<b>0.0063<sup>(m)</sup></b>	0.0041	0.0041	<b>0.0058<sup>(m)</sup></b>	0.0044	0.0025	<0.001	-	<b>0.0077<sup>(m)</sup></b>	0.0072	0.0066	0.0058	0.0055	0.0059
Vanadium	µg/L	0.01	0.013	0.021	0.02	0.022	0.023	0.02	0.023	0.023	0.022	0.022	0.022	0.023	0.022	0.018	0.016	<0.01	-	0.028	0.026	0.027	0.029	0.026	0.023
Zinc	µg/L	0.1	0.51	0.58	0.72	0.41	0.63	0.53	0.52	0.5	0.75	<b>0.65<sup>(m)</sup></b>	<b>0.65<sup>(m)</sup></b>	0.81	0.56	0.5	0.67	<0.1	-	1.15	0.89	0.74	<b>1.31<sup>(m)</sup></b>	0.78	0.46
Zirconium	µg/L	0.01	0.017	0.021	0.022	0.021	0.023	0.022	0.017	0.016	0.021	0.022	0.022	0.022	0.021	0.016	0.014	<0.01	-	0.022	0.024	0.025	0.027	0.023	0.021

Notes:  
- = no data or not applicable.  
**Bolded** values failed to pass one or more quality control checks.  
(m) = value exceeds the corresponding total metal value by 20% or more.  
(p) = value exceeds the corresponding total phosphorus value by 20% or more.  
DL = detection limit; mg-P/L = milligrams per litre as phosphorus; µg/L = micrograms per litre.

**ATTACHMENT**

## Certificate of Analysis





**Environmental**

## CERTIFICATE OF ANALYSIS

**Work Order** : **YL2200334**  
**Client** : **Sabina Gold & Silver Corporation**  
**Contact** : Zenovia Craciunescu  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
Vancouver BC Canada V7X 1M7  
**Telephone** : ----  
**Project** : 21505757/170000/41  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** :  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 20  
**No. of samples analysed** : 20

**Page** : 1 of 18  
**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 14-Apr-2022 13:20  
**Date Analysis Commenced** : 20-Apr-2022  
**Issue Date** : 11-May-2022 12:50

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angeli Marzan	Lab Analyst	Inorganics, Edmonton, Alberta
Caitlin Macey	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.



## Analytical Results

Sub-Matrix: **Water**

Client sample ID

(Matrix: Water)

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					10-Apr-2022 09:20	10-Apr-2022 11:00	10-Apr-2022 12:20	10-Apr-2022 14:00	10-Apr-2022 15:15	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-004	YL2200334-005	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	7.4	18.6	8.2	8.8	8.9	
conductivity	----	E100	2.0	µS/cm	53.0	56.6	54.3	55.4	51.6	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	22.4	23.8	21.6	23.9	21.4	
pH	----	E108	0.10	pH units	7.01	7.05	7.02	7.02	7.05	
solids, total dissolved [TDS]	----	E162	10	mg/L	42	42	40	39	38	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	33.4	41.6	34.7	36.1	33.8	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.12	0.17	0.15	0.36	0.12	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0186	0.0204	0.0190	0.0166	0.0189	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.83	3.00	2.91	3.09	2.81	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.027	0.028	0.029	0.028	0.027	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0200	0.0196	0.0195	0.0284	0.0193	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0037	0.0039	0.0035	0.0032	0.0037	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0015	0.0022	0.0018	0.0010	0.0015	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	0.70	0.75	0.71	0.72	0.70	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	11.5	11.8	11.7	12.1	11.4	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.254	0.242	0.232	0.237	0.238	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.84	5.27	5.73 <sup>RRV</sup>	5.06	4.90	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.55	5.10	5.05 <sup>RRV</sup>	5.21	4.71	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0017	<0.0015	<0.0015	<0.0015	0.0015	
Total Metals										



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time						10-Apr-2022 09:20	10-Apr-2022 11:00	10-Apr-2022 12:20	10-Apr-2022 14:00	10-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit		YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-004	YL2200334-005
						Result	Result	Result	Result	Result
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L		0.00067	0.00058	<0.00050	0.00065	0.00051
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L		0.0109	0.0112	0.0102	0.0107	0.00983
antimony, total	7440-36-0	E466	0.0000050	mg/L		0.0000269	0.0000260	0.0000196	0.0000137	0.0000196
arsenic, total	7440-38-2	E466	0.000010	mg/L		0.000281	0.000270	0.000266	0.000262	0.000260
barium, total	7440-39-3	E466	0.000020	mg/L		0.00794	0.00783	0.00777	0.00864	0.00736
beryllium, total	7440-41-7	E466	0.0000020	mg/L		0.0000026	<0.0000020	0.0000020	0.0000021	0.0000028
bismuth, total	7440-69-9	E466	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, total	7440-42-8	E466	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, total	7440-43-9	E466	0.0000025	mg/L		0.0000068	0.0000060	0.0000054	0.0000068	0.0000072
calcium, total	7440-70-2	E466	0.010	mg/L		4.13	4.21	4.14	4.30	3.90
chromium, total	7440-47-3	E466	0.000040	mg/L		0.000098	0.000095	0.000088	0.000093	0.000091
cobalt, total	7440-48-4	E466	0.0000050	mg/L		0.0000735	0.0000863	0.0000684	0.0000854	0.0000700
copper, total	7440-50-8	E466	0.000050	mg/L		0.00210	0.00208	0.00201	0.00207	0.00195
iron, total	7439-89-6	E466	0.00050	mg/L		0.00872	0.00960	0.00786	0.0105	0.00781
lanthanum, total	7439-91-0	E466	0.000010	mg/L		0.000150	0.000151	0.000147	0.000162	0.000144
lead, total	7439-92-1	E466	0.0000050	mg/L		0.000392	0.000186	0.0000234	0.0000208	0.0000391
lithium, total	7439-93-2	E466	0.00010	mg/L		0.00097	0.00093	0.00094	0.00095	0.00088
magnesium, total	7439-95-4	E466	0.0010	mg/L		2.72	2.81	2.69	2.84	2.62
manganese, total	7439-96-5	E466	0.0000050	mg/L		0.00190	0.00226	0.00174	0.00232	0.00182
molybdenum, total	7439-98-7	E466	0.000010	mg/L		0.000023	0.000015	0.000014	0.000011	0.000014
nickel, total	7440-02-0	E466	0.000020	mg/L		0.00550	0.00561	0.00547	0.00580	0.00525
potassium, total	7440-09-7	E466	0.0050	mg/L		0.562	0.572	0.549	0.560	0.515
selenium, total	7782-49-2	E466	0.000025	mg/L		0.000031	0.000032	0.000031	0.000031	0.000026
silicon, total	7440-21-3	E466	0.050	mg/L		0.342	0.343	0.331	0.342	0.332
silver, total	7440-22-4	E466	0.0000020	mg/L		<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
sodium, total	7440-23-5	E466	0.010	mg/L		0.989	1.00	0.959	0.998	0.921
strontium, total	7440-24-6	E466	0.000020	mg/L		0.0177	0.0182	0.0176	0.0183	0.0172
sulfur, total	7704-34-9	E466	0.50	mg/L		4.01	3.76	3.72	3.84	3.64
thallium, total	7440-28-0	E466	0.0000010	mg/L		0.0000012	0.0000012	0.0000013	0.0000010	0.0000011
tin, total	7440-31-5	E466	0.000010	mg/L		0.000045	0.000011	<0.000010	<0.000010	0.000013





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time						10-Apr-2022 09:20	10-Apr-2022 11:00	10-Apr-2022 12:20	10-Apr-2022 14:00	10-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit		YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-004	YL2200334-005
						Result	Result	Result	Result	Result
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L		0.000058	<0.000050	<0.000050	<0.000050	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L		0.0000076	0.0000071	0.0000091	0.0000071	0.0000068
vanadium, total	7440-62-2	E466	0.000010	mg/L		0.000027	0.000025	0.000027	0.000028	0.000023
zinc, total	7440-66-6	E466	0.00010	mg/L		0.00165	0.00166	0.00122	0.00139	0.00143
zirconium, total	7440-67-7	E466	0.000010	mg/L		0.000049	0.000044	0.000044	0.000044	0.000039
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L		0.00990	0.0110	0.00973	0.0107	0.00965
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L		0.0000183	0.0000177	0.0000139	0.0000198	0.0000158
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L		0.000279	0.000273	0.000265	0.000269	0.000259
barium, dissolved	7440-39-3	E465	0.000020	mg/L		0.00791	0.00796	0.00768	0.00886	0.00739
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L		0.0000024	0.0000036	0.0000032	0.0000028	0.0000022
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, dissolved	7440-42-8	E465	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L		0.0000069	0.0000066	0.0000065	0.0000043	0.0000074
calcium, dissolved	7440-70-2	E465	0.010	mg/L		4.24	4.49	4.03	4.56	4.09
chromium, dissolved	7440-47-3	E465	0.000040	mg/L		0.000092	0.000097	0.000087	0.000096	0.000091
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L		0.0000530	0.0000561	0.0000472	0.0000590	0.0000492
copper, dissolved	7440-50-8	E465	0.000050	mg/L		0.00214	0.00222	0.00204	0.00220	0.00204
dissolved metals filtration location	----	EP465	-	-		Field	Field	Field	Field	Field
iron, dissolved	7439-89-6	E465	0.00050	mg/L		0.00402	0.00447	0.00386	0.00508	0.00423
lead, dissolved	7439-92-1	E465	0.0000050	mg/L		0.000152	0.000114	0.0000121	0.0000397 <sup>DTC</sup>	0.0000325
lithium, dissolved	7439-93-2	E465	0.00010	mg/L		0.00098	0.00098	0.00094	0.00102	0.00092
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L		2.88	3.06	2.79	3.04	2.72
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L		0.000915	0.000962	0.000775	0.00118	0.000842
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L		0.00134	0.00099	0.00062	0.00057	0.00055
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L		0.000017	0.000014	0.000013	0.000015	0.000015
nickel, dissolved	7440-02-0	E465	0.000020	mg/L		0.00567	0.00602	0.00542	0.00624	0.00548
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
potassium, dissolved	7440-09-7	E465	0.0050	mg/L		0.568	0.612	0.549	0.609	0.556
rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
selenium, dissolved	7782-49-2	E465	0.000025	mg/L		0.000034	0.000030	0.000032	0.000034	0.000030



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time						10-Apr-2022 09:20	10-Apr-2022 11:00	10-Apr-2022 12:20	10-Apr-2022 14:00	10-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit	YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-004	YL2200334-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.346	0.349	0.337	0.355	0.326	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.05	1.07	0.978	1.25	0.976	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0185	0.0195	0.0177	0.0199	0.0177	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.97	4.06	3.80	4.20	3.72	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000012	0.0000013	0.0000010	<0.0000010	<0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000014	<0.000010	<0.000010	0.000060 <sup>DTC</sup>	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000077	0.0000076	0.0000069	0.0000087	0.0000080	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000026	0.000026	0.000024	0.000025	0.000024	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00151	0.00161	0.00122	0.00188 <sup>DTC</sup>	0.00180	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000048	0.000049	0.000044	0.000049	0.000049	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	

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



Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-3-Bottom	BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4
Client sampling date / time					10-Apr-2022 12:20	11-Apr-2022 09:45	11-Apr-2022 11:45	11-Apr-2022 14:45	11-Apr-2022 16:20	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-006	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	7.7	11.0	8.0	10.0	7.7	
conductivity	----	E100	2.0	µS/cm	----	54.2	54.9	53.3	51.8	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	----	23.1	23.3	22.8	22.7	
pH	----	E108	0.10	pH units	----	7.10	7.11	7.10	7.10	
solids, total dissolved [TDS]	----	E162	10	mg/L	39	40	42	36	37	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	29.1	36.2	34.8	36.4	34.9	
solids, total suspended [TSS]	----	E160	3.0	mg/L	----	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	----	0.15	0.16	0.23	0.16	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	----	0.0097	0.0103	0.0135	0.0136	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.92	2.34	2.40	2.32	2.23	
fluoride	16984-48-8	E235.F	0.020	mg/L	----	0.025	0.026	0.025	0.024	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0192	0.0115	0.0120	0.0113	0.0116	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	----	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	----	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	----	0.0040	0.0043 <sup>RRV</sup>	0.0045	0.0031	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	----	0.0016	0.0024 <sup>RRV</sup>	0.0018	0.0016	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	----	0.56	0.60	0.58	0.56	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	----	10.6	10.8	10.5	10.1	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	11.7	----	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	----	0.286	0.333	0.281	0.257	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	----	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	----	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	----	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	----	6.66	6.67	7.62	8.16 <sup>RRV</sup>	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	----	6.41	6.44	6.32	6.32 <sup>RRV</sup>	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	----	0.0020	0.0022	0.0021	0.0019	
Total Metals										



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-3-Bottom	BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4
Client sampling date / time						10-Apr-2022 12:20	11-Apr-2022 09:45	11-Apr-2022 11:45	11-Apr-2022 14:45	11-Apr-2022 16:20
Analyte	CAS Number	Method	LOR	Unit		YL2200334-006	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010
						Result	Result	Result	Result	Result
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L		----	0.00089	----	0.00094	0.00079
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L		----	0.0122	0.0114	0.0111	0.0118
antimony, total	7440-36-0	E466	0.0000050	mg/L		----	0.0000319	0.0000432	0.0000240	0.0000341
arsenic, total	7440-38-2	E466	0.000010	mg/L		----	0.000286	0.000288	0.000287	0.000292
barium, total	7440-39-3	E466	0.000020	mg/L		----	0.00906	0.00918	0.00865	0.00878
beryllium, total	7440-41-7	E466	0.0000020	mg/L		----	0.0000027	0.0000025	0.0000026	0.0000026
bismuth, total	7440-69-9	E466	0.0000010	mg/L		----	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, total	7440-42-8	E466	0.0050	mg/L		----	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, total	7440-43-9	E466	0.0000025	mg/L		----	0.0000086	0.0000106	0.0000057	0.0000064
calcium, total	7440-70-2	E466	0.010	mg/L		----	4.44	4.47	4.36	4.32
chromium, total	7440-47-3	E466	0.000040	mg/L		----	0.000123	0.000119	0.000114	0.000122
cobalt, total	7440-48-4	E466	0.0000050	mg/L		----	0.0000954	0.000101	0.0000949	0.000102
copper, total	7440-50-8	E466	0.000050	mg/L		----	0.00190	0.00188	0.00180	0.00184
iron, total	7439-89-6	E466	0.00050	mg/L		----	0.0250	0.0236	0.0236	0.0260
lanthanum, total	7439-91-0	E466	0.000010	mg/L		----	0.000101	0.000106	0.000100	0.000102
lead, total	7439-92-1	E466	0.0000050	mg/L		----	0.0000551	0.0000695	0.0000412	0.0000544
lithium, total	7439-93-2	E466	0.00010	mg/L		----	0.00087	0.00090	0.00090	0.00087
magnesium, total	7439-95-4	E466	0.0010	mg/L		----	2.94	2.98	2.84	2.89
manganese, total	7439-96-5	E466	0.0000050	mg/L		----	0.00680	0.00677	0.00718	0.00806
molybdenum, total	7439-98-7	E466	0.000010	mg/L		----	0.000010	<0.000010	0.000010	<0.000010
nickel, total	7440-02-0	E466	0.000020	mg/L		----	0.00462	0.00466	0.00444	0.00451
potassium, total	7440-09-7	E466	0.0050	mg/L		----	0.676	0.679	0.658	0.665
selenium, total	7782-49-2	E466	0.000025	mg/L		----	0.000035	0.000036	0.000031	0.000034
silicon, total	7440-21-3	E466	0.050	mg/L		----	0.275	0.285	0.291	0.290
silver, total	7440-22-4	E466	0.0000020	mg/L		----	<0.0000020	<0.0000020	<0.0000020	<0.0000020
sodium, total	7440-23-5	E466	0.010	mg/L		----	1.14	1.15	1.07	1.10
strontium, total	7440-24-6	E466	0.000020	mg/L		----	0.0184	0.0184	0.0176	0.0183
sulfur, total	7704-34-9	E466	0.50	mg/L		----	3.56	3.69	3.58	3.64
thallium, total	7440-28-0	E466	0.0000010	mg/L		----	0.0000014	0.0000013	<0.0000010	0.0000010
tin, total	7440-31-5	E466	0.000010	mg/L		----	0.000019	0.000013	0.000012	0.000016





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-3-Bottom	BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4
Client sampling date / time						10-Apr-2022 12:20	11-Apr-2022 09:45	11-Apr-2022 11:45	11-Apr-2022 14:45	11-Apr-2022 16:20
Analyte	CAS Number	Method	LOR	Unit		YL2200334-006	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010
						Result	Result	Result	Result	Result
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	----	----	0.000079	0.000109	<0.000050	0.000094
uranium, total	7440-61-1	E466	0.0000010	mg/L	----	----	0.0000074	0.0000078	0.0000077	0.0000070
vanadium, total	7440-62-2	E466	0.000010	mg/L	----	----	0.000033	0.000034	0.000033	0.000032
zinc, total	7440-66-6	E466	0.00010	mg/L	----	----	0.00296	0.00340	0.00314	0.00229
zirconium, total	7440-67-7	E466	0.000010	mg/L	----	----	0.000047	0.000048	0.000046	0.000049
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	----	----	0.0102	0.0102	0.00989	0.00983
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	----	----	0.0000229	0.0000144	0.0000154	0.0000154
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	----	----	0.000282	0.000279	0.000286	0.000271
barium, dissolved	7440-39-3	E465	0.000020	mg/L	----	----	0.00880	0.00840	0.00844	0.00841
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	----	----	<0.0000020	<0.0000020	<0.0000020	0.0000024
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	----	----	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, dissolved	7440-42-8	E465	0.0050	mg/L	----	----	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	----	----	0.0000098	0.0000063	0.0000046	0.0000070
calcium, dissolved	7440-70-2	E465	0.010	mg/L	----	----	4.44	4.43	4.26	4.27
calcium, dissolved	7440-70-2	E421	0.050	mg/L	4.26	----	----	----	----	----
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	----	----	0.000112	0.000115	0.000113	0.000102
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	----	----	0.0000771	0.0000690	0.0000606	0.0000668
copper, dissolved	7440-50-8	E465	0.000050	mg/L	----	----	0.00186	0.00182	0.00182	0.00178
dissolved metals filtration location	----	EP465	-	-	----	----	Field	Field	Field	Field
iron, dissolved	7439-89-6	E465	0.00050	mg/L	----	----	0.0115	0.0114	0.0109	0.0113
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	----	----	0.0000415	0.0000178	0.0000137	0.0000106
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	----	----	0.00088	0.00091	0.00093	0.00085
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	----	----	2.91	2.98	2.96	2.93
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.83	----	----	----	----	----
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	----	----	0.00551	0.00548	0.00547	0.00590
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	----	----	0.00076	0.00125	0.00076	0.00064
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	----	----	<0.000010	<0.000010	<0.000010	<0.000010
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	----	----	0.00453	0.00458	0.00447	0.00440
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	----	----	<0.010	<0.010	<0.010	<0.010
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	----	----	0.670	0.679	0.660	0.648



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-3-Bottom	BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4
Client sampling date / time					10-Apr-2022 12:20	11-Apr-2022 09:45	11-Apr-2022 11:45	11-Apr-2022 14:45	11-Apr-2022 16:20	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-006	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.646	----	----	----	----	
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L	----	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	----	0.000033	0.000038	0.000035	0.000032	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	----	0.275	0.270	0.287	0.284	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	----	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	----	1.16	1.14	1.13	1.09	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.08	----	----	----	----	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	----	0.0182	0.0178	0.0182	0.0176	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	----	3.68	3.62	3.72	3.53	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	----	0.0000013	0.0000011	0.0000012	0.0000011	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	----	0.000012	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	----	0.000162	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	----	0.0000074	0.0000080	0.0000054	0.0000064	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	----	0.000030	0.000029	0.000031	0.000026	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	----	0.00382	0.00262	0.00314	0.00177	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	----	0.000047	0.000050	0.000051	0.000047	
dissolved mercury filtration location	----	EP509-L	-	-	----	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	----	----	----	----	

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



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-35-5	Dup-1	BRP-36-1	BRP-36-2	BRP-36-3
Client sampling date / time						11-Apr-2022 13:00	11-Apr-2022 10:00	12-Apr-2022 12:15	12-Apr-2022 13:30	12-Apr-2022 14:40
Analyte	CAS Number	Method	LOR	Unit	YL2200334-011	YL2200334-012	YL2200334-013	YL2200334-014	YL2200334-015	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	15.7	17.5	6.8	7.5	7.8	
conductivity	----	E100	2.0	µS/cm	50.4	55.5	39.2	39.5	42.5	
hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100	0.50	mg/L	22.6	22.9	16.7	16.1	16.5	
pH	----	E108	0.10	pH units	7.08	7.10	7.00	6.97	6.99	
solids, total dissolved [TDS]	----	E162	10	mg/L	38	37	22	24	24	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	37.2	40.0	25.9	26.9	28.7	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.16	0.27	0.20	0.20	0.16	
<b>Anions and Nutrients</b>										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0131	0.0092	0.0109	0.0096	0.0108	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.17	2.38	1.69	1.73	1.88	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.023	0.026	<0.020	<0.020	0.021	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0130	0.0119	0.0147	0.0252	0.0138	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0047	0.0043	0.0033	0.0029	0.0032	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0014	0.0014	0.0010	0.0014	0.0018	
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	0.54	0.55	<0.50	<0.50	<0.50	
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	9.81	10.7	7.70	7.81	8.41	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.262	0.282	0.223	0.230	0.249	
<b>Cyanides</b>										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
<b>Organic / Inorganic Carbon</b>										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.02	6.48	4.97	5.59	6.36	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	5.61	6.25	4.88	4.86	5.24	
<b>Total Sulfides</b>										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0016	0.0020	<0.0015	<0.0015	<0.0015	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00073	----	0.00051	0.00118	0.00057	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-35-5	Dup-1	BRP-36-1	BRP-36-2	BRP-36-3
Client sampling date / time						11-Apr-2022 13:00	11-Apr-2022 10:00	12-Apr-2022 12:15	12-Apr-2022 13:30	12-Apr-2022 14:40
Analyte	CAS Number	Method	LOR	Unit	YL2200334-011	YL2200334-012	YL2200334-013	YL2200334-014	YL2200334-015	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0108	0.0114	0.0143	0.00925	0.00867	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000226	0.0000454	0.0000487	0.0000451	0.0000324	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000288	0.000282	0.000245	0.000219	0.000225	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00859	0.00874	0.00696	0.00630	0.00666	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	0.0000022	0.0000023	0.0000020	0.0000021	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000078	0.0000070	0.0000093	0.0000062	0.0000069	
calcium, total	7440-70-2	E466	0.010	mg/L	4.34	4.35	3.25	3.08	3.37	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000123	0.000121	0.000115	0.000130	0.000092	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000944	0.0000940	0.0000656	0.0000558	0.0000587	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00180	0.00183	0.00153	0.00141	0.00147	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0230	0.0234	0.0169	0.0123	0.0128	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000102	0.000102	0.000116	0.000078	0.000083	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000375	0.0000819	0.0000863	0.0000529	0.0000282	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00090	0.00093	0.00073	0.00069	0.00072	
magnesium, total	7439-95-4	E466	0.0010	mg/L	2.87	2.83	2.18	2.08	2.20	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00692	0.00650	0.00229	0.00205	0.00218	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00438	0.00444	0.00337	0.00316	0.00340	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.656	0.654	0.528	0.494	0.539	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000034	0.000032	0.000025	0.000030	0.000027	
silicon, total	7440-21-3	E466	0.050	mg/L	0.286	0.269	0.250	0.214	0.226	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	1.08	1.09	0.862	0.794	0.871	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0179	0.0177	0.0134	0.0130	0.0136	
sulfur, total	7704-34-9	E466	0.50	mg/L	3.66	3.60	2.89	2.73	2.80	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000011	0.0000013	<0.0000010	<0.0000010	0.0000010	
tin, total	7440-31-5	E466	0.000010	mg/L	0.000027	0.000012	0.000019	0.000051	0.000017	
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	0.000069	0.000236	0.000070	0.000052	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000075	0.0000080	0.0000067	0.0000056	0.0000069	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-35-5	Dup-1	BRP-36-1	BRP-36-2	BRP-36-3
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2200334-011	YL2200334-012	YL2200334-013	YL2200334-014	YL2200334-015	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000033	0.000032	0.000035	0.000027	0.000025	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00230	0.00351	0.00282	0.00275	0.00177	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000047	0.000047	0.000039	0.000035	0.000035	
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00984	0.0106	0.00842	0.00802	0.00804	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000143	0.0000181	0.0000202	0.0000186	0.0000137	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000265	0.000266	0.000226	0.000203	0.000213	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00795	0.00849	0.00648	0.00620	0.00635	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000023	0.0000023	<0.0000020	<0.0000020	<0.0000020	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000041	0.0000072	0.0000054	0.0000032	0.0000027	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.27	4.31	3.36	3.21	3.31	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	----	----	3.32	3.21	3.22	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000104	0.000107	0.000092	0.000085	0.000089	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000636	0.0000752	0.0000449	0.0000450	0.0000488	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00174	0.00183	0.00147	0.00141	0.00142	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0115	0.0126	0.00707	0.00608	0.00754	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000070	0.0000258	0.0000192	0.0000118	<0.0000050	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00088	0.00091	0.00073	0.00070	0.00074	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.91	2.95	2.31	2.18	2.31	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	----	----	2.05	1.97	2.05	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00533	0.00547	0.00153	0.00150	0.00182	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00073	0.00058	0.00053	<0.00050	0.00060	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00434	0.00453	0.00348	0.00322	0.00341	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.642	0.656	0.554	0.511	0.528	
potassium, dissolved	7440-09-7	E421	0.050	mg/L	----	----	0.534	0.510	0.517	
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-35-5	Dup-1	BRP-36-1	BRP-36-2	BRP-36-3
Client sampling date / time						11-Apr-2022 13:00	11-Apr-2022 10:00	12-Apr-2022 12:15	12-Apr-2022 13:30	12-Apr-2022 14:40
Analyte	CAS Number	Method	LOR	Unit	YL2200334-011	YL2200334-012	YL2200334-013	YL2200334-014	YL2200334-015	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000036	0.000038	0.000026	<0.000025	0.000034	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.267	0.271	0.234	0.222	0.217	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.09	1.12	0.908	0.826	0.872	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	----	----	0.815	0.775	0.788	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0175	0.0177	0.0140	0.0135	0.0136	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.49	3.51	2.80	2.69	2.66	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000011	0.0000011	<0.0000010	<0.0000010	<0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	0.000023	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000054	0.0000069	0.0000069	0.0000055	0.0000050	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000026	0.000027	0.000023	0.000021	0.000023	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00148	0.00286	0.00204	0.00201	0.00138	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000045	0.000044	0.000038	0.000033	0.000034	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	----	----	Field	Field	Field	

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



Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-36-4	BRP-36-5	FB-1	GLTL-TOP	GLTL-Bottom
Client sampling date / time					12-Apr-2022 15:45	12-Apr-2022 11:15	12-Apr-2022 13:40	12-Apr-2022 17:45	12-Apr-2022 17:45	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-016	YL2200334-017	YL2200334-018	YL2200334-019	YL2200334-020	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	8.5	8.6	<1.0	9.9	9.0	
conductivity	----	E100	2.0	µS/cm	47.9	39.5	<2.0	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	18.8	16.4	<0.50	----	----	
pH	----	E108	0.10	pH units	7.05	6.98	5.72	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	23	23	<10	38	44	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	32.1	27.4	<1.0	32.9	32.9	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	----	----	
turbidity	----	E121	0.10	NTU	0.22	0.30	<0.10	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0075	0.0097	0.0537 <sup>RRV</sup>	----	----	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.09	1.71	<0.50	3.33	3.38	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.022	<0.020	<0.020	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0126	0.0125	<0.0050	0.0127	0.0159	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0050	0.0033	<0.0010	----	----	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0016	0.0017	<0.0010	----	----	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	9.46	7.77	<0.050	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	----	----	----	12.6	12.6	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.253	0.221	0.058	----	----	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.98	5.49	<0.50	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	5.77	4.83	<0.50	----	----	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0022	<0.0015	<0.0015	----	----	
Total Metals										



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-36-4	BRP-36-5	FB-1	GLTL-TOP	GLTL-Bottom
Client sampling date / time					12-Apr-2022 15:45	12-Apr-2022 11:15	12-Apr-2022 13:40	12-Apr-2022 17:45	12-Apr-2022 17:45	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-016	YL2200334-017	YL2200334-018	YL2200334-019	YL2200334-020	
					Result	Result	Result	Result	Result	
Total Metals										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00090	0.00085	<0.00050	----	----	
Total Metals (Undigested)										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0110	0.0211	<0.00020	----	----	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000786	0.0000290	0.0000061 <sup>RRV</sup>	----	----	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000245	0.000220	<0.000010	----	----	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00759	0.00773	<0.000020	----	----	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	0.0000028	<0.0000020	----	----	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000061	0.0000073	<0.0000025	----	----	
calcium, total	7440-70-2	E466	0.010	mg/L	3.82	3.22	<0.010	----	----	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000106	0.000129	<0.000040	----	----	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000794	0.0000796	<0.0000050	----	----	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00166	0.00166	<0.000050	----	----	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0150	0.0225	<0.00050	----	----	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000100	0.000148	<0.000010	----	----	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000379	0.000299	<0.0000050	----	----	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00081	0.00070	<0.00010	----	----	
magnesium, total	7439-95-4	E466	0.0010	mg/L	2.59	2.17	<0.0010	----	----	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00308	0.00275	<0.0000050	----	----	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0.000020 <sup>RRV</sup>	----	----	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00387	0.00342	<0.000020	----	----	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.618	0.519	<0.0050	----	----	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000028	0.000028	<0.000025	----	----	
silicon, total	7440-21-3	E466	0.050	mg/L	0.291	0.231	<0.050	----	----	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
sodium, total	7440-23-5	E466	0.010	mg/L	0.990	0.845	<0.010	----	----	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0159	0.0135	<0.000020	----	----	
sulfur, total	7704-34-9	E466	0.50	mg/L	3.26	2.68	<0.50	----	----	
thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	0.0000012	<0.0000010	----	----	
tin, total	7440-31-5	E466	0.000010	mg/L	0.000012	0.000012	<0.000010	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-36-4	BRP-36-5	FB-1	GLTL-TOP	GLTL-Bottom
(Matrix: Water)										
Client sampling date / time										
					12-Apr-2022 15:45	12-Apr-2022 11:15	12-Apr-2022 13:40	12-Apr-2022 17:45	12-Apr-2022 17:45	
Analyte	CAS Number	Method	LOR	Unit	YL2200334-016	YL2200334-017	YL2200334-018	YL2200334-019	YL2200334-020	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000058	0.000391	<0.000050	----	----	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000057	0.0000083	<0.0000010	----	----	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000029	0.000044	<0.000010	----	----	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00172	0.00204	0.00045 <sup>RRV</sup>	----	----	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000034	0.000034	<0.000010	----	----	
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00909	0.00789	<0.00020	----	----	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000154	0.0000122	0.0000068 <sup>RRV</sup>	----	----	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000240	0.000209	<0.000010	----	----	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00722	0.00611	<0.000020	----	----	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000035	0.0000046	<0.0000025	----	----	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.72	3.23	<0.010	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	3.70	3.22	----	4.90	5.02	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000092	0.000082	<0.000040	----	----	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000649	0.0000437	<0.0000050	----	----	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00156	0.00138	<0.000050	----	----	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	----	----	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00711	0.00655	<0.00050	----	----	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000061	0.0000491	<0.0000050	----	----	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00084	0.00072	<0.00010	----	----	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.54	2.17	<0.0010	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.31	2.03	----	3.20	3.36	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00211	0.00152	<0.0000050	----	----	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00138	0.00140	0.00072 <sup>RRV</sup>	----	----	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0.000019 <sup>RRV</sup>	----	----	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00379	0.00331	<0.000020	----	----	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	----	----	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.594	0.512	<0.0050	----	----	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-36-4	BRP-36-5	FB-1	GLTL-TOP	GLTL-Bottom
Client sampling date / time						12-Apr-2022 15:45	12-Apr-2022 11:15	12-Apr-2022 13:40	12-Apr-2022 17:45	12-Apr-2022 17:45
Analyte	CAS Number	Method	LOR	Unit	YL2200334-016	YL2200334-017	YL2200334-018	YL2200334-019	YL2200334-020	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.592	0.523	----	0.703	0.716	
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000028	0.000025	<0.000025	----	----	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.246	0.220	<0.050	----	----	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.02	0.822	<0.010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.09	0.786	----	1.19	1.25	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0155	0.0130	<0.000020	----	----	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.22	2.69	<0.50	----	----	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000012	<0.0000010	<0.0000010	----	----	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0.000012 <sup>RRV</sup>	----	----	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	----	----	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000061	0.0000062	<0.0000010	----	----	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000025	0.000022	<0.000010	----	----	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00132	0.00119	0.00058 <sup>RRV</sup>	----	----	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000038	0.000032	<0.000010	----	----	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	----	Laboratory	Laboratory	

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2200334	Page	: 1 of 65
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Zenovia Craciunescu	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 446 5593
Project	: 21505757/170000/41	Date Samples Received	: 14-Apr-2022 13:20
PO	: ----	Issue Date	: 11-May-2022 12:51
C-O-C number	: ----		
Sampler	: ----		
Site	:		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 20		
No. of samples analysed	: 20		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### **Workorder Comments**

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

### **Summary of Outliers**

#### **Outliers : Quality Control Samples**

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

#### **Outliers: Reference Material (RM) Samples**

- No Reference Material (RM) Sample outliers occur.

#### **Outliers : Analysis Holding Time Compliance (Breaches)**

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

### ***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.





## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-36-1	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-36-2	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-36-3	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-36-4	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-36-5	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB-1	E298	12-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-35-1	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-35-2	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-35-3	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-35-4	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-35-5	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Dup-1	E298	11-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-1	E298	10-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-2	E298	10-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-3	E298	10-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-4	E298	10-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-5	E298	10-Apr-2022	21-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-2	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3-Bottom	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-4	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-5	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-35-1	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE Dup-1	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-1	E235.Cl	10-Apr-2022	----	----	----		20-Apr-2022	28 days	11 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-36-1	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-36-2	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-36-3	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-36-4	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-36-5	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB-1	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLTL-Bottom	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE GLTL-TOP	E235.Cl	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-35-2	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-35-3	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-35-4	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-35-5	E235.Cl	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-35-1	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-35-2	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-35-3	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-35-4	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-35-5	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	✖ EHTL



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Dup-1	E378-U	11-Apr-2022	----	----	----		21-Apr-2022	3 days	10 days	<div>✖ EHTL</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-1	E378-U	10-Apr-2022	----	----	----		21-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-2	E378-U	10-Apr-2022	----	----	----		21-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-3	E378-U	10-Apr-2022	----	----	----		21-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-4	E378-U	10-Apr-2022	----	----	----		21-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-5	E378-U	10-Apr-2022	----	----	----		21-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-36-1	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-36-2	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-36-3	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-36-4	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-36-5	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE FB-1	E378-U	12-Apr-2022	----	----	----		21-Apr-2022	3 days	9 days	<div>✖ EHT</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-2	E235.F	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-3	E235.F	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-4	E235.F	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-5	E235.F	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-35-1	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE Dup-1	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-1	E235.F	10-Apr-2022	----	----	----		20-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-36-1	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-36-2	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-36-3	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-36-4	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-36-5	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB-1	E235.F	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-35-2	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-35-3	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-35-4	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-35-5	E235.F	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-35-1	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Dup-1	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3-Bottom	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR





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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO3-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	11 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-36-1	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-36-2	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-36-3	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-36-4	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-36-5	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB-1	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLTL-Bottom	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>



Matrix: **Water**

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE GLTL-TOP	E235.NO3-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-35-2	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-35-3	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-35-4	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-35-5	E235.NO3-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-35-1	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Dup-1	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO2-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO2-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTR



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO2-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO2-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	* EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO2-L	10-Apr-2022	----	----	----		20-Apr-2022	3 days	11 days	* EHTR
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-36-1	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-36-2	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-36-3	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-36-4	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-36-5	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB-1	E235.NO2-L	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	* EHT





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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-35-2	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-35-3	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-35-4	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-35-5	E235.NO2-L	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-36-1	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-36-2	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-36-3	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-36-4	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-36-5	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB-1	E392	12-Apr-2022	----	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-35-1	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-35-2	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-35-3	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-35-4	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-35-5	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE Dup-1	E392	11-Apr-2022	----	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-1	E392	10-Apr-2022	----	----	----		25-Apr-2022	28 days	15 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-2	E392	10-Apr-2022	----	----	----		25-Apr-2022	28 days	15 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-3	E392	10-Apr-2022	----	----	----		25-Apr-2022	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-4	E392	10-Apr-2022	----	----	----		25-Apr-2022	28 days	15 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-5	E392	10-Apr-2022	----	----	----		25-Apr-2022	28 days	15 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.SO4-L	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.SO4-L	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.SO4-L	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.SO4-L	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-35-1	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE Dup-1	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✔





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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.SO4-L	10-Apr-2022	----	----	----		20-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-36-1	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-36-2	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-36-3	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-36-4	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-36-5	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE FB-1	E235.SO4-L	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-35-2	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-35-3	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-35-4	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-35-5	E235.SO4-L	11-Apr-2022	----	----	----		20-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-32-3-Bottom	E235.SO4	10-Apr-2022	----	----	----		20-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLTL-Bottom	E235.SO4	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE GLTL-TOP	E235.SO4	12-Apr-2022	----	----	----		20-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-36-1	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-36-2	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-36-3	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-36-4	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-36-5	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB-1	E375-U	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-35-1	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-35-2	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-35-3	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-35-4	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-35-5	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) Dup-1	E375-U	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E375-U	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E375-U	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E375-U	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E375-U	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E375-U	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-36-1	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-36-2	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-36-3	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-36-4	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-36-5	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB-1	E318	12-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	13 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-35-1	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-35-2	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-35-3	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-35-4	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-35-5	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) Dup-1	E318	11-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E318	10-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E318	10-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	15 days	✓



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E318	10-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E318	10-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E318	10-Apr-2022	21-Apr-2022	----	----		25-Apr-2022	28 days	15 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-36-1	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-36-2	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-36-3	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-36-4	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-36-5	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB-1	E372-S	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓





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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-35-1	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-35-2	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-35-3	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-35-4	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-35-5	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) Dup-1	E372-S	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-1	E372-S	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-2	E372-S	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-3	E372-S	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-4	E372-S	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-5	E372-S	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-1	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-2	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-3	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-4	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-5	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-1	E339	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-1	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-2	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-3	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-4	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-5	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Dup-1	E339	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E339	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E339	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E339	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E339	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓





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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E339	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-1	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-2	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-3	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-4	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-5	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-1	E333	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-1	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-2	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-3	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-4	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-5	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Dup-1	E333	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E333	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E333	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E333	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E333	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔
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UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E333	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✔



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-1	E336	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-2	E336	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-3	E336	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-4	E336	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-36-5	E336	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✔
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Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-2	E336	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-3	E336	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✔





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-35-4	E336	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
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Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E336	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E336	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E336	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E336	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E336	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-36-1	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-36-2	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-36-3	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-36-4	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-36-5	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) FB-1	E509-L	12-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-35-1	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-35-2	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-35-3	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-35-4	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-35-5	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) Dup-1	E509-L	11-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-32-1	E509-L	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-32-2	E509-L	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-32-3	E509-L	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-32-4	E509-L	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-32-5	E509-L	10-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-36-1	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-36-2	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓





Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-36-3	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-36-4	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-36-5	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) FB-1	E465	12-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	14 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-35-1	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-35-2	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-35-3	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-35-4	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-35-5	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) Dup-1	E465	11-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-32-1	E465	10-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	16 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-32-2	E465	10-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	16 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-32-3	E465	10-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	16 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-32-4	E465	10-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	16 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-32-5	E465	10-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	16 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-36-1	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-36-2	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-36-3	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-36-4	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-36-5	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) GLTL-Bottom	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) GLTL-TOP	E421	12-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	24 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-32-3-Bottom	E421	10-Apr-2022	05-May-2022	----	----		06-May-2022	180 days	26 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-35-1	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-35-2	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-35-3	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-35-4	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-35-5	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Dup-1	E358-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E358-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E358-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E358-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E358-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E358-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-36-1	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-36-2	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-36-3	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-36-4	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-36-5	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB-1	E358-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-35-1	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-35-2	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-35-3	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-35-4	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-35-5	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) Dup-1	E355-L	11-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E355-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E355-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E355-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E355-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E355-L	10-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-36-1	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-36-2	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-36-3	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-36-4	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-36-5	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB-1	E355-L	12-Apr-2022	21-Apr-2022	----	----		21-Apr-2022	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-36-1	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-36-2	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-36-3	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-36-4	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-36-5	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB-1	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLTL-Bottom	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE GLTL-TOP	E290	12-Apr-2022	----	----	----		22-Apr-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-35-1	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-35-2	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-35-3	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-35-4	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-35-5	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE Dup-1	E290	11-Apr-2022	----	----	----		22-Apr-2022	14 days	11 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-1	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-2	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3-Bottom	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-4	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-5	E290	10-Apr-2022	----	----	----		22-Apr-2022	14 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-36-1	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-36-2	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓





Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-36-3	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-36-4	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-36-5	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE FB-1	E100	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-35-1	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-35-2	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-35-3	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-35-4	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-35-5	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE Dup-1	E100	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-1	E100	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-2	E100	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-3	E100	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-4	E100	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-5	E100	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Physical Tests : pH by Meter										
HDPE BRP-36-4	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	232 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-36-3	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	233 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-36-2	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	234 hrs	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE FB-1	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	234 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-36-1	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	236 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-36-5	E108	12-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	237 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-35-4	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	256 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-35-3	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	257 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-35-5	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	259 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-35-2	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	260 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-35-1	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	262 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE Dup-1	E108	11-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	262 hrs	<div>✖</div> EHTR-FM





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-32-5	E108	10-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	281 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-4	E108	10-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	282 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-3	E108	10-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	284 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-2	E108	10-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	285 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-1	E108	10-Apr-2022	----	----	----		22-Apr-2022	0.25 hrs	287 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-4	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-5	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-35-1	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-35-2	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	* EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE Dup-1	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-1	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-2	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3-Bottom	E162	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-36-2	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-36-3	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-36-4	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>
Physical Tests : TDS by Gravimetry										
HDPE FB-1	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE GLTL-Bottom	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE GLTL-TOP	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-35-3	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-35-4	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-35-5	E162	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-36-1	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP-36-5	E162	12-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-4	E160	10-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-5	E160	10-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	✖ EHT





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-35-1	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-35-2	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE Dup-1	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	10 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-1	E160	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-2	E160	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-3	E160	10-Apr-2022	----	----	----		21-Apr-2022	7 days	11 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-36-2	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-36-3	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-36-4	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	<div>✖ EHT</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE FB-1	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-35-3	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-35-4	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-35-5	E160	11-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-36-1	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-36-5	E160	12-Apr-2022	----	----	----		21-Apr-2022	7 days	9 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-1	E121	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-2	E121	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-3	E121	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	✖ EHTR



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-4	E121	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-5	E121	10-Apr-2022	----	----	----		20-Apr-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-36-1	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-36-2	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-36-3	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-36-4	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-36-5	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE FB-1	E121	12-Apr-2022	----	----	----		20-Apr-2022	3 days	8 days	<div>✖ EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-35-1	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	<div>✖ EHTL</div>





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-35-2	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-35-3	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-35-4	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-35-5	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE Dup-1	E121	11-Apr-2022	----	----	----		20-Apr-2022	3 days	9 days	* EHTL
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-36-1	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-36-2	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-36-3	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-36-4	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-36-5	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) FB-1	E466	12-Apr-2022	----	----	----		26-Apr-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-35-1	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-35-2	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-35-3	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-35-4	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-35-5	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) Dup-1	E466	11-Apr-2022	----	----	----		26-Apr-2022	180 days	15 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-1	E466	10-Apr-2022	----	----	----		26-Apr-2022	180 days	16 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-2	E466	10-Apr-2022	----	----	----		26-Apr-2022	180 days	16 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-3	E466	10-Apr-2022	----	----	----		26-Apr-2022	180 days	16 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-4	E466	10-Apr-2022	----	----	----		26-Apr-2022	180 days	16 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-5	E466	10-Apr-2022	----	----	----		26-Apr-2022	180 days	16 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-36-1	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-36-2	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-36-3	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓





Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-36-4	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-36-5	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) FB-1	E508-L	12-Apr-2022	----	----	----		22-Apr-2022	28 days	10 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-35-1	E508-L	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-35-3	E508-L	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-35-4	E508-L	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-35-5	E508-L	11-Apr-2022	----	----	----		22-Apr-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-32-1	E508-L	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-32-2	E508-L	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-32-3	E508-L	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-32-4	E508-L	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-32-5	E508-L	10-Apr-2022	----	----	----		22-Apr-2022	28 days	12 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-1	E395	10-Apr-2022	----	----	----		20-Apr-2022	7 days	10 days	* EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-2	E395	10-Apr-2022	----	----	----		20-Apr-2022	7 days	10 days	* EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-3	E395	10-Apr-2022	----	----	----		20-Apr-2022	7 days	10 days	* EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-4	E395	10-Apr-2022	----	----	----		20-Apr-2022	7 days	10 days	* EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-5	E395	10-Apr-2022	----	----	----		20-Apr-2022	7 days	10 days	* EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-36-1	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	* EHT



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-36-2	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-36-3	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-36-4	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-36-5	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB-1	E395	12-Apr-2022	----	----	----		20-Apr-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-35-1	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-35-2	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-35-3	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖</div> <div>EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-35-4	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖</div> <div>EHT</div>





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-35-5	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖ EHT</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) Dup-1	E395	11-Apr-2022	----	----	----		20-Apr-2022	7 days	9 days	<div>✖ EHT</div>

**Legend & Qualifier Definitions**

EHTR-FM: Exceeded ALS recommended hold time prior to sample receipt. Field Measurement recommended  
 EHTR: Exceeded ALS recommended hold time prior to sample receipt.  
 EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.  
 EHT: Exceeded ALS recommended hold time prior to analysis.  
 Rec. HT: ALS recommended hold time (see units).



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	463569	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	464084	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	463572	1	20	5.0	5.0	✔
Conductivity in Water	E100	463570	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	465329	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468211	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	478420	2	8	25.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	464082	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463577	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	463571	1	17	5.8	5.0	✔
Free Cyanide	E339	465646	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463573	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463574	1	17	5.8	5.0	✔
pH by Meter	E108	463568	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	467559	2	39	5.1	5.0	✔
Sulfate in Water by IC	E235.SO4	463576	1	3	33.3	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	463575	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	463723	2	40	5.0	5.0	✔
Total Cyanide	E333	465647	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465224	2	38	5.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	464085	1	17	5.8	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	465838	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468197	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	464083	1	17	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465223	2	36	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	463683	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	463727	2	40	5.0	5.0	✔
Turbidity by Nephelometry	E121	463586	1	20	5.0	5.0	✔
WAD Cyanide	E336	465645	1	17	5.8	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	463569	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	464084	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	463572	1	20	5.0	5.0	✔
Conductivity in Water	E100	463570	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	465329	1	18	5.5	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468211	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	478420	2	8	25.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	464082	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463577	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	463571	1	17	5.8	5.0	✔
Free Cyanide	E339	465646	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463573	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463574	1	17	5.8	5.0	✔
pH by Meter	E108	463568	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	467559	2	39	5.1	5.0	✔
Sulfate in Water by IC	E235.SO4	463576	1	3	33.3	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	463575	1	17	5.8	5.0	✔
TDS by Gravimetry	E162	463723	2	40	5.0	5.0	✔
Total Cyanide	E333	465647	1	17	5.8	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465224	2	38	5.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	464085	1	17	5.8	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	465838	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468197	1	17	5.8	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	464083	1	17	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465223	2	36	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	463683	1	17	5.8	5.0	✔
TSS by Gravimetry	E160	463727	2	40	5.0	5.0	✔
Turbidity by Nephelometry	E121	463586	1	20	5.0	5.0	✔
WAD Cyanide	E336	465645	1	17	5.8	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	463569	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	464084	1	17	5.8	5.0	✔
Chloride in Water by IC	E235.Cl	463572	1	20	5.0	5.0	✔
Conductivity in Water	E100	463570	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	465329	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468211	1	17	5.8	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	478420	2	8	25.0	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	464082	1	17	5.8	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463577	1	17	5.8	5.0	✔
Fluoride in Water by IC	E235.F	463571	1	17	5.8	5.0	✔
Free Cyanide	E339	465646	1	17	5.8	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463573	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463574	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	467559	2	39	5.1	5.0	✔





Matrix: **Water**

Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	463576	1	3	33.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	463575	1	17	5.8	5.0	✓
TDS by Gravimetry	E162	463723	2	40	5.0	5.0	✓
Total Cyanide	E333	465647	1	17	5.8	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465224	2	38	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	464085	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	465838	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468197	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	464083	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465223	2	36	5.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	463683	1	17	5.8	5.0	✓
TSS by Gravimetry	E160	463727	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	463586	1	20	5.0	5.0	✓
WAD Cyanide	E336	465645	1	17	5.8	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	464084	1	17	5.8	5.0	✓
Chloride in Water by IC	E235.Cl	463572	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	465329	1	18	5.5	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468211	1	17	5.8	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	478420	2	8	25.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	464082	1	17	5.8	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463577	1	17	5.8	5.0	✓
Fluoride in Water by IC	E235.F	463571	1	17	5.8	5.0	✓
Free Cyanide	E339	465646	1	17	5.8	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	463573	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	463574	1	17	5.8	5.0	✓
Reactive Silica by Colourimetry	E392	467559	2	39	5.1	5.0	✓
Sulfate in Water by IC	E235.SO4	463576	1	3	33.3	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	463575	1	17	5.8	5.0	✓
Total Cyanide	E333	465647	1	17	5.8	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465224	2	38	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	464085	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	465838	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468197	1	17	5.8	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	464083	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465223	2	36	5.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	463683	1	17	5.8	5.0	✓
WAD Cyanide	E336	465645	1	17	5.8	5.0	✓



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals in Water by CRC ICPMS	E421  Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results.  Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

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Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



## QUALITY CONTROL REPORT

**Work Order** : **YL2200334**

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**Client** : Sabina Gold & Silver Corporation  
**Contact** : Zenovia Craciunescu  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
 Vancouver BC Canada V7X 1M7  
**Telephone** : ----  
**Project** : 21505757/170000/41  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** :  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 20  
**No. of samples analysed** : 20

**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
 Yellowknife, Northwest Territories Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 14-Apr-2022 13:20  
**Date Analysis Commenced** : 20-Apr-2022  
**Issue Date** : 11-May-2022 12:50

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angeli Marzan	Lab Analyst	Inorganics, Edmonton, Alberta
Caitlin Macey	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia

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## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

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

## Workorder Comments

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



## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 463568)</b>											
YL2200334-001	BRP-32-1	pH	----	E108	0.10	pH units	7.01	6.98	0.429%	4%	----
<b>Physical Tests (QC Lot: 463569)</b>											
YL2200334-001	BRP-32-1	alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	7.4	7.1	0.3	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463570)</b>											
YL2200334-001	BRP-32-1	conductivity	----	E100	2.0	µS/cm	53.0	52.8	0.378%	10%	----
<b>Physical Tests (QC Lot: 463586)</b>											
VA22A8088-001	Anonymous	turbidity	----	E121	0.10	NTU	0.44	0.49	0.05	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463723)</b>											
VA22A8135-003	Anonymous	solids, total dissolved [TDS]	----	E162	13	mg/L	86	81	5	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463724)</b>											
YL2200334-015	BRP-36-3	solids, total dissolved [TDS]	----	E162	10	mg/L	24	24	0.2	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463727)</b>											
VA22A8031-007	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	3.7	3.1	0.6	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463728)</b>											
YL2200334-005	BRP-32-5	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463571)</b>											
YL2200334-001	BRP-32-1	fluoride	16984-48-8	E235.F	0.020	mg/L	0.027	0.025	0.001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463572)</b>											
YL2200334-001	BRP-32-1	chloride	16887-00-6	E235.Cl	0.50	mg/L	2.83	2.79	0.04	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463573)</b>											
YL2200334-001	BRP-32-1	nitrate (as N)	14797-55-8	E235.NO <sub>3</sub> -L	0.0050	mg/L	0.0200	0.0198	0.0002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463574)</b>											
YL2200334-001	BRP-32-1	nitrite (as N)	14797-65-0	E235.NO <sub>2</sub> -L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463575)</b>											
YL2200334-001	BRP-32-1	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO <sub>4</sub> -L	0.050	mg/L	11.5	11.4	1.22%	20%	----
<b>Anions and Nutrients (QC Lot: 463576)</b>											
YL2200334-006	BRP-32-3-Bottom	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO <sub>4</sub>	0.30	mg/L	11.7	12.0	2.24%	20%	----
<b>Anions and Nutrients (QC Lot: 463577)</b>											
YL2200334-001	BRP-32-1	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 464084)</b>											
YL2200334-001	BRP-32-1	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0186	0.0185	0.0001	Diff <2x LOR	----

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Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 464085)</b>											
YL2200334-001	BRP-32-1	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.254	0.241	0.013	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 465223)</b>											
YL2200334-018	FB-1	phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 465224)</b>											
YL2200334-018	FB-1	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 466404)</b>											
EO2202697-001	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0100	mg/L	0.796	0.805	1.07%	20%	----
<b>Anions and Nutrients (QC Lot: 466406)</b>											
YL2200334-008	BRP-35-2	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0024	0.0024	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 467559)</b>											
VA22A7925-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	7.71	7.52	2.41%	20%	----
<b>Anions and Nutrients (QC Lot: 467561)</b>											
YL2200334-015	BRP-36-3	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465645)</b>											
YL2200334-001	BRP-32-1	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465646)</b>											
YL2200334-001	BRP-32-1	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465647)</b>											
YL2200334-001	BRP-32-1	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 464082)</b>											
YL2200334-001	BRP-32-1	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.84	5.19	7.06%	20%	----
<b>Organic / Inorganic Carbon (QC Lot: 464083)</b>											
YL2200334-001	BRP-32-1	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.55	4.94	0.39	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 463683)</b>											
YL2200334-001	BRP-32-1	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0017	<0.0015	0.0002	Diff <2x LOR	----
<b>Total Metals (QC Lot: 465838)</b>											
CG2204309-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 468197)</b>											
YL2200334-001	BRP-32-1	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0109	0.0107	1.73%	20%	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000269	0.0000262	0.0000007	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000281	0.000276	1.82%	20%	----
		barium, total	7440-39-3	E466	0.000020	mg/L	0.00794	0.00786	1.07%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000026	0.0000033	0.0000007	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----





Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 468197) - continued											
YL2200334-001	BRP-32-1	boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000068	0.0000096	0.0000027	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	4.13	4.08	1.20%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	0.000098	0.000093	0.000004	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000735	0.0000738	0.288%	20%	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.00210	0.00205	2.40%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.00872	0.00901	3.30%	20%	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000150	0.000154	2.43%	20%	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	0.000392	0.000388	0.980%	20%	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00097	0.00097	0.0000009	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	2.72	2.70	1.01%	20%	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00190	0.00188	1.08%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000023	0.000022	0.0000006	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.00550	0.00546	0.754%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	0.562	0.548	2.48%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	0.000031	0.000030	0.000001	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	0.342	0.343	0.0008	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	0.989	0.996	0.707%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0177	0.0176	0.748%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	4.01	3.82	0.19	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000012	0.0000012	0.00000004	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	0.000045	0.000040	0.000005	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	0.000058	0.000054	0.000005	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000076	0.0000086	0.0000010	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000027	0.000028	0.000001	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00165	0.00161	2.59%	20%	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000049	0.000045	0.000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 465329)											
VA22A7129-010	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	1.27	1.10	0.16	Diff <2x LOR	----
Dissolved Metals (QC Lot: 468211)											
YL2200334-001	BRP-32-1	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00990	0.0101	2.09%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000183	0.0000174	0.0000009	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000279	0.000271	2.83%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00791	0.00789	0.270%	20%	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 468211) - continued											
YL2200334-001	BRP-32-1	beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000024	0.0000026	0.0000002	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000069	0.0000068	0.00000008	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.24	4.22	0.407%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000092	0.000095	0.000003	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000530	0.0000558	5.07%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00214	0.00217	1.11%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00402	0.00411	0.00010	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.000152	0.000151	0.661%	20%	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00098	0.00098	0.000004	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	2.88	2.92	1.35%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.000915	0.000926	1.16%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000017	0.000014	0.000003	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00567	0.00583	2.68%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.568	0.578	1.81%	20%	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000034	0.000031	0.000003	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.346	0.346	0.0006	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.05	1.04	0.391%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0185	0.0190	2.58%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	3.97	3.98	0.01	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000012	0.0000010	0.0000002	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000014	0.000014	0.00000010	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000077	0.0000087	0.0000010	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000026	0.000025	0.000001	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00151	0.00153	1.81%	20%	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000048	0.000049	0.0000004	Diff <2x LOR	----
Dissolved Metals (QC Lot: 478420)											
YL2200334-006	BRP-32-3-Bottom	calcium, dissolved	7440-70-2	E421	0.050	mg/L	4.26	4.29	0.750%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.83	2.81	0.732%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.646	0.633	2.16%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 478420) - continued											
YL2200334-006	BRP-32-3-Bottom	sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.08	1.09	0.338%	20%	----
Dissolved Metals (QC Lot: 478647)											
YL2200334-013	BRP-36-1	calcium, dissolved	7440-70-2	E421	0.050	mg/L	3.32	3.35	0.956%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	2.05	2.08	1.27%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.534	0.529	1.02%	20%	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.815	0.823	0.933%	20%	----



## Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 463569)</b>						
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	1.4	----
<b>Physical Tests (QCLot: 463570)</b>						
conductivity	----	E100	1	µS/cm	<1.0	----
<b>Physical Tests (QCLot: 463586)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 463723)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 463724)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 463727)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 463728)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Anions and Nutrients (QCLot: 463571)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 463572)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 463573)</b>						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 463574)</b>						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 463575)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 463576)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 463577)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 464084)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 464085)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 465223)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----





Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 465224)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 466404)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 466406)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 467559)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 467561)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Cyanides (QCLot: 465645)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 465646)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 465647)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 464082)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 464083)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 463683)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 465838)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 468197)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 468197) - continued</b>						
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 465329)</b>						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
<b>Dissolved Metals (QCLot: 468211)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 468211) - continued</b>						
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 478420)</b>						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
<b>Dissolved Metals (QCLot: 478647)</b>						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----





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

Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 463568)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 463569)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	107	85.0	115	----
Physical Tests (QCLot: 463570)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.3	90.0	110	----
Physical Tests (QCLot: 463586)									
turbidity	----	E121	0.1	NTU	200 NTU	98.0	85.0	115	----
Physical Tests (QCLot: 463723)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	107	85.0	115	----
Physical Tests (QCLot: 463724)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Physical Tests (QCLot: 463727)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	96.8	85.0	115	----
Physical Tests (QCLot: 463728)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 463571)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 463572)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 463573)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 463574)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 463575)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 463576)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	106	90.0	110	----
Anions and Nutrients (QCLot: 463577)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 464084)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	92.4	85.0	115	----
Anions and Nutrients (QCLot: 464085)									



Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 464085) - continued									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 465223)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 465224)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 466404)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	98.8	80.0	120	----
Anions and Nutrients (QCLot: 466406)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	98.8	80.0	120	----
Anions and Nutrients (QCLot: 467559)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 467561)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	104	85.0	115	----
Cyanides (QCLot: 465645)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 465646)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	101	80.0	120	----
Cyanides (QCLot: 465647)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	94.4	80.0	120	----
Organic / Inorganic Carbon (QCLot: 464082)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.9	80.0	120	----
Organic / Inorganic Carbon (QCLot: 464083)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 463683)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	100	80.0	120	----
Total Metals (QCLot: 465838)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	101	80.0	120	----
Total Metals (Undigested) (QCLot: 468197)									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	104	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	110	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	109	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	103	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	96.8	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (Undigested) (QCLot: 468197) - continued</b>									
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	89.3	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	106	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	105	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.5	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	98.6	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	99.7	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	106	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	91.4	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	106	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	99.0	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	103	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	98.5	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	104	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	106	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	105	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	100	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	103	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	108	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	105	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	105	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	107	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	99.2	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	105	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	98.4	80.0	120	----
<b>Dissolved Metals (QCLot: 468211)</b>									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	105	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	106	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	103	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	94.5	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	98.5	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 468211) - continued									
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	87.2	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	102	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	101	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	102	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	98.0	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	99.1	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	90.6	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	105	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	102	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	98.6	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	93.9	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	102	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	101	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	102	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	96.0	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	98.4	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	101	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	99.0	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	103	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	101	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	101	80.0	120	----
Dissolved Metals (QCLot: 478420)									
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.1	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	102	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	107	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	107	80.0	120	----
Dissolved Metals (QCLot: 478647)									
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	99.2	80.0	120	----





Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 478647) - continued									
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	104	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	104	80.0	120	----



## Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 463571)</b>										
YL2200334-002	BRP-32-2	fluoride	16984-48-8	E235.F	1.04 mg/L	1 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 463572)</b>										
YL2200334-002	BRP-32-2	chloride	16887-00-6	E235.Cl	107 mg/L	100 mg/L	107	75.0	125	----
<b>Anions and Nutrients (QCLot: 463573)</b>										
YL2200334-002	BRP-32-2	nitrate (as N)	14797-55-8	E235.NO3-L	2.68 mg/L	2.5 mg/L	107	75.0	125	----
<b>Anions and Nutrients (QCLot: 463574)</b>										
YL2200334-002	BRP-32-2	nitrite (as N)	14797-65-0	E235.NO2-L	0.519 mg/L	0.5 mg/L	104	75.0	125	----
<b>Anions and Nutrients (QCLot: 463575)</b>										
YL2200334-002	BRP-32-2	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO <sub>4</sub> -L	108 mg/L	100 mg/L	108	75.0	125	----
<b>Anions and Nutrients (QCLot: 463576)</b>										
YL2200334-019	GLTL-TOP	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO <sub>4</sub>	106 mg/L	100 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 463577)</b>										
YL2200334-002	BRP-32-2	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0294 mg/L	0.03 mg/L	98.0	70.0	130	----
<b>Anions and Nutrients (QCLot: 464084)</b>										
YL2200334-002	BRP-32-2	ammonia, total (as N)	7664-41-7	E298	0.0988 mg/L	0.1 mg/L	98.8	75.0	125	----
<b>Anions and Nutrients (QCLot: 464085)</b>										
YL2200334-002	BRP-32-2	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
<b>Anions and Nutrients (QCLot: 465223)</b>										
YL2200334-001	BRP-32-1	phosphorus, total	7723-14-0	E372-S	0.0677 mg/L	0.067 mg/L	101	70.0	130	----
<b>Anions and Nutrients (QCLot: 465224)</b>										
YL2200334-001	BRP-32-1	phosphorus, total dissolved	7723-14-0	E375-U	0.0681 mg/L	0.067 mg/L	102	70.0	130	----
<b>Anions and Nutrients (QCLot: 466404)</b>										
EO2202697-002	Anonymous	phosphorus, total	7723-14-0	E372-S	ND mg/L	0.067 mg/L	ND	70.0	130	----
<b>Anions and Nutrients (QCLot: 466406)</b>										
YL2200340-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0640 mg/L	0.067 mg/L	95.5	70.0	130	----
<b>Anions and Nutrients (QCLot: 467559)</b>										
VA22A7925-003	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	11.5 mg/L	10 mg/L	115	75.0	125	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 467561)										
YL2200334-016	BRP-36-4	silicate (as SiO2)	7631-86-9	E392	11.1 mg/L	10 mg/L	111	75.0	125	----
Cyanides (QCLot: 465645)										
YL2200334-002	BRP-32-2	cyanide, weak acid dissociable	----	E336	0.133 mg/L	0.125 mg/L	106	75.0	125	----
Cyanides (QCLot: 465646)										
YL2200334-002	BRP-32-2	cyanide, free	----	E339	0.121 mg/L	0.125 mg/L	97.2	75.0	125	----
Cyanides (QCLot: 465647)										
YL2200334-002	BRP-32-2	cyanide, strong acid dissociable (total)	----	E333	0.215 mg/L	0.25 mg/L	86.0	75.0	125	----
Organic / Inorganic Carbon (QCLot: 464082)										
YL2200334-002	BRP-32-2	carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 464083)										
YL2200334-002	BRP-32-2	carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Sulfides (QCLot: 463683)										
YL2200334-002	BRP-32-2	sulfide, total (as S)	18496-25-8	E395	0.187 mg/L	0.2 mg/L	93.6	75.0	125	----
Total Metals (QCLot: 465838)										
CG2204309-002	Anonymous	mercury, total	7439-97-6	E508-L	4.86 ng/L	5 ng/L	97.2	70.0	130	----
Total Metals (Undigested) (QCLot: 468197)										
YL2200334-002	BRP-32-2	aluminum, total	7429-90-5	E466	0.206 mg/L	0.2 mg/L	103	70.0	130	----
		antimony, total	7440-36-0	E466	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		barium, total	7440-39-3	E466	0.0186 mg/L	0.02 mg/L	93.2	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0372 mg/L	0.04 mg/L	92.9	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00964 mg/L	0.01 mg/L	96.4	70.0	130	----
		boron, total	7440-42-8	E466	0.0897 mg/L	0.1 mg/L	89.7	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00414 mg/L	0.004 mg/L	104	70.0	130	----
		calcium, total	7440-70-2	E466	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, total	7440-47-3	E466	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E466	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		iron, total	7439-89-6	E466	2.07 mg/L	2 mg/L	103	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00247 mg/L	0.0025 mg/L	99.0	70.0	130	----
		lead, total	7439-92-1	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		lithium, total	7439-93-2	E466	0.0886 mg/L	0.1 mg/L	88.6	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0197 mg/L	0.02 mg/L	98.4	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 468197) - continued										
YL2200334-002	BRP-32-2	molybdenum, total	7439-98-7	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, total	7440-02-0	E466	0.0393 mg/L	0.04 mg/L	98.3	70.0	130	----
		potassium, total	7440-09-7	E466	4.10 mg/L	4 mg/L	102	70.0	130	----
		selenium, total	7782-49-2	E466	0.0429 mg/L	0.04 mg/L	107	70.0	130	----
		silicon, total	7440-21-3	E466	9.27 mg/L	10 mg/L	92.7	70.0	130	----
		silver, total	7440-22-4	E466	0.00424 mg/L	0.004 mg/L	106	70.0	130	----
		sodium, total	7440-23-5	E466	2.02 mg/L	2 mg/L	101	70.0	130	----
		strontium, total	7440-24-6	E466	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E466	20.3 mg/L	20 mg/L	102	70.0	130	----
		thallium, total	7440-28-0	E466	0.00386 mg/L	0.004 mg/L	96.6	70.0	130	----
		tin, total	7440-31-5	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		titanium, total	7440-32-6	E466	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
		uranium, total	7440-61-1	E466	0.00387 mg/L	0.004 mg/L	96.7	70.0	130	----
		vanadium, total	7440-62-2	E466	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		zinc, total	7440-66-6	E466	0.423 mg/L	0.4 mg/L	106	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0458 mg/L	0.04 mg/L	114	70.0	130	----
Dissolved Metals (QCLot: 465329)										
YL2200334-001	BRP-32-1	mercury, dissolved	7439-97-6	E509-L	3.91 ng/L	5 ng/L	78.2	70.0	130	----
Dissolved Metals (QCLot: 468211)										
YL2200334-002	BRP-32-2	aluminum, dissolved	7429-90-5	E465	0.198 mg/L	0.2 mg/L	98.8	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0205 mg/L	0.02 mg/L	103	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0185 mg/L	0.02 mg/L	92.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0392 mg/L	0.04 mg/L	98.0	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00951 mg/L	0.01 mg/L	95.1	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.0937 mg/L	0.1 mg/L	93.7	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00405 mg/L	0.004 mg/L	101	70.0	130	----
		calcium, dissolved	7440-70-2	E465	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.06 mg/L	2 mg/L	103	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.0968 mg/L	0.1 mg/L	96.8	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
manganese, dissolved	7439-96-5	E465	0.0201 mg/L	0.02 mg/L	100	70.0	130	----		



Page : 21 of 21  
 Work Order : YL2200334  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/170000/41



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 468211) - continued										
YL2200334-002	BRP-32-2	molybdenum, dissolved	7439-98-7	E465	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0390 mg/L	0.04 mg/L	97.5	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.39 mg/L	10 mg/L	93.9	70.0	130	----
		potassium, dissolved	7440-09-7	E465	3.89 mg/L	4 mg/L	97.3	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00254 mg/L	0.0025 mg/L	102	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0415 mg/L	0.04 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E465	8.82 mg/L	10 mg/L	88.2	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00431 mg/L	0.004 mg/L	108	70.0	130	----
		sodium, dissolved	7440-23-5	E465	1.82 mg/L	2 mg/L	91.2	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	19.7 mg/L	20 mg/L	98.6	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00387 mg/L	0.004 mg/L	96.8	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00383 mg/L	0.004 mg/L	95.7	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.418 mg/L	0.4 mg/L	104	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0455 mg/L	0.04 mg/L	114	70.0	130	----
Dissolved Metals (QCLot: 478420)										
YL2200334-019	GLTL-TOP	calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.22 mg/L	4 mg/L	105	70.0	130	----
		sodium, dissolved	7440-23-5	E421	1.95 mg/L	2 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 478647)										
YL2200334-014	BRP-36-2	calcium, dissolved	7440-70-2	E421	4.08 mg/L	4 mg/L	102	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.04 mg/L	4 mg/L	101	70.0	130	----
		sodium, dissolved	7440-23-5	E421	1.96 mg/L	2 mg/L	98.2	70.0	130	----



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# Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

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COC Number: 1

Page 1 of 2

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>	
Company:	Golder Associates Ltd.	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)	<b>Regular [R]</b> <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply	
Contact:	Zenovia Craciunescu (Yellowknife)	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>EMERGENCY</b> <input type="checkbox"/> <b>1 Business day [E - 100%]</b>	
Phone:	780-222-0587 (cell)	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		<b>Same Day, Weekend or Statutory holiday [E2 - 200%]</b> (Laboratory opening fees may apply)	
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	<b>Date and Time Required for all E&amp;P TATs:</b>	
Street:	16820 107 Ave NW	Email 1 or Fax	ZCraciunescu@golder.com	For tests that can not be performed according to the service level selected, you will be contacted.	
City/Province:	Edmonton, AB	Email 2	KSerben@golder.com	<b>Analysis Request</b>	
Postal Code:	T5P 4C3	Email 3	gal_equis@golder.com	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	
<b>Invoice To</b>	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>Invoice Distribution</b>		<b>NUMBER OF CONTAINERS</b>	
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Routine (including organic phosphorus, reactive silica)	
Company:	Sabina Gold And Silver Corp	Email 1 or Fax	mkeefe@sabinagoldsilver.com	Total Nutrients (including total nitrogen)	
Contact:	Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com	Email 2	ZCraciunescu@golder.com	Dissolved Nutrients (including DOC)	
<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>		Total Ultra Low Metals	
ALS Account # / Quote #:	2021 Under-ice Field Program	AFE/Cost Center:	PO#	Dissolved Ultra Low Mercury	
Job #:	21505757/17000/41	Major/Minor Code:	Routing Code:	Dissolved Ultra Low Mercury	
PO / AFE:		Requisitioner:		Total Sulfide	
LSD:	Sabina Facility Code: 176233659	Location:		Cyanide	
<b>ALS Lab Work Order # (lab use only):</b>		ALS Contact:	Oliver Gregg	TDS (measured and calculated)	
		Sampler:		Samples for Archive	
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	SUSPECTED HAZARD (see Special Instructions)
	BRP-32-1	10-April-22	09:20	Water	
	BRP-32-2		11:00	Water	
	BRP-32-3		12:20	Water	
	BRP-32-4		14:00	Water	
	BRP-32-5		15:15	Water	
	BRP-32-3-Bottom		12:20	Water	
	BRP-35-1	11-April-22	09:45	Water	
	BRP-35-2		11:45	Water	
	BRP-35-3		14:45	Water	
	BRP-35-4		16:20	Water	
	BRP-35-5		13:00	Water	
	DUP-1		10:00	Water	
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>		<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>	
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>	
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Parameters included in each test code are detailed in the Quote - 2021 Under-ice Field Program		Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>	
				Cooling Initiated <input type="checkbox"/>	
				INITIAL COOLER TEMPERATURES °C	
				FINAL COOLER TEMPERATURES °C	
				4.3	
<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>		<b>FINAL SHIPMENT RECEPTION (lab use only)</b>	
Released by:	Date:	Time:	Received by:	Date:	Time:
			MA	April 14/22	1:20

Environmental Division  
Yellowknife  
Work Order Reference  
YL2200334



Telephone : - 1 867 873 5593

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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



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Contact and company name below will appear on the final report

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and accept with the Terms and Conditions as specified on the back page of the white - report copy.

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# Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

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COC Number: 1

Page 1 of 2

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>		
Company:	Golder Associates Ltd.	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)	<b>Regular [R]</b> <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply		
Contact:	Zenovia Craciunescu (Yellowknife)	Quality Control (QC) Report with Report	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<b>EMERGENCY</b> <input type="checkbox"/> 1 Business day [E - 100%]		
Phone:	780-222-0587 (cell)	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		<b>Same Day, Weekend or Statutory holiday [E2 - 200% (Laboratory opening fees may apply)]</b> <input type="checkbox"/>		
Company address below will appear on the final report		Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	<b>Date and Time Required for all E&amp;P TATs:</b>		
Street:	16820 107 Ave NW	Email 1 or Fax	ZCraciunescu@golder.com	For tests that can not be performed according to the service level selected, you will be contacted.		
City/Province:	Edmonton, AB	Email 2	KSerben@golder.com	<b>Analysis Request</b>		
Postal Code:	T5P 4C3	Email 3	gal_equis@golder.com	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below		
<b>Invoice To</b>	Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<b>Invoice Distribution</b>		<b>NUMBER OF CONTAINERS</b>		
	Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Select Invoice Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Routine (including organic phosphorus, reactive silica)		
Company:	Sabina Gold And Silver Corp	Email 1 or Fax	mkeefe@sabinagoldsilver.com	Total Nutrients (including total nitrogen)		
Contact:	Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com	Email 2	ZCraciunescu@golder.com	Dissolved Nutrients (including DOC)		
<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>		Total Ultra Low Metals		
ALS Account # / Quote #:	2021 Under-ice Field Program	AFE/Cost Center:	PO#	Dissolved Ultra Low Mercury		
Job #:	21505757/17000/41	Major/Minor Code:	Routing Code:	Dissolved Ultra Low Mercury		
PO / AFE:		Requisitioner:		Total Sulfide		
LSD:	Sabina Facility Code: 176233659	Location:		Cyanide		
<b>ALS Lab Work Order # (lab use only):</b>		ALS Contact:	Oliver Gregg	TDS (measured and calculated)		
		Sampler:		Samples for Archive		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	SUSPECTED HAZARD (see Special Instructions)	
	BRP-32-1	10-April-22	09:20	Water	10	
	BRP-32-2		11:00	Water	10	
	BRP-32-3		12:20	Water	10	
	BRP-32-4		14:00	Water	10	
	BRP-32-5		15:15	Water	10	
	BRP-32-3-Bottom		12:20	Water	1	
	BRP-35-1	11-April-22	09:45	Water	10	
	BRP-35-2		11:45	Water	1	
	BRP-35-3		14:45	Water	1	
	BRP-35-4		16:20	Water	1	
	BRP-35-5		13:00	Water	1	
	Dug-1		10:00	Water	1	
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>		<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>		
Are samples taken from a Regulated DW System?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			Frozen	<input type="checkbox"/>	SIF Observations
Are samples for human consumption/ use?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			Ice Packs	<input type="checkbox"/>	Custody seal intact
				Cooling Initiated	<input type="checkbox"/>	
				INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C
				4.3		
<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>		<b>FINAL SHIPMENT RECEPTION (lab use only)</b>		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:
			MA	April 14/22	1:20	

Environmental Division  
Yellowknife  
Work Order Reference  
YL2200334



Telephone : - 1 867 873 5593

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



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**Environmental**

## CERTIFICATE OF ANALYSIS

**Work Order** : **YL2200337**  
**Client** : **Sabina Gold & Silver Corporation**  
**Contact** : Zenovia Craciunescu  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
Vancouver BC Canada V7X 1M7  
**Telephone** : ----  
**Project** : 21505757/170000/41  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 17  
**No. of samples analysed** : 17

**Page** : 1 of 15  
**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 18-Apr-2022 10:35  
**Date Analysis Commenced** : 20-Apr-2022  
**Issue Date** : 09-May-2022 11:44

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angeli Marzan	Lab Analyst	Inorganics, Edmonton, Alberta
Caitlin Macey	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.

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

*Client sample ID*

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
Client sampling date / time					13-Apr-2022 11:45	13-Apr-2022 12:45	13-Apr-2022 13:30	13-Apr-2022 14:30	13-Apr-2022 15:30	
Analyte	CAS Number	Method	LOR	Unit	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	15.4	15.2	15.2	15.2	16.0	
conductivity	----	E100	2.0	µS/cm	53.4	53.8	52.0	54.2	56.8	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	23.2	23.8	24.8	24.2	24.3	
pH	----	E108	0.10	pH units	7.23	7.27	7.20	7.26	7.25	
solids, total dissolved [TDS]	----	E162	10	mg/L	36	32	32	36	20	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	32.7	32.9	32.5	33.6	35.2	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.22	0.22	0.22	0.20	0.23	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.102	0.0990	0.107	0.100	0.106	
chloride	16887-00-6	E235.Cl	0.50	mg/L	0.98	0.98	0.91	0.97	1.05	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.030	0.030	0.029	0.029	0.028	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.0059	0.0053	0.0193	0.0071	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0049	0.0046	0.0046	0.0047	0.0053	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0035	0.0032	0.0053	0.0032	0.0031	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	0.57	0.56	0.59	0.55	0.62	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.17	7.21	6.66	7.13	7.66	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.387	0.388	0.366	0.377	0.401	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.36	5.37	5.10	5.88	6.29	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.96	5.29	4.64	5.14	5.23	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0041	<0.0015	0.0019	<0.0015	<0.0015	
Total Metals										





Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	
					Result	Result	Result	Result	Result	
Total Metals										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050 <sup>DTC</sup>	<0.00050 <sup>DTC</sup>	<0.00050	0.00069	0.00052	
Total Metals (Undigested)										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00161	0.00177	0.00180	0.00258	0.00215	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000095	0.0000187	0.0000384	0.0000460	0.000175	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000268	0.000290	0.000290	0.000297	0.000295	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00768	0.00800	0.00800	0.00812	0.00843	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	0.0000026	<0.0000025	0.0000028	0.0000026	
calcium, total	7440-70-2	E466	0.010	mg/L	3.97	4.15	4.04	4.13	4.37	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000051	0.000057	0.000052	0.000061	0.000057	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000866	0.0000984	0.000111	0.0000892	0.0000881	
copper, total	7440-50-8	E466	0.000050	mg/L	0.000862	0.000901	0.000873	0.000930	0.000939	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0622	0.0554	0.0504	0.0514	0.0532	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000024	0.000026	0.000024	0.000027	0.000028	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000390	0.000206	0.000567	0.000943	0.000139	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00071	0.00079	0.00076	0.00077	0.00077	
magnesium, total	7439-95-4	E466	0.0010	mg/L	2.96	3.24	3.10	3.15	3.36	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00776	0.00972	0.0138	0.00818	0.00726	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00176	0.00183	0.00177	0.00185	0.00240	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.633	0.675	0.652	0.669	0.708	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000034	0.000031	0.000030	0.000032	0.000033	
silicon, total	7440-21-3	E466	0.050	mg/L	0.274	0.282	0.288	0.286	0.304	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	1.08	1.16	1.10	1.16	1.22	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0135	0.0141	0.0138	0.0141	0.0147	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.42	2.54	2.51	2.55	2.66	
thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000013	0.0000012	0.0000010	
tin, total	7440-31-5	E466	0.000010	mg/L	0.000012	<0.000010	0.000018	0.000013	0.000012	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000024	0.0000030	0.0000026	0.0000024	0.0000045	0.0000045
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000015	0.000018	0.000016	0.000018	0.000018	0.000018
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00072	0.00197	0.00109	0.00129	0.00191	0.00191
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000012	0.000013	0.000014	0.000014	0.000014	0.000014
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00138	0.00132	0.00172	0.00143	0.00148	0.00148
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000134	0.0000127	0.0000175	0.0000229	0.0000220	0.0000220
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000283	0.000283	0.000307	0.000289	0.000299	0.000299
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00759	0.00801	0.00823	0.00805	0.00834	0.00834
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000027	0.0000032	0.0000036	<0.0000025	0.0000029	0.0000029
calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.12	4.18	4.36	4.30	4.34	4.34
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000052	0.000057	0.000058	0.000058	0.000060	0.000060
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000299	0.0000310	0.0000402	0.0000352	0.0000347	0.0000347
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000917	0.000919	0.000956	0.000932	0.000946	0.000946
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	Field
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0152	0.0144	0.0144	0.0143	0.0129	0.0129
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000332	0.0000741	0.0000500	0.0000321	0.0000219	0.0000219
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00080	0.00080	0.00084	0.00082	0.00085	0.00085
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	3.13	3.24	3.39	3.28	3.27	3.27
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00112	0.00145	0.00450	0.00210	0.00241	0.00241
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00131 <sup>DTC</sup>	0.00110 <sup>DTC</sup>	<0.00050	0.00075	<0.00050	<0.00050
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00182	0.00182	0.00198	0.00189	0.00196	0.00196
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.658	0.688	0.708	0.687	0.692	0.692
rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000029	0.000041	0.000038	0.000038	0.000032	0.000032



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
Client sampling date / time						13-Apr-2022 11:45	13-Apr-2022 12:45	13-Apr-2022 13:30	13-Apr-2022 14:30	13-Apr-2022 15:30
Analyte	CAS Number	Method	LOR	Unit	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.271	0.286	0.292	0.285	0.314	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.13	1.17	1.22	1.20	1.28	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0137	0.0142	0.0148	0.0145	0.0148	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.53	2.61	2.68	2.74	2.72	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000011	0.0000011	0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000014	<0.000010	0.000012	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000023	0.0000031	0.0000019	0.0000022	0.0000027	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000016	0.000015	0.000016	0.000016	0.000014	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00161 <sup>DTC</sup>	0.00201	0.00159 <sup>DTC</sup>	0.00128	0.00173	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000015	0.000016	0.000016	0.000017	0.000017	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	

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



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	TB-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
Client sampling date / time					13-Apr-2022 15:35	14-Apr-2022 11:00	14-Apr-2022 12:00	14-Apr-2022 10:15	14-Apr-2022 15:15	
Analyte	CAS Number	Method	LOR	Unit	YL2200337-006	YL2200337-007	YL2200337-008	YL2200337-009	YL2200337-010	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	6.7	6.6	6.9	7.3	
conductivity	----	E100	2.0	µS/cm	<2.0	72.1	70.5	72.5	71.5	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	<0.50	28.6	28.2	29.0	28.8	
pH	----	E108	0.10	pH units	5.34	6.87	6.93	6.93	6.92	
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	46	46	48	47	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	<1.0	42.9	41.9	42.7	44.2	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	<0.10	<0.10	<0.10	<0.10	0.13	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0219	0.0206	0.0217	0.0206	
chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	6.30	6.14	6.43	7.49	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	0.021	0.021	0.021	0.022	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.188	0.182	0.190	0.185	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	0.0025	0.0013	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0012 <sup>RRV</sup>	0.0031	0.0031	0.0032	0.0040	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	0.0022	0.0019	0.0018	0.0014	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	1.88	1.77	1.90	1.85	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	<0.050	13.6	13.2	13.5	14.0	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.050	0.210	0.195	0.199	0.207	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	<0.50	4.73	4.69	4.32	4.18	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	5.61	4.24	4.14	4.29	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	0.0015	
Total Metals										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	<0.00050	0.00071	0.00070	0.00070	0.00110	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	TB-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
Client sampling date / time						13-Apr-2022 15:35	14-Apr-2022 11:00	14-Apr-2022 12:00	14-Apr-2022 10:15	14-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit		YL2200337-006	YL2200337-007	YL2200337-008	YL2200337-009	YL2200337-010
						Result	Result	Result	Result	Result
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L		<0.00020	0.0158	0.0164	0.0168	0.0163
antimony, total	7440-36-0	E466	0.0000050	mg/L		<0.0000050	0.0000145	0.0000495	0.0000579	0.0000271
arsenic, total	7440-38-2	E466	0.000010	mg/L		<0.000010	0.000262	0.000258	0.000243	0.000262
barium, total	7440-39-3	E466	0.000020	mg/L		<0.000020	0.0110	0.0108	0.0109	0.0107
beryllium, total	7440-41-7	E466	0.0000020	mg/L		<0.0000020	0.0000039	0.0000052	0.0000046	0.0000047
bismuth, total	7440-69-9	E466	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, total	7440-42-8	E466	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, total	7440-43-9	E466	0.0000025	mg/L		<0.0000025	0.0000157	0.0000152	0.0000158	0.0000137
calcium, total	7440-70-2	E466	0.010	mg/L		<0.010	5.93	5.83	5.83	5.87
chromium, total	7440-47-3	E466	0.000040	mg/L		<0.000040	0.000100	0.000106	0.000107	0.000103
cobalt, total	7440-48-4	E466	0.0000050	mg/L		<0.0000050	0.000323	0.000322	0.000311	0.000323
copper, total	7440-50-8	E466	0.000050	mg/L		<0.000050	0.00224	0.00221	0.00222	0.00229
iron, total	7439-89-6	E466	0.00050	mg/L		<0.00050	0.0127	0.0130	0.0122	0.0116
lanthanum, total	7439-91-0	E466	0.000010	mg/L		<0.000010	0.000268	0.000265	0.000258	0.000273
lead, total	7439-92-1	E466	0.0000050	mg/L		<0.0000050	0.0000123	0.000145	0.0000859	0.0000664
lithium, total	7439-93-2	E466	0.00010	mg/L		<0.00010	0.00102	0.00102	0.00102	0.00107
magnesium, total	7439-95-4	E466	0.0010	mg/L		<0.0010	3.44	3.32	3.36	3.46
manganese, total	7439-96-5	E466	0.0000050	mg/L		<0.0000050	0.00347	0.00332	0.00320	0.00325
molybdenum, total	7439-98-7	E466	0.000010	mg/L		<0.000010	0.000012	0.000011	0.000013	0.000013
nickel, total	7440-02-0	E466	0.000020	mg/L		<0.000020	0.00735	0.00716	0.00716	0.00727
potassium, total	7440-09-7	E466	0.0050	mg/L		<0.0050	0.586	0.589	0.591	0.597
selenium, total	7782-49-2	E466	0.000025	mg/L		<0.000025	<0.000025	0.000028	<0.000025	0.000031
silicon, total	7440-21-3	E466	0.050	mg/L		<0.050	0.836	0.817	0.819	0.853
silver, total	7440-22-4	E466	0.0000020	mg/L		<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
sodium, total	7440-23-5	E466	0.010	mg/L		<0.010	1.14	1.10	1.17	1.16
strontium, total	7440-24-6	E466	0.000020	mg/L		<0.000020	0.0272	0.0260	0.0260	0.0271
sulfur, total	7704-34-9	E466	0.50	mg/L		<0.50	4.52	4.59	4.34	4.65
thallium, total	7440-28-0	E466	0.0000010	mg/L		<0.0000010	0.0000012	0.0000013	0.0000012	0.0000013
tin, total	7440-31-5	E466	0.000010	mg/L		<0.000010	0.000019	0.000022	<0.000010	0.000016
titanium, total	7440-32-6	E466	0.000050	mg/L		<0.000050	<0.000050	0.000058	0.000065	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L		<0.0000010	0.0000079	0.0000073	0.0000090	0.0000088



## Analytical Results

Sub-Matrix: Water					Client sample ID	TB-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
(Matrix: Water)										
Client sampling date / time						13-Apr-2022 15:35	14-Apr-2022 11:00	14-Apr-2022 12:00	14-Apr-2022 10:15	14-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit		YL2200337-006	YL2200337-007	YL2200337-008	YL2200337-009	YL2200337-010
						Result	Result	Result	Result	Result
<b>Total Metals (Undigested)</b>										
vanadium, total	7440-62-2	E466	0.000010	mg/L		<0.000010	0.000026	0.000026	0.000026	0.000028
zinc, total	7440-66-6	E466	0.00010	mg/L		0.00014	0.00272	0.00358	0.00348	0.00317
zirconium, total	7440-67-7	E466	0.000010	mg/L		<0.000010	0.000062	0.000060	0.000059	0.000059
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L		0.00029 <sup>RRV</sup>	0.0154	0.0150	0.0152	0.0150
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L		<0.0000050	0.0000168	0.0000194	0.0000155	0.0000131
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L		<0.000010	0.000258	0.000245	0.000246	0.000246
barium, dissolved	7440-39-3	E465	0.000020	mg/L		<0.000020	0.0109	0.0108	0.0107	0.0109
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L		<0.0000020	0.0000050	0.0000049	0.0000051	0.0000038
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, dissolved	7440-42-8	E465	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L		<0.0000025	0.0000150	0.0000162	0.0000131	0.0000128
calcium, dissolved	7440-70-2	E465	0.010	mg/L		<0.010	5.87	5.84	5.94	5.91
chromium, dissolved	7440-47-3	E465	0.000040	mg/L		<0.000040	0.000100	0.000096	0.000102	0.000097
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L		<0.0000050	0.000299	0.000292	0.000301	0.000273
copper, dissolved	7440-50-8	E465	0.000050	mg/L		<0.000050	0.00222	0.00223	0.00223	0.00219
dissolved metals filtration location	----	EP465	-	-		Field	Field	Field	Field	Field
iron, dissolved	7439-89-6	E465	0.00050	mg/L		<0.00050	0.00595	0.00611	0.00572	0.00590
lead, dissolved	7439-92-1	E465	0.0000050	mg/L		<0.0000050	0.0000129	0.0000422	0.0000494	0.0000063
lithium, dissolved	7439-93-2	E465	0.00010	mg/L		<0.00010	0.00106	0.00107	0.00107	0.00107
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L		<0.0010	3.39	3.32	3.44	3.40
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L		<0.0000050	0.00300	0.00281	0.00283	0.00287
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L		<0.00050	0.00051	0.00062	0.00078	0.00156
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L		<0.000010	0.000011	0.000011	0.000012	0.000012
nickel, dissolved	7440-02-0	E465	0.000020	mg/L		<0.000020	0.00736	0.00727	0.00735	0.00721
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
potassium, dissolved	7440-09-7	E465	0.0050	mg/L		<0.0050	0.590	0.597	0.601	0.586
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
selenium, dissolved	7782-49-2	E465	0.000025	mg/L		<0.000025	0.000028	0.000030	0.000029	0.000034
silicon, dissolved	7440-21-3	E465	0.050	mg/L		<0.050	0.849	0.811	0.831	0.839
silver, dissolved	7440-22-4	E465	0.0000020	mg/L		<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	TB-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
Client sampling date / time						13-Apr-2022 15:35	14-Apr-2022 11:00	14-Apr-2022 12:00	14-Apr-2022 10:15	14-Apr-2022 15:15
Analyte	CAS Number	Method	LOR	Unit	YL2200337-006	YL2200337-007	YL2200337-008	YL2200337-009	YL2200337-010	
					Result	Result	Result	Result	Result	
Dissolved Metals										
sodium, dissolved	7440-23-5	E465	0.010	mg/L	<0.010	1.18	1.10	1.16	1.10	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	<0.000020	0.0270	0.0262	0.0270	0.0265	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	<0.50 <sup>RRV</sup>	4.78	4.56	4.49	4.46	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	0.0000012	0.0000010	0.0000012	0.0000012	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	0.000030	0.000015	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	<0.0000010	0.0000090	0.0000090	0.0000085	0.0000072	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	<0.000010	0.000023	0.000025	0.000024	0.000022	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00016 <sup>RRV</sup>	0.00327	0.00337	0.00373	0.00268	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	<0.000010	0.000067	0.000069	0.000066	0.000061	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	

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

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	Dup-2	BRP-29-2-Bottom	BRP-29-6-Top	BRP-29-6-Bottom
Client sampling date / time					14-Apr-2022 16:30	14-Apr-2022 10:20	14-Apr-2022 12:00	14-Apr-2022 14:30	14-Apr-2022 14:30	
Analyte	CAS Number	Method	LOR	Unit	YL2200337-011	YL2200337-012	YL2200337-013	YL2200337-014	YL2200337-015	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	7.5	7.3	6.8	7.1	7.0	
conductivity	----	E100	2.0	µS/cm	75.3	72.5	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	30.2	29.3	----	----	----	
pH	----	E108	0.10	pH units	6.90	6.91	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	48	48	51	47	50	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	44.4	43.2	38.2	39.9	38.6	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	----	----	----	
turbidity	----	E121	0.10	NTU	0.15	<0.10	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0210	0.0212	----	----	----	
chloride	16887-00-6	E235.Cl	0.50	mg/L	6.56	6.34	6.43	6.78	6.54	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.021	0.021	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.196	0.192	0.195	0.209	0.205	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0040	0.0061	----	----	----	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0015	0.0013	----	----	----	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	1.94	1.85	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	13.9	13.6	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	----	----	13.7	14.1	13.6	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.228	0.203	----	----	----	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.53	4.40	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.70	4.39	----	----	----	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	0.0015	----	----	----	
Total Metals										





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	Dup-2	BRP-29-2-Botto m	BRP-29-6-Top	BRP-29-6-Botto m
Client sampling date / time						14-Apr-2022 16:30	14-Apr-2022 10:20	14-Apr-2022 12:00	14-Apr-2022 14:30	14-Apr-2022 14:30
Analyte	CAS Number	Method	LOR	Unit		YL2200337-011	YL2200337-012	YL2200337-013	YL2200337-014	YL2200337-015
						Result	Result	Result	Result	Result
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L		0.00076	0.00071	----	----	----
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L		0.0159	0.0178	----	----	----
antimony, total	7440-36-0	E466	0.0000050	mg/L		0.0000162	0.0000127	----	----	----
arsenic, total	7440-38-2	E466	0.000010	mg/L		0.000257	0.000255	----	----	----
barium, total	7440-39-3	E466	0.000020	mg/L		0.0111	0.0107	----	----	----
beryllium, total	7440-41-7	E466	0.0000020	mg/L		0.0000049	0.0000049	----	----	----
bismuth, total	7440-69-9	E466	0.0000010	mg/L		<0.0000010	<0.0000010	----	----	----
boron, total	7440-42-8	E466	0.0050	mg/L		<0.0050	<0.0050	----	----	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L		0.0000134	0.0000126	----	----	----
calcium, total	7440-70-2	E466	0.010	mg/L		5.90	5.88	----	----	----
chromium, total	7440-47-3	E466	0.000040	mg/L		0.000100	0.000102	----	----	----
cobalt, total	7440-48-4	E466	0.0000050	mg/L		0.000365	0.000359	----	----	----
copper, total	7440-50-8	E466	0.000050	mg/L		0.00220	0.00216	----	----	----
iron, total	7439-89-6	E466	0.00050	mg/L		0.0133	0.0172	----	----	----
lanthanum, total	7439-91-0	E466	0.000010	mg/L		0.000280	0.000288	----	----	----
lead, total	7439-92-1	E466	0.0000050	mg/L		0.0000056	0.0000264	----	----	----
lithium, total	7439-93-2	E466	0.00010	mg/L		0.00102	0.00098	----	----	----
magnesium, total	7439-95-4	E466	0.0010	mg/L		3.38	3.28	----	----	----
manganese, total	7439-96-5	E466	0.0000050	mg/L		0.00401	0.00435	----	----	----
molybdenum, total	7439-98-7	E466	0.000010	mg/L		0.000012	0.000011	----	----	----
nickel, total	7440-02-0	E466	0.000020	mg/L		0.00737	0.00724	----	----	----
potassium, total	7440-09-7	E466	0.0050	mg/L		0.580	0.581	----	----	----
selenium, total	7782-49-2	E466	0.000025	mg/L		0.000032	0.000030	----	----	----
silicon, total	7440-21-3	E466	0.050	mg/L		0.899	0.889	----	----	----
silver, total	7440-22-4	E466	0.0000020	mg/L		<0.0000020	<0.0000020	----	----	----
sodium, total	7440-23-5	E466	0.010	mg/L		1.15	1.07	----	----	----
strontium, total	7440-24-6	E466	0.000020	mg/L		0.0277	0.0269	----	----	----
sulfur, total	7704-34-9	E466	0.50	mg/L		4.51	4.34	----	----	----
thallium, total	7440-28-0	E466	0.0000010	mg/L		<0.0000010	0.0000012	----	----	----
tin, total	7440-31-5	E466	0.000010	mg/L		<0.000010	0.000012	----	----	----



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	Dup-2	BRP-29-2-Bottom	BRP-29-6-Top	BRP-29-6-Bottom
Client sampling date / time					14-Apr-2022 16:30	14-Apr-2022 10:20	14-Apr-2022 12:00	14-Apr-2022 14:30	14-Apr-2022 14:30	
Analyte	CAS Number	Method	LOR	Unit	YL2200337-011	YL2200337-012	YL2200337-013	YL2200337-014	YL2200337-015	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	0.000071	----	----	----	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000082	0.0000114	----	----	----	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000027	0.000027	----	----	----	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00282	0.00284	----	----	----	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000062	0.000064	----	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0160	0.0153	----	----	----	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000251	0.0000168	----	----	----	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000265	0.000256	----	----	----	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.0114	0.0107	----	----	----	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000060	0.0000054	----	----	----	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000164	0.0000168	----	----	----	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	6.29	6.10	----	----	----	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	----	----	5.98	6.24	5.98	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000106	0.000100	----	----	----	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000354	0.000309	----	----	----	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00228	0.00224	----	----	----	
dissolved metals filtration location	----	EP465	-	-	Field	Field	----	----	----	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00820	0.00550	----	----	----	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000173 <sup>DTC</sup>	0.0000456 <sup>DTC</sup>	----	----	----	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00113	0.00108	----	----	----	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	3.51	3.42	----	----	----	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	----	----	3.05	3.22	3.04	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00355	0.00287	----	----	----	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00052	<0.00050	----	----	----	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000012	0.000013	----	----	----	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00779	0.00734	----	----	----	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	----	----	----	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.615	0.616	----	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	Dup-2	BRP-29-2-Botto m	BRP-29-6-Top	BRP-29-6-Botto m
Client sampling date / time						14-Apr-2022 16:30	14-Apr-2022 10:20	14-Apr-2022 12:00	14-Apr-2022 14:30	14-Apr-2022 14:30
Analyte	CAS Number	Method	LOR	Unit		YL2200337-011	YL2200337-012	YL2200337-013	YL2200337-014	YL2200337-015
						Result	Result	Result	Result	Result
<b>Dissolved Metals</b>										
potassium, dissolved	7440-09-7	E421	0.050	mg/L		----	----	0.572	0.624	0.598
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L		<0.0000050	<0.0000050	----	----	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L		0.000035	<0.000025	----	----	----
silicon, dissolved	7440-21-3	E465	0.050	mg/L		0.892	0.832	----	----	----
silver, dissolved	7440-22-4	E465	0.0000020	mg/L		<0.0000020	<0.0000020	----	----	----
sodium, dissolved	7440-23-5	E465	0.010	mg/L		1.16	1.15	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L		----	----	1.09	1.16	1.13
strontium, dissolved	7440-24-6	E465	0.000020	mg/L		0.0282	0.0271	----	----	----
sulfur, dissolved	7704-34-9	E465	0.50	mg/L		4.78	4.57	----	----	----
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L		0.0000013	0.0000013	----	----	----
tin, dissolved	7440-31-5	E465	0.000010	mg/L		0.000014	<0.000010	----	----	----
titanium, dissolved	7440-32-6	E465	0.000050	mg/L		<0.000050	<0.000050	----	----	----
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L		0.0000078	0.0000079	----	----	----
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L		0.000026	0.000025	----	----	----
zinc, dissolved	7440-66-6	E465	0.00010	mg/L		0.00378	0.00338	----	----	----
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L		0.000073	0.000066	----	----	----
dissolved mercury filtration location	----	EP509-L	-	-		Field	Field	----	----	----
dissolved metals filtration location	----	EP421	-	-		----	----	Laboratory	Laboratory	Laboratory

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



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-33-3-Top	BRP-33-3-Bottom	----	----	----
Client sampling date / time						14-Apr-2022 17:50	14-Apr-2022 17:50	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2200337-016	YL2200337-017	-----	-----	-----	-----
					Result	Result	----	----	----	----
<b>Physical Tests</b>										
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	10.2	9.7	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	49	48	----	----	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	40.3	39.2	----	----	----	----
<b>Anions and Nutrients</b>										
chloride	16887-00-6	E235.Cl	0.50	mg/L	4.95	5.06	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO <sub>3</sub> -L	0.0050	mg/L	0.0581	0.0562	----	----	----	----
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO <sub>4</sub>	0.30	mg/L	16.1	15.8	----	----	----	----
<b>Dissolved Metals</b>										
calcium, dissolved	7440-70-2	E421	0.050	mg/L	5.79	5.53	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	3.49	3.35	----	----	----	----
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.806	0.773	----	----	----	----
sodium, dissolved	7440-23-5	E421	0.050	mg/L	1.49	1.39	----	----	----	----
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	----	----	----	----

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



## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2200337	Page	: 1 of 51
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Zenovia Craciunescu	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: ----	Telephone	: 1 867 446 5593
Project	: 21505757/170000/41	Date Samples Received	: 18-Apr-2022 10:35
PO	: ----	Issue Date	: 09-May-2022 11:45
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 17		
No. of samples analysed	: 17		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### **Workorder Comments**

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

### **Summary of Outliers**

#### **Outliers : Quality Control Samples**

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

#### **Outliers: Reference Material (RM) Samples**

- No Reference Material (RM) Sample outliers occur.

#### **Outliers : Analysis Holding Time Compliance (Breaches)**

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

### ***Outliers : Frequency of Quality Control Samples***

- No Quality Control Sample Frequency Outliers occur.



## Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-1	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-2	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-3	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-4	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-5	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) Dup-2	E298	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-1	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-2	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-3	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-4	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-5	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) TB-1	E298	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-1	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-2	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-2-Bottom	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-3	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-4	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-5	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-6-Bottom	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-6-Top	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-3-Bottom	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-3-Top	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE Dup-2	E235.Cl	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-1	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-2	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-3	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-4	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-5	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE TB-1	E235.Cl	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-29-1	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-29-2	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-29-3	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-29-4	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-5	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE Dup-2	E378-U	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-40-1	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-40-2	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-40-3	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-40-4	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-40-5	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE TB-1	E378-U	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-1	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-2	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-3	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-4	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-5	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE Dup-2	E235.F	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-1	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-2	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-3	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-4	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-5	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE TB-1	E235.F	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-1	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-2	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-2-Bottom	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-3	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-4	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-5	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	✖ EHTR



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-6-Bottom	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-6-Top	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-3-Bottom	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-3-Top	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE Dup-2	E235.NO3-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-1	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-2	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-3	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-4	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-5	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE TB-1	E235.NO3-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-1	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-2	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-3	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-4	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-5	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE Dup-2	E235.NO2-L	14-Apr-2022	----	----	----		20-Apr-2022	3 days	6 days	<div>✖</div> <div>EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-1	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖</div> <div>EHTR</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-2	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-3	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-4	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-5	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE TB-1	E235.NO2-L	13-Apr-2022	----	----	----		20-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-1	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-2	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-3	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-4	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	<div>✔</div>





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-5	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE Dup-2	E392	14-Apr-2022	----	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-1	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-2	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-3	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-4	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-5	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE TB-1	E392	13-Apr-2022	----	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-1	E235.S04-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-2	E235.SO4-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-3	E235.SO4-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-4	E235.SO4-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-5	E235.SO4-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE Dup-2	E235.SO4-L	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-1	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-2	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-3	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-4	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-5	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE TB-1	E235.SO4-L	13-Apr-2022	----	----	----		20-Apr-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29-2-Bottom	E235.SO4	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29-6-Bottom	E235.SO4	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-29-6-Top	E235.SO4	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-33-3-Bottom	E235.SO4	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-33-3-Top	E235.SO4	14-Apr-2022	----	----	----		20-Apr-2022	28 days	6 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-1	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-2	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-3	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-4	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-5	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) Dup-2	E375-U	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-1	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-2	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-3	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-4	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-5	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) TB-1	E375-U	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-1	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-2	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-3	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-4	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-5	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) Dup-2	E318	14-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	11 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-1	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-2	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-3	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-4	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-5	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) TB-1	E318	13-Apr-2022	23-Apr-2022	----	----		25-Apr-2022	28 days	12 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-1	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-2	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-3	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-4	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-5	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) Dup-2	E372-S	14-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-1	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-2	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-3	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-4	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-5	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) TB-1	E372-S	13-Apr-2022	22-Apr-2022	----	----		22-Apr-2022	28 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Dup-2	E339	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-1	E339	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Dup-2	E333	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-1	E333	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) Dup-2	E336	14-Apr-2022	----	----	----		22-Apr-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) TB-1	E336	13-Apr-2022	----	----	----		22-Apr-2022	14 days	9 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-29-1	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-29-2	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-29-3	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-29-4	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-29-5	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) Dup-2	E509-L	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-1	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-2	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-3	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-4	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-5	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) TB-1	E509-L	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-29-1	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-29-2	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-29-3	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-29-4	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-29-5	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) Dup-2	E465	14-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-1	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-2	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-3	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-4	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-5	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) TB-1	E465	13-Apr-2022	26-Apr-2022	----	----		26-Apr-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-29-2-Bottom	E421	14-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	20 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-29-6-Bottom	E421	14-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	20 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-29-6-Top	E421	14-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	20 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-33-3-Bottom	E421	14-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	20 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-33-3-Top	E421	14-Apr-2022	04-May-2022	----	----		04-May-2022	180 days	20 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-1	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-2	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-3	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-4	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-5	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) TB-1	E358-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-1	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-2	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-3	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-4	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-5	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) Dup-2	E358-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-1	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-2	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-3	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-4	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-5	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) TB-1	E355-L	13-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	10 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-1	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-2	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-3	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-4	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-5	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) Dup-2	E355-L	14-Apr-2022	23-Apr-2022	----	----		23-Apr-2022	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-1	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-2	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-2-Bottom	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-3	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-4	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-5	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-6-Bottom	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-6-Top	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-3-Bottom	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-3-Top	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE Dup-2	E290	14-Apr-2022	----	----	----		21-Apr-2022	14 days	7 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-1	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-2	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-3	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-4	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-5	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE TB-1	E290	13-Apr-2022	----	----	----		21-Apr-2022	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-1	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-2	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-29-3	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-4	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-5	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE Dup-2	E100	14-Apr-2022	----	----	----		21-Apr-2022	28 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-1	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-2	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-3	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-4	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-5	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE TB-1	E100	13-Apr-2022	----	----	----		21-Apr-2022	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE BRP-29-5	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	165 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29-4	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	167 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29-2	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	170 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29-1	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	171 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE Dup-2	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	171 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-29-3	E108	14-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	172 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-40-5	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	190 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE TB-1	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	190 hrs	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-40-4	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	191 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-40-3	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	192 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-40-2	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	193 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-40-1	E108	13-Apr-2022	----	----	----		21-Apr-2022	0.25 hrs	194 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-4	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-5	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-6-Bottom	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-6-Top	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-3-Bottom	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-3-Top	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-1	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-2	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-2-Bottom	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-3	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-2	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-3	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-4	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-5	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE Dup-2	E162	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE TB-1	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-1	E162	13-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-4	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-5	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-1	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-2	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-3	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-2	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-3	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-4	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-5	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TSS by Gravimetry										
HDPE Dup-2	E160	14-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✔
Physical Tests : TSS by Gravimetry										
HDPE TB-1	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	7 days	✖
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-1	E160	13-Apr-2022	----	----	----		21-Apr-2022	7 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-1	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-2	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-3	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	✖ EHTR



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-4	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-5	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE Dup-2	E121	14-Apr-2022	----	----	----		21-Apr-2022	3 days	7 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-1	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-2	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-3	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-4	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-5	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE TB-1	E121	13-Apr-2022	----	----	----		21-Apr-2022	3 days	8 days	<div>✖ EHTR</div>



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-1	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-2	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-3	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-4	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-5	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) Dup-2	E466	14-Apr-2022	----	----	----		26-Apr-2022	180 days	12 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-1	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-2	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-3	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-4	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-5	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) TB-1	E466	13-Apr-2022	----	----	----		26-Apr-2022	180 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-29-1	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-29-2	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-29-3	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-29-4	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-29-5	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) Dup-2	E508-L	14-Apr-2022	----	----	----		26-Apr-2022	28 days	12 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-1	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-2	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-3	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-4	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-5	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) TB-1	E508-L	13-Apr-2022	----	----	----		26-Apr-2022	28 days	13 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-1	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-2	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-3	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-4	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-5	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) Dup-2	E395	14-Apr-2022	----	----	----		20-Apr-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-1	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-2	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-3	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-4	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-5	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓

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 Work Order : YL2200337  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/170000/41



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) TB-1	E395	13-Apr-2022	----	----	----		20-Apr-2022	7 days	7 days	✓

#### Legend & Qualifier Definitions

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

EHTR: Exceeded ALS recommended hold time prior to sample receipt.

EHT: Exceeded ALS recommended hold time prior to analysis.

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	463368	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	465965	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	463373	1	19	5.2	5.0	✔
Conductivity in Water	E100	463367	1	14	7.1	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	468411	1	15	6.6	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468213	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	476261	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465966	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463377	1	12	8.3	5.0	✔
Fluoride in Water by IC	E235.F	463372	1	14	7.1	5.0	✔
Free Cyanide	E339	465649	1	12	8.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463370	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463371	1	14	7.1	5.0	✔
pH by Meter	E108	463366	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	467561	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	463369	1	8	12.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	463376	1	12	8.3	5.0	✔
TDS by Gravimetry	E162	463724	2	23	8.7	5.0	✔
Total Cyanide	E333	465650	1	12	8.3	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465086	1	12	8.3	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	465963	1	17	5.8	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	468459	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468206	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465964	1	17	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465087	1	12	8.3	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	463346	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	463728	2	25	8.0	5.0	✔
Turbidity by Nephelometry	E121	464200	1	20	5.0	5.0	✔
WAD Cyanide	E336	465648	1	12	8.3	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	463368	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	465965	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	463373	1	19	5.2	5.0	✔
Conductivity in Water	E100	463367	1	14	7.1	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	468411	1	15	6.6	5.0	✔





Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468213	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	476261	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465966	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463377	1	12	8.3	5.0	✔
Fluoride in Water by IC	E235.F	463372	1	14	7.1	5.0	✔
Free Cyanide	E339	465649	1	12	8.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463370	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463371	1	14	7.1	5.0	✔
pH by Meter	E108	463366	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	467561	1	19	5.2	5.0	✔
Sulfate in Water by IC	E235.SO4	463369	1	8	12.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	463376	1	12	8.3	5.0	✔
TDS by Gravimetry	E162	463724	2	23	8.7	5.0	✔
Total Cyanide	E333	465650	1	12	8.3	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465086	1	12	8.3	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	465963	1	17	5.8	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	468459	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468206	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465964	1	17	5.8	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465087	1	12	8.3	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	463346	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	463728	2	25	8.0	5.0	✔
Turbidity by Nephelometry	E121	464200	1	20	5.0	5.0	✔
WAD Cyanide	E336	465648	1	12	8.3	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	463368	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	465965	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	463373	1	19	5.2	5.0	✔
Conductivity in Water	E100	463367	1	14	7.1	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	468411	1	15	6.6	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468213	1	12	8.3	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	476261	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465966	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463377	1	12	8.3	5.0	✔
Fluoride in Water by IC	E235.F	463372	1	14	7.1	5.0	✔
Free Cyanide	E339	465649	1	12	8.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	463370	1	18	5.5	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	463371	1	14	7.1	5.0	✔
Reactive Silica by Colourimetry	E392	467561	1	19	5.2	5.0	✔



Matrix: **Water**

Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	463369	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	463376	1	12	8.3	5.0	✓
TDS by Gravimetry	E162	463724	2	23	8.7	5.0	✓
Total Cyanide	E333	465650	1	12	8.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465086	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	465963	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	468459	1	18	5.5	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468206	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465964	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465087	1	12	8.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	463346	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	463728	2	25	8.0	5.0	✓
Turbidity by Nephelometry	E121	464200	1	20	5.0	5.0	✓
WAD Cyanide	E336	465648	1	12	8.3	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	465965	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	463373	1	19	5.2	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	468411	1	15	6.6	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	468213	1	12	8.3	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	476261	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	465966	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	463377	1	12	8.3	5.0	✓
Fluoride in Water by IC	E235.F	463372	1	14	7.1	5.0	✓
Free Cyanide	E339	465649	1	12	8.3	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	463370	1	18	5.5	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	463371	1	14	7.1	5.0	✓
Reactive Silica by Colourimetry	E392	467561	1	19	5.2	5.0	✓
Sulfate in Water by IC	E235.SO4	463369	1	8	12.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	463376	1	12	8.3	5.0	✓
Total Cyanide	E333	465650	1	12	8.3	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	465086	1	12	8.3	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	465963	1	17	5.8	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	468459	1	18	5.5	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	468206	1	12	8.3	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	465964	1	17	5.8	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	465087	1	12	8.3	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	463346	1	20	5.0	5.0	✓
WAD Cyanide	E336	465648	1	12	8.3	5.0	✓



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	J. Environ. Monit., 2005, 7, 37-42 (mod)	Ammonia in water is analyzed by flow-injection analysis with fluorescence detection after reaction with orthophthaldialdehyde (OPA).
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Total Kjeldahl Nitrogen is determined using block digestion followed by flow-injection analysis with fluorescence detection.
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically using a discrete analyzer after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically using a discrete analyzer after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals in Water by CRC ICPMS	E421  Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results.  Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested using block digestion with Copper Sulfate Digestion Reagent.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

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Work Order : YL2200337  
Client : Sabina Gold & Silver Corporation  
Project : 21505757/170000/41



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

**Work Order** : **YL2200337**

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**Client** : Sabina Gold & Silver Corporation  
**Contact** : Zenovia Craciunescu  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
 Vancouver BC Canada V7X 1M7  
**Telephone** : ----  
**Project** : 21505757/170000/41  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 17  
**No. of samples analysed** : 17

**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
 Yellowknife, Northwest Territories Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 18-Apr-2022 10:35  
**Date Analysis Commenced** : 20-Apr-2022  
**Issue Date** : 09-May-2022 11:44

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angeli Marzan	Lab Analyst	Inorganics, Edmonton, Alberta
Caitlin Macey	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Caleb Deroche	Lab Analyst	Metals, Burnaby, British Columbia
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



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Work Order : YL2200337  
Client : Sabina Gold & Silver Corporation  
Project : 21505757/170000/41



## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

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

## Workorder Comments

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



## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 463366)</b>											
VA22A7969-021	Anonymous	pH	----	E108	0.10	pH units	7.11	7.13	0.239%	4%	----
<b>Physical Tests (QC Lot: 463367)</b>											
VA22A7969-021	Anonymous	conductivity	----	E100	2.0	µS/cm	1640	1640	0.00%	10%	----
<b>Physical Tests (QC Lot: 463368)</b>											
VA22A7969-021	Anonymous	alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	8.7	8.8	0.1	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463724)</b>											
YL2200334-015	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	24	24	0.2	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463725)</b>											
YL2200337-015	BRP-29-6-Bottom	solids, total dissolved [TDS]	----	E162	13	mg/L	50	46	5	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463728)</b>											
YL2200334-005	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 463729)</b>											
YL2200337-008	BRP-29-2	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 464200)</b>											
VA22A8273-001	Anonymous	turbidity	----	E121	0.10	NTU	1.35	1.40	4.08%	15%	----
<b>Anions and Nutrients (QC Lot: 463369)</b>											
VA22A7969-021	Anonymous	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	3.00	mg/L	886	875	1.27%	20%	----
<b>Anions and Nutrients (QC Lot: 463370)</b>											
VA22A7969-021	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0500	mg/L	1.07	1.10	2.90%	20%	----
<b>Anions and Nutrients (QC Lot: 463371)</b>											
VA22A7969-021	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0100	mg/L	0.0384	0.0372	0.0012	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463372)</b>											
VA22A7969-021	Anonymous	fluoride	16984-48-8	E235.F	0.200	mg/L	<0.200	<0.200	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463373)</b>											
VA22A7969-021	Anonymous	chloride	16887-00-6	E235.Cl	5.00	mg/L	34.2	33.8	0.37	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 463376)</b>											
YL2200337-001	BRP-40-1	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	7.17	7.16	0.111%	20%	----
<b>Anions and Nutrients (QC Lot: 463377)</b>											
YL2200337-001	BRP-40-1	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 465086)</b>											
YL2200337-001	BRP-40-1	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0035	0.0032	0.0003	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 465087)</b>											
YL2200337-001	BRP-40-1	phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0049	0.0044	0.0005	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 465963)</b>											
VA22A7805-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.111	0.103	0.007	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 465965)</b>											
VA22A7805-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0057	0.0059	0.0002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 467561)</b>											
YL2200334-015	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465648)</b>											
YL2200337-001	BRP-40-1	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465649)</b>											
YL2200337-001	BRP-40-1	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 465650)</b>											
YL2200337-001	BRP-40-1	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 465964)</b>											
WR2200297-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	16.7	17.6	5.30%	20%	----
<b>Organic / Inorganic Carbon (QC Lot: 465966)</b>											
VA22A7805-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.91	3.18	0.27	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 463346)</b>											
CG2204338-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 468459)</b>											
CG2204379-001	Anonymous	mercury, total	7439-97-6	E508-L	0.00050	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 468206)</b>											
YL2200337-001	BRP-40-1	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00161	0.00182	0.00021	Diff <2x LOR	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000095	0.0000086	0.0000009	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000268	0.000280	4.36%	20%	----
		barium, total	7440-39-3	E466	0.000020	mg/L	0.00768	0.00768	0.0121%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	3.97	4.08	2.65%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	0.000051	0.000053	0.000001	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000866	0.0000874	0.955%	20%	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.000862	0.000880	2.07%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.0622	0.0639	2.56%	20%	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 468206) - continued											
YL2200337-001	BRP-40-1	lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000024	0.000024	0.0000008	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000390	0.0000392	0.00000010	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00071	0.00072	0.00002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	2.96	3.04	2.88%	20%	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00776	0.00789	1.66%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.00176	0.00179	1.84%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	0.633	0.650	2.63%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	0.000034	0.000028	0.000006	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	0.274	0.264	0.010	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	1.08	1.10	1.75%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0135	0.0137	1.18%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	2.42	2.42	0.006	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	0.000012	0.000013	0.0000009	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000024	0.0000027	0.0000002	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000015	0.000017	0.000002	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00072	0.00078	0.00005	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000012	0.000013	0.000001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 468213)											
YL2200337-001	BRP-40-1	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00138	0.00136	0.00002	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000134	0.0000136	0.0000003	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000283	0.000283	0.0233%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00759	0.00767	0.946%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000027	<0.0000025	0.0000002	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	4.12	4.08	1.06%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000052	0.000056	0.000003	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000299	0.0000300	0.00000004	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000917	0.000896	2.37%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0152	0.0154	1.24%	20%	----





Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 468213) - continued											
YL2200337-001	BRP-40-1	lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000332	0.0000332	0.000000007	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00080	0.00080	0.000007	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	3.13	3.17	1.45%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00112	0.00112	0.205%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00182	0.00182	0.426%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.658	0.664	0.803%	20%	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000029	0.000033	0.000004	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.271	0.275	0.004	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	1.13	1.14	0.935%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0137	0.0137	0.226%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.53	2.55	0.02	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000014	0.000011	0.000003	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	0.000078	0.000028	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000023	0.0000020	0.0000003	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000016	0.000014	0.000002	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00161	0.00162	0.134%	20%	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000015	0.000015	0.0000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 468411)											
VA22A8092-001	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	2.99	2.94	0.05	Diff <2x LOR	----
Dissolved Metals (QC Lot: 476261)											
VA22A8850-001	Anonymous	calcium, dissolved	7440-70-2	E421	0.050	mg/L	52.0	52.5	0.906%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.100	mg/L	16.6	17.1	3.06%	20%	----
		potassium, dissolved	7440-09-7	E421	2.00	mg/L	<2.00	<2.00	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	2.00	mg/L	2.98	3.07	0.085	Diff <2x LOR	----



## Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 463367)</b>						
conductivity	----	E100	1	µS/cm	1.2	----
<b>Physical Tests (QCLot: 463368)</b>						
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 463724)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 463725)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 463728)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 463729)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 464200)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Anions and Nutrients (QCLot: 463369)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 463370)</b>						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 463371)</b>						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 463372)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 463373)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 463376)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 463377)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 465086)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 465087)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 465963)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 465965)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 467561)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Cyanides (QCLot: 465648)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 465649)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 465650)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 465964)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 465966)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 463346)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 468459)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 468206)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 468206) - continued</b>						
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 468213)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----



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Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 468213) - continued</b>						
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 468411)</b>						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
<b>Dissolved Metals (QCLot: 476261)</b>						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

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

### Laboratory Control Sample (LCS) Report

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 463366)									
pH	----	E108	----	pH units	7 pH units	99.8	98.0	102	----
Physical Tests (QCLot: 463367)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	102	90.0	110	----
Physical Tests (QCLot: 463368)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	101	85.0	115	----
Physical Tests (QCLot: 463724)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	105	85.0	115	----
Physical Tests (QCLot: 463725)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	107	85.0	115	----
Physical Tests (QCLot: 463728)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	99.2	85.0	115	----
Physical Tests (QCLot: 463729)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	101	85.0	115	----
Physical Tests (QCLot: 464200)									
turbidity	----	E121	0.1	NTU	200 NTU	99.7	85.0	115	----
Anions and Nutrients (QCLot: 463369)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 463370)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 463371)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 463372)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	98.7	90.0	110	----
Anions and Nutrients (QCLot: 463373)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 463376)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 463377)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	106	80.0	120	----
Anions and Nutrients (QCLot: 465086)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 465087)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 465087) - continued</b>									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	104	80.0	120	----
<b>Anions and Nutrients (QCLot: 465963)</b>									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	103	75.0	125	----
<b>Anions and Nutrients (QCLot: 465965)</b>									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
<b>Anions and Nutrients (QCLot: 467561)</b>									
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	10 mg/L	104	85.0	115	----
<b>Cyanides (QCLot: 465648)</b>									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	102	80.0	120	----
<b>Cyanides (QCLot: 465649)</b>									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	99.9	80.0	120	----
<b>Cyanides (QCLot: 465650)</b>									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	93.1	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 465964)</b>									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 465966)</b>									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
<b>Total Sulfides (QCLot: 463346)</b>									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	84.6	80.0	120	----
<b>Total Metals (QCLot: 468459)</b>									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	104	80.0	120	----
<b>Total Metals (Undigested) (QCLot: 468206)</b>									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	103	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	106	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	103	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	98.5	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	99.9	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	97.7	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	90.6	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	102	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	103	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	98.6	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	98.9	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (Undigested) (QCLot: 468206) - continued</b>									
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	97.8	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	98.1	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.3	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	94.2	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	106	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	98.0	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	101	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	96.3	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	102	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	99.0	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	99.4	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	103	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.2	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	102	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	102	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	104	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	99.4	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	101	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
<b>Dissolved Metals (QCLot: 468213)</b>									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	106	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	108	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	104	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	99.2	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	94.7	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	97.9	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	88.6	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	105	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	104	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	103	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	102	80.0	120	----



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Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 468213) - continued</b>									
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	100	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	89.6	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	109	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.4	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	104	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	98.8	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	94.1	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	104	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	102	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	102	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	98.3	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	102	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	104	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	104	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	102	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	106	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	101	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	102	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	100	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	95.0	80.0	120	----
<b>Dissolved Metals (QCLot: 476261)</b>									
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	99.7	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	97.9	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	106	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----



## Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 463369)</b>										
VA22A8198-001	Anonymous	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	106 mg/L	100 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 463370)</b>										
YL2200337-002	BRP-40-2	nitrate (as N)	14797-55-8	E235.NO3-L	2.58 mg/L	2.5 mg/L	103	75.0	125	----
<b>Anions and Nutrients (QCLot: 463371)</b>										
VA22A8198-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.512 mg/L	0.5 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 463372)</b>										
VA22A8198-001	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
<b>Anions and Nutrients (QCLot: 463373)</b>										
VA22A8198-001	Anonymous	chloride	16887-00-6	E235.Cl	105 mg/L	100 mg/L	105	75.0	125	----
<b>Anions and Nutrients (QCLot: 463376)</b>										
YL2200337-002	BRP-40-2	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	106 mg/L	100 mg/L	106	75.0	125	----
<b>Anions and Nutrients (QCLot: 463377)</b>										
YL2200337-002	BRP-40-2	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0339 mg/L	0.03 mg/L	113	70.0	130	----
<b>Anions and Nutrients (QCLot: 465086)</b>										
YL2200337-002	BRP-40-2	phosphorus, total dissolved	7723-14-0	E375-U	0.0675 mg/L	0.067 mg/L	101	70.0	130	----
<b>Anions and Nutrients (QCLot: 465087)</b>										
YL2200337-002	BRP-40-2	phosphorus, total	7723-14-0	E372-S	0.0672 mg/L	0.067 mg/L	100	70.0	130	----
<b>Anions and Nutrients (QCLot: 465963)</b>										
VA22A7805-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	204 mg/L	2.5 mg/L	81.5	70.0	130	----
<b>Anions and Nutrients (QCLot: 465965)</b>										
VA22A7805-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B
<b>Anions and Nutrients (QCLot: 467561)</b>										
YL2200334-016	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	11.1 mg/L	10 mg/L	111	75.0	125	----
<b>Cyanides (QCLot: 465648)</b>										
YL2200337-002	BRP-40-2	cyanide, weak acid dissociable	----	E336	0.119 mg/L	0.125 mg/L	95.0	75.0	125	----
<b>Cyanides (QCLot: 465649)</b>										
YL2200337-002	BRP-40-2	cyanide, free	----	E339	0.117 mg/L	0.125 mg/L	93.3	75.0	125	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 465650)										
YL2200337-002	BRP-40-2	cyanide, strong acid dissociable (total)	----	E333	0.223 mg/L	0.25 mg/L	89.2	75.0	125	----
Organic / Inorganic Carbon (QCLot: 465964)										
WR2200297-002	Anonymous	carbon, total organic [TOC]	----	E355-L	ND mg/L	5 mg/L	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 465966)										
VA22A7805-002	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Sulfides (QCLot: 463346)										
CG2204338-002	Anonymous	sulfide, total (as S)	18496-25-8	E395	1.08 mg/L	1 mg/L	108	75.0	125	----
Total Metals (QCLot: 468459)										
CG2204379-002	Anonymous	mercury, total	7439-97-6	E508-L	4.88 ng/L	5 ng/L	97.7	70.0	130	----
Total Metals (Undigested) (QCLot: 468206)										
YL2200337-002	BRP-40-2	aluminum, total	7429-90-5	E466	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E466	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E466	0.0186 mg/L	0.02 mg/L	92.9	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0401 mg/L	0.04 mg/L	100	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00978 mg/L	0.01 mg/L	97.8	70.0	130	----
		boron, total	7440-42-8	E466	0.0963 mg/L	0.1 mg/L	96.3	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, total	7440-70-2	E466	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, total	7440-47-3	E466	0.0384 mg/L	0.04 mg/L	95.9	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E466	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		iron, total	7439-89-6	E466	2.09 mg/L	2 mg/L	105	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00250 mg/L	0.0025 mg/L	99.8	70.0	130	----
		lead, total	7439-92-1	E466	0.0199 mg/L	0.02 mg/L	99.4	70.0	130	----
		lithium, total	7439-93-2	E466	0.0952 mg/L	0.1 mg/L	95.2	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E466	0.0386 mg/L	0.04 mg/L	96.6	70.0	130	----
		potassium, total	7440-09-7	E466	4.00 mg/L	4 mg/L	100.0	70.0	130	----
		selenium, total	7782-49-2	E466	0.0418 mg/L	0.04 mg/L	105	70.0	130	----
		silicon, total	7440-21-3	E466	9.00 mg/L	10 mg/L	90.0	70.0	130	----
		silver, total	7440-22-4	E466	0.00437 mg/L	0.004 mg/L	109	70.0	130	----
				sodium, total	7440-23-5	E466	1.96 mg/L	2 mg/L	97.9	70.0



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 468206) - continued										
YL2200337-002	BRP-40-2	strontium, total	7440-24-6	E466	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		sulfur, total	7704-34-9	E466	19.8 mg/L	20 mg/L	99.1	70.0	130	----
		thallium, total	7440-28-0	E466	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		tin, total	7440-31-5	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, total	7440-32-6	E466	0.0409 mg/L	0.04 mg/L	102	70.0	130	----
		uranium, total	7440-61-1	E466	0.00375 mg/L	0.004 mg/L	93.7	70.0	130	----
		vanadium, total	7440-62-2	E466	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		zinc, total	7440-66-6	E466	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
Dissolved Metals (QCLot: 468213)										
YL2200337-002	BRP-40-2	aluminum, dissolved	7429-90-5	E465	0.207 mg/L	0.2 mg/L	104	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0183 mg/L	0.02 mg/L	91.6	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0417 mg/L	0.04 mg/L	104	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00991 mg/L	0.01 mg/L	99.1	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.0981 mg/L	0.1 mg/L	98.1	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00413 mg/L	0.004 mg/L	103	70.0	130	----
		calcium, dissolved	7440-70-2	E465	ND mg/L	4 mg/L	ND	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0395 mg/L	0.04 mg/L	98.7	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.09 mg/L	2 mg/L	104	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.104 mg/L	0.1 mg/L	104	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.54 mg/L	10 mg/L	95.4	70.0	130	----
		potassium, dissolved	7440-09-7	E465	4.07 mg/L	4 mg/L	102	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00263 mg/L	0.0025 mg/L	105	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		silicon, dissolved	7440-21-3	E465	9.04 mg/L	10 mg/L	90.4	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00445 mg/L	0.004 mg/L	111	70.0	130	----
				sodium, dissolved	7440-23-5	E465	1.92 mg/L	2 mg/L	96.2	70.0





Sub-Matrix: <b>Water</b>					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 468213) - continued										
YL2200337-002	BRP-40-2	strontium, dissolved	7440-24-6	E465	0.0195 mg/L	0.02 mg/L	97.6	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	19.8 mg/L	20 mg/L	99.2	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00389 mg/L	0.004 mg/L	97.4	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0418 mg/L	0.04 mg/L	104	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00390 mg/L	0.004 mg/L	97.5	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.0996 mg/L	0.1 mg/L	99.6	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.417 mg/L	0.4 mg/L	104	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0466 mg/L	0.04 mg/L	116	70.0	130	----
Dissolved Metals (QCLot: 468411)										
VA22A8092-002	Anonymous	mercury, dissolved	7439-97-6	E509-L	18.8 ng/L	20 ng/L	94.1	70.0	130	----
Dissolved Metals (QCLot: 476261)										
VA22A8854-001	Anonymous	calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	4.08 mg/L	4 mg/L	102	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.



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





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





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# Chain of Custody (COC) / Analytical Request Form

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COC Number: 1

Page 1 of 2

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>																																																																																																																																																																																																																												
Company:	Golders Associates Ltd.	Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)		Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																																																																																																																																																																												
Contact:	Zenovia Craciunescu (Yellowknife)	Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<table border="1"> <tr> <td rowspan="3">PRIORITY (Business Days)</td> <td>4 day [P4-20%]</td> <td><input type="checkbox"/></td> <td rowspan="3">EMERGENCY</td> <td colspan="6">1 Business day [E - 100%]</td> <td><input type="checkbox"/></td> </tr> <tr> <td>3 day [P3-25%]</td> <td><input type="checkbox"/></td> <td colspan="6">Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2 day [P2-50%]</td> <td><input type="checkbox"/></td> <td colspan="6"></td> <td></td> </tr> </table>										PRIORITY (Business Days)	4 day [P4-20%]	<input type="checkbox"/>	EMERGENCY	1 Business day [E - 100%]						<input type="checkbox"/>	3 day [P3-25%]	<input type="checkbox"/>	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)]						<input type="checkbox"/>	2 day [P2-50%]	<input type="checkbox"/>																																																																																																																																																																																													
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Street:	16820 107 Ave NW	Email 1 or Fax: ZCraciunescu@golder.com		For tests that can not be performed according to the service level selected, you will be contacted.																																																																																																																																																																																																																												
City/Province:	Edmonton, AB	Email 2: KSerben@golder.com																																																																																																																																																																																																																														
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Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax: mkeefe@sabinagoldsilver.com		<table border="1"> <tr> <td rowspan="10">NUMBER OF CONTAINERS (including organic phosphorus, reactive silica)</td> <td>P</td> <td>F/P</td> <td>F</td> <td>F</td> <td>P</td> <td>P</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="19">Routine (including organic phosphorus, reactive silica)</td> </tr> <tr> <td colspan="19">Total Nutrients (including total nitrogen)</td> </tr> <tr> <td colspan="19">Dissolved Nutrients (including DOC)</td> </tr> <tr> <td colspan="19">Total Ultra Low Metals</td> </tr> <tr> <td colspan="19">Dissolved Ultra Low Metals</td> </tr> <tr> <td colspan="19">Total Ultra Low Mercury</td> </tr> <tr> <td colspan="19">Dissolved Ultra Low Mercury</td> </tr> <tr> <td colspan="19">Total Sulfide</td> </tr> <tr> <td colspan="19">Cyanide</td> </tr> <tr> <td colspan="19">TDS (measured and calculated)</td> </tr> </table>										NUMBER OF CONTAINERS (including organic phosphorus, reactive silica)	P	F/P	F	F	P	P															Routine (including organic phosphorus, reactive silica)																			Total Nutrients (including total nitrogen)																			Dissolved Nutrients (including DOC)																			Total Ultra Low Metals																			Dissolved Ultra Low Metals																			Total Ultra Low Mercury																			Dissolved Ultra Low Mercury																			Total Sulfide																			Cyanide																			TDS (measured and calculated)																		
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<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>																																																																																																																																																																																																																														
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LSD: Sabina Facility Code: 176233659		Location:																																																																																																																																																																																																																														
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg		Sampler:																																																																																																																																																																																																																												
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type																																																																																																																																																																																																																												
	BRP-40-1	13-April-22	11:45	Water	10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																																																																																																												
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<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>		<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>		<b>SAMPLE CONDITION AS RECEIVED</b>																																																																																																																																																																																																																												
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Parameters included in each test code are detailed in the Quote - 2021 Under-ice Field Program		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																																																												
Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																																																												
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<b>SHIPMENT RELEASE (client use)</b>		<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>		<b>FINAL SHIPMENT RECEPTION (lab use only)</b>																																																																																																																																																																																																																												
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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

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NOV 2014 P1001

Environmental Division  
Yellowknife  
Work Order Reference  
YL2200337



Telephone: +1 867 873 5593





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Page 2 of 7

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



**Environmental**

## CERTIFICATE OF ANALYSIS

**Work Order** : **YL2200620**  
**Client** : **Sabina Gold & Silver Corporation**  
**Contact** : Merle Keefe  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
Vancouver BC Canada V7X 1M7  
**Telephone** : 604 240 6619  
**Project** : 21505757-17000-42  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 3  
**No. of samples analysed** : 3

**Page** : 1 of 6  
**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 09-Jun-2022 09:59  
**Date Analysis Commenced** : 13-Jun-2022  
**Issue Date** : 21-Jul-2022 16:17

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Angelo Salandanan	Lab Assistant	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Michael Webb	Lab Analyst	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Internal Subcontracting, Fort Collins, Colorado
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
Woochan Song	Lab Analyst	Metals, Burnaby, British Columbia



## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
RRV	Reported result verified by repeat analysis.



## Analytical Results

Sub-Matrix: Water					Client sample ID				
(Matrix: Water)					BRP-34	DUP-1	FB-1	----	----
Client sampling date / time					07-Jun-2022 16:00	07-Jun-2022 16:05	07-Jun-2022 16:10	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2200620-001	YL2200620-002	YL2200620-003	-----	-----
					Result	Result	Result	----	----
<b>Physical Tests</b>									
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	6.0	5.1	<1.0	----	----
conductivity	----	E100	2.0	µS/cm	36.3	36.5	<2.0	----	----
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	13.7	13.7	<0.50	----	----
pH	----	E108	0.10	pH units	6.81	6.85	5.51	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	23	24	<10	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	24.3	25.0	<1.0	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	----	----
turbidity	----	E121	0.10	NTU	0.48	0.46	<0.10	----	----
<b>Anions and Nutrients</b>									
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0825	0.0729	<0.0050	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.47	2.46	<0.50	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	<0.020	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0827	0.0735	<0.0050	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0059	0.0060	<0.0010	----	----
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0033	0.0037	<0.0010	----	----
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	0.64	0.64	<0.50	----	----
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	5.58	5.61	<0.050	----	----
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	5.58	5.61	<0.30	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.314	0.264	<0.050	----	----
<b>Cyanides</b>									
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----
<b>Organic / Inorganic Carbon</b>									
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.79	6.96 <sup>RRV</sup>	<0.50	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	5.60	5.09 <sup>RRV</sup>	<0.50	----	----
<b>Total Sulfides</b>									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	<0.0015	----	----





## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	DUP-1	FB-1	----	----
(Matrix: Water)										
Client sampling date / time					07-Jun-2022 16:00	07-Jun-2022 16:05	07-Jun-2022 16:10	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2200620-001	YL2200620-002	YL2200620-003	-----	-----	-----
					Result	Result	Result	----	----	----
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00206	0.00198	<0.00050	----	----	----
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0301	0.0281	0.00028 <sup>RRV</sup>	----	----	----
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000108	0.0000096	<0.0000050	----	----	----
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000217	0.000216	<0.000010	----	----	----
barium, total	7440-39-3	E466	0.000020	mg/L	0.00657	0.00638	0.000067 <sup>RRV</sup>	----	----	----
beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000042	0.0000046	<0.0000020	----	----	----
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	----
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000070	0.0000072	<0.0000025	----	----	----
calcium, total	7440-70-2	E466	0.010	mg/L	2.73	2.78	<0.010	----	----	----
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000110	0.000110	<0.000040	----	----	----
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000407	0.000409	<0.0000050	----	----	----
copper, total	7440-50-8	E466	0.000050	mg/L	0.00143	0.00146	<0.000050	----	----	----
iron, total	7439-89-6	E466	0.00050	mg/L	0.0480	0.0506	<0.00050	----	----	----
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000213	0.000218	<0.000010	----	----	----
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000193	0.0000162	<0.0000050	----	----	----
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00070	0.00066	<0.00010	----	----	----
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.56	1.54	<0.0010	----	----	----
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.0104	0.0107	0.0000072 <sup>RRV</sup>	----	----	----
molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000011	<0.000010	----	----	----
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00428	0.00435	<0.000020	----	----	----
potassium, total	7440-09-7	E466	0.0050	mg/L	0.453	0.451	<0.0050	----	----	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	<0.000025	----	----	----
silicon, total	7440-21-3	E466	0.050	mg/L	0.272	0.291	<0.050	----	----	----
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	----
sodium, total	7440-23-5	E466	0.010	mg/L	0.620	0.593	<0.010	----	----	----
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0131	0.0130	<0.000020	----	----	----
sulfur, total	7704-34-9	E466	0.50	mg/L	2.00	2.01	<0.50	----	----	----
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000017	0.0000021	<0.0000010	----	----	----
tin, total	7440-31-5	E466	0.000010	mg/L	0.000015	0.000010	0.000018 <sup>RRV</sup>	----	----	----



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34	DUP-1	FB-1	----	----
(Matrix: Water)										
Client sampling date / time					07-Jun-2022 16:00	07-Jun-2022 16:05	07-Jun-2022 16:10	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2200620-001	YL2200620-002	YL2200620-003	-----	-----	-----
					Result	Result	Result	----	----	----
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000232	0.000331	<0.000050	----	----	----
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000100	0.0000085	<0.0000010	----	----	----
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000062	0.000052	<0.000010	----	----	----
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00473	0.00251	0.00088 <sup>RRV</sup>	----	----	----
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000124	0.000047	<0.000010	----	----	----
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.0225	0.0214	0.00023 <sup>RRV</sup>	----	----	----
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000094	0.0000175	<0.0000050	----	----	----
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000204	0.000216	<0.000010	----	----	----
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00635	0.00629	0.000067 <sup>RRV</sup>	----	----	----
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	0.0000037	0.0000047	<0.0000020	----	----	----
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	----
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000084	0.0000055	<0.0000025	----	----	----
calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.73	2.64	<0.010	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	2.89	2.85	<0.050	----	----	----
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000085	0.000091	<0.000040	----	----	----
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000387	0.000370	<0.0000050	----	----	----
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00141	0.00136	<0.000050	----	----	----
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	----	----	----
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0291	0.0284	<0.00050	----	----	----
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000078	0.0000088	<0.0000050	----	----	----
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00067	0.00069	<0.00010	----	----	----
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.61	1.50	<0.0010	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	1.57	1.59	<0.0050	----	----	----
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.0100	0.00940	0.0000055 <sup>RRV</sup>	----	----	----
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00157	0.00144	<0.00050	----	----	----
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000013	0.000011	<0.000010	----	----	----
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00426	0.00415	<0.000020	----	----	----
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	----	----	----
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.447	0.433	<0.0050	----	----	----



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-34	DUP-1	FB-1	----	----
Client sampling date / time						07-Jun-2022 16:00	07-Jun-2022 16:05	07-Jun-2022 16:10	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2200620-001	YL2200620-002	YL2200620-003	-----	-----	
					Result	Result	Result	----	----	
<b>Dissolved Metals</b>										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.465	0.469	<0.050	----	----	
rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	----	----	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	0.000035	<0.000025	----	----	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.270	0.288	<0.050	----	----	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.648	0.589	<0.010	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.667	0.660	<0.050	----	----	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0133	0.0128	<0.000020	----	----	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.04	2.08	<0.50	----	----	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000017	0.0000016	<0.0000010	----	----	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	0.000017	0.000016	0.000016 <sup>RRV</sup>	----	----	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000089	0.000117	<0.000050	----	----	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000084	0.0000092	<0.0000010	----	----	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000036	0.000031	<0.000010	----	----	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00221	0.00174	0.00080 <sup>RRV</sup>	----	----	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000050	0.000049	<0.000010	----	----	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	----	----	
dissolved metals filtration location	----	EP421	-	-	Field	Field	Field	----	----	
<b>Radiological Parameters</b>										
radium-226	13982-63-3	Ra226-MMER	0.0053	Bq/L	----	----	<0.0053	----	----	
radium-226	13982-63-3	Ra226-MMER	0.0055	Bq/L	----	<0.0055	----	----	----	
radium-226	13982-63-3	Ra226-MMER	0.0067	Bq/L	<0.0067	----	----	----	----	

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2200620	Page	: 1 of 21
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757-17000-42	Date Samples Received	: 09-Jun-2022 09:59
PO	: ----	Issue Date	: 21-Jul-2022 16:17
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 3		
No. of samples analysed	: 3		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### **Workorder Comments**

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

### **Summary of Outliers**

#### **Outliers : Quality Control Samples**

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

#### **Outliers: Reference Material (RM) Samples**

- No Reference Material (RM) Sample outliers occur.

#### **Outliers : Analysis Holding Time Compliance (Breaches)**

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

#### **Outliers : Frequency of Quality Control Samples**

- No Quality Control Sample Frequency Outliers occur.







## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34	E298	07-Jun-2022	16-Jun-2022	----	----		18-Jun-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-1	E298	07-Jun-2022	16-Jun-2022	----	----		18-Jun-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB-1	E298	07-Jun-2022	16-Jun-2022	----	----		18-Jun-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34	E235.Cl	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE DUP-1	E235.Cl	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB-1	E235.Cl	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-34	E378-U	07-Jun-2022	----	----	----		14-Jun-2022	3 days	7 days	✖ EHT



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE DUP-1	E378-U	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE FB-1	E378-U	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34	E235.F	07-Jun-2022	----	---	----		14-Jun-2022	28 days	7 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE DUP-1	E235.F	07-Jun-2022	----	---	----		14-Jun-2022	28 days	7 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB-1	E235.F	07-Jun-2022	----	---	----		14-Jun-2022	28 days	7 days	<div>✔</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34	E235.NO3-L	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE DUP-1	E235.NO3-L	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB-1	E235.NO3-L	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34	E235.NO2-L	07-Jun-2022	----	---	----		14-Jun-2022	3 days	7 days	<div>✖</div> <div>EHT</div>



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE DUP-1	E235.NO2-L	07-Jun-2022	----	----	----		14-Jun-2022	3 days	7 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB-1	E235.NO2-L	07-Jun-2022	----	----	----		14-Jun-2022	3 days	7 days	* EHT
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34	E392	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE DUP-1	E392	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB-1	E392	07-Jun-2022	----	----	----		13-Jun-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-34	E235.SO4-L	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE DUP-1	E235.SO4-L	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE FB-1	E235.SO4-L	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-34	E235.SO4	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE DUP-1	E235.SO4	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE FB-1	E235.SO4	07-Jun-2022	----	----	----		14-Jun-2022	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34	E375-U	07-Jun-2022	29-Jun-2022	----	----		02-Jul-2022	28 days	25 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) DUP-1	E375-U	07-Jun-2022	29-Jun-2022	----	----		02-Jul-2022	28 days	25 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB-1	E375-U	07-Jun-2022	29-Jun-2022	----	----		02-Jul-2022	28 days	25 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E318	07-Jun-2022	16-Jun-2022	----	----		21-Jun-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) DUP-1	E318	07-Jun-2022	16-Jun-2022	----	----		21-Jun-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB-1	E318	07-Jun-2022	16-Jun-2022	----	----		21-Jun-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34	E372-S	07-Jun-2022	04-Jul-2022	----	----		05-Jul-2022	28 days	28 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) DUP-1	E372-S	07-Jun-2022	04-Jul-2022	----	----		05-Jul-2022	28 days	28 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB-1	E372-S	07-Jun-2022	04-Jul-2022	----	----		05-Jul-2022	28 days	28 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E339	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP-1	E339	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-1	E339	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E333	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP-1	E333	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-1	E333	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34	E336	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) DUP-1	E336	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB-1	E336	07-Jun-2022	----	----	----		13-Jun-2022	14 days	6 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-34	E509-L	07-Jun-2022	19-Jun-2022	----	----		19-Jun-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) DUP-1	E509-L	07-Jun-2022	19-Jun-2022	----	----		19-Jun-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) FB-1	E509-L	07-Jun-2022	19-Jun-2022	----	----		19-Jun-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-34	E465	07-Jun-2022	20-Jun-2022	----	----		20-Jun-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) DUP-1	E465	07-Jun-2022	20-Jun-2022	----	----		20-Jun-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) FB-1	E465	07-Jun-2022	20-Jun-2022	----	----		20-Jun-2022	180 days	13 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-34	E421	07-Jun-2022	14-Jun-2022	----	----		18-Jun-2022	180 days	10 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) DUP-1	E421	07-Jun-2022	14-Jun-2022	----	----		18-Jun-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) FB-1	E421	07-Jun-2022	14-Jun-2022	----	----		18-Jun-2022	180 days	10 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34	E358-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) DUP-1	E358-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB-1	E358-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34	E355-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) DUP-1	E355-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB-1	E355-L	07-Jun-2022	16-Jun-2022	----	----		17-Jun-2022	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34	E290	07-Jun-2022	----	----	----		15-Jun-2022	14 days	8 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE DUP-1	E290	07-Jun-2022	----	----	----		15-Jun-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE FB-1	E290	07-Jun-2022	----	----	----		15-Jun-2022	14 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34	E100	07-Jun-2022	----	----	----		15-Jun-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE DUP-1	E100	07-Jun-2022	----	----	----		15-Jun-2022	28 days	8 days	✓
Physical Tests : Conductivity in Water										
HDPE FB-1	E100	07-Jun-2022	----	----	----		15-Jun-2022	28 days	8 days	✓
Physical Tests : pH by Meter										
HDPE BRP-34	E108	07-Jun-2022	----	----	----		15-Jun-2022	0.25 hrs	193 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE DUP-1	E108	07-Jun-2022	----	----	----		15-Jun-2022	0.25 hrs	193 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE FB-1	E108	07-Jun-2022	----	----	----		15-Jun-2022	0.25 hrs	193 hrs	✖ EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-34	E162	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE DUP-1	E162	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT
Physical Tests : TDS by Gravimetry										
HDPE FB-1	E162	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE BRP-34	E160	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE DUP-1	E160	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT
Physical Tests : TSS by Gravimetry										
HDPE FB-1	E160	07-Jun-2022	----	----	----		16-Jun-2022	7 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34	E121	07-Jun-2022	----	----	----		15-Jun-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE DUP-1	E121	07-Jun-2022	----	----	----		15-Jun-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE FB-1	E121	07-Jun-2022	----	----	----		15-Jun-2022	3 days	8 days	✖ EHT
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-34	Ra226-MMER	07-Jun-2022	----	----	----		16-Jul-2022	180 days	39 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) DUP-1	Ra226-MMER	07-Jun-2022	----	----	----		16-Jul-2022	180 days	39 days	✓
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) FB-1	Ra226-MMER	07-Jun-2022	----	----	----		16-Jul-2022	180 days	39 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-34	E466	07-Jun-2022	----	----	----		20-Jun-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) DUP-1	E466	07-Jun-2022	----	----	----		20-Jun-2022	180 days	13 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) FB-1	E466	07-Jun-2022	----	----	----		20-Jun-2022	180 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-34	E508-L	07-Jun-2022	----	----	----		18-Jun-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) DUP-1	E508-L	07-Jun-2022	----	----	----		18-Jun-2022	28 days	11 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) FB-1	E508-L	07-Jun-2022	----	----	----		18-Jun-2022	28 days	11 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34	E395	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) DUP-1	E395	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✔
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB-1	E395	07-Jun-2022	----	----	----		13-Jun-2022	7 days	6 days	✔

**Legend & Qualifier Definitions**

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

EHT: Exceeded ALS recommended hold time prior to analysis.

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





## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	523228	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	527275	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	523234	1	15	6.6	5.0	✔
Conductivity in Water	E100	523226	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	529776	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	530467	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	522082	1	19	5.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	527276	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	523237	1	6	16.6	5.0	✔
Fluoride in Water by IC	E235.F	523233	1	15	6.6	5.0	✔
Free Cyanide	E339	521425	1	4	25.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	523231	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	523232	1	19	5.2	5.0	✔
pH by Meter	E108	523227	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	522152	2	22	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	523229	1	18	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	523236	1	3	33.3	5.0	✔
TDS by Gravimetry	E162	525671	1	4	25.0	5.0	✔
Total Cyanide	E333	521423	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	543182	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	527272	1	14	7.1	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	528904	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	530524	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	527277	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	546881	1	18	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	521967	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	525669	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	524245	1	20	5.0	5.0	✔
WAD Cyanide	E336	521424	1	9	11.1	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	523228	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	527275	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	523234	1	15	6.6	5.0	✔
Conductivity in Water	E100	523226	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	529776	1	18	5.5	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	530467	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	522082	1	19	5.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	527276	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	523237	1	6	16.6	5.0	✔
Fluoride in Water by IC	E235.F	523233	1	15	6.6	5.0	✔
Free Cyanide	E339	521425	1	4	25.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	523231	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	523232	1	19	5.2	5.0	✔
pH by Meter	E108	523227	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	522152	2	22	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	523229	1	18	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	523236	1	3	33.3	5.0	✔
TDS by Gravimetry	E162	525671	1	4	25.0	5.0	✔
Total Cyanide	E333	521423	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	543182	1	16	6.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	527272	1	14	7.1	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	528904	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	530524	1	9	11.1	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	527277	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	546881	1	18	5.5	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	521967	1	16	6.2	5.0	✔
TSS by Gravimetry	E160	525669	1	18	5.5	5.0	✔
Turbidity by Nephelometry	E121	524245	1	20	5.0	5.0	✔
WAD Cyanide	E336	521424	1	9	11.1	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	523228	1	19	5.2	5.0	✔
Ammonia by Fluorescence	E298	527275	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	523234	1	15	6.6	5.0	✔
Conductivity in Water	E100	523226	1	18	5.5	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	529776	1	18	5.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	530467	1	9	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	522082	1	19	5.2	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	527276	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	523237	1	6	16.6	5.0	✔
Fluoride in Water by IC	E235.F	523233	1	15	6.6	5.0	✔
Free Cyanide	E339	521425	1	4	25.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	523231	1	19	5.2	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	523232	1	19	5.2	5.0	✔
Reactive Silica by Colourimetry	E392	522152	2	22	9.0	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	523229	1	18	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	523236	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	525671	1	4	25.0	5.0	✓
Total Cyanide	E333	521423	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	543182	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	527272	1	14	7.1	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	528904	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	530524	1	9	11.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	527277	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	546881	1	18	5.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	521967	1	16	6.2	5.0	✓
TSS by Gravimetry	E160	525669	1	18	5.5	5.0	✓
Turbidity by Nephelometry	E121	524245	1	20	5.0	5.0	✓
WAD Cyanide	E336	521424	1	9	11.1	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	527275	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	523234	1	15	6.6	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	529776	1	18	5.5	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	530467	1	9	11.1	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	522082	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	527276	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	523237	1	6	16.6	5.0	✓
Fluoride in Water by IC	E235.F	523233	1	15	6.6	5.0	✓
Free Cyanide	E339	521425	1	4	25.0	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	523231	1	19	5.2	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	523232	1	19	5.2	5.0	✓
Reactive Silica by Colourimetry	E392	522152	2	22	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	523229	1	18	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	523236	1	3	33.3	5.0	✓
Total Cyanide	E333	521423	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	543182	1	16	6.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	527272	1	14	7.1	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	528904	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	530524	1	9	11.1	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	527277	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	546881	1	18	5.5	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	521967	1	16	6.2	5.0	✓
WAD Cyanide	E336	521424	1	9	11.1	5.0	✓



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO <sub>2</sub> E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> -) and reports it as Total Sulphide as (H <sub>2</sub> S)
Dissolved Metals in Water by CRC ICPMS	E421  Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results.  Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium-226 in Water by Radon Emanation (0.037 Bq/L)	Ra226-MMER  Fort Collins - Environmental - 225 Commerce Drive Fort Collins Colorado United States 80524	Water	EPA 903.1	Radium-226 in sample was analyzed according to the current revision of SOP 783.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.

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 Client : Sabina Gold & Silver Corporation  
 Project : 21505757-17000-42



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Digestion for Dissolved Phosphorus in water	EP375  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: YL2200620</b>	<b>Page</b>	<b>: 1 of 18</b>
<b>Client</b>	: Sabina Gold & Silver Corporation	<b>Laboratory</b>	: Yellowknife - Environmental
<b>Contact</b>	: Merle Keefe	<b>Account Manager</b>	: Oliver Gregg
<b>Address</b>	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	<b>Address</b>	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
<b>Telephone</b>	: 604 240 6619	<b>Telephone</b>	: 1 867 446 5593
<b>Project</b>	: 21505757-17000-42	<b>Date Samples Received</b>	: 09-Jun-2022 09:59
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 13-Jun-2022
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 21-Jul-2022 16:17
<b>Sampler</b>	: ----		
<b>Site</b>	: ----		
<b>Quote number</b>	: 2021 Under-Ice Field Program		
<b>No. of samples received</b>	: 3		
<b>No. of samples analysed</b>	: 3		

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

This Quality Control Report contains the following information:

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

### Signatories

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

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Work Order : YL2200620  
Client : Sabina Gold & Silver Corporation  
Project : 21505757-17000-42



## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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



## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 523226)</b>											
VA22B2370-003	Anonymous	conductivity	----	E100	2.0	µS/cm	2490	2490	0.00%	10%	----
<b>Physical Tests (QC Lot: 523227)</b>											
VA22B2370-003	Anonymous	pH	----	E108	0.10	pH units	8.33	8.34	0.0240%	4%	----
<b>Physical Tests (QC Lot: 523228)</b>											
VA22B2370-003	Anonymous	alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	171	169	1.00%	20%	----
<b>Physical Tests (QC Lot: 524245)</b>											
VA22B3308-016	Anonymous	turbidity	----	E121	0.10	NTU	0.27	0.29	0.02	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 525669)</b>											
VA22B3452-001	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	3.5	<3.0	0.5	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 525671)</b>											
VA22B3356-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	311	293	5.96%	20%	----
<b>Anions and Nutrients (QC Lot: 522152)</b>											
YL2200601-003	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	2.32	2.26	0.05	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 522153)</b>											
YL2200620-002	DUP-1	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	0.64	0.64	0.006	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 523229)</b>											
VA22B2370-001	Anonymous	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	299	300	0.169%	20%	----
<b>Anions and Nutrients (QC Lot: 523231)</b>											
VA22B2370-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	1.76	1.77	0.280%	20%	----
<b>Anions and Nutrients (QC Lot: 523232)</b>											
VA22B2370-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0010	<0.0010	0.000003	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 523233)</b>											
VA22B2468-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.057	0.054	0.003	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 523234)</b>											
VA22B2468-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 523236)</b>											
YL2200620-001	BRP-34	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	5.58	5.62	0.719%	20%	----
<b>Anions and Nutrients (QC Lot: 523237)</b>											
WR2200508-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0064	0.0056	0.0007	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 527272)</b>											
KS2202054-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.093	0.091	0.002	Diff <2x LOR	----

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Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 527275)</b>											
KS2202054-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0508	0.0516	1.58%	20%	----
<b>Anions and Nutrients (QC Lot: 543182)</b>											
EO2203977-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0613	0.0608	0.819%	20%	----
<b>Anions and Nutrients (QC Lot: 546881)</b>											
EO2204075-010	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0100	mg/L	0.664	0.615	7.63%	20%	----
<b>Cyanides (QC Lot: 521423)</b>											
VA22B2929-001	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 521424)</b>											
VA22B2929-001	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 521425)</b>											
VA22B2929-001	Anonymous	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 527276)</b>											
VA22B2262-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.37	2.66	0.29	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 527277)</b>											
KS2202054-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.26	1.31	0.05	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 521967)</b>											
CG2207189-008	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0020	0.0019	0.00007	Diff <2x LOR	----
<b>Total Metals (QC Lot: 528904)</b>											
VA22B2544-027	Anonymous	mercury, total	7439-97-6	E508-L	5.00	ng/L	0.0000185 mg/L	18.5	0.02	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 530524)</b>											
YL2200587-001	Anonymous	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00037	0.00038	0.00001	Diff <2x LOR	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		copper, total	7440-50-8	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E466	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----





Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 530524) - continued											
YL2200587-001	Anonymous	lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 522082)											
YL2200619-001	Anonymous	calcium, dissolved	7440-70-2	E421	0.050	mg/L	191	196	2.50%	20%	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	52.4	55.7	6.15%	20%	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.36	4.56	4.49%	20%	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	20.8	21.2	1.97%	20%	----
Dissolved Metals (QC Lot: 529776)											
EO2203958-001	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 530467)											
YL2200587-001	Anonymous	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	<0.00020	0.00032	0.00012	Diff <2x LOR	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 530467) - continued</b>											
YL2200587-001	Anonymous	cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



## Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 523226)</b>						
conductivity	----	E100	1	µS/cm	<1.0	----
<b>Physical Tests (QCLot: 523228)</b>						
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 524245)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 525669)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 525671)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Anions and Nutrients (QCLot: 522152)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 522153)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 523229)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 523231)</b>						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 523232)</b>						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 523233)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 523234)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 523236)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 523237)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 527272)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 527275)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 543182)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 546881)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Cyanides (QCLot: 521423)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 521424)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 521425)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 527276)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 527277)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 521967)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 528904)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 530524)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----





Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 530524) - continued</b>						
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 522082)</b>						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
<b>Dissolved Metals (QCLot: 529776)</b>						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
<b>Dissolved Metals (QCLot: 530467)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----

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Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 530467) - continued</b>						
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----

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

### Laboratory Control Sample (LCS) Report

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 523226)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.9	90.0	110	----
Physical Tests (QCLot: 523227)									
pH	----	E108	----	pH units	7 pH units	99.5	98.0	102	----
Physical Tests (QCLot: 523228)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	111	85.0	115	----
Physical Tests (QCLot: 524245)									
turbidity	----	E121	0.1	NTU	200 NTU	102	85.0	115	----
Physical Tests (QCLot: 525669)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 525671)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	112	85.0	115	----
Anions and Nutrients (QCLot: 522152)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	109	85.0	115	----
Anions and Nutrients (QCLot: 522153)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 523229)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 523231)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 523232)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 523233)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 523234)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 523236)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 523237)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	92.8	80.0	120	----
Anions and Nutrients (QCLot: 527272)									
Kjeldahl nitrogen, total [TKN]	-----	E318	0.05	mg/L	4 mg/L	89.4	75.0	125	----
Anions and Nutrients (QCLot: 527275)									

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Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 527275) - continued</b>									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	100	85.0	115	----
<b>Anions and Nutrients (QCLot: 543182)</b>									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
<b>Anions and Nutrients (QCLot: 546881)</b>									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	97.4	80.0	120	----
<b>Cyanides (QCLot: 521423)</b>									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	92.1	80.0	120	----
<b>Cyanides (QCLot: 521424)</b>									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	97.3	80.0	120	----
<b>Cyanides (QCLot: 521425)</b>									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	97.2	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 527276)</b>									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	98.5	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 527277)</b>									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	100	80.0	120	----
<b>Total Sulfides (QCLot: 521967)</b>									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	85.9	80.0	120	----
<b>Total Metals (QCLot: 528904)</b>									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	106	80.0	120	----
<b>Total Metals (Undigested) (QCLot: 530524)</b>									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	106	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	108	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	108	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	101	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	102	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	98.2	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	104	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	110	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	102	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	102	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	95.0	80.0	120	----





Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (Undigested) (QCLot: 530524) - continued</b>									
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	102	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	107	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	107	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	106	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	106	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	104	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	104	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	97.4	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	103	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	106	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	104	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	106	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	103	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	108	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	108	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	109	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	108	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	105	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	106	80.0	120	----
<b>Dissolved Metals (QCLot: 522082)</b>									
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	98.7	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	99.3	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	102	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	100	80.0	120	----
<b>Dissolved Metals (QCLot: 530467)</b>									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	109	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	112	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	112	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	105	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	97.7	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	105	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	95.7	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	106	80.0	120	----

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Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 530467) - continued</b>									
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	118	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	103	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	105	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	104	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	99.1	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	106	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	110	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	106	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	108	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	105	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	109	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	106	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	111	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	110	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	99.4	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	104	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	110	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	108	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	110	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	109	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	109	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	110	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	108	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	111	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	107	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	108	80.0	120	----

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

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 522152)										
YL2200601-004	Anonymous	silicate (as SiO2)	7631-86-9	E392	10.2 mg/L	10 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 522153)										
YL2200620-003	FB-1	silicate (as SiO2)	7631-86-9	E392	10.7 mg/L	10 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 523229)										
VA22B2370-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4	2000 mg/L	2000 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 523231)										
VA22B2370-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	49.8 mg/L	50 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 523232)										
VA22B2370-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	9.68 mg/L	10 mg/L	96.8	75.0	125	----
Anions and Nutrients (QCLot: 523233)										
VA22B2468-002	Anonymous	fluoride	16984-48-8	E235.F	0.945 mg/L	1 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 523234)										
VA22B2468-002	Anonymous	chloride	16887-00-6	E235.Cl	95.1 mg/L	100 mg/L	95.1	75.0	125	----
Anions and Nutrients (QCLot: 523236)										
YL2200620-002	DUP-1	sulfate (as SO4)	14808-79-8	E235.SO4-L	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 523237)										
WR2200508-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0285 mg/L	0.03 mg/L	95.1	70.0	130	----
Anions and Nutrients (QCLot: 527272)										
KS2202054-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.39 mg/L	2.5 mg/L	95.6	70.0	130	----
Anions and Nutrients (QCLot: 527275)										
KS2202054-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0996 mg/L	0.1 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 543182)										
EO2203977-002	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	0.067 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 546881)										
EO2204075-011	Anonymous	phosphorus, total	7723-14-0	E372-S	ND mg/L	0.067 mg/L	ND	70.0	130	----
Cyanides (QCLot: 521423)										
YL2200620-001	BRP-34	cyanide, strong acid dissociable (total)	----	E333	0.235 mg/L	0.25 mg/L	93.9	75.0	125	----
Cyanides (QCLot: 521424)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 521424) - continued										
YL2200620-001	BRP-34	cyanide, weak acid dissociable	----	E336	0.122 mg/L	0.125 mg/L	98.0	75.0	125	----
Cyanides (QCLot: 521425)										
YL2200620-001	BRP-34	cyanide, free	----	E339	0.123 mg/L	0.125 mg/L	98.6	75.0	125	----
Organic / Inorganic Carbon (QCLot: 527276)										
VA22B2262-002	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	6.38 mg/L	5 mg/L	128	70.0	130	----
Organic / Inorganic Carbon (QCLot: 527277)										
KS2202054-002	Anonymous	carbon, total organic [TOC]	----	E355-L	5.19 mg/L	5 mg/L	104	70.0	130	----
Total Sulfides (QCLot: 521967)										
CG2207189-009	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.115 mg/L	0.1 mg/L	115	75.0	125	----
Total Metals (QCLot: 528904)										
VA22B2544-028	Anonymous	mercury, total	7439-97-6	E508-L	5.22 ng/L	5 ng/L	104	70.0	130	----
Total Metals (Undigested) (QCLot: 530524)										
YL2200587-002	Anonymous	aluminum, total	7429-90-5	E466	0.185 mg/L	0.2 mg/L	92.3	70.0	130	----
		antimony, total	7440-36-0	E466	0.0196 mg/L	0.02 mg/L	97.8	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E466	0.0190 mg/L	0.02 mg/L	95.2	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00938 mg/L	0.01 mg/L	93.8	70.0	130	----
		boron, total	7440-42-8	E466	0.0950 mg/L	0.1 mg/L	95.0	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00393 mg/L	0.004 mg/L	98.2	70.0	130	----
		calcium, total	7440-70-2	E466	4.34 mg/L	4 mg/L	108	70.0	130	----
		chromium, total	7440-47-3	E466	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0198 mg/L	0.02 mg/L	98.9	70.0	130	----
		copper, total	7440-50-8	E466	0.0194 mg/L	0.02 mg/L	96.8	70.0	130	----
		iron, total	7439-89-6	E466	2.00 mg/L	2 mg/L	100	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00244 mg/L	0.0025 mg/L	97.7	70.0	130	----
		lead, total	7439-92-1	E466	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		lithium, total	7439-93-2	E466	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		magnesium, total	7439-95-4	E466	0.930 mg/L	1 mg/L	93.0	70.0	130	----
		manganese, total	7439-96-5	E466	0.0193 mg/L	0.02 mg/L	96.5	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		nickel, total	7440-02-0	E466	0.0384 mg/L	0.04 mg/L	96.0	70.0	130	----
		potassium, total	7440-09-7	E466	3.71 mg/L	4 mg/L	92.8	70.0	130	----
		selenium, total	7782-49-2	E466	0.0390 mg/L	0.04 mg/L	97.6	70.0	130	----
		silicon, total	7440-21-3	E466	8.40 mg/L	10 mg/L	84.0	70.0	130	----





Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 530524) - continued										
YL2200587-002	Anonymous	silver, total	7440-22-4	E466	0.00395 mg/L	0.004 mg/L	98.8	70.0	130	----
		sodium, total	7440-23-5	E466	1.86 mg/L	2 mg/L	93.1	70.0	130	----
		strontium, total	7440-24-6	E466	0.0192 mg/L	0.02 mg/L	95.9	70.0	130	----
		sulfur, total	7704-34-9	E466	20.2 mg/L	20 mg/L	101	70.0	130	----
		thallium, total	7440-28-0	E466	0.00364 mg/L	0.004 mg/L	91.0	70.0	130	----
		tin, total	7440-31-5	E466	0.0196 mg/L	0.02 mg/L	98.0	70.0	130	----
		titanium, total	7440-32-6	E466	0.0399 mg/L	0.04 mg/L	99.7	70.0	130	----
		uranium, total	7440-61-1	E466	0.00381 mg/L	0.004 mg/L	95.4	70.0	130	----
		vanadium, total	7440-62-2	E466	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		zinc, total	7440-66-6	E466	0.398 mg/L	0.4 mg/L	99.4	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0446 mg/L	0.04 mg/L	111	70.0	130	----
Dissolved Metals (QCLot: 522082)										
YL2200619-002	Anonymous	calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2 mg/L	ND	70.0	130	----
Dissolved Metals (QCLot: 529776)										
EO2203958-002	Anonymous	mercury, dissolved	7439-97-6	E509-L	5.02 ng/L	5 ng/L	100	70.0	130	----
Dissolved Metals (QCLot: 530467)										
YL2200587-002	Anonymous	aluminum, dissolved	7429-90-5	E465	0.199 mg/L	0.2 mg/L	99.3	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0383 mg/L	0.04 mg/L	95.7	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00972 mg/L	0.01 mg/L	97.2	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.0953 mg/L	0.1 mg/L	95.3	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00409 mg/L	0.004 mg/L	102	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.46 mg/L	4 mg/L	111	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0391 mg/L	0.04 mg/L	97.8	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.10 mg/L	2 mg/L	105	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.102 mg/L	0.1 mg/L	102	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	0.994 mg/L	1 mg/L	99.4	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0195 mg/L	0.02 mg/L	97.4	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 530467) - continued										
YL2200587-002	Anonymous	molybdenum, dissolved	7439-98-7	E465	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0400 mg/L	0.04 mg/L	100	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.87 mg/L	10 mg/L	98.7	70.0	130	----
		potassium, dissolved	7440-09-7	E465	3.92 mg/L	4 mg/L	98.0	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00251 mg/L	0.0025 mg/L	100	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
		silicon, dissolved	7440-21-3	E465	8.60 mg/L	10 mg/L	86.0	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		sodium, dissolved	7440-23-5	E465	1.96 mg/L	2 mg/L	98.3	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00371 mg/L	0.004 mg/L	92.7	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0411 mg/L	0.04 mg/L	103	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00404 mg/L	0.004 mg/L	101	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.110 mg/L	0.1 mg/L	110	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.416 mg/L	0.4 mg/L	104	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0458 mg/L	0.04 mg/L	114	70.0	130	----



Attach ALS barcode label here  
(lab use only)

Page 1 of 1

Canada Toll Free: 1 800 668 9878

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

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## CERTIFICATE OF ANALYSIS

**Work Order** : **YL2201163**

**Page** : 1 of 11

**Amendment** : **1**

**Client** : **Sabina Gold & Silver Corporation**

**Laboratory** : Yellowknife - Environmental

**Contact** : Merle Keefe

**Account Manager** : Oliver Gregg

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**Address** : 314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A 3T3

**Telephone** : 604 240 6619

**Telephone** : 1 867 446 5593

**Project** : 21505757/17000/43

**Date Samples Received** : 08-Aug-2022 10:15

**PO** : ----

**Date Analysis Commenced** : 10-Aug-2022

**C-O-C number** : ----

**Issue Date** : 03-Oct-2022 17:04

**Sampler** : ----

**Site** : ----

**Quote number** : 2021 Under-Ice Field Program

**No. of samples received** : 7

**No. of samples analysed** : 7

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
Courtney Cox	Analyst	Inorganics, Burnaby, British Columbia
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Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia
Woochan Song	Lab Analyst	Metals, Burnaby, British Columbia





## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
DTMF	Dissolved concentration exceeds total for field-filtered metals sample. Metallic contaminants may have been introduced to dissolved sample during field filtration.



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-39-A	BRP-39-B	BRP-40-1	BRP-40-2	BRP-40-3
(Matrix: Water)										
Client sampling date / time										
					06-Aug-2022 17:05	06-Aug-2022 17:42	06-Aug-2022 14:47	06-Aug-2022 13:46	06-Aug-2022 12:41	
Analyte	CAS Number	Method	LOR	Unit	YL2201163-001	YL2201163-002	YL2201163-003	YL2201163-004	YL2201163-005	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	5.7	5.9	6.2	7.1	6.5	
conductivity	----	E100	2.0	µS/cm	23.3	23.3	23.4	23.0	23.3	
hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100	0.50	mg/L	9.12	8.95	8.97	9.19	9.14	
pH	----	E108	0.10	pH units	6.90	6.89	6.98	6.99	6.97	
solids, total dissolved [TDS]	----	E162	10	mg/L	22	20	21	22	21	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	15.9	17.0	13.8	14.5	14.1	
solids, total suspended [TSS]	----	E160	3.0	mg/L	4.6	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.76	0.68	0.29	0.45	0.26	
<b>Anions and Nutrients</b>										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0084	0.0085	0.0058	0.0078	0.0056	
chloride	16887-00-6	E235.Cl	0.50	mg/L	0.53	0.53	<0.50	<0.50	<0.50	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0082	0.0082	0.0050	0.0035	0.0038	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0043	0.0051	0.0039	0.0037	0.0031	
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	3.26	3.25	3.10	3.08	3.08	
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	3.26	3.25	3.10	3.08	3.08	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.670	0.415	0.212	0.187	0.183	
<b>Cyanides</b>										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
<b>Organic / Inorganic Carbon</b>										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	4.37	5.49	2.97	3.16	3.12	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	4.55	4.95	3.15	3.45	3.10	
<b>Total Sulfides</b>										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0029	0.0035	0.0016	0.0016	0.0016	





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-39-A	BRP-39-B	BRP-40-1	BRP-40-2	BRP-40-3
Client sampling date / time						06-Aug-2022 17:05	06-Aug-2022 17:42	06-Aug-2022 14:47	06-Aug-2022 13:46	06-Aug-2022 12:41
Analyte	CAS Number	Method	LOR	Unit	YL2201163-001	YL2201163-002	YL2201163-003	YL2201163-004	YL2201163-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00110	0.00123	<0.00050	0.00050	<0.00050	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0100	0.0103	0.00340	0.00330	0.00302	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000051	0.0000057	<0.0000050	<0.0000050	0.0000097	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000356	0.000376	0.000168	0.000176	0.000179	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00323	0.00339	0.00280	0.00279	0.00281	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
calcium, total	7440-70-2	E466	0.010	mg/L	1.58	1.55	1.55	1.54	1.56	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000056	0.000058	<0.000040	<0.000040	0.0162	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000521	0.0000620	0.0000300	0.0000318	0.0000568	
copper, total	7440-50-8	E466	0.000050	mg/L	0.000805	0.000824	0.000547	0.000537	0.00112	
iron, total	7439-89-6	E466	0.00050	mg/L	0.243	0.265	0.0419	0.0467	0.173	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000068	0.000084	0.000023	0.000022	0.000021	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000147	0.0000206	<0.0000050	<0.0000050	<0.0000050	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00043	0.00042	0.00038	0.00038	0.00037	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.25	1.24	1.23	1.25	1.26	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00134	0.00179	0.00130	0.00124	0.00269	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000092	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.000907	0.000936	0.000582	0.000594	0.000972	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.313	0.312	0.289	0.293	0.291	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000031	<0.000025	0.000028	<0.000025	<0.000025	
silicon, total	7440-21-3	E466	0.050	mg/L	0.167	0.173	0.133	0.134	0.136	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	0.589	0.582	0.509	0.507	0.509	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.00573	0.00571	0.00546	0.00548	0.00539	
sulfur, total	7704-34-9	E466	0.50	mg/L	1.25	1.21	1.12	1.18	1.15	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000011	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000020	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-39-A	BRP-39-B	BRP-40-1	BRP-40-2	BRP-40-3
(Matrix: Water)										
Client sampling date / time					06-Aug-2022 17:05	06-Aug-2022 17:42	06-Aug-2022 14:47	06-Aug-2022 13:46	06-Aug-2022 12:41	
Analyte	CAS Number	Method	LOR	Unit	YL2201163-001	YL2201163-002	YL2201163-003	YL2201163-004	YL2201163-005	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000067	0.000079	<0.000050	0.000108	<0.000050	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000019	0.0000034	0.0000023	0.0000011	0.0000032	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000050	0.000066	0.000017	0.000017	0.000088	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00052	0.00048	0.00092	0.00054	0.00035	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000022	0.000022	<0.000010	<0.000010	<0.000010	
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00661	0.00667	0.00163	0.00178	0.00155	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000073	0.0000058	<0.0000050	0.0000052	<0.0000050	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000311	0.000328	0.000147	0.000141	0.000139	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00306	0.00299	0.00272	0.00268	0.00268	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000067 <sup>DTMF</sup>	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.45	1.46	1.46	1.47	1.42	
calcium, dissolved	7440-70-2	E421	0.050	mg/L	1.54	1.54	1.53	1.52	1.50	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000046	0.000047	<0.000040	<0.000040	<0.000040	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000511	0.0000609	0.0000174	0.0000224	0.0000170	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000782	0.000780	0.000523	0.000536	0.000515	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.162	0.173	0.0195	0.0200	0.0186	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000093	0.0000082	<0.0000050	<0.0000050	<0.0000050	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00042	0.00041	0.00036	0.00038	0.00037	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.18	1.17	1.22	1.19	1.15	
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	1.28	1.24	1.25	1.31	1.31	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00135	0.00169	0.000632	0.000660	0.000600	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00089	0.00105	<0.00050	<0.00050	<0.00050	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.000880	0.000951	0.000584	0.000604	0.000572	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.290	0.290	0.271	0.270	0.266	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-39-A	BRP-39-B	BRP-40-1	BRP-40-2	BRP-40-3
Client sampling date / time					06-Aug-2022 17:05	06-Aug-2022 17:42	06-Aug-2022 14:47	06-Aug-2022 13:46	06-Aug-2022 12:41	
Analyte	CAS Number	Method	LOR	Unit	YL2201163-001	YL2201163-002	YL2201163-003	YL2201163-004	YL2201163-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.322	0.307	0.289	0.298	0.293	
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000026	<0.000050 <sup>DLM</sup>	<0.000025	<0.000025	<0.000025	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.158	0.167	0.127	0.129	0.130	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.562	0.560	0.499	0.490	0.476	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.596	0.569	0.500	0.517	0.512	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00568	0.00566	0.00555	0.00545	0.00534	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.24	1.24	1.08	1.12	1.12	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000025	0.0000023	<0.0000010	0.0000013	<0.0000010	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000037	0.000045	<0.000010	0.000012	0.000011	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00059	0.00039	0.00022	0.00044	0.00032	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000014	0.000015	<0.000010	<0.000010	<0.000010	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	Laboratory	Laboratory	Laboratory	
Radiological Parameters										
radium-226	13982-63-3	Ra226-MMER	0.0055	Bq/L	<0.0055	----	----	----	----	
radium-226	13982-63-3	Ra226-MMER	0.0058	Bq/L	----	<0.0058	----	----	----	
radium-226	13982-63-3	Ra226-MMER	0.0061	Bq/L	----	----	<0.0061	----	----	
radium-226	13982-63-3	Ra226-MMER	0.0065	Bq/L	----	----	----	----	<0.0065	
radium-226	13982-63-3	Ra226-MMER	0.0068	Bq/L	----	----	----	<0.0068	----	

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

Sub-Matrix: Water					Client sample ID	BRP-40-4	BRP-40-5	----	----	----
(Matrix: Water)										
Client sampling date / time					06-Aug-2022 11:35	06-Aug-2022 10:04	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201163-006	YL2201163-007	-----	-----	-----	
					Result	Result	----	----	----	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	6.8	6.6	----	----	----	
conductivity	----	E100	2.0	µS/cm	23.1	23.5	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	9.17	9.04	----	----	----	
pH	----	E108	0.10	pH units	6.99	6.97	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	21	21	----	----	----	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	14.4	14.0	----	----	----	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	----	----	----	
turbidity	----	E121	0.10	NTU	0.25	0.24	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0136	0.0065	----	----	----	
chloride	16887-00-6	E235.Cl	0.50	mg/L	<0.50	<0.50	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0042	0.0050	----	----	----	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0041	0.0035	----	----	----	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	3.08	3.08	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	3.08	3.08	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.192	0.177	----	----	----	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.21	2.98	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.07	3.06	----	----	----	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0016	0.0015	----	----	----	
Total Metals										





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-40-4	BRP-40-5	----	----	----
Client sampling date / time					06-Aug-2022 11:35	06-Aug-2022 10:04	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201163-006	YL2201163-007	-----	-----	-----	-----
					Result	Result	----	----	----	----
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00056	<0.00050	----	----	----	----
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00293	0.00341	----	----	----	----
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000058	0.0000138	----	----	----	----
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000155	0.000158	----	----	----	----
barium, total	7440-39-3	E466	0.000020	mg/L	0.00280	0.00285	----	----	----	----
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	----
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	----
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	----	----	----	----
calcium, total	7440-70-2	E466	0.010	mg/L	1.53	1.57	----	----	----	----
chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	----	----	----	----
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000327	0.0000358	----	----	----	----
copper, total	7440-50-8	E466	0.000050	mg/L	0.000523	0.000568	----	----	----	----
iron, total	7439-89-6	E466	0.00050	mg/L	0.0362	0.0422	----	----	----	----
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000020	0.000022	----	----	----	----
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	0.0000052	----	----	----	----
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00037	0.00039	----	----	----	----
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.24	1.29	----	----	----	----
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00115	0.00142	----	----	----	----
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----
nickel, total	7440-02-0	E466	0.000020	mg/L	0.000592	0.000636	----	----	----	----
potassium, total	7440-09-7	E466	0.0050	mg/L	0.281	0.296	----	----	----	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	----	----	----	----
silicon, total	7440-21-3	E466	0.050	mg/L	0.132	0.134	----	----	----	----
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	----
sodium, total	7440-23-5	E466	0.010	mg/L	0.499	0.525	----	----	----	----
strontium, total	7440-24-6	E466	0.000020	mg/L	0.00539	0.00559	----	----	----	----
sulfur, total	7704-34-9	E466	0.50	mg/L	1.15	1.10	----	----	----	----
thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	----
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-40-4	BRP-40-5	----	----	----
(Matrix: Water)										
Client sampling date / time					06-Aug-2022 11:35	06-Aug-2022 10:04	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201163-006	YL2201163-007	-----	-----	-----	-----
					Result	Result	----	----	----	----
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	----	----	----	----
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000012	0.0000024	----	----	----	----
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000017	0.000017	----	----	----	----
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00050	0.00084	----	----	----	----
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000010	<0.000010	----	----	----	----
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00168	0.00177	----	----	----	----
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	<0.0000050	0.0000050	----	----	----	----
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000152	0.000144	----	----	----	----
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00274	0.00271	----	----	----	----
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	----
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	----
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	----	----	----	----
calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.44	1.44	----	----	----	----
calcium, dissolved	7440-70-2	E421	0.050	mg/L	1.53	1.51	----	----	----	----
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	----	----	----	----
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000175	0.0000203	----	----	----	----
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000529	0.000535	----	----	----	----
dissolved metals filtration location	----	EP465	-	-	Field	Field	----	----	----	----
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0196	0.0189	----	----	----	----
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	----
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00037	0.00038	----	----	----	----
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.19	1.20	----	----	----	----
magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	1.30	1.28	----	----	----	----
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.000580	0.000621	----	----	----	----
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	<0.00050	<0.00050	----	----	----	----
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.000591	0.000591	----	----	----	----
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	----	----	----	----
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.270	0.266	----	----	----	----



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-40-4	BRP-40-5	----	----	----
					Client sampling date / time	06-Aug-2022 11:35	06-Aug-2022 10:04	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201163-006	YL2201163-007	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.298	0.288	----	----	----	
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	----	----	----	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.129	0.129	----	----	----	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.490	0.493	----	----	----	
sodium, dissolved	7440-23-5	E421	0.050	mg/L	0.507	0.505	----	----	----	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00544	0.00548	----	----	----	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.14	1.14	----	----	----	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	<0.0000010	0.0000015	----	----	----	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000011	0.000011	----	----	----	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00037	0.00046	----	----	----	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	----	----	----	
dissolved metals filtration location	----	EP421	-	-	Laboratory	Laboratory	----	----	----	
Radiological Parameters										
radium-226	13982-63-3	Ra226-MMER	0.0066	Bq/L	<0.0066	<0.0066	----	----	----	

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2201163	Page	: 1 of 35
Amendment	: 1		
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 08-Aug-2022 10:15
PO	: ----	Issue Date	: 03-Oct-2022 17:04
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 7		
No. of samples analysed	: 7		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### **Workorder Comments**

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

### **Summary of Outliers**

#### **Outliers : Quality Control Samples**

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

#### **Outliers: Reference Material (RM) Samples**

- No Reference Material (RM) Sample outliers occur.

#### **Outliers : Analysis Holding Time Compliance (Breaches)**

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

#### **Outliers : Frequency of Quality Control Samples**



- No Quality Control Sample Frequency Outliers occur.



**Outliers : Quality Control Samples**  
*Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes*

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Total Metals (Undigested)	Anonymous	Anonymous	zinc, total	7440-66-6	E466	0.00022 <sup>DUP-H</sup> %	Diff <2x LOR	Low Level DUP DQO exceeded (difference > 2 LOR).

**Result Qualifiers**

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-39-A	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-39-B	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-1	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-2	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-3	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-4	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-40-5	E298	06-Aug-2022	13-Aug-2022	----	----		15-Aug-2022	28 days	9 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-39-A	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-39-B	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-1	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-2	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-3	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-4	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-40-5	E235.Cl	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-39-A	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-39-B	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-40-1	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-40-2	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-40-3	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-40-4	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-40-5	E378-U	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	✖ EHT
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-39-A	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-39-B	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-1	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-2	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-3	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-4	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-40-5	E235.F	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-39-A	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	✖ EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-39-B	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	✖ EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-1	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	✖ EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-2	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	✖ EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-3	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	✖ EHT	11-Aug-2022	3 days	0 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-4	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	* EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-40-5	E235.NO3-L	06-Aug-2022	11-Aug-2022	3 days	5 days	* EHT	11-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-39-A	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-39-B	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-1	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-2	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-3	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-4	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-40-5	E235.NO2-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	3 days	5 days	* EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-39-A	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-39-B	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-1	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-2	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-3	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-4	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-40-5	E392	06-Aug-2022	----	----	----		14-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-39-A	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-39-B	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-1	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-2	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-3	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-4	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-40-5	E235.SO4-L	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-39-A	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-39-B	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-40-1	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-40-2	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-40-3	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-40-4	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Sulfate in Water by IC										
HDPE BRP-40-5	E235.SO4	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-39-A	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-39-B	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-1	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-2	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-3	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-4	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-40-5	E375-U	06-Aug-2022	22-Aug-2022	----	----		23-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-39-A	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-39-B	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-1	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-2	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-3	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-4	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-40-5	E318	06-Aug-2022	13-Aug-2022	----	----		14-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-39-A	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-39-B	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-1	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-2	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-3	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-4	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-40-5	E372-S	06-Aug-2022	18-Aug-2022	----	----		19-Aug-2022	28 days	13 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E339	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E339	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E339	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-A	E339	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-B	E339	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E339	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E339	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E333	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E333	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E333	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-A	E333	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-B	E333	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E333	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E333	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-1	E336	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-2	E336	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-3	E336	06-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	12 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-A	E336	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-39-B	E336	06-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	13 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-4	E336	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-40-5	E336	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	14 days	7 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-39-A	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-39-B	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-1	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-2	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-3	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-4	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP-40-5	E509-L	06-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-39-A	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-39-B	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-1	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-2	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-3	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-4	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP-40-5	E465	06-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	11 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-39-A	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	18 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-39-B	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	18 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-40-1	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	18 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-40-2	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	19 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-40-3	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	19 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-40-4	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	19 days	✔
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab preserved) BRP-40-5	E421	06-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	19 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-39-A	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-39-B	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-1	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-2	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-3	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-4	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-40-5	E358-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-39-A	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-39-B	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-1	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-2	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-3	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-4	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-40-5	E355-L	06-Aug-2022	13-Aug-2022	----	----		13-Aug-2022	28 days	7 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-39-A	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-39-B	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-1	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-2	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-3	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-4	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-40-5	E290	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	14 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-39-A	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-39-B	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-40-1	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-2	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-3	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-4	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-40-5	E100	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	28 days	5 days	✓
Physical Tests : pH by Meter										
HDPE BRP-39-A	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-39-B	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-40-1	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-40-2	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-40-3	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-40-4	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	<div>✖</div> EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-40-5	E108	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	0.25 hrs	4.25 hrs	<div>✖</div> EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP-39-A	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-39-B	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-1	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-2	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-3	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-4	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	<div>✔</div>



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-40-5	E162	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-39-A	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-39-B	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-1	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-2	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-3	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-4	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-40-5	E160	06-Aug-2022	----	----	----		12-Aug-2022	7 days	6 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-39-A	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	✖ EHT



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-39-B	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-1	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-2	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-3	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-4	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-40-5	E121	06-Aug-2022	----	----	----		10-Aug-2022	3 days	4 days	<div>✖</div> <div>EHT</div>
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-39-A	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	<div>✔</div>
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-39-B	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	<div>✔</div>
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-40-1	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-40-2	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	✓
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-40-3	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	✓
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-40-4	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	✓
Radiological Parameters : Radium-226 in Water by Radon Emanation (0.037 Bq/L)										
HDPE (nitric acid) BRP-40-5	Ra226-MMER	06-Aug-2022	----	----	----		07-Sep-2022	180 days	32 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-39-A	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-39-B	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-1	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-2	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-3	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-4	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-40-5	E466	06-Aug-2022	11-Aug-2022	----	----		11-Aug-2022	180 days	5 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-39-A	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-39-B	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-1	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-2	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-3	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-4	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP-40-5	E508-L	06-Aug-2022	17-Aug-2022	28 days	11 days	✓	17-Aug-2022	28 days	0 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-3	E395	06-Aug-2022	----	----	----		10-Aug-2022	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-4	E395	06-Aug-2022	----	----	----		10-Aug-2022	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-5	E395	06-Aug-2022	----	----	----		10-Aug-2022	7 days	4 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-39-A	E395	06-Aug-2022	----	----	----		11-Aug-2022	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-39-B	E395	06-Aug-2022	----	----	----		11-Aug-2022	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-1	E395	06-Aug-2022	----	----	----		11-Aug-2022	7 days	5 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-40-2	E395	06-Aug-2022	----	----	----		11-Aug-2022	7 days	5 days	✓

**Legend & Qualifier Definitions**

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

EHT: Exceeded ALS recommended hold time prior to analysis.

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	597608	1	13	7.6	5.0	✔
Ammonia by Fluorescence	E298	601330	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	597611	1	9	11.1	5.0	✔
Conductivity in Water	E100	597607	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	604416	1	8	12.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	1	18	5.5	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	614282	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	601322	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	597617	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	597614	1	9	11.1	5.0	✔
Free Cyanide	E339	601329	3	14	21.4	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	597612	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	597613	1	9	11.1	5.0	✔
pH by Meter	E108	597606	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	602024	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	597610	1	14	7.1	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	597616	1	7	14.2	5.0	✔
TDS by Gravimetry	E162	600519	1	14	7.1	5.0	✔
Total Cyanide	E333	601328	3	35	8.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	613122	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	601872	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	606225	1	16	6.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	597798	1	13	7.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	601290	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	608030	2	40	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	597278	2	40	5.0	5.0	✔
TSS by Gravimetry	E160	600513	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	597268	2	21	9.5	5.0	✔
WAD Cyanide	E336	601327	3	40	7.5	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	597608	1	13	7.6	5.0	✔
Ammonia by Fluorescence	E298	601330	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	597611	1	9	11.1	5.0	✔
Conductivity in Water	E100	597607	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	604416	1	8	12.5	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	2	18	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	614282	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	601322	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	597617	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	597614	1	9	11.1	5.0	✔
Free Cyanide	E339	601329	3	14	21.4	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	597612	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	597613	1	9	11.1	5.0	✔
pH by Meter	E108	597606	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	602024	1	20	5.0	5.0	✔
Sulfate in Water by IC	E235.SO4	597610	1	14	7.1	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	597616	1	7	14.2	5.0	✔
TDS by Gravimetry	E162	600519	1	14	7.1	5.0	✔
Total Cyanide	E333	601328	3	35	8.5	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	613122	1	20	5.0	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	601872	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	606225	1	16	6.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	597798	1	13	7.6	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	601290	1	19	5.2	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	608030	2	40	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	597278	2	40	5.0	5.0	✔
TSS by Gravimetry	E160	600513	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	597268	2	21	9.5	5.0	✔
WAD Cyanide	E336	601327	3	40	7.5	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	597608	1	13	7.6	5.0	✔
Ammonia by Fluorescence	E298	601330	1	18	5.5	5.0	✔
Chloride in Water by IC	E235.Cl	597611	1	9	11.1	5.0	✔
Conductivity in Water	E100	597607	1	15	6.6	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	604416	1	8	12.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	2	18	11.1	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	614282	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	601322	1	16	6.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	597617	1	7	14.2	5.0	✔
Fluoride in Water by IC	E235.F	597614	1	9	11.1	5.0	✔
Free Cyanide	E339	601329	3	14	21.4	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	597612	1	10	10.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	597613	1	9	11.1	5.0	✔
Reactive Silica by Colourimetry	E392	602024	1	20	5.0	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Sulfate in Water by IC	E235.SO4	597610	1	14	7.1	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	597616	1	7	14.2	5.0	✓
TDS by Gravimetry	E162	600519	1	14	7.1	5.0	✓
Total Cyanide	E333	601328	3	35	8.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	613122	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	601872	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	606225	1	16	6.2	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	597798	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	601290	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	608030	2	40	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	597278	2	40	5.0	5.0	✓
TSS by Gravimetry	E160	600513	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	597268	2	21	9.5	5.0	✓
WAD Cyanide	E336	601327	3	40	7.5	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	601330	1	18	5.5	5.0	✓
Chloride in Water by IC	E235.Cl	597611	1	9	11.1	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	604416	1	8	12.5	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	1	18	5.5	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	614282	1	12	8.3	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	601322	1	16	6.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	597617	1	7	14.2	5.0	✓
Fluoride in Water by IC	E235.F	597614	1	9	11.1	5.0	✓
Free Cyanide	E339	601329	3	14	21.4	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	597612	1	10	10.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	597613	1	9	11.1	5.0	✓
Reactive Silica by Colourimetry	E392	602024	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	597610	1	14	7.1	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	597616	1	7	14.2	5.0	✓
Total Cyanide	E333	601328	3	35	8.5	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	613122	1	20	5.0	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	601872	1	20	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	606225	1	16	6.2	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	597798	1	13	7.6	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	601290	1	19	5.2	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	608030	2	40	5.0	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	597278	2	40	5.0	5.0	✓
WAD Cyanide	E336	601327	3	40	7.5	5.0	✓





## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals in Water by CRC ICPMS	E421  Vancouver - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results.  Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium-226 in Water by Radon Emanation (0.037 Bq/L)	Ra226-MMER  Fort Collins - Environmental - 225 Commerce Drive Fort Collins Colorado United States 80524	Water	EPA 903.1	Radium-226 in sample was analyzed according to the current revision of SOP 783.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Digestion for Dissolved Phosphorus in water	EP375  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration	EP421  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.



## QUALITY CONTROL REPORT

**Work Order** : **YL2201163**

**Page** : 1 of 24

**Amendment** : **1**

**Client** : Sabina Gold & Silver Corporation  
**Contact** : Merle Keefe  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
 Vancouver BC Canada V7X 1M7  
**Telephone** : 604 240 6619  
**Project** : 21505757/17000/43  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : ----  
**Site** : ----  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 7  
**No. of samples analysed** : 7

**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
 Yellowknife, Northwest Territories Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 08-Aug-2022 10:15  
**Date Analysis Commenced** : 10-Aug-2022  
**Issue Date** : 03-Oct-2022 17:04

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

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Courtney Cox	Analyst	Vancouver Inorganics, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Vancouver Metals, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Inorganics, Burnaby, British Columbia
Michael Webb	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Oleksandr Busel		Winnipeg Inorganics, Winnipeg, Manitoba
Oliver Gregg	Client Services Supervisor	USA - Fort Collins Internal Subcontracting, Fort Collins, Colorado
Parnian Sane	Analyst	Vancouver Metals, Burnaby, British Columbia
Sukhman Khosa	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia
Woochan Song	Lab Analyst	Vancouver Metals, Burnaby, British Columbia



## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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



## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 597268)</b>											
VA22B8418-006	Anonymous	turbidity	----	E121	0.10	NTU	3.35	3.53	5.00%	15%	----
<b>Physical Tests (QC Lot: 597269)</b>											
YL2201163-007	BRP-40-5	turbidity	----	E121	0.10	NTU	0.24	0.27	0.02	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 597606)</b>											
FJ2202089-001	Anonymous	pH	----	E108	0.10	pH units	8.30	8.30	0.00%	4%	----
<b>Physical Tests (QC Lot: 597607)</b>											
FJ2202089-001	Anonymous	conductivity	----	E100	2.0	µS/cm	2280	2270	0.440%	10%	----
<b>Physical Tests (QC Lot: 597608)</b>											
YL2201148-002	Anonymous	alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	61.3	62.0	1.14%	20%	----
<b>Physical Tests (QC Lot: 600513)</b>											
VA22B8750-004	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 600519)</b>											
VA22B8750-004	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	147	145	2	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 597610)</b>											
YL2201157-001	Anonymous	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.30	mg/L	11.4	11.4	0.0246%	20%	----
<b>Anions and Nutrients (QC Lot: 597611)</b>											
YL2201157-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	4.78	4.78	0.003	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 597612)</b>											
YL2201157-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 597613)</b>											
YL2201157-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 597614)</b>											
YL2201157-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.069	0.068	0.0009	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 597616)</b>											
YL2201163-001	BRP-39-A	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	3.26	3.25	0.204%	20%	----
<b>Anions and Nutrients (QC Lot: 597617)</b>											
YL2201163-001	BRP-39-A	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 601330)</b>											
FJ2202081-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.348	0.347	0.306%	20%	----
<b>Anions and Nutrients (QC Lot: 601872)</b>											
CG2210486-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.250	mg/L	8.04	9.34	14.9%	20%	----

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 Work Order : YL2201163 Amendment 1  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 602024)</b>											
VA22B8591-001	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	2.22	2.22	0.002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 608030)</b>											
YL2201142-005	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0063	0.0063	0.00005	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 608147)</b>											
WP2202567-001	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0050	mg/L	0.114	0.114	0.210%	20%	----
<b>Anions and Nutrients (QC Lot: 613122)</b>											
YL2201158-012	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0018	0.0011	0.0007	Diff <2x LOR	----
<b>Cyanides (QC Lot: 601327)</b>											
YL2201163-006	BRP-40-4	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 601328)</b>											
YL2201163-006	BRP-40-4	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 601329)</b>											
YL2201163-006	BRP-40-4	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 608263)</b>											
YL2201163-003	BRP-40-1	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 608264)</b>											
YL2201163-003	BRP-40-1	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 608265)</b>											
YL2201163-003	BRP-40-1	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 609700)</b>											
VA22B8907-024	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 609701)</b>											
VA22B8907-024	Anonymous	cyanide, weak acid dissociable	----	E336	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 609702)</b>											
VA22B8907-024	Anonymous	cyanide, free	----	E339	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 601290)</b>											
FJ2202081-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.91	2.31	0.39	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 601322)</b>											
FJ2202081-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	2.10	1.92	0.18	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 597278)</b>											
CG2210389-008	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 598028)</b>											
CG2210396-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----



Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Total Metals (QC Lot: 606225)</b>											
CG2210649-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 597798)</b>											
YL2201143-001	Anonymous	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0133	0.0129	3.66%	20%	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000079	0.0000085	0.0000006	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000125	0.000125	0.147%	20%	----
		barium, total	7440-39-3	E466	0.000020	mg/L	0.00673	0.00690	2.56%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	0.0341	0.0348	0.0007	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	4.45	4.36	1.92%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000416	0.0000429	0.0000013	Diff <2x LOR	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.000547	0.000527	3.66%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.0477	0.0473	0.764%	20%	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000014	0.000014	0.00000008	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000065	0.0000063	0.0000001	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00156	0.00157	0.118%	20%	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	1.59	1.56	1.75%	20%	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00495	0.00491	0.925%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000056	0.000056	0.00000010	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.000343	0.000314	8.82%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	1.09	1.08	1.10%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	0.105	0.106	0.0007	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	3.44	3.39	1.62%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0483	0.0464	4.00%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	0.95	0.94	0.003	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000022	0.0000022	0.00000005	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	0.000010	0.000010	0.00000003	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	0.000052	0.000002	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000144	0.0000130	10.6%	20%	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000031	0.000034	0.000003	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00069	# 0.00047	0.00022	Diff <2x LOR	DUP-H





Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Total Metals (Undigested) (QC Lot: 597798) - continued</b>											
YL2201143-001	Anonymous	zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000016	0.000015	0.0000008	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 604416)</b>											
YL2201158-012	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.50	<0.50	0	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 606069)</b>											
YL2201163-001	BRP-39-A	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00661	0.00644	2.68%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000073	0.0000063	0.0000010	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000311	0.000297	4.56%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00306	0.00308	0.826%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000067	0.0000073	0.0000006	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.45	1.42	1.75%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000046	0.000044	0.000002	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000511	0.0000496	2.99%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000782	0.000786	0.543%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.162	0.159	2.20%	20%	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000093	0.0000084	0.0000008	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00042	0.00040	0.00002	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.18	1.16	1.62%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00135	0.00134	1.08%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.000880	0.000873	0.802%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.290	0.284	2.22%	20%	----
		rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000026	0.000028	0.000003	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.158	0.158	0.0009	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.562	0.545	3.08%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00568	0.00556	2.12%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.24	1.22	0.02	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 606069) - continued											
YL2201163-001	BRP-39-A	uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000025	<0.0000010	0.0000015	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000037	0.000036	0.0000004	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00059	0.00043	0.00016	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000014	0.000014	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 614282)											
VA22B9511-009	Anonymous	calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



## Method Blank (MB) Report

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

### Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 597268)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 597269)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 597607)</b>						
conductivity	----	E100	1	µS/cm	1.1	----
<b>Physical Tests (QCLot: 597608)</b>						
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 600513)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Physical Tests (QCLot: 600519)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Anions and Nutrients (QCLot: 597610)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 597611)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 597612)</b>						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 597613)</b>						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 597614)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 597616)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 597617)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 601330)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 601872)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 602024)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 608030)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 608147)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 613122)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Cyanides (QCLot: 601327)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 601328)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 601329)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 608263)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 608264)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 608265)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 609700)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 609701)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 609702)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 601290)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 601322)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 597278)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Sulfides (QCLot: 598028)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 606225)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 597798)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 597798) - continued</b>						
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 604416)</b>						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
<b>Dissolved Metals (QCLot: 606069)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----





Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 606069) - continued</b>						
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 607351)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 607351) - continued</b>						
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 614282)</b>						
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 614282) - continued						
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----

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

Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 597268)									
turbidity	----	E121	0.1	NTU	200 NTU	95.8	85.0	115	----
Physical Tests (QCLot: 597269)									
turbidity	----	E121	0.1	NTU	200 NTU	97.0	85.0	115	----
Physical Tests (QCLot: 597606)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 597607)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.6	90.0	110	----
Physical Tests (QCLot: 597608)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	111	85.0	115	----
Physical Tests (QCLot: 600513)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	94.7	85.0	115	----
Physical Tests (QCLot: 600519)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 597610)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 597611)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 597612)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 597613)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	96.3	90.0	110	----
Anions and Nutrients (QCLot: 597614)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	96.2	90.0	110	----
Anions and Nutrients (QCLot: 597616)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 597617)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	100.0	80.0	120	----
Anions and Nutrients (QCLot: 601330)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	90.8	85.0	115	----
Anions and Nutrients (QCLot: 601872)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	93.5	75.0	125	----
Anions and Nutrients (QCLot: 602024)									



Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 602024) - continued									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 608030)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	97.2	80.0	120	----
Anions and Nutrients (QCLot: 608147)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	82.9	80.0	120	----
Anions and Nutrients (QCLot: 613122)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	98.8	80.0	120	----
Cyanides (QCLot: 601327)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	89.9	80.0	120	----
Cyanides (QCLot: 601328)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	87.4	80.0	120	----
Cyanides (QCLot: 601329)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	95.6	80.0	120	----
Cyanides (QCLot: 608263)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	89.2	80.0	120	----
Cyanides (QCLot: 608264)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	92.0	80.0	120	----
Cyanides (QCLot: 608265)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	92.6	80.0	120	----
Cyanides (QCLot: 609700)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	82.6	80.0	120	----
Cyanides (QCLot: 609701)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	90.9	80.0	120	----
Cyanides (QCLot: 609702)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 601290)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	105	80.0	120	----
Organic / Inorganic Carbon (QCLot: 601322)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Total Sulfides (QCLot: 597278)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	101	80.0	120	----
Total Sulfides (QCLot: 598028)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	112	80.0	120	----





Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (QCLot: 606225)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	96.0	80.0	120	----
Total Metals (Undigested) (QCLot: 597798)									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	100	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	106	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	99.4	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	102	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	93.9	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	96.2	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	92.6	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	101	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	105	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	98.6	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.7	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	95.6	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	92.4	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.8	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	101	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	94.9	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	101	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	96.0	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	100	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	95.4	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	99.2	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	100	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	97.6	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	97.1	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	98.1	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	97.5	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	100	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	104	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	106	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	101	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	99.4	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	95.8	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	99.8	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	93.8	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 606069)									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	116	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	109	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	110	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	107	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	94.9	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	112	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	111	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	104	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	104	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	90.5	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	107	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	106	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	106	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	105	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	118	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	99.4	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	108	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	110	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	113	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	107	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	110	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	103	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	112	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	110	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	108	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	96.5	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	112	80.0	120	----
Dissolved Metals (QCLot: 607351)									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	91.3	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 607351) - continued</b>									
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	95.8	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	95.6	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	93.8	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	94.4	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	89.5	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.3	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	98.0	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	92.7	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	92.4	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	92.7	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	85.0	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	94.3	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	92.1	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	95.9	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	96.1	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	93.2	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	96.4	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	89.4	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	101	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	95.2	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.5	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	91.1	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	94.8	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	94.6	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	96.0	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	93.8	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	91.2	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	97.6	80.0	120	----
<b>Dissolved Metals (QCLot: 614282)</b>									
calcium, dissolved	7440-70-2	E421	0.05	mg/L	50 mg/L	96.6	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	50 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 614282) - continued									
potassium, dissolved	7440-09-7	E421	0.05	mg/L	50 mg/L	100	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	50 mg/L	106	80.0	120	----

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

Matrix Spike (MS) Report					
Spike		Recovery (%)	Recovery Limits (%)		
Concentration	Target	MS	Low	High	Qualifier
106 mg/L	100 mg/L	106	75.0	125	----
104 mg/L	100 mg/L	104	75.0	125	----
2.62 mg/L	2.5 mg/L	105	75.0	125	----
0.495 mg/L	0.5 mg/L	98.9	75.0	125	----
0.998 mg/L	1 mg/L	99.8	75.0	125	----
106 mg/L	100 mg/L	106	75.0	125	----
0.0262 mg/L	0.03 mg/L	87.5	70.0	130	----
0.0937 mg/L	0.1 mg/L	93.7	75.0	125	----
12.6 mg/L	2.5 mg/L	100	70.0	130	----
9.96 mg/L	10 mg/L	99.6	75.0	125	----
0.0097 mg/L	0.01 mg/L	97.1	70.0	130	----
ND mg/L	0.01 mg/L	ND	70.0	130	----
0.0109 mg/L	0.01 mg/L	109	70.0	130	----
0.118 mg/L	0.125 mg/L	94.0	75.0	125	----





Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 601328) - continued										
YL2201163-007	BRP-40-5	cyanide, strong acid dissociable (total)	----	E333	0.224 mg/L	0.25 mg/L	89.6	75.0	125	----
Cyanides (QCLot: 601329)										
YL2201163-007	BRP-40-5	cyanide, free	----	E339	0.117 mg/L	0.125 mg/L	93.7	75.0	125	----
Cyanides (QCLot: 608263)										
YL2201163-004	BRP-40-2	cyanide, weak acid dissociable	----	E336	0.119 mg/L	0.125 mg/L	95.5	75.0	125	----
Cyanides (QCLot: 608264)										
YL2201163-004	BRP-40-2	cyanide, strong acid dissociable (total)	----	E333	0.239 mg/L	0.25 mg/L	95.5	75.0	125	----
Cyanides (QCLot: 608265)										
YL2201163-004	BRP-40-2	cyanide, free	----	E339	0.119 mg/L	0.125 mg/L	95.3	75.0	125	----
Cyanides (QCLot: 609700)										
VA22B8907-025	Anonymous	cyanide, strong acid dissociable (total)	----	E333	1.16 mg/L	1.25 mg/L	92.8	75.0	125	----
Cyanides (QCLot: 609701)										
VA22B8907-025	Anonymous	cyanide, weak acid dissociable	----	E336	0.640 mg/L	0.625 mg/L	102	75.0	125	----
Cyanides (QCLot: 609702)										
VA22B8907-025	Anonymous	cyanide, free	----	E339	0.632 mg/L	0.625 mg/L	101	75.0	125	----
Organic / Inorganic Carbon (QCLot: 601290)										
FJ2202081-002	Anonymous	carbon, total organic [TOC]	----	E355-L	5.62 mg/L	5 mg/L	112	70.0	130	----
Organic / Inorganic Carbon (QCLot: 601322)										
FJ2202081-002	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.67 mg/L	5 mg/L	93.4	70.0	130	----
Total Sulfides (QCLot: 597278)										
CG2210389-009	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.111 mg/L	0.1 mg/L	111	75.0	125	----
Total Sulfides (QCLot: 598028)										
YL2201163-002	BRP-39-B	sulfide, total (as S)	18496-25-8	E395	0.227 mg/L	0.2 mg/L	113	75.0	125	----
Total Metals (QCLot: 606225)										
CG2210649-002	Anonymous	mercury, total	7439-97-6	E508-L	4.43 ng/L	5 ng/L	88.6	70.0	130	----
Total Metals (Undigested) (QCLot: 597798)										
YL2201143-002	Anonymous	aluminum, total	7429-90-5	E466	0.198 mg/L	0.2 mg/L	99.3	70.0	130	----
		antimony, total	7440-36-0	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		barium, total	7440-39-3	E466	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00945 mg/L	0.01 mg/L	94.5	70.0	130	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 597798) - continued										
YL2201143-002	Anonymous	boron, total	7440-42-8	E466	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00400 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, total	7440-70-2	E466	4.46 mg/L	4 mg/L	111	70.0	130	----
		chromium, total	7440-47-3	E466	0.0377 mg/L	0.04 mg/L	94.2	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0192 mg/L	0.02 mg/L	96.0	70.0	130	----
		copper, total	7440-50-8	E466	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		iron, total	7439-89-6	E466	1.98 mg/L	2 mg/L	98.8	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00233 mg/L	0.0025 mg/L	93.1	70.0	130	----
		lead, total	7439-92-1	E466	0.0198 mg/L	0.02 mg/L	99.2	70.0	130	----
		lithium, total	7439-93-2	E466	0.0941 mg/L	0.1 mg/L	94.1	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0191 mg/L	0.02 mg/L	95.6	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0203 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E466	0.0386 mg/L	0.04 mg/L	96.5	70.0	130	----
		potassium, total	7440-09-7	E466	3.94 mg/L	4 mg/L	98.6	70.0	130	----
		selenium, total	7782-49-2	E466	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		silicon, total	7440-21-3	E466	9.21 mg/L	10 mg/L	92.1	70.0	130	----
		silver, total	7440-22-4	E466	0.00396 mg/L	0.004 mg/L	99.1	70.0	130	----
		sodium, total	7440-23-5	E466	ND mg/L	2 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E466	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E466	20.0 mg/L	20 mg/L	99.9	70.0	130	----
		thallium, total	7440-28-0	E466	0.00380 mg/L	0.004 mg/L	95.1	70.0	130	----
		tin, total	7440-31-5	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		titanium, total	7440-32-6	E466	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
		uranium, total	7440-61-1	E466	0.00388 mg/L	0.004 mg/L	97.1	70.0	130	----
		vanadium, total	7440-62-2	E466	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		zinc, total	7440-66-6	E466	0.403 mg/L	0.4 mg/L	101	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
Dissolved Metals (QCLot: 604416)										
YL2201163-001	BRP-39-A	mercury, dissolved	7439-97-6	E509-L	5.07 ng/L	5 ng/L	101	70.0	130	----
Dissolved Metals (QCLot: 606069)										
YL2201163-002	BRP-39-B	aluminum, dissolved	7429-90-5	E465	0.216 mg/L	0.2 mg/L	108	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0236 mg/L	0.02 mg/L	118	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0229 mg/L	0.02 mg/L	114	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0220 mg/L	0.02 mg/L	110	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0432 mg/L	0.04 mg/L	108	70.0	130	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 606069) - continued										
YL2201163-002	BRP-39-B	bismuth, dissolved	7440-69-9	E465	0.0108 mg/L	0.01 mg/L	108	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.112 mg/L	0.1 mg/L	112	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00477 mg/L	0.004 mg/L	119	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.62 mg/L	4 mg/L	116	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0219 mg/L	0.02 mg/L	110	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0221 mg/L	0.02 mg/L	111	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.16 mg/L	2 mg/L	108	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0223 mg/L	0.02 mg/L	111	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0223 mg/L	0.02 mg/L	111	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0225 mg/L	0.02 mg/L	113	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	11.3 mg/L	10 mg/L	113	70.0	130	----
		potassium, dissolved	7440-09-7	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00278 mg/L	0.0025 mg/L	111	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0856 mg/L	0.08 mg/L	107	70.0	130	----
		silicon, dissolved	7440-21-3	E465	9.92 mg/L	10 mg/L	99.2	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00460 mg/L	0.004 mg/L	115	70.0	130	----
		sodium, dissolved	7440-23-5	E465	2.17 mg/L	2 mg/L	108	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	22.8 mg/L	20 mg/L	114	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0231 mg/L	0.02 mg/L	116	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0463 mg/L	0.04 mg/L	116	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00447 mg/L	0.004 mg/L	112	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.112 mg/L	0.1 mg/L	112	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.463 mg/L	0.4 mg/L	116	70.0	130	----
				zirconium, dissolved	7440-67-7	E465	0.0461 mg/L	0.04 mg/L	115	70.0
Dissolved Metals (QCLot: 614282)										
VA22B9511-011	Anonymous	calcium, dissolved	7440-70-2	E421	ND mg/L	4 mg/L	ND	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	ND mg/L	1 mg/L	ND	70.0	130	----
		potassium, dissolved	7440-09-7	E421	3.83 mg/L	4 mg/L	95.9	70.0	130	----
		sodium, dissolved	7440-23-5	E421	1.81 mg/L	2 mg/L	90.7	70.0	130	----





Wednesday, September 07, 2022

Oliver Gregg  
ALS Environmental  
314 Old Airport Road Unit 116  
Yellowknife, NT X1A 3T3

Re: ALS Workorder: 2208360  
Project Name:  
Project Number: YL2201163

Dear Mr. Gregg:

Seven water samples were received from ALS Environmental, on 8/12/2022. The samples were scheduled for the following analysis:

Radium-226

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

*Margaret G. O'Brien*

For

ALS Environmental  
Tyler J. Monroe  
Project Manager



	<h1>Accreditations</h1>	Effective June 7, 2022
		ALS   Environmental – Fort Collins

**Accreditations:** ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Arizona	AZ0828
California (CA)	2926
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
Oklahoma	1301
Louisiana	197538
Maryland (MD)	285
PJLA (DoD ELAP/ISO 170250)	95377
PJLA (DOE-AP/ISO 17025)	95377
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO010992018-1
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	TN02976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280
Virginia	460305

**40 CFR Part 136:** All analyses for Clean Water Act samples are analyzed using the 40 CFR Part 136 specified method and include all the QC requirements.



**2208360**

**Radium-226:**

The samples were prepared and analyzed according to the current revision of SOP 783.

All acceptance criteria were met.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 2208360

**Client Name:** ALS Environmental

**Client Project Name:**

**Client Project Number:** YL2201163

**Client PO Number:** YL2201163

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
YL2201163-001	2208360-1		WATER	06-Aug-22	17:05
YL2201163-002	2208360-2		WATER	06-Aug-22	17:42
YL2201163-003	2208360-3		WATER	06-Aug-22	14:47
YL2201163-004	2208360-4		WATER	06-Aug-22	13:46
YL2201163-005	2208360-5		WATER	06-Aug-22	12:41
YL2201163-006	2208360-6		WATER	06-Aug-22	11:35
YL2201163-007	2208360-7		WATER	06-Aug-22	10:04



Chain of Custody  
Yellowknife - Environmental  
314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A  
3T3

68676



2208360

Destination Lab: **USA - Fort Collins**

Address: 225 Commerce Drive Fort Collins CO  
United States 80524

Client: Sabina Gold & Silver Corporation

Work Order Number: **YL2201163**

Original Receipt Date/Time: 08/08/2022 10:15  
Instructions Received

Relinquished By

Date/Time

Received By: *Amph...*  
**AUG 10 2022**

Date/Time: *8/12/22 13:05 AM*

Receipt Temp

Return as Indicated: Results: ALSYK.ClientServices@alsglobal.com Invoice: ALSYK.ClientServices@alsglobal.com Electronic Data: ALSYK.ClientServices@alsglobal.com

Attention: Oliver Gregg

ALS Sample ID	Client ID	Matrix	Container Type	Test Codes	Method Description	Due Date	Sampling Date and Time	Remarks
YL2201163-001	BRP-39-A	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 17:05	
YL2201163-002	BRP-39-B	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 17:42	
YL2201163-003	BRP-40-1	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 14:47	
YL2201163-004	BRP-40-2	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 13:46	
YL2201163-005	BRP-40-3	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 12:41	
YL2201163-006	BRP-40-4	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 11:35	
YL2201163-007	BRP-40-5	Water	HDPE (nitric acid)	Ra226-MMER	Radium-226 in Water by Radon Emanation (0.037 Bq/L)	15-08-2022	06/08/2022 10:04	



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: ALS BURNABY Workorder No: 2208360  
 Project Manager: TJM Initials: AXK Date: 08/12/2022

	N/A	YES	NO
1. Are airbills / shipping documents present and/or removable?		X	
Tracking number:			
2. Are custody seals on shipping containers intact?	X		
3. Are custody seals on sample containers intact?	X		
4. Is there a COC (chain-of-custody) present?		X	
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		X	
6. Are short-hold samples present?			X
7. Are all samples within holding times for the requested analyses?		X	
8. Were all sample containers received intact? (not broken or leaking)		X	
9. Is there sufficient sample for the requested analyses?		X	
10. Are samples in proper containers for requested analyses? (form 250, Sample Handling Guidelines)		X	
11. Are all aqueous samples preserved correctly, if required? (excluding volatiles)		X	
12. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	X		
13. Were the samples shipped on ice?	X		
14. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #6		
Cooler #: <u>1</u> Temperature (°C): <u>AMB</u> # of custody seals on cooler: <u>0</u> External µR/hr reading: <u>10</u> Background µR/hr reading: <u>11</u> Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES (If no, see Form 008.)			

\* Please provide details here for NO responses to boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

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Were unpreserved bottles pH checked? NA All client bottle ID's vs ALS lab ID's double-checked by: AK

If applicable, was the client contacted? YES / NO / NA Contact: Margaret G. Brown Date/Time: 8/15/22

Project Manager Signature / Date: Margaret G. Brown 8/15/22



10-D  
Amv

EXPRESS WORLDWIDE **WPX** **WHL**

2022-08-11 MYDHL+ 1.0 / 30-0821  
From : ALS Environmental  
Paul Chandra  
100 - 8051 Loughheed Highway  
Origin:  
YVR

VSA 1W9 BURBARY BC  
Canada

To : ALS Environmental - Fort Collins  
Sample Receiving  
225 Commerce Drive  
Contact:  
Sample Receiving

80524 FORT COLLINS Colorado  
United States of America

US-DEN-DEN

C-PLT

Ref: Piece  
23.0/46.0 lbs 1 / 2

Contents:  
Environmental w alers  
for resesach.

WYBIL 15 7932 9161

(2L)US80524+48000001

(J) JD01 4600 0102 0332 5847

2208360

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-001

Lab ID: 2208360-1

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 17:05

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Radium-226 by Radon Emanation - Method 903.1</b>						
			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.00037 (+/- 0.0028)	U	0.0055	BQ/l	NA	9/6/2022 12:09
Carr: BARIUM	92.5		40-110	%REC	DL = NA	9/6/2022 12:09

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-002

Lab ID: 2208360-2

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 17:42

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Radium-226 by Radon Emanation - Method 903.1</b>			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.0038 (+/- 0.0040)	U	0.0058	BQ/l	NA	9/6/2022 12:09
Carr: BARIUM	95		40-110	%REC	DL = NA	9/6/2022 12:09

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-003

Lab ID: 2208360-3

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 14:47

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Radium-226 by Radon Emanation - Method 903.1</b>		<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>		PrepBy: <b>EJE</b>
Ra-226	0.0017 (+/- 0.0035)	Y1,U	0.0061	BQ/l	NA	9/6/2022 12:09
Carr: BARIUM	103	Y1	40-110	%REC	DL = NA	9/6/2022 12:09

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-004

Lab ID: 2208360-4

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 13:46

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>Radium-226 by Radon Emanation - Method 903.1</b>			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.00086 (+/- 0.0037)	U	0.0068	BQ/l	NA	9/6/2022 12:09
Carr: BARIUM	92.7		40-110	%REC	DL = NA	9/6/2022 12:09



Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-005

Lab ID: 2208360-5

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 12:41

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Radium-226 by Radon Emanation - Method 903.1</b>						
			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.00043 (+/- 0.0034)	U	0.0065	BQ/l	NA	9/6/2022 12:09
Carr: BARIUM	99.4		40-110	%REC	DL = NA	9/6/2022 12:09

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-006

Lab ID: 2208360-6

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 11:35

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>Radium-226 by Radon Emanation - Method 903.1</b>			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.0025 (+/- 0.0040)	U	0.0066	BQ/l	NA	9/6/2022 12:49
Carr: BARIUM	98		40-110	%REC	DL = NA	9/6/2022 12:49

Client: ALS Environmental

Date: 07-Sep-22

Project: YL2201163

Work Order: 2208360

Sample ID: YL2201163-007

Lab ID: 2208360-7

Legal Location:

Matrix: WATER

Collection Date: 8/6/2022 10:04

Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
<b>Radium-226 by Radon Emanation - Method 903.1</b>			<b>SOP 783</b>		Prep Date: <b>8/25/2022</b>	PrepBy: <b>EJE</b>
Ra-226	0.0018 (+/- 0.0038)	U	0.0066	BQ/l	NA	9/6/2022 12:49
Carr: BARIUM	98		40-110	%REC	DL = NA	9/6/2022 12:49

**Client:** ALS Environmental  
**Project:** YL2201163  
**Sample ID:** YL2201163-007  
**Legal Location:**  
**Collection Date:** 8/6/2022 10:04

**Date:** 07-Sep-22  
**Work Order:** 2208360  
**Lab ID:** 2208360-7  
**Matrix:** WATER  
**Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
----------	--------	------	--------------	-------	-----------------	---------------

### Explanation of Qualifiers

#### Radiochemistry:

- "Report Limit" is the MDC  
 U or ND - Result is less than the sample specific MDC.  
 Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.  
 Y2 - Chemical Yield outside default limits.  
 W - DER is greater than Warning Limit of 1.42  
 \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.  
 # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.  
 G - Sample density differs by more than 15% of LCS density.  
 D - DER is greater than Control Limit  
 M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
 L - LCS Recovery below lower control limit.  
 H - LCS Recovery above upper control limit.  
 P - LCS, Matrix Spike Recovery within control limits.  
 N - Matrix Spike Recovery outside control limits  
 NC - Not Calculated for duplicate results less than 5 times MDC  
 B - Analyte concentration greater than MDC.  
 B3 - Analyte concentration greater than MDC but less than Requested MDC.

#### Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).  
 U or ND - Indicates that the compound was analyzed for but not detected.  
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.  
 M - Duplicate injection precision was not met.  
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.  
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.  
 \* - Duplicate analysis (relative percent difference) not within control limits.  
 S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

#### Organics:

U or ND - Indicates that the compound was analyzed for but not detected.  
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.  
 E - Analyte concentration exceeds the upper level of the calibration range.  
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).  
 A - A tentatively identified compound is a suspected aldol-condensation product.  
 X - The analyte was diluted below an accurate quantitation level.  
 \* - The spike recovery is equal to or outside the control criteria used.  
 + - The relative percent difference (RPD) equals or exceeds the control criteria.  
 G - A pattern resembling gasoline was detected in this sample.  
 D - A pattern resembling diesel was detected in this sample.  
 M - A pattern resembling motor oil was detected in this sample.  
 C - A pattern resembling crude oil was detected in this sample.  
 4 - A pattern resembling JP-4 was detected in this sample.  
 5 - A pattern resembling JP-5 was detected in this sample.  
 H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.  
 L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.  
 Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:  
 - gasoline  
 - JP-8  
 - diesel  
 - mineral spirits  
 - motor oil  
 - Stoddard solvent  
 - bunker C

## ALS -- Fort Collins

Date: 9/7/2022 9:56:24

Client: ALS Environmental

Work Order: 2208360

Project: YL2201163

## QC BATCH REPORT

Batch ID: RE220825-1-2

Instrument ID: Alpha Scin

Method: Radium-226 by Radon Emanation

LCS	Sample ID: RE220825-1				Units: BQ/I		Analysis Date: 9/6/2022 12:49				
Client ID:	Run ID: RE220825-1A				Prep Date: 8/25/2022			DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	1.72 (+/- 0.426)	0.0123	1.717		100	67-120					P,Y1
Carr: BARIUM	15600		15560		100	40-110					Y1

LCSD	Sample ID: RE220825-1				Units: BQ/I		Analysis Date: 9/6/2022 12:49				
Client ID:	Run ID: RE220825-1A				Prep Date: 8/25/2022			DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	1.69 (+/- 0.420)	0.0119	1.717		98.2	67-120		1.72	0.05	2.13	P,Y1
Carr: BARIUM	15600		15560		100	40-110		15600			Y1

MB	Sample ID: RE220825-1				Units: BQ/I		Analysis Date: 9/6/2022 12:49				
Client ID:	Run ID: RE220825-1A				Prep Date: 8/25/2022			DF: NA			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	DER Ref Value	DER	DER Limit	Qual
Ra-226	0.0033 (+/- 0.0035)	0.0051									U
Carr: BARIUM	15000		15560		96.1	40-110					

The following samples were analyzed in this batch:

2208360-1	2208360-2	2208360-3
2208360-4	2208360-5	2208360-6
2208360-7		





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Amesbury 2008, 1999, 1997, 1996, 1995, 1994, 1993, 1992, 1991, 1990, 1989, 1988, 1987, 1986, 1985, 1984, 1983, 1982, 1981, 1980, 1979, 1978, 1977, 1976, 1975, 1974, 1973, 1972, 1971, 1970, 1969, 1968, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1959, 1958, 1957, 1956, 1955, 1954, 1953, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1943, 1942, 1941, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1922, 1921, 1920, 1919, 1918, 1917, 1916, 1915, 1914, 1913, 1912, 1911, 1910, 1909, 1908, 1907, 1906, 1905, 1904, 1903, 1902, 1901, 1900, 1899, 1898, 1897, 1896, 1895, 1894, 1893, 1892, 1891, 1890, 1889, 1888, 1887, 1886, 1885, 1884, 1883, 1882, 1881, 1880, 1879, 1878, 1877, 1876, 1875, 1874, 1873, 1872, 1871, 1870, 1869, 1868, 1867, 1866, 1865, 1864, 1863, 1862, 1861, 1860, 1859, 1858, 1857, 1856, 1855, 1854, 1853, 1852, 1851, 1850, 1849, 1848, 1847, 1846, 1845, 1844, 1843, 1842, 1841, 1840, 1839, 1838, 1837, 1836, 1835, 1834, 1833, 1832, 1831, 1830, 1829, 1828, 1827, 1826, 1825, 1824, 1823, 1822, 1821, 1820, 1819, 1818, 1817, 1816, 1815, 1814, 1813, 1812, 1811, 1810, 1809, 1808, 1807, 1806, 1805, 1804, 1803, 1802, 1801, 1800, 1799, 1798, 1797, 1796, 1795, 1794, 1793, 1792, 1791, 1790, 1789, 1788, 1787, 1786, 1785, 1784, 1783, 1782, 1781, 1780, 1779, 1778, 1777, 1776, 1775, 1774, 1773, 1772, 1771, 1770, 1769, 1768, 1767, 1766, 1765, 1764, 1763, 1762, 1761, 1760, 1759, 1758, 1757, 1756, 1755, 1754, 1753, 1752, 1751, 1750, 1749, 1748, 1747, 1746, 1745, 1744, 1743, 1742, 1741, 1740, 1739, 1738, 1737, 1736, 1735, 1734, 1733, 1732, 1731, 1730, 1729, 1728, 1727, 1726, 1725, 1724, 1723, 1722, 1721, 1720, 1719, 1718, 1717, 1716, 1715, 1714, 1713, 1712, 1711, 1710, 1709, 1708, 1707, 1706, 1705, 1704, 1703, 1702, 1701, 1700, 1699, 1698, 1697, 1696, 1695, 1694, 1693, 1692, 1691, 1690, 1689, 1688, 1687, 1686, 1685, 1684, 1683, 1682, 1681, 1680, 1679, 1678, 1677, 1676, 1675, 1674, 1673, 1672, 1671, 1670, 1669, 1668, 1667, 1666, 1665, 1664, 1663, 1662, 1661, 1660, 1659, 1658, 1657, 1656, 1655, 1654, 1653, 1652, 1651, 1650, 1649, 1648, 1647, 1646, 1645, 1644, 1643, 1642, 1641, 1640, 1639, 1638, 1637, 1636, 1635, 1634, 1633, 1632, 1631, 1630, 1629, 1628, 1627, 1626, 1625, 1624, 1623, 1622, 1621, 1620, 1619, 1618, 1617, 1616, 1615, 1614, 1613, 1612, 1611, 1610, 1609, 1608, 1607, 1606, 1605, 1604, 1603, 1602, 1601, 1600, 1599, 1598, 1597, 1596, 1595, 1594, 1593, 1592, 1591, 1590, 1589, 1588, 1587, 1586, 1585, 1584, 1583, 1582, 1581, 1580, 1579, 1578, 1577, 1576, 1575, 1574, 1573, 1572, 1571, 1570, 1569, 1568, 1567, 1566, 1565, 1564, 1563, 1562, 1561, 1560, 1559, 1558, 1557, 1556, 1555, 1554, 1553, 1552, 1551, 1550, 1549, 1548, 1547, 1546, 1545, 1544, 1543, 1542, 1541, 1540, 1539, 1538, 1537, 1536, 1535, 1534, 1533, 1532, 1531, 1530, 1529, 1528, 1527, 1526, 1525, 1524, 1523, 1522, 1521, 1520, 1519, 1518, 1517, 1516, 1515, 1514, 1513, 1512, 1511, 1510, 1509, 1508, 1507, 1506, 1505, 1504, 1503, 1502, 1501, 1500, 1499, 1498, 1497, 1496, 1495, 1494, 1493, 1492, 1491, 1490, 1489, 1488, 1487, 1486, 1485, 1484, 1483, 1482, 1481, 1480, 1479, 1478, 1477, 1476, 1475, 1474, 1473, 1472, 1471, 1470, 1469, 1468, 1467, 1466, 1465, 1464, 1463, 1462, 1461, 1460, 1459, 1458, 1457, 1456, 1455, 1454, 1453, 1452, 1451, 1450, 1449, 1448, 1447, 1446, 1445, 1444, 1443, 1442, 1441, 1440, 1439, 1438, 1437, 1436, 1435, 1434, 1433, 1432, 1431, 1430, 1429, 1428, 1427, 1426, 1425, 1424, 1423, 1422, 1421, 1420, 1419, 1418, 1417, 1416, 1415, 1414, 1413, 1412, 1411, 1410, 1409, 1408, 1407, 1406, 1405, 1404, 1403, 1402, 1401, 1400, 1399, 1398, 1397, 1396, 1395, 1394, 1393, 1392, 1391, 1390, 1389, 1388, 1387, 1386, 1385, 1384, 1383, 1382, 1381, 1380, 1379, 1378, 1377, 1376, 1375, 1374, 1373, 1372, 1371, 1370, 1369, 1368, 1367, 1366, 1365, 1364, 1363, 1362, 1361, 1360, 1359, 1358, 1357, 1356, 1355, 1354, 1353, 1352, 1351, 1350, 1349, 1348, 1347, 1346, 1345, 1344, 1343, 1342, 1341, 1340, 1339, 1338, 1337, 1336, 1335, 1334, 1333, 1332, 1331, 1330, 1329, 1328, 1327, 1326, 1325, 1324, 1323, 1322, 1321, 1320, 1319, 1318

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





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



**Environmental**

## CERTIFICATE OF ANALYSIS

**Work Order** : **YL2201189**  
**Client** : **Sabina Gold & Silver Corporation**  
**Contact** : Merle Keefe  
**Address** : 375 - 555 Burrard St. Box 220, Bentall 2  
Vancouver BC Canada V7X 1M7  
**Telephone** : 604 240 6619  
**Project** : 21505757/17000/43  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : BP  
**Site** : ----  
**Quote number** : 2021 Under-Ice Field Program  
**No. of samples received** : 10  
**No. of samples analysed** : 10

**Page** : 1 of 10  
**Laboratory** : Yellowknife - Environmental  
**Account Manager** : Oliver Gregg  
**Address** : 314 Old Airport Road, Unit 116  
Yellowknife NT Canada X1A 3T3  
**Telephone** : 1 867 446 5593  
**Date Samples Received** : 10-Aug-2022 17:30  
**Date Analysis Commenced** : 16-Aug-2022  
**Issue Date** : 26-Sep-2022 16:21

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Christine Mason	Analyst - Chemistry	Inorganics, Winnipeg, Manitoba
Kaitlyn Gardner	Account Manager Assistant	External Subcontracting, Saskatoon, Saskatchewan
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Michael Webb	Lab Analyst	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.

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

Client sample ID

Sub-Matrix: Water					Client sample ID	BRP 35-5	BRP 35-4	BRP 35-3	BRP 35-2	BRP 35-1
(Matrix: Water)										
Client sampling date / time					07-Aug-2022 14:35	07-Aug-2022 13:48	07-Aug-2022 12:40	07-Aug-2022 15:20	08-Aug-2022 10:11	
Analyte	CAS Number	Method	LOR	Unit	YL2201189-001	YL2201189-002	YL2201189-003	YL2201189-004	YL2201189-005	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.5	4.4	4.4	4.3	4.0	
conductivity	----	E100	2.0	µS/cm	25.1	25.2	25.1	24.9	25.1	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	8.41	8.52	8.58	8.59	8.45	
pH	----	E108	0.10	pH units	6.85	6.83	6.84	6.83	6.78	
solids, total dissolved [TDS]	----	E162	10	mg/L	21	25	20	21	26	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	14.8	14.6	15.0	14.7	15.0	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.26	0.26	0.27	0.26	0.23	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0058	<0.0050	<0.0050	<0.0050	
chloride	16887-00-6	E235.Cl	0.50	mg/L	1.07	1.08	1.09	1.08	1.08	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	0.0828	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0040	0.0050	0.0050	0.0062	0.0050	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0030	0.0048	0.0048	0.0033	0.0034	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	4.12	4.12	4.11	4.11	4.14	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.162	0.169	0.180	0.173	0.164	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.32	3.12	3.49	3.30	3.27	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.14	3.26	3.42	3.50	3.20	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0016	<0.0015	0.0015	<0.0015	<0.0015	
Total Metals										





## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 35-5	BRP 35-4	BRP 35-3	BRP 35-2	BRP 35-1
Client sampling date / time						07-Aug-2022 14:35	07-Aug-2022 13:48	07-Aug-2022 12:40	07-Aug-2022 15:20	08-Aug-2022 10:11
Analyte	CAS Number	Method	LOR	Unit	YL2201189-001	YL2201189-002	YL2201189-003	YL2201189-004	YL2201189-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00080	0.00069	0.00073	0.00063	0.00056	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00613	0.00585	0.00677	0.00617	0.00697	
antimony, total	7440-36-0	E466	0.0000050	mg/L	<0.0000050	0.0000051	0.0000056	0.0000052	0.0000051	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000132	0.000131	0.000131	0.000129	0.000130	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00324	0.00324	0.00330	0.00326	0.00327	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
calcium, total	7440-70-2	E466	0.010	mg/L	1.64	1.74	1.68	1.69	1.70	
chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	0.000042	<0.000040	<0.000040	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000612	0.0000482	0.0000626	0.0000582	0.0000677	
copper, total	7440-50-8	E466	0.000050	mg/L	0.000796	0.000842	0.000816	0.000814	0.000824	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0174	0.0149	0.0184	0.0182	0.0183	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000044	0.000043	0.000046	0.000045	0.000045	
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00040	0.00041	0.00039	0.00040	0.00040	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.10	1.15	1.13	1.10	1.14	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00282	0.00221	0.00290	0.00281	0.00298	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00162	0.00166	0.00165	0.00160	0.00164	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.285	0.293	0.291	0.290	0.290	
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
silicon, total	7440-21-3	E466	0.050	mg/L	0.063	0.059	0.062	0.068	0.062	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	0.462	0.496	0.492	0.457	0.462	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.00735	0.00758	0.00729	0.00757	0.00742	
sulfur, total	7704-34-9	E466	0.50	mg/L	1.43	1.41	1.45	1.43	1.43	
thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 35-5	BRP 35-4	BRP 35-3	BRP 35-2	BRP 35-1
Client sampling date / time						07-Aug-2022 14:35	07-Aug-2022 13:48	07-Aug-2022 12:40	07-Aug-2022 15:20	08-Aug-2022 10:11
Analyte	CAS Number	Method	LOR	Unit	YL2201189-001	YL2201189-002	YL2201189-003	YL2201189-004	YL2201189-005	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000035	0.0000032	0.0000037	0.0000039	0.0000023	0.0000023
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000020	0.000020	0.000022	0.000022	0.000021	0.000021
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00045	0.00026	0.00030	0.00024	0.00060	0.00060
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000018	0.000017	0.000019	0.000017	0.000017	0.000017
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00376	0.00377	0.00396	0.00386	0.00404	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000085	0.0000056	0.0000078	0.0000067	0.0000143	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000123	0.000122	0.000127	0.000126	0.000132	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00334	0.00328	0.00334	0.00330	0.00333	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000029	<0.0000025	<0.0000025	<0.0000025	0.0000068 <sup>OTC</sup>	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.62	1.63	1.64	1.66	1.62	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	<0.000040	<0.000040	0.000040	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000273	0.0000193	0.0000290	0.0000180	0.0000229	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000776	0.000753	0.000777	0.000784	0.000846	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00431	0.00406	0.00416	0.00427	0.00424	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000055	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00041	0.00040	0.00040	0.00040	0.00042	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.06	1.08	1.09	1.08	1.07	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.000619	0.000533	0.000703	0.000565	0.000592	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	<0.00050	<0.00050	0.00060	<0.00050	0.00056	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00162	0.00156	0.00160	0.00158	0.00161	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.280	0.272	0.278	0.283	0.328	
rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000025	<0.000025	<0.000025	<0.000025	<0.000025	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 35-5	BRP 35-4	BRP 35-3	BRP 35-2	BRP 35-1
Client sampling date / time						07-Aug-2022 14:35	07-Aug-2022 13:48	07-Aug-2022 12:40	07-Aug-2022 15:20	08-Aug-2022 10:11
Analyte	CAS Number	Method	LOR	Unit	YL2201189-001	YL2201189-002	YL2201189-003	YL2201189-004	YL2201189-005	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.061	0.060	0.062	0.059	0.062	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.459	0.449	0.516	0.466	0.522	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00715	0.00710	0.00717	0.00716	0.00699	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.45	1.45	1.48	1.46	1.50	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000031	0.0000028	0.0000039	0.0000019	0.0000029	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000014	0.000016	0.000017	0.000016	0.000014	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00059	0.00024	0.00041	0.00035	0.00126 <sup>DTC</sup>	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000016	0.000016	0.000016	0.000015	0.000017	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
<b>Radiological Parameters</b>										
radium-226	13982-63-3	Ra226	0.005	Bq/L	<0.005	<0.005	0.008	<0.005	<0.005	

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



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 36-5	BRP 36-4	BRP 36-3	BRP 36-2	BRP 36-1
Client sampling date / time					08-Aug-2022 15:10	08-Aug-2022 11:45	08-Aug-2022 13:40	08-Aug-2022 12:42	08-Aug-2022 14:32	
Analyte	CAS Number	Method	LOR	Unit	YL2201189-006	YL2201189-007	YL2201189-008	YL2201189-009	YL2201189-010	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	3.8	4.3	4.5	4.2	4.4	
conductivity	----	E100	2.0	µS/cm	24.7	24.6	25.0	24.7	25.1	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	8.61	8.72	8.61	8.82	8.66	
pH	----	E108	0.10	pH units	6.83	6.84	6.83	6.81	6.83	
solids, total dissolved [TDS]	----	E162	10	mg/L	24	21	24	25	23	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	14.3	14.8	14.7	14.9	15.0	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.24	0.26	0.24	0.29	0.26	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
chloride	16887-00-6	E235.Cl	0.50	mg/L	1.07	1.06	1.07	1.06	1.07	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	<0.020	<0.020	<0.020	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0041	0.0042	0.0042	0.0052	0.0049	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0036	0.0032	0.0033	0.0042	0.0047	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	4.09	4.11	4.10	4.09	4.09	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.163	0.177	0.190	0.152	0.172	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.19	3.34	3.15	3.46	3.46	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.18	3.11	3.24	3.18	3.48	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.0020	<0.0015	<0.0015	<0.0015	<0.0015	
Total Metals										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00068	0.00068	0.00068	0.00070	0.00066	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 36-5	BRP 36-4	BRP 36-3	BRP 36-2	BRP 36-1
Client sampling date / time						08-Aug-2022 15:10	08-Aug-2022 11:45	08-Aug-2022 13:40	08-Aug-2022 12:42	08-Aug-2022 14:32
Analyte	CAS Number	Method	LOR	Unit		YL2201189-006	YL2201189-007	YL2201189-008	YL2201189-009	YL2201189-010
						Result	Result	Result	Result	Result
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L		0.00592	0.00563	0.00592	0.00546	0.00543
antimony, total	7440-36-0	E466	0.0000050	mg/L		<0.0000050	0.0000054	0.0000055	0.0000061	0.0000061
arsenic, total	7440-38-2	E466	0.000010	mg/L		0.000132	0.000131	0.000125	0.000128	0.000130
barium, total	7440-39-3	E466	0.000020	mg/L		0.00326	0.00329	0.00329	0.00336	0.00333
beryllium, total	7440-41-7	E466	0.0000020	mg/L		<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
bismuth, total	7440-69-9	E466	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, total	7440-42-8	E466	0.0050	mg/L		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, total	7440-43-9	E466	0.0000025	mg/L		<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025
calcium, total	7440-70-2	E466	0.010	mg/L		1.69	1.66	1.70	1.65	1.67
chromium, total	7440-47-3	E466	0.000040	mg/L		<0.000040	<0.000040	<0.000040	<0.000040	<0.000040
cobalt, total	7440-48-4	E466	0.0000050	mg/L		0.0000623	0.0000600	0.0000627	0.0000531	0.0000562
copper, total	7440-50-8	E466	0.000050	mg/L		0.000806	0.000822	0.000820	0.000783	0.000788
iron, total	7439-89-6	E466	0.00050	mg/L		0.0171	0.0161	0.0165	0.0161	0.0159
lanthanum, total	7439-91-0	E466	0.000010	mg/L		0.000046	0.000046	0.000045	0.000046	0.000044
lead, total	7439-92-1	E466	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
lithium, total	7439-93-2	E466	0.00010	mg/L		0.00040	0.00039	0.00040	0.00040	0.00040
magnesium, total	7439-95-4	E466	0.0010	mg/L		1.15	1.13	1.13	1.10	1.09
manganese, total	7439-96-5	E466	0.0000050	mg/L		0.00344	0.00316	0.00328	0.00303	0.00318
molybdenum, total	7439-98-7	E466	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
nickel, total	7440-02-0	E466	0.000020	mg/L		0.00172	0.00168	0.00169	0.00169	0.00166
potassium, total	7440-09-7	E466	0.0050	mg/L		0.298	0.288	0.297	0.278	0.279
selenium, total	7782-49-2	E466	0.000025	mg/L		<0.000025	<0.000025	<0.000025	<0.000025	<0.000025
silicon, total	7440-21-3	E466	0.050	mg/L		0.072	0.070	0.069	0.069	0.072
silver, total	7440-22-4	E466	0.0000020	mg/L		<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
sodium, total	7440-23-5	E466	0.010	mg/L		0.473	0.465	0.465	0.455	0.444
strontium, total	7440-24-6	E466	0.000020	mg/L		0.00758	0.00744	0.00747	0.00734	0.00725
sulfur, total	7704-34-9	E466	0.50	mg/L		1.40	1.46	1.44	1.44	1.44
thallium, total	7440-28-0	E466	0.0000010	mg/L		<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
tin, total	7440-31-5	E466	0.000010	mg/L		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
titanium, total	7440-32-6	E466	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L		0.0000026	0.0000030	0.0000036	0.0000034	0.0000028





## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP 36-5	BRP 36-4	BRP 36-3	BRP 36-2	BRP 36-1
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2201189-006	YL2201189-007	YL2201189-008	YL2201189-009	YL2201189-010	
					Result	Result	Result	Result	Result	
<b>Total Metals (Undigested)</b>										
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000021	0.000018	0.000020	0.000019	0.000020	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00047	0.00024	0.00055	0.00078	0.00042	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000018	0.000018	0.000020	0.000017	0.000018	
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00354	0.00350	0.00362	0.00368	0.00359	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000059	0.0000063	0.0000083	0.0000075	0.0000068	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000126	0.000123	0.000119	0.000121	0.000127	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00334	0.00337	0.00330	0.00336	0.00331	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0.0000019	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	<0.0000025	<0.0000025	<0.0000025	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.65	1.68	1.65	1.70	1.67	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	<0.000040	<0.000040	<0.000040	<0.000040	<0.000040	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000219	0.0000238	0.0000235	0.0000181	0.0000205	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000783	0.000777	0.000781	0.000779	0.000785	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00373	0.00376	0.00356	0.00344	0.00363	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00039	0.00040	0.00040	0.00040	0.00039	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.09	1.10	1.09	1.11	1.09	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.000893	0.000839	0.000731	0.000633	0.000899	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00052	<0.00050	<0.00050	0.00052	<0.00050	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00163	0.00168	0.00167	0.00166	0.00165	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.279	0.282	0.285	0.283	0.284	
rhodium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	0.000027	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.069	0.069	0.067	0.068	0.068	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP 36-5	BRP 36-4	BRP 36-3	BRP 36-2	BRP 36-1
Client sampling date / time						08-Aug-2022 15:10	08-Aug-2022 11:45	08-Aug-2022 13:40	08-Aug-2022 12:42	08-Aug-2022 14:32
Analyte	CAS Number	Method	LOR	Unit	YL2201189-006	YL2201189-007	YL2201189-008	YL2201189-009	YL2201189-010	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.450	0.451	0.461	0.472	0.455	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00708	0.00719	0.00730	0.00723	0.00725	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.45	1.44	1.42	1.44	1.46	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	0.000063	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000037	0.0000041	0.0000024	0.0000024	0.0000022	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000013	0.000014	0.000014	0.000015	0.000014	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00051	0.00033	0.00051	0.00062	0.00146 <sup>DTC</sup>	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000017	0.000016	0.000018	0.000030	0.000017	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
<b>Radiological Parameters</b>										
radium-226	13982-63-3	Ra226	0.005	Bq/L	<0.005	0.02	<0.005	0.005	<0.005	

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2201189	Page	: 1 of 42
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 10-Aug-2022 17:30
PO	: ----	Issue Date	: 26-Sep-2022 16:15
C-O-C number	: ----		
Sampler	: BP		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 10		
No. of samples analysed	: 10		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### **Workorder Comments**

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

### **Summary of Outliers**

#### **Outliers : Quality Control Samples**

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

#### **Outliers: Reference Material (RM) Samples**

- No Reference Material (RM) Sample outliers occur.

#### **Outliers : Analysis Holding Time Compliance (Breaches)**

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

#### **Outliers : Frequency of Quality Control Samples**

- No Quality Control Sample Frequency Outliers occur.





## Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 35-2	E298	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 35-3	E298	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 35-4	E298	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 35-5	E298	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 35-1	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 36-1	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 36-2	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 36-3	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 36-4	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP 36-5	E298	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 35-1	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 35-2	E235.Cl	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 36-1	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 36-2	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 36-3	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 36-4	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 36-5	E235.Cl	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 35-3	E235.Cl	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 35-4	E235.Cl	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP 35-5	E235.Cl	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 35-1	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 36-1	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 36-2	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 36-3	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	✖ EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 36-4	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 36-5	E378-U	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	<div>✖</div> <div>EHT</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 35-2	E378-U	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 35-3	E378-U	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 35-4	E378-U	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP 35-5	E378-U	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 35-1	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 35-2	E235.F	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 36-1	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 36-2	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 36-3	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 36-4	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 36-5	E235.F	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 35-3	E235.F	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 35-4	E235.F	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP 35-5	E235.F	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 35-1	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	✖ EHT	16-Aug-2022	3 days	0 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 36-1	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	* EHT	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 36-2	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	* EHT	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 36-3	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	* EHT	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 36-4	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	* EHT	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 36-5	E235.NO3-L	08-Aug-2022	16-Aug-2022	3 days	8 days	* EHT	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 35-2	E235.NO3-L	07-Aug-2022	16-Aug-2022	3 days	8 days	* EHTL	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 35-3	E235.NO3-L	07-Aug-2022	16-Aug-2022	3 days	9 days	* EHTL	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 35-4	E235.NO3-L	07-Aug-2022	16-Aug-2022	3 days	9 days	* EHTL	16-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP 35-5	E235.NO3-L	07-Aug-2022	16-Aug-2022	3 days	9 days	* EHTL	16-Aug-2022	3 days	0 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 35-1	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 36-1	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 36-2	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 36-3	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 36-4	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 36-5	E235.NO2-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHT
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 35-2	E235.NO2-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	8 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 35-3	E235.NO2-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	* EHTL
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 35-4	E235.NO2-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	* EHTL



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP 35-5	E235.NO2-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 35-2	E392	07-Aug-2022	----	----	----		17-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 35-3	E392	07-Aug-2022	----	----	----		17-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 35-4	E392	07-Aug-2022	----	----	----		17-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 35-5	E392	07-Aug-2022	----	----	----		17-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 35-1	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 36-1	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 36-2	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 36-3	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	<div>✔</div>



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 36-4	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP 36-5	E392	08-Aug-2022	----	----	----		17-Aug-2022	28 days	9 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 35-1	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 35-2	E235.SO4-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 36-1	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 36-2	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 36-3	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 36-4	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 36-5	E235.SO4-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 35-3	E235.SO4-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 35-4	E235.SO4-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP 35-5	E235.SO4-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 35-1	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 36-1	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 36-2	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 36-3	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 36-4	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 36-5	E375-U	08-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	18 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 35-2	E375-U	07-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	19 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 35-3	E375-U	07-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	19 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 35-4	E375-U	07-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	19 days	✔
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP 35-5	E375-U	07-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	19 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 35-2	E318	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 35-3	E318	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 35-4	E318	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 35-5	E318	07-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 35-1	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✔





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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 36-1	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 36-2	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 36-3	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 36-4	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP 36-5	E318	08-Aug-2022	16-Aug-2022	----	----		17-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 35-1	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 36-1	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 36-2	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 36-3	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 36-4	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 36-5	E372-S	08-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 35-2	E372-S	07-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 35-3	E372-S	07-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 35-4	E372-S	07-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	18 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP 35-5	E372-S	07-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	18 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-1	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-1	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-2	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓



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Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-3	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-4	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-5	E339	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-2	E339	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-3	E339	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-4	E339	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-5	E339	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-1	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-1	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-2	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-3	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-4	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-5	E333	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-2	E333	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-3	E333	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-4	E333	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-5	E333	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-1	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓



Matrix: **Water**

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-1	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-2	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-3	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-4	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 36-5	E336	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	10 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-2	E336	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-3	E336	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-4	E336	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP 35-5	E336	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	14 days	11 days	✓





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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 35-1	E509-L	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 36-1	E509-L	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
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Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 36-3	E509-L	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 36-4	E509-L	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 36-5	E509-L	08-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	10 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 35-2	E509-L	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 35-3	E509-L	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 35-4	E509-L	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	11 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - dissolved (lab preserved) BRP 35-5	E509-L	07-Aug-2022	18-Aug-2022	----	----		18-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 35-2	E465	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 35-3	E465	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 35-4	E465	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 35-5	E465	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 35-1	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 36-1	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 36-2	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 36-3	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 36-4	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
HDPE - dissolved (lab preserved) BRP 36-5	E465	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 35-1	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 36-1	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 36-2	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 36-3	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 36-4	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 36-5	E358-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 35-2	E358-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 35-3	E358-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 35-4	E358-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP 35-5	E358-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 35-1	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 36-1	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 36-2	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 36-3	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 36-4	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 36-5	E355-L	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 35-2	E355-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 35-3	E355-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 35-4	E355-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP 35-5	E355-L	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 35-1	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 35-2	E290	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 36-1	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 36-2	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✓





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 36-3	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 36-4	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 36-5	E290	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	8 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 35-3	E290	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	9 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 35-4	E290	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	9 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP 35-5	E290	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	14 days	9 days	✔
Physical Tests : Conductivity in Water										
HDPE BRP 35-1	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Physical Tests : Conductivity in Water										
HDPE BRP 35-2	E100	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔
Physical Tests : Conductivity in Water										
HDPE BRP 36-1	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis				
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Conductivity in Water											
HDPE BRP 36-2	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 36-3	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 36-4	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 36-5	E100	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	8 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 35-3	E100	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 35-4	E100	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓	
Physical Tests : Conductivity in Water											
HDPE BRP 35-5	E100	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	28 days	9 days	✓	
Physical Tests : pH by Meter											
HDPE BRP 35-1	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	✖ EHTR-FM	
Physical Tests : pH by Meter											
HDPE BRP 35-2	E108	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	✖ EHTR-FM	



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP 35-3	E108	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 35-4	E108	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 35-5	E108	07-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 36-1	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 36-2	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 36-3	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 36-4	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP 36-5	E108	08-Aug-2022	16-Aug-2022	----	----		16-Aug-2022	0.25 hrs	3.25 hrs	* EHTR-FM
Physical Tests : TDS by Gravimetry										
HDPE BRP 35-1	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP 36-1	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 36-2	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 36-3	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 36-4	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 36-5	E162	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 35-2	E162	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 35-3	E162	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 35-4	E162	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	* EHT
Physical Tests : TDS by Gravimetry										
HDPE BRP 35-5	E162	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	* EHT



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP 35-1	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 36-1	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 36-2	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 36-3	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 36-4	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 36-5	E160	08-Aug-2022	----	----	----		16-Aug-2022	7 days	8 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 35-2	E160	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 35-3	E160	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	<div>✖</div> <div>EHT</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP 35-4	E160	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	<div>✖</div> <div>EHT</div>





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP 35-5	E160	07-Aug-2022	----	----	----		16-Aug-2022	7 days	9 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 35-1	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 36-1	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 36-2	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 36-3	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 36-4	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 36-5	E121	08-Aug-2022	----	----	----		16-Aug-2022	3 days	8 days	✖ EHT
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 35-2	E121	07-Aug-2022	----	----	----		16-Aug-2022	3 days	9 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 35-3	E121	07-Aug-2022	----	----	----		16-Aug-2022	3 days	9 days	✖ EHTL



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 35-4	E121	07-Aug-2022	----	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP 35-5	E121	07-Aug-2022	----	----	----		16-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTL</div>
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 35-1	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 35-2	Ra226	07-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 35-3	Ra226	07-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 35-4	Ra226	07-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 35-5	Ra226	07-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 36-1	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 36-2	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 36-3	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 36-4	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE (nitric acid) BRP 36-5	Ra226	08-Aug-2022	----	----	----		26-Aug-2022	----	----	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 35-2	E466	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 35-3	E466	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 35-4	E466	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 35-5	E466	07-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	10 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 35-1	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 36-1	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 36-2	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 36-3	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 36-4	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
HDPE - total (lab preserved) BRP 36-5	E466	08-Aug-2022	17-Aug-2022	----	----		17-Aug-2022	180 days	9 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 35-1	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 36-1	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 36-2	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 36-3	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 36-4	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 36-5	E508-L	08-Aug-2022	18-Aug-2022	28 days	10 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 35-2	E508-L	07-Aug-2022	18-Aug-2022	28 days	11 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 35-3	E508-L	07-Aug-2022	18-Aug-2022	28 days	11 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 35-4	E508-L	07-Aug-2022	18-Aug-2022	28 days	11 days	✓	18-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
Pre-cleaned amber glass - total (lab preserved) BRP 35-5	E508-L	07-Aug-2022	18-Aug-2022	28 days	11 days	✓	18-Aug-2022	28 days	0 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 35-2	E395	07-Aug-2022	----	----	----		17-Aug-2022	7 days	10 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 35-3	E395	07-Aug-2022	----	----	----		17-Aug-2022	7 days	10 days	✖ EHT





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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 35-4	E395	07-Aug-2022	----	----	----		17-Aug-2022	7 days	10 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 35-5	E395	07-Aug-2022	----	----	----		17-Aug-2022	7 days	10 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 35-1	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 36-1	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 36-2	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 36-3	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 36-4	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP 36-5	E395	08-Aug-2022	----	----	----		17-Aug-2022	7 days	9 days	✖ EHT

**Legend & Qualifier Definitions**

EHT: Exceeded ALS recommended hold time prior to analysis.

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	603836	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	604244	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	603840	1	20	5.0	5.0	✔
Conductivity in Water	E100	603838	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	608049	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	1	18	5.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	604246	1	15	6.6	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	603846	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	603839	1	20	5.0	5.0	✔
Free Cyanide	E339	607754	1	15	6.6	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	603842	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	603843	1	20	5.0	5.0	✔
pH by Meter	E108	603837	1	18	5.5	5.0	✔
Reactive Silica by Colourimetry	E392	607151	2	36	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	603845	1	10	10.0	5.0	✔
TDS by Gravimetry	E162	604387	1	19	5.2	5.0	✔
Total Cyanide	E333	607753	1	20	5.0	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	618109	1	17	5.8	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	604248	1	12	8.3	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	608027	1	18	5.5	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	606071	1	16	6.2	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	604247	1	13	7.6	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	616588	1	17	5.8	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	606753	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	604390	1	19	5.2	5.0	✔
Turbidity by Nephelometry	E121	604207	1	19	5.2	5.0	✔
WAD Cyanide	E336	607752	1	19	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	603836	1	18	5.5	5.0	✔
Ammonia by Fluorescence	E298	604244	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	603840	1	20	5.0	5.0	✔
Conductivity in Water	E100	603838	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	608049	1	10	10.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	2	18	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	604246	1	15	6.6	5.0	✔



Matrix: **Water**

Evaluation: \* = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Control Samples (LCS) - Continued							
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	603846	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	603839	1	20	5.0	5.0	✓
Free Cyanide	E339	607754	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	603842	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	603843	1	20	5.0	5.0	✓
pH by Meter	E108	603837	1	18	5.5	5.0	✓
Reactive Silica by Colourimetry	E392	607151	2	36	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	603845	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	604387	1	19	5.2	5.0	✓
Total Cyanide	E333	607753	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	618109	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	604248	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	608027	1	18	5.5	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	606071	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	604247	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	616588	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	606753	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	604390	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	604207	1	19	5.2	5.0	✓
WAD Cyanide	E336	607752	1	19	5.2	5.0	✓
Method Blanks (MB)							
Alkalinity Species by Titration	E290	603836	1	18	5.5	5.0	✓
Ammonia by Fluorescence	E298	604244	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	603840	1	20	5.0	5.0	✓
Conductivity in Water	E100	603838	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	608049	1	10	10.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	2	18	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	604246	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	603846	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	603839	1	20	5.0	5.0	✓
Free Cyanide	E339	607754	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	603842	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	603843	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	607151	2	36	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	603845	1	10	10.0	5.0	✓
TDS by Gravimetry	E162	604387	1	19	5.2	5.0	✓
Total Cyanide	E333	607753	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	618109	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	604248	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	608027	1	18	5.5	5.0	✓



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	606071	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	604247	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	616588	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	606753	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	604390	1	19	5.2	5.0	✓
Turbidity by Nephelometry	E121	604207	1	19	5.2	5.0	✓
WAD Cyanide	E336	607752	1	19	5.2	5.0	✓
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	604244	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	603840	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	608049	1	10	10.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	606069	1	18	5.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	604246	1	15	6.6	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	603846	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	603839	1	20	5.0	5.0	✓
Free Cyanide	E339	607754	1	15	6.6	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	603842	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	603843	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	607151	2	36	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	603845	1	10	10.0	5.0	✓
Total Cyanide	E333	607753	1	20	5.0	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	618109	1	17	5.8	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	604248	1	12	8.3	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	608027	1	18	5.5	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	606071	1	16	6.2	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	604247	1	13	7.6	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	616588	1	17	5.8	5.0	✓
Total Sulfide by Colourimetry (Automated Flow)	E395	606753	1	20	5.0	5.0	✓
WAD Cyanide	E336	607752	1	19	5.2	5.0	✓



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourmetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourmetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry	Ra226  Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.

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Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>:YL2201189</b>	<b>Page</b>	<b>: 1 of 20</b>
<b>Client</b>	: Sabina Gold & Silver Corporation	<b>Laboratory</b>	: Yellowknife - Environmental
<b>Contact</b>	: Merle Keefe	<b>Account Manager</b>	: Oliver Gregg
<b>Address</b>	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	<b>Address</b>	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
<b>Telephone</b>	: 604 240 6619	<b>Telephone</b>	: 1 867 446 5593
<b>Project</b>	: 21505757/17000/43	<b>Date Samples Received</b>	: 10-Aug-2022 17:30
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 16-Aug-2022
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 26-Sep-2022 16:17
<b>Sampler</b>	: BP		
<b>Site</b>	: ----		
<b>Quote number</b>	: 2021 Under-Ice Field Program		
<b>No. of samples received</b>	: 10		
<b>No. of samples analysed</b>	: 10		

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

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Vancouver Metals, Burnaby, British Columbia
Christine Mason	Analyst - Chemistry	Winnipeg Inorganics, Winnipeg, Manitoba
Kaitlyn Gardner	Account Manager Assistant	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
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Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia



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## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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



## Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 603836)</b>											
VA22B8885-001	Anonymous	alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	155	154	0.971%	20%	----
<b>Physical Tests (QC Lot: 603837)</b>											
VA22B8885-001	Anonymous	pH	----	E108	0.10	pH units	8.30	8.31	0.120%	4%	----
<b>Physical Tests (QC Lot: 603838)</b>											
VA22B8885-001	Anonymous	conductivity	----	E100	2.0	µS/cm	341	342	0.293%	10%	----
<b>Physical Tests (QC Lot: 604207)</b>											
YL2201173-003	Anonymous	turbidity	----	E121	0.10	NTU	0.38	0.36	0.02	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 604387)</b>											
VA22B8925-002	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	159	142	16	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 604390)</b>											
VA22B8925-002	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 603839)</b>											
VA22B8885-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.123	0.120	0.002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 603840)</b>											
VA22B8885-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	3.21	3.20	0.010	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 603842)</b>											
VA22B8885-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	1.88	1.88	0.0680%	20%	----
<b>Anions and Nutrients (QC Lot: 603843)</b>											
VA22B8885-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0014	<0.0010	0.0004	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 603845)</b>											
YL2201189-001	BRP 35-5	sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	4.12	4.13	0.242%	20%	----
<b>Anions and Nutrients (QC Lot: 603846)</b>											
VA22B8885-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 604244)</b>											
WR2200829-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0089	0.0084	0.0005	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 604248)</b>											
YL2201189-001	BRP 35-5	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.162	0.164	0.002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 607151)</b>											
CG2210674-001	Anonymous	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	9.30	9.29	0.0640%	20%	----
<b>Anions and Nutrients (QC Lot: 607152)</b>											
YL2201189-004	BRP 35-2	silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----

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Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 616588)</b>											
WT2211403-004	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0052	0.0060	0.0008	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 618109)</b>											
WT2211403-005	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0071	0.0072	0.0001	Diff <2x LOR	----
<b>Cyanides (QC Lot: 607752)</b>											
VA22B8907-009	Anonymous	cyanide, weak acid dissociable	----	E336	0.0100	mg/L	0.441	0.456	3.27%	20%	----
<b>Cyanides (QC Lot: 607753)</b>											
VA22B8907-009	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0100	mg/L	0.484	0.491	1.35%	20%	----
<b>Cyanides (QC Lot: 607754)</b>											
VA22B8907-009	Anonymous	cyanide, free	----	E339	0.0100	mg/L	0.440	0.436	0.735%	20%	----
<b>Organic / Inorganic Carbon (QC Lot: 604246)</b>											
YL2201189-001	BRP 35-5	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.32	3.38	0.06	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 604247)</b>											
YL2201189-001	BRP 35-5	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.14	3.38	0.23	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 606753)</b>											
CG2210712-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 608027)</b>											
CG2210696-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00051 µg/L	0.55	0.04	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 606071)</b>											
YL2201108-013	Anonymous	aluminum, total	7429-90-5	E466	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		barium, total	7440-39-3	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	0	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	<0.000040	<0.000040	0	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		copper, total	7440-50-8	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		iron, total	7439-89-6	E466	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 606071) - continued											
YL2201108-013	Anonymous	manganese, total	7439-96-5	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 606069)											
YL2201163-001	Anonymous	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00661	0.00644	2.68%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000073	0.0000063	0.0000010	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000311	0.000297	4.56%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00306	0.00308	0.826%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000067	0.0000073	0.0000006	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.45	1.42	1.75%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000046	0.000044	0.000002	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000511	0.0000496	2.99%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000782	0.000786	0.543%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.162	0.159	2.20%	20%	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	0.0000093	0.0000084	0.0000008	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00042	0.00040	0.00002	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.18	1.16	1.62%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00135	0.00134	1.08%	20%	----



Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 606069) - continued											
YL2201163-001	Anonymous	molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.000880	0.000873	0.802%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.290	0.284	2.22%	20%	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000026	0.000028	0.000003	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.158	0.158	0.0009	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.562	0.545	3.08%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00568	0.00556	2.12%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.24	1.22	0.02	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000025	<0.0000010	0.0000015	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000037	0.000036	0.0000004	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00059	0.00043	0.00016	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000014	0.000014	0.0000006	Diff <2x LOR	----
Dissolved Metals (QC Lot: 608049)											
YL2201189-001	BRP 35-5	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----





## Method Blank (MB) Report

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

### Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 603836)</b>						
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1	mg/L	<1.0	----
<b>Physical Tests (QCLot: 603838)</b>						
conductivity	----	E100	1	µS/cm	1.0	----
<b>Physical Tests (QCLot: 604207)</b>						
turbidity	----	E121	0.1	NTU	<0.10	----
<b>Physical Tests (QCLot: 604387)</b>						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
<b>Physical Tests (QCLot: 604390)</b>						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
<b>Anions and Nutrients (QCLot: 603839)</b>						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 603840)</b>						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 603842)</b>						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 603843)</b>						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 603845)</b>						
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 603846)</b>						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 604244)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 604248)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 607151)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 607152)</b>						
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 616588)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 618109)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Cyanides (QCLot: 607752)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 607753)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 607754)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 604246)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 604247)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 606753)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 608027)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 606071)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 606071) - continued</b>						
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 606069)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhodium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 606069) - continued</b>						
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 607351)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhodium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 607351) - continued						
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 608049)						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----



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

Sub-Matrix: **Water**

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 603836)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	108	85.0	115	----
Physical Tests (QCLot: 603837)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 603838)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	99.8	90.0	110	----
Physical Tests (QCLot: 604207)									
turbidity	----	E121	0.1	NTU	200 NTU	98.5	85.0	115	----
Physical Tests (QCLot: 604387)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Physical Tests (QCLot: 604390)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	90.7	85.0	115	----
Anions and Nutrients (QCLot: 603839)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 603840)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 603842)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	99.8	90.0	110	----
Anions and Nutrients (QCLot: 603843)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 603845)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 603846)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 604244)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	93.1	85.0	115	----
Anions and Nutrients (QCLot: 604248)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	97.3	75.0	125	----
Anions and Nutrients (QCLot: 607151)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	99.0	85.0	115	----
Anions and Nutrients (QCLot: 607152)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.7	85.0	115	----
Anions and Nutrients (QCLot: 616588)									



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 616588) - continued</b>									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	101	80.0	120	----
<b>Anions and Nutrients (QCLot: 618109)</b>									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	97.7	80.0	120	----
<b>Cyanides (QCLot: 607752)</b>									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	96.8	80.0	120	----
<b>Cyanides (QCLot: 607753)</b>									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	93.4	80.0	120	----
<b>Cyanides (QCLot: 607754)</b>									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	94.2	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 604246)</b>									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.6	80.0	120	----
<b>Organic / Inorganic Carbon (QCLot: 604247)</b>									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	104	80.0	120	----
<b>Total Sulfides (QCLot: 606753)</b>									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	88.6	80.0	120	----
<b>Total Metals (QCLot: 608027)</b>									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	106	80.0	120	----
<b>Total Metals (Undigested) (QCLot: 606071)</b>									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	91.5	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	109	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	102	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	101	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	97.0	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	97.2	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	92.5	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	106	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	97.1	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	94.4	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.9	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.4	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	88.0	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	103	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	97.6	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (Undigested) (QCLot: 606071) - continued</b>									
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	95.1	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	93.6	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	96.4	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	98.1	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	93.4	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	93.0	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	110	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	99.2	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	102	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	93.8	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	98.7	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	100	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	94.6	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	108	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	103	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	92.6	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	102	80.0	120	----
<b>Dissolved Metals (QCLot: 606069)</b>									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	101	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	116	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	109	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	110	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	107	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	94.9	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	112	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	111	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	104	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	104	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	103	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	90.5	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	107	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	103	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	101	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	106	80.0	120	----



Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 606069) - continued									
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	106	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	105	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	118	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	99.4	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	108	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	110	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	113	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	107	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	105	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	106	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	110	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	103	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	112	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	110	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	108	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	96.5	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	112	80.0	120	----
Dissolved Metals (QCLot: 607351)									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	91.3	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	104	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	95.8	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	95.6	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	93.8	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	94.4	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	89.5	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	98.3	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	98.0	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	92.7	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	92.4	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	92.7	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	85.0	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	94.3	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	97.5	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	92.1	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	95.9	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	96.1	80.0	120	----



Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 607351) - continued									
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	93.2	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	96.4	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	89.4	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	95.9	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	101	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	95.2	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	94.5	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	91.1	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	94.8	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	94.6	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	93.0	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	99.5	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	96.0	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	93.8	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	91.2	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	97.6	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	106	80.0	120	----



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

Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 603839)										
VA22B8885-002	Anonymous	fluoride	16984-48-8	E235.F	0.921 mg/L	1 mg/L	92.1	75.0	125	----
Anions and Nutrients (QCLot: 603840)										
VA22B8885-002	Anonymous	chloride	16887-00-6	E235.Cl	94.5 mg/L	100 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 603842)										
VA22B8885-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.36 mg/L	2.5 mg/L	94.2	75.0	125	----
Anions and Nutrients (QCLot: 603843)										
VA22B8885-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.468 mg/L	0.5 mg/L	93.5	75.0	125	----
Anions and Nutrients (QCLot: 603845)										
YL2201189-002	BRP 35-4	sulfate (as SO4)	14808-79-8	E235.SO4-L	95.6 mg/L	100 mg/L	95.6	75.0	125	----
Anions and Nutrients (QCLot: 603846)										
VA22B8885-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0302 mg/L	0.03 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 604244)										
WR2200829-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0991 mg/L	0.1 mg/L	99.1	75.0	125	----
Anions and Nutrients (QCLot: 604248)										
YL2201189-002	BRP 35-4	Kjeldahl nitrogen, total [TKN]	----	E318	2.51 mg/L	2.5 mg/L	100	70.0	130	----
Anions and Nutrients (QCLot: 607151)										
EO2206423-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	9.95 mg/L	10 mg/L	99.5	75.0	125	----
Anions and Nutrients (QCLot: 607152)										
YL2201189-005	BRP 35-1	silicate (as SiO2)	7631-86-9	E392	10.1 mg/L	10 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 616588)										
WT2211403-005	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0117 mg/L	0.01 mg/L	117	70.0	130	----
Anions and Nutrients (QCLot: 618109)										
WT2211403-006	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0111 mg/L	0.01 mg/L	111	70.0	130	----
Cyanides (QCLot: 607752)										
VA22B8907-010	Anonymous	cyanide, weak acid dissociable	----	E336	2.73 mg/L	2.5 mg/L	109	75.0	125	----
Cyanides (QCLot: 607753)										
VA22B8907-010	Anonymous	cyanide, strong acid dissociable (total)	----	E333	4.94 mg/L	5 mg/L	98.9	75.0	125	----
Cyanides (QCLot: 607754)										



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 607754) - continued										
VA22B8907-010	Anonymous	cyanide, free	----	E339	2.72 mg/L	2.5 mg/L	109	75.0	125	----
Organic / Inorganic Carbon (QCLot: 604246)										
YL2201189-002	BRP 35-4	carbon, dissolved organic [DOC]	----	E358-L	4.64 mg/L	5 mg/L	92.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 604247)										
YL2201189-002	BRP 35-4	carbon, total organic [TOC]	----	E355-L	4.06 mg/L	5 mg/L	81.2	70.0	130	----
Total Sulfides (QCLot: 606753)										
CG2210772-015	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0934 mg/L	0.1 mg/L	93.4	75.0	125	----
Total Metals (QCLot: 608027)										
CG2210696-002	Anonymous	mercury, total	7439-97-6	E508-L	4.03 ng/L	5 ng/L	80.5	70.0	130	----
Total Metals (Undigested) (QCLot: 606071)										
YL2201158-013	Anonymous	aluminum, total	7429-90-5	E466	0.191 mg/L	0.2 mg/L	95.4	70.0	130	----
		antimony, total	7440-36-0	E466	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0216 mg/L	0.02 mg/L	108	70.0	130	----
		barium, total	7440-39-3	E466	0.0203 mg/L	0.02 mg/L	101	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0421 mg/L	0.04 mg/L	105	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00982 mg/L	0.01 mg/L	98.2	70.0	130	----
		boron, total	7440-42-8	E466	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00435 mg/L	0.004 mg/L	109	70.0	130	----
		calcium, total	7440-70-2	E466	4.29 mg/L	4 mg/L	107	70.0	130	----
		chromium, total	7440-47-3	E466	0.0382 mg/L	0.04 mg/L	95.5	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		copper, total	7440-50-8	E466	0.0201 mg/L	0.02 mg/L	100	70.0	130	----
		iron, total	7439-89-6	E466	1.98 mg/L	2 mg/L	99.0	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00260 mg/L	0.0025 mg/L	104	70.0	130	----
		lead, total	7439-92-1	E466	0.0197 mg/L	0.02 mg/L	98.6	70.0	130	----
		lithium, total	7439-93-2	E466	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0207 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, total	7440-02-0	E466	0.0403 mg/L	0.04 mg/L	101	70.0	130	----
		potassium, total	7440-09-7	E466	3.73 mg/L	4 mg/L	93.2	70.0	130	----
		selenium, total	7782-49-2	E466	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		silicon, total	7440-21-3	E466	9.35 mg/L	10 mg/L	93.5	70.0	130	----
		silver, total	7440-22-4	E466	0.00427 mg/L	0.004 mg/L	107	70.0	130	----
				sodium, total	7440-23-5	E466	ND mg/L	2 mg/L	ND	70.0



Sub-Matrix: **Water**

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 606071) - continued										
YL2201158-013	Anonymous	strontium, total	7440-24-6	E466	ND mg/L	0.02 mg/L	ND	70.0	130	----
		sulfur, total	7704-34-9	E466	21.0 mg/L	20 mg/L	105	70.0	130	----
		thallium, total	7440-28-0	E466	0.00373 mg/L	0.004 mg/L	93.2	70.0	130	----
		tin, total	7440-31-5	E466	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		titanium, total	7440-32-6	E466	0.0422 mg/L	0.04 mg/L	106	70.0	130	----
		uranium, total	7440-61-1	E466	0.00408 mg/L	0.004 mg/L	102	70.0	130	----
		vanadium, total	7440-62-2	E466	0.103 mg/L	0.1 mg/L	103	70.0	130	----
		zinc, total	7440-66-6	E466	0.408 mg/L	0.4 mg/L	102	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0431 mg/L	0.04 mg/L	108	70.0	130	----
Dissolved Metals (QCLot: 606069)										
YL2201163-002	Anonymous	aluminum, dissolved	7429-90-5	E465	0.216 mg/L	0.2 mg/L	108	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0236 mg/L	0.02 mg/L	118	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0229 mg/L	0.02 mg/L	114	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0220 mg/L	0.02 mg/L	110	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0432 mg/L	0.04 mg/L	108	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.0108 mg/L	0.01 mg/L	108	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.112 mg/L	0.1 mg/L	112	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00477 mg/L	0.004 mg/L	119	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.62 mg/L	4 mg/L	116	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0414 mg/L	0.04 mg/L	104	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0219 mg/L	0.02 mg/L	110	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0221 mg/L	0.02 mg/L	111	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.16 mg/L	2 mg/L	108	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0223 mg/L	0.02 mg/L	111	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0223 mg/L	0.02 mg/L	111	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0225 mg/L	0.02 mg/L	113	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0448 mg/L	0.04 mg/L	112	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	11.3 mg/L	10 mg/L	113	70.0	130	----
		potassium, dissolved	7440-09-7	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00278 mg/L	0.0025 mg/L	111	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0856 mg/L	0.08 mg/L	107	70.0	130	----
		silicon, dissolved	7440-21-3	E465	9.92 mg/L	10 mg/L	99.2	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00460 mg/L	0.004 mg/L	115	70.0	130	----
		sodium, dissolved	7440-23-5	E465	2.17 mg/L	2 mg/L	108	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 606069) - continued										
YL2201163-002	Anonymous	strontium, dissolved	7440-24-6	E465	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	22.8 mg/L	20 mg/L	114	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00411 mg/L	0.004 mg/L	103	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0231 mg/L	0.02 mg/L	116	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0463 mg/L	0.04 mg/L	116	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00447 mg/L	0.004 mg/L	112	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.112 mg/L	0.1 mg/L	112	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.463 mg/L	0.4 mg/L	116	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0461 mg/L	0.04 mg/L	115	70.0	130	----
Dissolved Metals (QCLot: 608049)										
YL2201189-002	BRP 35-4	mercury, dissolved	7439-97-6	E509-L	5.26 ng/L	5 ng/L	105	70.0	130	----



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# Chain of Custody (COC) / Analytical Request Form

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(fill here only)

Page 1 of 1

COC Number: 1

Report To		Contact and company name below will appear on the final report	
Company:	Golden Associates Ltd.	Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EPO (DIGITAL)	
Contact:	Zenovia Craciunescu	Quality Control (QC) Report with Report: <input type="checkbox"/> YES <input type="checkbox"/> NO	
Phone:	780-222-0587 (cell)	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked	
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
Street:	16820 107 Ave NW	Email 1 or Fax: zenovia.craciunescu@wsp.com	
City/Province:	Edmonton, AB	Email 2: kerrie.serben@wsp.com	
Postal Code:	T5P 4C3	Email 3: mkeefe@sabinagoldsilver.com	
Invoice To	Same as Report To	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Copy of Invoice with Report	<input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
Company:	Sabina Gold And Silver Corp	Email 1 or Fax: mkeefe@sabinagoldsilver.com	
Contact:	Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com	Email 2: zenovia.craciunescu@wsp.com	
Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #	YL2021SAB110000001_v2	AFS/Cost Center	
Job #	21505757/17000/43	Major/Minor Code	
PO / AFE		Routing Code	
LSD:	Sabina Facility Code - 176233659	Location:	
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg	
Sample Identification and/or Coordinates		Sampler: <i>Boyle</i>	
ALS Sample #	(lab use only)	Date	(dd-mm-yy)
(This description will appear on the report)		Time	(hh:mm)
Sample Type		NUMBER OF CONTAINERS	
Routine (including organic phosphorus, reactive silica)		P	
Total Nutrients (including total nitrogen)		F/P	
Dissolved Nutrients (including DOC)		F	
Total Ultra Metals		F	
Dissolved Ultra Metals		F	
Total Mercury (low level)		F	
Dissolved Mercury (low level)		F	
Total Sulfide		P	
Cyanide (total free, and WAD cyanide)		P	
Radium_226		P	
TDS (measured and calculated)		F	
Chlorophyll a (see attached)		F	
Samples for Archive		SUSPECTED HAZARD (see Special Instructions)	
Analysis Request			
For tests that can not be performed according to the service level selected, you will be contacted.			
Date and Time Required for all E&P TATs:			
1 Business day [E - 100%]			
3 day [P3-25%]			
2 day [P2-50%]			
4 day [P4-20%]			
Regular [R]			
Standard TAT if received by 3 pm - business days - no surcharges apply			
Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)			
Shipping Release (client use)			
Initial Shipment Reception (lab use only)			
Final Shipment Reception (lab use only)			
Released by:			
Date:			
Time:			
Received by:			
Date:			
Time:			
WHITE - LABORATORY COPY			
YELLOW - CLIENT COPY			
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.			
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.			



Environmental Division  
Yellowknife  
Work Order Reference  
YL2201189

Telephone: - 1 867 873 5593

BRP 35-5  
BRP 35-4  
BRP 35-3  
BRP 35-2  
BRP 35-1  
BRP 36-5  
BRP 36-4  
BRP 36-3  
BRP 36-2  
BRP 36-1  
BRP 3





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# Chain of Custody (COC) / Analytical Request Form

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(lab use only)

COC Number: 1

Page 1 of 1

<b>Report To</b>		Contact and company name below will appear on the final report	
Company:	Goldier Associates Ltd.	Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)	
Contact:	Zenovia Craciunescu	Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	
Phone:	780-222-0587 (cell)	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked	
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
Street:	16820 107 Ave NW	Email 1 or Fax: zenovia.craciunescu@wsp.com	
City/Province:	Edmonton, AB	Email 2: kenne.serben@wsp.com	
Postal Code:	T5P 4C3	Email 3: mkeefe@sabingoldsilver.com	
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	Invoice Distribution	
Copy of Invoice with Report	<input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
Company:	Sabina Gold And Silver Corp	Email 1 or Fax: mkeefe@sabingoldsilver.com	
Contact:	Mele Keefe (604 988 4190) mkeefe@sabingoldsilver.com	Email 2: zenovia.craciunescu@wsp.com	
Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #	YL2021SAB10000001_V2	AFECost Center:	
Job #	21505757/17000/43	Major/Minor Code:	
PO / AFE:	Sabina Facility Code: 176233659	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg	
Sample Identification and/or Coordinates (This description will appear on the report)		Date	
BRRP 35-5		07-Aug-22	
BRRP 35-14		14:35	
BRRP 35-3		13:48	
BRRP 35-2		12:40	
BRRP 35-1		15:20	
BRRP 36-5		10:11	
BRRP 36-4		15:10	
BRRP 36-3		11:45	
BRRP 36-2		13:40	
BRRP 36-1		12:42	
BRRP 3		14:32	
Telephone: +1 867 873 5583		Water	
Drinking Water (DW) Samples <sup>1</sup> (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)	
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		Samples marked archive long term - please hold for a minimum of 120 days or until further notice.	
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO		SHIPMENT RELEASE (client use)	
Released by: <i>AMH</i>		Date: 9 Aug 2022	
Time: 10:06		Received by: <i>ch. samples to softow lab</i>	
Time: 10:06		Date: 10-06	
WHITE - LABORATORY COPY		YELLOW - CLIENT COPY	
NOV 23 9 17 AM '22		NOV 23 9 17 AM '22	



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Chain of Custody (COC) / Analytical  
Request Form

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COC Number: 1

Page 1 of

<b>Report To</b> Contact and company name below will appear on the final report		<b>Report Format / Distribution</b>		<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>																				
Company:	Golder Associates Ltd.	Select Report Format: <input type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)		<b>Regular [R]</b> <input type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																				
Contact:	Zenovia Craciunescu	Quality Control (QC) Report with Report <input type="checkbox"/> YES <input type="checkbox"/> NO		<b>PRIORITY</b> (Business Days)	4 day [P4-20%] <input type="checkbox"/>				<b>1 Business day [E - 100%]</b> <input type="checkbox"/>															
Phone:	780-222-0587 (cell)	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] <input type="checkbox"/>				<b>Same Day, Weekend or Statutory holiday [E2 -200%]</b> <input type="checkbox"/>															
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			2 day [P2-50%] <input type="checkbox"/>				<b>(Laboratory opening fees may apply)</b>															
Street:	16820 107 Ave NW	Email 1 or Fax zenovia.craciunescu@wsp.com		Date and Time Required for all E&P TATs:																				
City/Province:	Edmonton, AB	Email 2 kerrie.serben@wsp.com		For tests that can not be performed according to the service level selected, you will be contacted.																				
Postal Code:	T5P 4C3	Email 3 mkeefe@sabinagoldsilver.com		<b>Analysis Request</b>																				
Invoice To	Same as Report To <input type="checkbox"/> YES <input type="checkbox"/> NO	<b>Invoice Distribution</b>		<b>NUMBER OF CONTAINERS</b>	Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																			
	Copy of Invoice with Report <input type="checkbox"/> YES <input type="checkbox"/> NO	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			P	F/P	F	F	P	P	P	F												
Company:	Sabina Gold And Silver Corp	Email 1 or Fax mkeefe@sabinagoldsilver.com																						
Contact:	Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com	Email 2 zenovia.craciunescu@wsp.com																						
<b>Project Information</b>		<b>Oil and Gas Required Fields (client use)</b>																						
ALS Account # / Quote #:	YL2021SABI10000001_v2	AFE/Cost Center:																						
Job #:	21505757/17000/43	Major/Minor Code:																						
PO / AFE:		Requisitioner:																						
LSD:	Sabina Facility Code: 176233659	Location:																						
ALS Lab Work Order # (lab use only):		ALS Contact: Oliver Gregg			Sampler: <i>Byrne</i>																			
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type																			
	BRP 35-5		07-Aug-22	14:35	Water	10	R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 35-4			13:48	Water	1	R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 35-3			12:40	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 35-2			15:20	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 35-1		08-Aug-22	10:11	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 36-5			15:10	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 36-4			11:45	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 36-3			13:40	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 36-2			12:42	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 36-1			14:32	Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
	BRP 3				Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
					Water		R	R	R	R	R	R	R	R	R	R	R	R	R	R				
<b>Drinking Water (DW) Samples<sup>1</sup> (client use)</b>			<b>Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)</b>			<b>SAMPLE CONDITION AS RECEIVED (lab use only)</b>																		
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO			Samples marked archive long term - please hold for a minimum of 120 days or until further notice.			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																		
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO						Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																		
						Cooling Initiated <input type="checkbox"/>																		
						INITIAL COOLER TEMPERATURES °C																		
						FINAL COOLER TEMPERATURES °C 8°C (avg 10)																		
<b>SHIPMENT RELEASE (client use)</b>			<b>INITIAL SHIPMENT RECEPTION (lab use only)</b>			<b>FINAL SHIPMENT RECEPTION (lab use only)</b>																		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by: <i>sc</i> Date: <b>AUG 13 2022</b> Time: <i>11:15am</i>																		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

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

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

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Report To		Contact and company name below will appear on the final report		Company: Golden Associates Ltd.		Contact: Zenovia Craciunescu		Phone: 780-222-0587 (cell)		Company address below will appear on the final report	
Street:		16820 107 Ave NW		City/Province:		Edmonton, AB		Postal Code:		T6P 4C3	
Invoice To		Same as Report To		Copy of Invoice with Report		YES <input type="checkbox"/> NO <input type="checkbox"/>		Select Invoice Distribution		YES <input type="checkbox"/> MAIL <input type="checkbox"/> FAX <input type="checkbox"/>	
Company:		Sabina Gold And Silver Corp		Contact:		Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com		Email 1 or Fax:		mkeefe@sabinagoldsilver.com	
Project Information		ALSA Account # / Quote #		Y2021SAB10000001_V2		AFR/Coast Carrier		PO#		Routing Code	
LSD:		Sabina Facility Code		176233659		Requestioner:		Location:		ALS Contact:	
ALS Lab Work Order # (lab use only):		ALS Contact:		Oliver Gregg		Sample:		Date		(dd-mm-yy)	
(This description will appear on the report)		Sample Identification and/or Coordinates		Date		Time		Sample Type		NUMBER OF CONTAINERS	
(lab use only)		ALS Sample #		Date		Time		Sample Type		ROUTINE (including organic phosphorus, reactive silica)	
ROUTINE (including organic phosphorus, reactive silica)		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
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Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals		Dissolved Ultra Metals	
Dissolved Ultra Metals		Dissolved Ultra Metals									

## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	<b>: YL2201253</b>	<b>Page</b>	<b>: 1 of 11</b>
<b>Client</b>	<b>: Sabina Gold &amp; Silver Corporation</b>	<b>Laboratory</b>	<b>: Yellowknife - Environmental</b>
<b>Contact</b>	<b>: Merle Keefe</b>	<b>Account Manager</b>	<b>: Oliver Gregg</b>
<b>Address</b>	<b>: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7</b>	<b>Address</b>	<b>: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3</b>
<b>Telephone</b>	<b>: 604 240 6619</b>	<b>Telephone</b>	<b>: 1 867 446 5593</b>
<b>Project</b>	<b>: 21505757/17000/43</b>	<b>Date Samples Received</b>	<b>: 18-Aug-2022 12:05</b>
<b>PO</b>	<b>: ----</b>	<b>Date Analysis Commenced</b>	<b>: 19-Aug-2022</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	<b>: 01-Nov-2022 14:35</b>
<b>Sampler</b>	<b>: BP</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: 2021 Under-Ice Field Program</b>		
<b>No. of samples received</b>	<b>: 8</b>		
<b>No. of samples analysed</b>	<b>: 8</b>		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Alex Drake	Lab Analyst	Inorganics, Edmonton, Alberta
Angeli Marzan	Lab Analyst	Inorganics, Edmonton, Alberta
Christine Mason	Analyst - Chemistry	Inorganics, Winnipeg, Manitoba
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Cindy Tang	Team Leader - Inorganics	Inorganics, Burnaby, British Columbia
David Stewart	Analyst - Chemistry	Inorganics, Burnaby, British Columbia
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Oleksandr Busel		Inorganics, Winnipeg, Manitoba
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Ping Yeung	Team Leader - Inorganics	Inorganics, Edmonton, Alberta
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia







## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
RRV	Reported result verified by repeat analysis.



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2201253-001	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	
					Result	Result	Result	Result	Result	
<b>Physical Tests</b>										
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	4.8	4.8	4.9	4.9	4.6	
conductivity	----	E100	2.0	µS/cm	34.1	44.1	43.4	43.7	43.2	
hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100	0.50	mg/L	11.9	15.8	15.2	15.6	15.3	
pH	----	E108	0.10	pH units	6.89	6.90	6.91	6.91	6.91	
solids, total dissolved [TDS]	----	E162	10	mg/L	37	43	47	45	41	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	20.5	25.3	24.7	25.2	24.8	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.38	0.37	0.34	0.37	0.52	
<b>Anions and Nutrients</b>										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0406	0.0377	0.0421	0.0352	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.05	3.84	3.72	3.77	3.72	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.025	0.024	0.024	0.025	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	0.270	0.247	0.260	0.246	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	0.0024	0.0022	0.0024	0.0023	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0058	0.0052	0.0559	0.0056	0.0075	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0034	<0.0010	0.0034	0.0028	0.0027	
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	6.79	7.31	7.27	7.28	7.26	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	0.215	0.220	0.244	0.256	
<b>Cyanides</b>										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
<b>Organic / Inorganic Carbon</b>										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.86	3.25	3.14	3.32	3.40	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.57	3.31	3.38	3.32	3.29	
<b>Total Sulfides</b>										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0.0016	0.0016	0.0016	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2201253-001	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00099	0.00112	0.00095	0.00112	0.00100	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00988	0.0154	0.0162	0.0156	0.0126	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000071	0.0000066	0.0000076	0.0000075	0.0000070	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000208	0.000258	0.000254	0.000257	0.000253	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00470	0.00708	0.00700	0.00697	0.00622	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	0.0000025	0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000041	0.0000067	0.0000076	0.0000070	0.0000050	
calcium, total	7440-70-2	E466	0.010	mg/L	2.45	3.40	3.35	3.34	3.03	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000057	0.000056	0.000056	0.000056	0.000050	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000109	0.000345	0.000328	0.000334	0.000255	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00130	0.00153	0.00153	0.00154	0.00138	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0362	0.0404	0.0396	0.0402	0.0304	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000091	0.000142	0.000142	0.000139	0.000119	
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	0.0000058	0.0000068	0.0000054	<0.0000050	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00065	0.00081	0.00079	0.00082	0.00075	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.57	1.80	1.80	1.82	1.63	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00289	0.00464	0.00442	0.00455	0.00359	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000013	0.000014	0.000012	0.000012	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00256	0.00314	0.00312	0.00310	0.00278	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.352	0.416	0.424	0.413	0.361	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000026	<0.000025	<0.000025	<0.000025	<0.000025	
silicon, total	7440-21-3	E466	0.050	mg/L	0.071	0.159	0.165	0.161	0.154	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	0.0000020	0.0000031	
sodium, total	7440-23-5	E466	0.010	mg/L	0.612	0.672	0.677	0.684	0.620	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0111	0.0179	0.0184	0.0185	0.0166	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.15	2.31	2.31	2.34	2.54	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000016	0.0000017	0.0000022	0.0000018	0.0000015	

Sub-Matrix: Water					Client sample ID	BRP-33-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
(Matrix: Water)										
Client sampling date / time					13-Aug-2022 12:22	13-Aug-2022 11:13	13-Aug-2022 09:35	13-Aug-2022 10:31	13-Aug-2022 08:41	
Analyte	CAS Number	Method	LOR	Unit	YL2201253-001	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000078	0.000115	0.000589	0.000144	<0.000050	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000056	0.0000068	0.0000061	0.0000061	0.0000070	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000033	0.000035	0.000036	0.000037	0.000032	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00034	0.00086	0.00109	0.00081	0.00083	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000020	0.000026	0.000027	0.000027	0.000028	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00533	0.0100	0.00980	0.0102	0.00976	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000083	0.0000073	0.0000084	0.0000100	0.0000088	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000200	0.000240	0.000244	0.000245	0.000251	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00465	0.00715	0.00696	0.00716	0.00689	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	0.0000027	<0.0000020	<0.0000020	0.0000030	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000028	0.0000075	0.0000062	0.0000078	0.0000059	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.31	3.35	3.24	3.28	3.27	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000043	0.000044	0.000046	0.000048	0.000051	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000674	0.000275	0.000229	0.000268	0.000237	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00124	0.00149	0.00146	0.00147	0.00148	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0103	0.0152	0.0147	0.0156	0.0153	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000056	<0.0000050	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00065	0.00082	0.00078	0.00080	0.00079	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.49	1.80	1.74	1.79	1.74	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00155	0.00339	0.00302	0.00335	0.00309	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00061	0.00087	0.00079	0.00088	0.00078	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000011	0.000011	0.000013	0.000015	0.000013	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00252	0.00320	0.00299	0.00315	0.00306	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.336	0.422	0.407	0.411	0.414	

Sub-Matrix: Water					Client sample ID	BRP-33-1	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4
(Matrix: Water)										
Client sampling date / time					13-Aug-2022 12:22	13-Aug-2022 11:13	13-Aug-2022 09:35	13-Aug-2022 10:31	13-Aug-2022 08:41	
Analyte	CAS Number	Method	LOR	Unit	YL2201253-001	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0.000027	0.000025	0.000025	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.069	0.158	0.154	0.162	0.151	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0.0000022	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.581	0.680	0.653	0.676	0.658	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0113	0.0188	0.0182	0.0183	0.0182	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.19	2.34	2.35	2.36	2.36	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000020	0.0000020	0.0000022	0.0000032	0.0000018	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000059	0.0000055	0.0000066	0.0000058	0.0000072	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000023	0.000026	0.000027	0.000029	0.000026	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00046	0.00078	0.00074	0.00131 <sup>DTC</sup>	0.00089	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000023	0.000025	0.000027	0.000024	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
radium-226	13982-63-3	Ra226	0.005	Bq/L	<0.005	<0.005	0.008	<0.005	<0.005	

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## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	BRP-TB	FB	----	----
Client sampling date / time					13-Aug-2022 08:00	[13-Aug-2022]	12-Aug-2022 10:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201253-006	YL2201253-007	YL2201253-008	-----	-----	
					Result	Result	Result	----	----	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.9	<1.0	<1.0	----	----	
conductivity	----	E100	2.0	µS/cm	43.3	<2.0	<2.0	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	15.5	----	<0.50	----	----	
pH	----	E108	0.10	pH units	6.91	5.67	5.61	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	44	<10	<10	----	----	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	24.7	----	<1.0	----	----	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	----	----	
turbidity	----	E121	0.10	NTU	0.35	<0.10	<0.10	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0330	<0.0050	0.0082 <sup>RRV</sup>	----	----	
chloride	16887-00-6	E235.Cl	0.50	mg/L	3.71	<0.50	<0.50	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.025	<0.020	<0.020	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.240	<0.0050	<0.0050	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	0.0021	<0.0010	<0.0010	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	----	----	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0040	<0.0010	0.0013	----	----	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0022	----	0.0020	----	----	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	7.24	<0.050	<0.050	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.216	<0.200	<0.200	----	----	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.09	----	<0.50	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.37	1.79 <sup>RRV</sup>	<0.50	----	----	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	<0.0015	----	----	
Total Metals										



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-29-5	BRP-TB	FB	----	----
(Matrix: Water)										
Client sampling date / time					13-Aug-2022 08:00	[13-Aug-2022]	12-Aug-2022 10:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201253-006	YL2201253-007	YL2201253-008	-----	-----	
					Result	Result	Result	----	----	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00102	<0.00050	<0.00050	----	----	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0153	<0.00020	<0.00020	----	----	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000074	<0.0000050	<0.0000050	----	----	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000261	<0.000010	<0.000010	----	----	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00685	<0.000020	<0.000020	----	----	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	0.0000021	<0.0000020	<0.0000020	----	----	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	----	----	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	----	----	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000071	<0.0000025	<0.0000025	----	----	
calcium, total	7440-70-2	E466	0.010	mg/L	3.33	<0.010	<0.010	----	----	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000056	<0.000040	<0.000040	----	----	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000303	<0.0000050	<0.0000050	----	----	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00150	<0.000050	<0.000050	----	----	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0396	<0.00050	<0.00050	----	----	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000134	<0.000010	<0.000010	----	----	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000060	<0.0000050	<0.0000050	----	----	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00080	<0.00010	<0.00010	----	----	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.78	<0.0010	<0.0010	----	----	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00433	<0.0000050	<0.0000050	----	----	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	<0.000010	<0.000010	----	----	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00297	<0.000020	<0.000020	----	----	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.413	<0.0050	<0.0050	----	----	
selenium, total	7782-49-2	E466	0.000025	mg/L	0.000025	<0.000025	<0.000025	----	----	
silicon, total	7440-21-3	E466	0.050	mg/L	0.157	<0.050	<0.050	----	----	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	----	----	
sodium, total	7440-23-5	E466	0.010	mg/L	0.672	<0.010	<0.010	----	----	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0178	<0.000020	<0.000020	----	----	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.38	<0.50	<0.50	----	----	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000019	<0.0000010	<0.0000010	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-29-5	BRP-TB	FB	----	----
(Matrix: Water)										
Client sampling date / time					13-Aug-2022 08:00	[13-Aug-2022]	12-Aug-2022 10:58	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201253-006	YL2201253-007	YL2201253-008	-----	-----	
					Result	Result	Result	----	----	
Total Metals (Undigested)										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	----	----	
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000120	<0.000050	<0.000050	----	----	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000064	<0.0000010	<0.0000010	----	----	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000039	<0.000010	<0.000010	----	----	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00104	<0.00010	<0.00010	----	----	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000028	<0.000010	<0.000010	----	----	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00976	----	<0.00020	----	----	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000089	----	<0.0000050	----	----	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000252	----	<0.000010	----	----	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00696	----	<0.000020	----	----	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	----	<0.0000020	----	----	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	----	<0.0000010	----	----	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	----	<0.0050	----	----	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000064	----	<0.0000025	----	----	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	3.28	----	<0.010	----	----	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000046	----	<0.000040	----	----	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000232	----	<0.0000050	----	----	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00148	----	<0.000050	----	----	
dissolved metals filtration location	----	EP465	-	-	Field	----	Field	----	----	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0156	----	<0.00050	----	----	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	----	<0.0000050	----	----	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00079	----	<0.00010	----	----	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.78	----	<0.0010	----	----	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00308	----	<0.0000050	----	----	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00075	----	<0.00050	----	----	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000013	----	<0.000010	----	----	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00305	----	<0.000020	----	----	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	----	<0.010	----	----	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.424	----	<0.0050	----	----	



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-29-5	BRP-TB	FB	----	----
Client sampling date / time						13-Aug-2022 08:00	[13-Aug-2022]	12-Aug-2022 10:58	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201253-006	YL2201253-007	YL2201253-008	-----	-----	
					Result	Result	Result	----	----	
<b>Dissolved Metals</b>										
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	----	<0.0000050	----	----	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----	<0.000025	----	----	----
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.150	----	<0.050	----	----	----
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	----	<0.0000020	----	----	----
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.679	----	<0.010	----	----	----
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0180	----	<0.000020	----	----	----
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.36	----	<0.50	----	----	----
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000019	----	<0.0000010	----	----	----
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	----	<0.000010	----	----	----
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	----	<0.000050	----	----	----
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000077	----	<0.0000010	----	----	----
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000028	----	<0.000010	----	----	----
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00115	----	<0.00010	----	----	----
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000022	----	<0.000010	----	----	----
dissolved mercury filtration location	----	EP509-L	-	-	Field	----	Field	----	----	----
<b>Radiological Parameters</b>										
radium-226	13982-63-3	Ra226	0.005	Bq/L	<0.005	<0.005	<0.005	----	----	----

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2201253	Page	: 1 of 37
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 18-Aug-2022 12:05
PO	: ----	Issue Date	: 01-Nov-2022 14:36
C-O-C number	: ----		
Sampler	: BP		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 8		
No. of samples analysed	: 8		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### Workorder Comments

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

### Summary of Outliers

#### Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

#### Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.



### ***Outliers : Analysis Holding Time Compliance (Breaches)***

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

### ***Outliers : Frequency of Quality Control Samples***

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.

Page : 3 of 37  
 Work Order : YL2201253  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



## Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: Water

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Method Blank (MB) Values</b>								
Total Metals (Undigested)	QC-614290-001	----	bismuth, total	7440-69-9	E466	0.000001 <sup>B</sup> 3 mg/L	0.000001 mg/L	Blank result exceeds permitted value

## Result Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.

## Laboratory Control Sample (LCS) Recoveries

Dissolved Metals	QC-614299-002	----	iron, dissolved	7439-89-6	E465	124 % <sup>MES</sup>	80.0-120%	Recovery greater than upper control limit
------------------	---------------	------	-----------------	-----------	------	----------------------	-----------	---

## Result Qualifiers

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



## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-1	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-2	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-3	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-4	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-29-5	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-33-1	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-TB	E298	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) FB	E298	12-Aug-2022	28-Aug-2022	----	----		29-Aug-2022	28 days	17 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-1	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-2	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-3	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-4	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-29-5	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-1	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-TB	E235.Cl	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE FB	E235.Cl	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	7 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-1	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-2	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-3	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-4	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-29-5	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-33-1	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-TB	E378-U	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE FB	E378-U	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	7 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-1	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-2	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-3	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-4	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-29-5	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-33-1	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-TB	E235.F	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE FB	E235.F	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	7 days	<div>✔</div>



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-1	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-2	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-3	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-4	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-29-5	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-1	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-TB	E235.NO3-L	13-Aug-2022	19-Aug-2022	3 days	6 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE FB	E235.NO3-L	12-Aug-2022	19-Aug-2022	3 days	7 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-1	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-2	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-3	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-4	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-29-5	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-33-1	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-TB	E235.NO2-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	6 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE FB	E235.NO2-L	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	7 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-1	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-2	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-3	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-4	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-29-5	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-33-1	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-TB	E392	13-Aug-2022	----	----	----		23-Aug-2022	28 days	10 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE FB	E392	12-Aug-2022	----	----	----		23-Aug-2022	28 days	11 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-1	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-2	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-3	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-4	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-29-5	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-33-1	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-TB	E235.SO4-L	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE FB	E235.SO4-L	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	7 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-5	E375-U	13-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	27 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-2	E375-U	13-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	44 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-3	E375-U	13-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	44 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-4	E375-U	13-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	44 days	✖ EHT





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-33-1	E375-U	13-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	44 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) FB	E375-U	12-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-29-1	E375-U	13-Aug-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	79 days	✖ EHT
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-1	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-2	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-3	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-4	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-29-5	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-33-1	E318	13-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✔



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-TB	E318	13-Aug-2022	25-Aug-2022	----	----		27-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) FB	E318	12-Aug-2022	25-Aug-2022	----	----		26-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) FB	E372-S	12-Aug-2022	07-Sep-2022	----	----		08-Sep-2022	28 days	27 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-1	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-2	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-3	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-29-4	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-33-1	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-TB	E372-S	13-Aug-2022	22-Sep-2022	----	----		23-Sep-2022	28 days	41 days	✖ EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (lab preserved) BRP-29-5	E372-S	13-Aug-2022	07-Sep-2022	3 days	25 days	✖ EHTR	08-Sep-2022	28 days	1 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E339	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	7 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-1	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-TB	E339	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E333	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	7 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-1	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-TB	E333	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) FB	E336	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	7 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-1	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-2	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-3	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-4	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-29-5	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-1	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-TB	E336	13-Aug-2022	21-Aug-2022	----	----		21-Aug-2022	14 days	8 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-29-1	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-29-2	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔





Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-29-3	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-29-4	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-29-5	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-33-1	E509-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) FB	E509-L	12-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	12 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29-1	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29-2	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29-3	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29-4	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-29-5	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-33-1	E465	13-Aug-2022	24-Aug-2022	180 days	11 days	✓	24-Aug-2022	169 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) FB	E465	12-Aug-2022	24-Aug-2022	180 days	12 days	✓	24-Aug-2022	168 days	0 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-1	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-2	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-3	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-4	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-29-5	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-33-1	E358-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) FB	E358-L	12-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	13 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-1	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-2	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-3	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-4	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-29-5	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-33-1	E355-L	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	11 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-TB	E355-L	13-Aug-2022	25-Aug-2022	----	----		25-Aug-2022	28 days	12 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) FB	E355-L	12-Aug-2022	28-Aug-2022	----	----		28-Aug-2022	28 days	16 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-1	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-2	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-3	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-4	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-29-5	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-1	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-TB	E290	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	6 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE FB	E290	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	7 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-1	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-2	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-3	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-4	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-29-5	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-33-1	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-TB	E100	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	6 days	✓
Physical Tests : Conductivity in Water										
HDPE FB	E100	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	7 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-29-1	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-29-2	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-29-3	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-29-4	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-29-5	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-33-1	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-TB	E108	13-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE FB	E108	12-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-1	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-2	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-3	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-4	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-29-5	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-1	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE BRP-TB	E162	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE FB	E162	12-Aug-2022	----	----	----		19-Aug-2022	7 days	7 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-1	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-2	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-3	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-4	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-29-5	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-33-1	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE BRP-TB	E160	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Physical Tests : TSS by Gravimetry										
HDPE FB	E160	12-Aug-2022	----	----	----		19-Aug-2022	7 days	7 days	✓
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-1	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-2	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-3	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	✖ EHTR



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-4	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-29-5	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-33-1	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-TB	E121	13-Aug-2022	----	----	----		19-Aug-2022	3 days	6 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE FB	E121	12-Aug-2022	----	----	----		19-Aug-2022	3 days	7 days	<div>✖ EHTR</div>
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-29-1	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-29-2	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-29-3	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-29-4	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-29-5	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-33-1	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-TB	Ra226	13-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) FB	Ra226	12-Aug-2022	----	----	----		31-Aug-2022	----	----	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-1	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-2	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-3	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-4	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-29-5	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-33-1	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-TB	E466	13-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	11 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) FB	E466	12-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	12 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-29-1	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-29-2	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-29-3	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-29-4	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-29-5	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-33-1	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-TB	E508-L	13-Aug-2022	25-Aug-2022	28 days	12 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) FB	E508-L	12-Aug-2022	25-Aug-2022	28 days	13 days	✓	25-Aug-2022	28 days	0 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-1	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-2	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-3	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-4	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-29-5	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓

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 Work Order : YL2201253  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-33-1	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-TB	E395	13-Aug-2022	----	----	----		19-Aug-2022	7 days	6 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) FB	E395	12-Aug-2022	----	----	----		19-Aug-2022	7 days	7 days	✓

**Legend & Qualifier Definitions**

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	616520	2	30	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✓
Conductivity in Water	E100	609549	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✓
Free Cyanide	E339	610441	2	18	11.1	5.0	✓
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✓
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✓
pH by Meter	E108	609547	1	20	5.0	5.0	✓
Reactive Silica by Colourimetry	E392	615323	2	36	5.5	5.0	✓
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✓
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✓
Total Cyanide	E333	610440	2	37	5.4	5.0	✓
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	2	45	4.4	5.0	✗
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	2	40	5.0	5.0	✓
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✓
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✓
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	2	29	6.9	5.0	✓
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	636014	1	26	3.8	5.0	✗
Total Sulfide by Colourimetry (Automated Flow)	E395	610058	1	20	5.0	5.0	✓
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✓
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✓
WAD Cyanide	E336	610439	2	36	5.5	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✓
Ammonia by Fluorescence	E298	616520	2	30	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✓
Conductivity in Water	E100	609549	1	20	5.0	5.0	✓
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✓
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✓



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
<b>Laboratory Control Samples (LCS) - Continued</b>							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610441	2	18	11.1	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
pH by Meter	E108	609547	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	615323	2	36	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✔
Total Cyanide	E333	610440	2	37	5.4	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	3	45	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	2	40	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	2	29	6.9	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	636014	2	26	7.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610058	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	2	36	5.5	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	616520	2	30	6.6	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Conductivity in Water	E100	609549	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610441	2	18	11.1	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	615323	2	36	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✔
Total Cyanide	E333	610440	2	37	5.4	5.0	✔





Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
<b>Method Blanks (MB) - Continued</b>							
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	3	45	6.6	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	2	40	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	2	29	6.9	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	636014	2	26	7.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610058	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	2	36	5.5	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	616520	2	30	6.6	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610441	2	18	11.1	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	615323	2	36	5.5	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
Total Cyanide	E333	610440	2	37	5.4	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	2	45	4.4	5.0	✖
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	2	40	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	2	29	6.9	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	636014	1	26	3.8	5.0	✖
Total Sulfide by Colourimetry (Automated Flow)	E395	610058	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	2	36	5.5	5.0	✔



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Edmonton - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry	Ra226  Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.



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 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: YL2201253</b>	<b>Page</b>	<b>: 1 of 22</b>
<b>Client</b>	: Sabina Gold & Silver Corporation	<b>Laboratory</b>	: Yellowknife - Environmental
<b>Contact</b>	: Merle Keefe	<b>Account Manager</b>	: Oliver Gregg
<b>Address</b>	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	<b>Address</b>	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
<b>Telephone</b>	:	<b>Telephone</b>	: 1 867 446 5593
<b>Project</b>	: 21505757/17000/43	<b>Date Samples Received</b>	: 18-Aug-2022 12:05
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 19-Aug-2022
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 01-Nov-2022 14:36
<b>Sampler</b>	: BP 604 240 6619		
<b>Site</b>	: ----		
<b>Quote number</b>	: 2021 Under-Ice Field Program		
<b>No. of samples received</b>	: 8		
<b>No. of samples analysed</b>	: 8		

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

This Quality Control Report contains the following information:

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

### Signatories

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

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Work Order : YL2201253  
Client : Sabina Gold & Silver Corporation  
Project : 21505757/17000/43



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## General Comments

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

### Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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

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

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 609547)											
YL2201252-001	Anonymous	pH	----	E108	0.10	pH units	6.86	6.87	0.146%	4%	----
Physical Tests (QC Lot: 609548)											
YL2201252-001	Anonymous	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.4	5.0	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 609549)											
YL2201252-001	Anonymous	conductivity	----	E100	2.0	µS/cm	33.7	34.0	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 609712)											
YL2201252-001	Anonymous	turbidity	----	E121	0.10	NTU	0.26	0.26	0.0006	Diff <2x LOR	----
Physical Tests (QC Lot: 610487)											
VA22B9394-005	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	3.4	3.6	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 610505)											
YL2201253-001	BRP-33-1	solids, total dissolved [TDS]	----	E162	10	mg/L	37	36	1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609550)											
YL2201252-001	Anonymous	fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.024	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609551)											
YL2201252-001	Anonymous	chloride	16887-00-6	E235.Cl	0.50	mg/L	2.01	1.99	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609552)											
YL2201252-001	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0106	0.0094	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609553)											
YL2201252-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609554)											
YL2201252-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	6.78	6.74	0.593%	20%	----
Anions and Nutrients (QC Lot: 609555)											
YL2201252-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 615323)											
YL2201232-004	Anonymous	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 615324)											
YL2201253-003	BRP-29-2	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616520)											
YL2201252-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616521)											

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Anions and Nutrients (QC Lot: 616521) - continued											
YL2201252-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616876)											
EO2206724-004	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0120	0.0111	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 618407)											
EO2206814-005	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	1.01	1.06	0.055	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 619472)											
CG2211077-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.465	0.446	0.019	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 622410)											
VA22C0175-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 636014)											
WP2202934-003	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0050	mg/L	0.136	0.123	9.66%	20%	----
Anions and Nutrients (QC Lot: 638060)											
WP2203068-002	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0500	mg/L	1.05	1.01	4.04%	20%	----
Anions and Nutrients (QC Lot: 669749)											
YL2201600-003	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722336)											
KS2203679-012	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0048	0.0041	0.0007	Diff <2x LOR	----
Cyanides (QC Lot: 610439)											
YL2201252-003	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 610440)											
YL2201252-003	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 610441)											
YL2201252-003	Anonymous	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 612052)											
YL2201253-001	BRP-33-1	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 612053)											
YL2201253-001	BRP-33-1	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Cyanides (QC Lot: 612054)											
YL2201253-001	BRP-33-1	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 616518)											
YL2201252-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.19	3.24	0.05	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 616519)											





Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Organic / Inorganic Carbon (QC Lot: 616519) - continued											
YL2201252-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.24	3.32	0.08	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 617383)											
FC2201932-003	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	54.1	56.3	3.97%	20%	----
Organic / Inorganic Carbon (QC Lot: 619588)											
YL2201253-007	BRP-TB	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	1.79	1.80	0.01	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 622414)											
VA22C0175-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Total Sulfides (QC Lot: 610058)											
CG2210826-002	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
Total Metals (QC Lot: 618896)											
YL2201252-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00062 µg/L	0.64	0.02	Diff <2x LOR	----
Total Metals (Undigested) (QC Lot: 614290)											
YL2201253-001	BRP-33-1	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00988	0.0101	2.64%	20%	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000071	0.0000063	0.0000008	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000208	0.000213	2.57%	20%	----
		barium, total	7440-39-3	E466	0.000020	mg/L	0.00470	0.00471	0.0910%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000041	0.0000040	0.0000002	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	2.45	2.44	0.213%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	0.000057	0.000058	0.0000007	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000109	0.000111	2.08%	20%	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.00130	0.00133	2.07%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.0362	0.0366	1.20%	20%	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000091	0.000093	0.000002	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00065	0.00067	0.00002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	1.57	1.56	0.245%	20%	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00289	0.00291	0.754%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000011	0.0000006	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.00256	0.00259	1.22%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	0.352	0.360	2.16%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	0.000026	<0.000025	0.000001	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 614290) - continued											
YL2201253-001	BRP-33-1	silicon, total	7440-21-3	E466	0.050	mg/L	0.071	0.075	0.005	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	0.612	0.606	0.924%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0111	0.0114	3.04%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	2.15	2.19	0.04	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000016	0.0000017	0.00000010	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	0.000078	0.000085	0.000007	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000056	0.0000054	0.0000003	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000033	0.000034	0.0000010	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00034	0.00041	0.00008	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000020	0.000022	0.0000010	Diff <2x LOR	----
Dissolved Metals (QC Lot: 614299)											
YL2201253-001	BRP-33-1	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00533	0.00546	2.39%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000083	0.0000082	0.00000004	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000200	0.000201	0.446%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00465	0.00463	0.547%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000028	0.0000026	0.0000003	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.31	2.34	1.37%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000043	0.000044	0.0000009	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000674	0.0000698	3.46%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00124	0.00125	0.338%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0103	0.0106	2.57%	20%	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00065	0.00066	0.000008	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.49	1.48	0.978%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00155	0.00156	0.512%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000011	0.000011	0.0000003	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00252	0.00252	0.174%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.336	0.340	1.23%	20%	----

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 Work Order : YL2201253  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 614299) - continued											
YL2201253-001	BRP-33-1	rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.069	0.069	0.0001	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.581	0.577	0.643%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0113	0.0112	1.34%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.19	2.13	0.06	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000020	0.0000016	0.0000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000059	0.0000060	0.0000001	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000023	0.000024	0.0000006	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00046	0.00056	0.00010	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000023	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 616221)											
YL2201252-001	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.00054 µg/L	0.64	0.10	Diff <2x LOR	----

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

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 609548)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 609549)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 609712)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 610487)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 610505)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 609550)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 609551)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 609552)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 609553)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 609554)						
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 609555)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 615323)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 615324)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 616520)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 616521)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 616876)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 618407)						

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 Work Order : YL2201253  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 618407) - continued</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 619472)</b>						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
<b>Anions and Nutrients (QCLot: 622410)</b>						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
<b>Anions and Nutrients (QCLot: 636014)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 638060)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 666317)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 669749)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 673886)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 722336)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Cyanides (QCLot: 610439)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610440)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610441)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 612052)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 612053)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 612054)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 616518)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 616519)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 617383)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Organic / Inorganic Carbon (QCLot: 619588)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 622414)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 610058)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 618896)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 614290)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	# 0.0000013	B
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 614290) - continued</b>						
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 614299)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----



Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 614299) - continued						
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 616221)						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.



Laboratory Control Sample (LCS) Report

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

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 609547)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 609548)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 609549)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	97.8	90.0	110	----
Physical Tests (QCLot: 609712)									
turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 610487)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.7	85.0	115	----
Physical Tests (QCLot: 610505)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 609550)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 609551)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 609552)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 609553)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 609554)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 609555)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.6	80.0	120	----
Anions and Nutrients (QCLot: 615323)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.9	85.0	115	----
Anions and Nutrients (QCLot: 615324)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.6	85.0	115	----
Anions and Nutrients (QCLot: 616520)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 616521)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.9	75.0	125	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit					
Anions and Nutrients (QCLot: 616876)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	108	85.0	115	----
Anions and Nutrients (QCLot: 618407)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 619472)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 622410)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	95.2	85.0	115	----
Anions and Nutrients (QCLot: 636014)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	115	80.0	120	----
Anions and Nutrients (QCLot: 638060)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	98.6	80.0	120	----
Anions and Nutrients (QCLot: 666317)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	87.7	80.0	120	----
Anions and Nutrients (QCLot: 669749)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	85.5	80.0	120	----
Anions and Nutrients (QCLot: 673886)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	95.3	80.0	120	----
Anions and Nutrients (QCLot: 722336)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Cyanides (QCLot: 610439)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	89.9	80.0	120	----
Cyanides (QCLot: 610440)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	87.2	80.0	120	----
Cyanides (QCLot: 610441)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.0	80.0	120	----
Cyanides (QCLot: 612052)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	111	80.0	120	----
Cyanides (QCLot: 612053)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	115	80.0	120	----
Cyanides (QCLot: 612054)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	116	80.0	120	----
Organic / Inorganic Carbon (QCLot: 616518)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----





Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit					
Organic / Inorganic Carbon (QCLot: 616519)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Organic / Inorganic Carbon (QCLot: 617383)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	92.6	80.0	120	----
Organic / Inorganic Carbon (QCLot: 619588)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	93.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 622414)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	110	80.0	120	----
Total Sulfides (QCLot: 610058)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	95.8	80.0	120	----
Total Metals (QCLot: 618896)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	98.2	80.0	120	----
Total Metals (Undigested) (QCLot: 614290)									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	96.6	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	96.5	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	97.1	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	91.1	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	92.7	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	97.1	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	97.4	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	94.7	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	94.8	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.7	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	115	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.1	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	94.0	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	94.1	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	95.8	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	98.0	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	92.1	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	94.2	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	93.9	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 614290) - continued									
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	98.0	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	90.6	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	97.3	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	94.8	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	94.8	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	97.2	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	94.9	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	107	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	96.1	80.0	120	----
Dissolved Metals (QCLot: 614299)									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	95.2	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	94.8	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	91.4	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	92.6	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	95.7	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	98.3	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	95.9	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	96.4	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	# 124	80.0	120	MES
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	97.2	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	94.1	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.1	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	99.7	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	94.5	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	94.7	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	97.8	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	96.9	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 614299) - continued									
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	94.8	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	97.9	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	87.6	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	97.5	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	97.4	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	95.1	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	94.4	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	96.3	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	92.3	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	116	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	115	80.0	120	----

Qualifiers

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



Matrix Spike (MS) Report

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

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method						
Anions and Nutrients (QCLot: 609550)										
YL2201252-002	Anonymous	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 609551)										
YL2201252-002	Anonymous	chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 609552)										
YL2201252-002	Anonymous	nitrate (as N)	14797-55-8	E235.NO3-L	2.62 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 609553)										
YL2201252-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 609554)										
YL2201252-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4-L	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 609555)										
YL2201252-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.2	70.0	130	----
Anions and Nutrients (QCLot: 615323)										
YL2201233-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	ND mg/L	10 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 615324)										
YL2201253-004	BRP-29-3	silicate (as SiO2)	7631-86-9	E392	9.98 mg/L	10 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 616520)										
YL2201252-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 616521)										
YL2201252-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 616876)										
EO2206724-004	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0987 mg/L	0.1 mg/L	98.7	75.0	125	----
Anions and Nutrients (QCLot: 618407)										
EO2206814-006	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.54 mg/L	2.5 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 619472)										
CG2211128-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.58 mg/L	2.5 mg/L	103	70.0	130	----
Anions and Nutrients (QCLot: 622410)										
VA22C0108-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	MS-B







Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Sulfides (QCLot: 610058) - continued										
YL2201253-007	BRP-TB	sulfide, total (as S)	18496-25-8	E395	0.110 mg/L	0.1 mg/L	110	75.0	125	----
Total Metals (QCLot: 618896)										
YL2201252-002	Anonymous	mercury, total	7439-97-6	E508-L	4.61 ng/L	5 ng/L	92.2	70.0	130	----
Total Metals (Undigested) (QCLot: 614290)										
YL2201253-002	BRP-29-1	aluminum, total	7429-90-5	E466	0.203 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E466	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		barium, total	7440-39-3	E466	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0434 mg/L	0.04 mg/L	108	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		boron, total	7440-42-8	E466	0.114 mg/L	0.1 mg/L	114	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00406 mg/L	0.004 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E466	4.32 mg/L	4 mg/L	108	70.0	130	----
		chromium, total	7440-47-3	E466	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		copper, total	7440-50-8	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		iron, total	7439-89-6	E466	2.10 mg/L	2 mg/L	105	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00244 mg/L	0.0025 mg/L	97.6	70.0	130	----
		lead, total	7439-92-1	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E466	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0219 mg/L	0.02 mg/L	109	70.0	130	----
		nickel, total	7440-02-0	E466	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		potassium, total	7440-09-7	E466	4.05 mg/L	4 mg/L	101	70.0	130	----
		selenium, total	7782-49-2	E466	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		silicon, total	7440-21-3	E466	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		silver, total	7440-22-4	E466	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		sodium, total	7440-23-5	E466	2.08 mg/L	2 mg/L	104	70.0	130	----
		strontium, total	7440-24-6	E466	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E466	19.9 mg/L	20 mg/L	99.7	70.0	130	----
		thallium, total	7440-28-0	E466	0.00372 mg/L	0.004 mg/L	93.0	70.0	130	----
		tin, total	7440-31-5	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		titanium, total	7440-32-6	E466	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		uranium, total	7440-61-1	E466	0.00406 mg/L	0.004 mg/L	102	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 614290) - continued										
YL2201253-002	BRP-29-1	vanadium, total	7440-62-2	E466	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		zinc, total	7440-66-6	E466	0.391 mg/L	0.4 mg/L	97.9	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
Dissolved Metals (QCLot: 614299)										
YL2201253-002	BRP-29-1	aluminum, dissolved	7429-90-5	E465	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00924 mg/L	0.01 mg/L	92.4	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.03 mg/L	2 mg/L	102	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.29 mg/L	10 mg/L	92.9	70.0	130	----
		potassium, dissolved	7440-09-7	E465	3.91 mg/L	4 mg/L	97.7	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00249 mg/L	0.0025 mg/L	99.7	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E465	8.83 mg/L	10 mg/L	88.3	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		sodium, dissolved	7440-23-5	E465	1.98 mg/L	2 mg/L	99.0	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	19.8 mg/L	20 mg/L	99.1	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00358 mg/L	0.004 mg/L	89.6	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
				titanium, dissolved	7440-32-6	E465	0.0391 mg/L	0.04 mg/L	97.7	70.0



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 614299) - continued										
YL2201253-002	BRP-29-1	uranium, dissolved	7440-61-1	E465	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.386 mg/L	0.4 mg/L	96.4	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 616221)										
YL2201252-002	Anonymous	mercury, dissolved	7439-97-6	E509-L	4.62 ng/L	5 ng/L	92.5	70.0	130	----

Qualifiers

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.



www.alsglobal.com

Environmental Division  
Yellowknife  
Work Order Reference  
YL2201253

COC) / Analytical  
Form

1 800 668 9878

Affix ALS barcode label here  
(lab use only)

COC Number: 1

Page 1 of

Report To Contact and company

Company: Golder Associates Ltd.

Contact: Zenovia Craciunescu

Phone: 780-222-0587 (cell)

Company address below x

Street: 16820 107 Ave NW

City/Province: Edmonton, AB

Postal Code: T5P 4C3

Invoice To Same as Report To

Company: Sabina Gold And Silver Corp

Contact: Merle Keefe (604 998 4190) mkeefe@sabinagoldsilver.com

Project Information

ALS Account # / Quote # YL2021SAB10000001\_V2

Job #: 21505757/170004/3

PO / AFE: Sabina Facility Code: 176233659

LSD: Sabina Facility Code: 176233659

ALS Lab Work Order # (lab use only): 11221253

ALS Sample # (lab use only) Sample Identification and/or Coordinates (This description will appear on the report)

GRP-29-1

GRP-29-2

GRP-29-3

GRP-29-4

GRP-29-5

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## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	<b>: YL2201254</b>	<b>Page</b>	<b>: 1 of 6</b>
<b>Amendment</b>	<b>: 1</b>		
<b>Client</b>	<b>: Sabina Gold &amp; Silver Corporation</b>	<b>Laboratory</b>	<b>: Yellowknife - Environmental</b>
<b>Contact</b>	<b>: Merle Keefe</b>	<b>Account Manager</b>	<b>: Oliver Gregg</b>
<b>Address</b>	<b>: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7</b>	<b>Address</b>	<b>: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3</b>
<b>Telephone</b>	<b>: 604 240 6619</b>	<b>Telephone</b>	<b>: 1 867 446 5593</b>
<b>Project</b>	<b>: 21505757/17000/43</b>	<b>Date Samples Received</b>	<b>: 18-Aug-2022 12:05</b>
<b>PO</b>	<b>: ----</b>	<b>Date Analysis Commenced</b>	<b>: 19-Aug-2022</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	<b>: 08-Nov-2022 15:17</b>
<b>Sampler</b>	<b>: ----</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: 2021 Under-Ice Field Program</b>		
<b>No. of samples received</b>	<b>: 2</b>		
<b>No. of samples analysed</b>	<b>: 2</b>		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Christine Mason	Analyst - Chemistry	Inorganics, Winnipeg, Manitoba
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia





## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
RRV	Reported result verified by repeat analysis.



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-37A	BRP-37B	----	----	----
Client sampling date / time					11-Aug-2022 07:59	11-Aug-2022 08:38	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201254-001	YL2201254-002	-----	-----	-----	
					Result	Result	----	----	----	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.6	4.4	----	----	----	
conductivity	----	E100	2.0	µS/cm	26.2	26.0	----	----	----	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	9.39	9.35	----	----	----	
pH	----	E108	0.10	pH units	6.97	6.96	----	----	----	
solids, total dissolved [TDS]	----	E162	10	mg/L	32	29	----	----	----	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	17.0	21.8	----	----	----	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	----	----	----	
turbidity	----	E121	0.10	NTU	0.17	0.12	----	----	----	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
chloride	16887-00-6	E235.Cl	0.50	mg/L	<10.0 <sup>DLDS</sup>	<10.0 <sup>DLDS</sup>	----	----	----	
fluoride	16984-48-8	E235.F	0.020	mg/L	<0.400 <sup>DLDS</sup>	<0.400 <sup>DLDS</sup>	----	----	----	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.132	1.49	----	----	----	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0200 <sup>DLDS</sup>	<0.0200 <sup>DLDS</sup>	----	----	----	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0043	0.0045	----	----	----	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	<0.0010	0.0032	----	----	----	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	----	----	----	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	3.01	3.14	----	----	----	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	----	----	----	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.52 <sup>RRV</sup>	5.35 <sup>RRV</sup>	----	----	----	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	2.55 <sup>RRV</sup>	2.40 <sup>RRV</sup>	----	----	----	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-37A	BRP-37B	----	----	----
(Matrix: Water)										
Client sampling date / time					11-Aug-2022 07:59	11-Aug-2022 08:38	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201254-001	YL2201254-002	-----	-----	-----	
					Result	Result	----	----	----	
Total Metals										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00112	0.00142	----	----	----	
Total Metals (Undigested)										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00456	0.00432	----	----	----	
antimony, total	7440-36-0	E466	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000127	0.000124	----	----	----	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00412	0.00414	----	----	----	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	<0.0000025	----	----	----	
calcium, total	7440-70-2	E466	0.010	mg/L	1.93	1.87	----	----	----	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000066	0.000042	----	----	----	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000364	0.0000324	----	----	----	
copper, total	7440-50-8	E466	0.000050	mg/L	0.000896	0.000885	----	----	----	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0144	0.0136	----	----	----	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000064	0.000063	----	----	----	
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00049	0.00048	----	----	----	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.20	1.20	----	----	----	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00113	0.00104	----	----	----	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00152	0.00152	----	----	----	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.320	0.314	----	----	----	
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	----	----	----	
silicon, total	7440-21-3	E466	0.050	mg/L	0.111	0.110	----	----	----	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
sodium, total	7440-23-5	E466	0.010	mg/L	0.491	0.491	----	----	----	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.00822	0.00834	----	----	----	
sulfur, total	7704-34-9	E466	0.50	mg/L	1.43	1.47	----	----	----	
thallium, total	7440-28-0	E466	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-37A	BRP-37B	----	----	----
(Matrix: Water)										
Client sampling date / time					11-Aug-2022 07:59	11-Aug-2022 08:38	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201254-001	YL2201254-002	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals (Undigested)</b>										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000034	0.0000035	----	----	----	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000019	0.000019	----	----	----	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00143	0.00107	----	----	----	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000013	0.000010	----	----	----	
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00361	0.00390	----	----	----	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000065	0.0000053	----	----	----	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000124	0.000124	----	----	----	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00415	0.00411	----	----	----	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	0.0000026	----	----	----	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	1.83	1.83	----	----	----	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000041	0.000042	----	----	----	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000282	0.0000269	----	----	----	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.000854	0.000928	----	----	----	
dissolved metals filtration location	----	EP465	-	-	Field	Field	----	----	----	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00791	0.00786	----	----	----	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	0.0000052	----	----	----	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00050	0.00049	----	----	----	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.17	1.16	----	----	----	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.000597	0.000594	----	----	----	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00070	0.00072	----	----	----	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00152	0.00159	----	----	----	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	----	----	----	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.320	0.308	----	----	----	



Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-37A	BRP-37B	----	----	----
(Matrix: Water)										
					Client sampling date / time	11-Aug-2022 07:59	11-Aug-2022 08:38	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201254-001	YL2201254-002	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	----	----	----	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.108	0.110	----	----	----	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.484	0.484	----	----	----	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.00810	0.00781	----	----	----	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	1.50	1.50	----	----	----	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000013	<0.0000010	----	----	----	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000044	0.0000025	----	----	----	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000018	0.000016	----	----	----	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00050	0.00067	----	----	----	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000016	0.000014	----	----	----	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	----	----	----	
Radiological Parameters										
radium-226	13982-63-3	Ra-226	0.005	Bq/L	<0.005	<0.005	----	----	----	

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



## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2201254	Page	: 1 of 18
Amendment	: 1		
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 18-Aug-2022 12:05
PO	: ----	Issue Date	: 08-Nov-2022 15:17
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

### Key

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

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

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

### Workorder Comments

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

### Summary of Outliers

#### Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Matrix Spike outliers occur.
- Method Blank value outliers occur - please see following pages for full details.
- Laboratory Control Sample (LCS) outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

#### Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

### ***Outliers : Analysis Holding Time Compliance (Breaches)***

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

### ***Outliers : Frequency of Quality Control Samples***

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



## Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: Water

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
<b>Method Blank (MB) Values</b>								
Total Metals (Undigested)	QC-614290-001	----	bismuth, total	7440-69-9	E466	0.000001 <sup>B</sup> 3 mg/L	0.000001 mg/L	Blank result exceeds permitted value

## Result Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.

## Laboratory Control Sample (LCS) Recoveries

Dissolved Metals	QC-614299-002	----	iron, dissolved	7439-89-6	E465	124 % <sup>MES</sup>	80.0-120%	Recovery greater than upper control limit
------------------	---------------	------	-----------------	-----------	------	----------------------	-----------	---

## Result Qualifiers

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



## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-37A	E298	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-37B	E298	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-37A	E235.Cl	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-37B	E235.Cl	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-37A	E378-U	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	8 days	✖ EHTR-FM
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-37B	E378-U	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	8 days	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-37A	E235.F	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-37B	E235.F	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-37A	E235.NO3-L	11-Aug-2022	19-Aug-2022	3 days	8 days	✖ EHTR	19-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-37B	E235.NO3-L	11-Aug-2022	19-Aug-2022	3 days	8 days	✖ EHTR	19-Aug-2022	3 days	0 days	✓
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-37A	E235.NO2-L	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	8 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-37B	E235.NO2-L	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	8 days	✖ EHTR-FM
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-37A	E392	11-Aug-2022	----	----	----		23-Aug-2022	28 days	12 days	✓
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-37B	E392	11-Aug-2022	----	----	----		23-Aug-2022	28 days	12 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-37A	E235.SO4-L	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-37B	E235.SO4-L	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	8 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-37B	E375-U	11-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	46 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-37A	E375-U	11-Aug-2022	31-Oct-2022	----	----		31-Oct-2022	28 days	81 days	✖ EHT
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-37A	E318	11-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-37B	E318	11-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-37A	E372-S	11-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	46 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-37B	E372-S	11-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	46 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37A	E339	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37B	E339	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37A	E333	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37B	E333	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37A	E336	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-37B	E336	11-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-37A	E509-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-37B	E509-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-37A	E465	11-Aug-2022	24-Aug-2022	180 days	13 days	✓	24-Aug-2022	167 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-37B	E465	11-Aug-2022	24-Aug-2022	180 days	13 days	✓	24-Aug-2022	167 days	0 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-37A	E358-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-37B	E358-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-37A	E355-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	13 days	✓
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-37B	E355-L	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-37A	E290	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-37B	E290	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-37A	E100	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-37B	E100	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE BRP-37A	E108	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	0.25 hrs	21.25 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-37B	E108	11-Aug-2022	19-Aug-2022	----	----		20-Aug-2022	0.25 hrs	21.25 hrs	✖ EHTR-FM



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-37A	E162	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL
Physical Tests : TDS by Gravimetry										
HDPE BRP-37B	E162	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL
Physical Tests : TSS by Gravimetry										
HDPE BRP-37A	E160	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL
Physical Tests : TSS by Gravimetry										
HDPE BRP-37B	E160	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-37A	E121	11-Aug-2022	----	----	----		19-Aug-2022	3 days	8 days	✖ EHTR
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-37B	E121	11-Aug-2022	----	----	----		19-Aug-2022	3 days	8 days	✖ EHTR
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-37A	Ra-226	11-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-37B	Ra-226	11-Aug-2022	----	----	----		31-Aug-2022	----	----	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-37A	E466	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	13 days	✔



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-37B	E466	11-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	13 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-37A	E508-L	11-Aug-2022	25-Aug-2022	28 days	14 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-37B	E508-L	11-Aug-2022	25-Aug-2022	28 days	14 days	✓	25-Aug-2022	28 days	0 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-37A	E395	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-37B	E395	11-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	✖ EHTL

**Legend & Qualifier Definitions**

EHTL: Exceeded ALS recommended hold time prior to analysis. Sample was received less than 24 hours prior to expiry.

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





## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	610020	1	15	6.6	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	610030	1	2	50.0	5.0	✔
Conductivity in Water	E100	610021	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	2	21	9.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	610031	1	14	7.1	5.0	✔
Fluoride in Water by IC	E235.F	610029	1	2	50.0	5.0	✔
Free Cyanide	E339	610441	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	610028	1	2	50.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	610024	1	15	6.6	5.0	✔
pH by Meter	E108	610019	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	615324	1	16	6.2	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	610027	1	15	6.6	5.0	✔
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✔
Total Cyanide	E333	610440	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	666317	0	7	0.0	5.0	✖
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	619150	1	19	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	666349	0	6	0.0	5.0	✖
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	609901	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	1	19	5.2	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	610020	1	15	6.6	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	610030	1	2	50.0	5.0	✔
Conductivity in Water	E100	610021	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	2	21	9.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
<b>Laboratory Control Samples (LCS) - Continued</b>							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	610031	1	14	7.1	5.0	✔
Fluoride in Water by IC	E235.F	610029	1	2	50.0	5.0	✔
Free Cyanide	E339	610441	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	610028	1	2	50.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	610024	1	15	6.6	5.0	✔
pH by Meter	E108	610019	1	17	5.8	5.0	✔
Reactive Silica by Colourimetry	E392	615324	1	16	6.2	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	610027	1	15	6.6	5.0	✔
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✔
Total Cyanide	E333	610440	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	666317	1	7	14.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	619150	1	19	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	666349	1	6	16.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	609901	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	1	19	5.2	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	610020	1	15	6.6	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	610030	1	2	50.0	5.0	✔
Conductivity in Water	E100	610021	1	17	5.8	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	2	21	9.5	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	610031	1	14	7.1	5.0	✔
Fluoride in Water by IC	E235.F	610029	1	2	50.0	5.0	✔
Free Cyanide	E339	610441	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	610028	1	2	50.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	610024	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	615324	1	16	6.2	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	610027	1	15	6.6	5.0	✔
TDS by Gravimetry	E162	610505	1	10	10.0	5.0	✔
Total Cyanide	E333	610440	1	19	5.2	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	666317	1	7	14.2	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	619150	1	19	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	666349	1	6	16.6	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	610487	1	16	6.2	5.0	✔
Turbidity by Nephelometry	E121	609901	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	1	19	5.2	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	610030	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	21	4.7	5.0	✖
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614299	1	9	11.1	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	610031	1	14	7.1	5.0	✔
Fluoride in Water by IC	E235.F	610029	1	2	50.0	5.0	✔
Free Cyanide	E339	610441	1	11	9.0	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	610028	1	2	50.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	610024	1	15	6.6	5.0	✔
Reactive Silica by Colourimetry	E392	615324	1	16	6.2	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	610027	1	15	6.6	5.0	✔
Total Cyanide	E333	610440	1	19	5.2	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	666317	0	7	0.0	5.0	✖
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	619150	1	19	5.2	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614290	1	10	10.0	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	666349	0	6	0.0	5.0	✖
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
WAD Cyanide	E336	610439	1	19	5.2	5.0	✔



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO <sub>2</sub> E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H <sub>2</sub> S" if reported represent the maximum possible H <sub>2</sub> S concentration based on the total sulfide concentration in the sample. The H <sub>2</sub> S calculation converts Total Sulphide as (S <sub>2</sub> <sup>-</sup> ) and reports it as Total Sulphide as (H <sub>2</sub> S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry	Ra-226  Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

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<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: YL2201254</b>	<b>Page</b>	<b>: 1 of 18</b>
<b>Amendment</b>	<b>: 1</b>		
<b>Client</b>	: Sabina Gold & Silver Corporation	<b>Laboratory</b>	: Yellowknife - Environmental
<b>Contact</b>	: Merle Keefe	<b>Account Manager</b>	: Oliver Gregg
<b>Address</b>	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	<b>Address</b>	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
<b>Telephone</b>	:	<b>Telephone</b>	: 1 867 446 5593
<b>Project</b>	: 21505757/17000/43	<b>Date Samples Received</b>	: 18-Aug-2022 12:05
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 19-Aug-2022
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 08-Nov-2022 15:17
<b>Sampler</b>	: ---- 604 240 6619		
<b>Site</b>	: ----		
<b>Quote number</b>	: 2021 Under-Ice Field Program		
<b>No. of samples received</b>	: 2		
<b>No. of samples analysed</b>	: 2		

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

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Christine Mason	Analyst - Chemistry	Winnipeg Inorganics, Winnipeg, Manitoba
Christopher Li	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
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Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
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## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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

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

### Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 609901)											
FJ2202158-001	Anonymous	turbidity	----	E121	0.10	NTU	0.22	0.22	0.005	Diff <2x LOR	----
Physical Tests (QC Lot: 610019)											
YL2201254-001	BRP-37A	pH	----	E108	0.10	pH units	6.97	7.00	0.429%	4%	----
Physical Tests (QC Lot: 610020)											
YL2201254-001	BRP-37A	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.6	4.8	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 610021)											
YL2201254-001	BRP-37A	conductivity	----	E100	2.0	µS/cm	26.2	26.5	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 610487)											
VA22B9394-005	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	3.4	3.6	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 610505)											
YL2201253-001	Anonymous	solids, total dissolved [TDS]	----	E162	10	mg/L	37	36	1	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 610024)											
YL2201197-001	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	0.0200	mg/L	0.526	0.525	0.139%	20%	----
Anions and Nutrients (QC Lot: 610027)											
YL2201197-001	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4-L	1.00	mg/L	369	366	0.801%	20%	----
Anions and Nutrients (QC Lot: 610028)											
YL2201254-001	BRP-37A	nitrate (as N)	14797-55-8	E235.NO3-L	0.100	mg/L	0.132	0.168	0.0356	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 610029)											
YL2201254-001	BRP-37A	fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 610030)											
YL2201254-001	BRP-37A	chloride	16887-00-6	E235.Cl	10.0	mg/L	<10.0	<10.0	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 610031)											
YL2201197-001	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 615324)											
YL2201253-003	Anonymous	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616520)											
YL2201252-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616521)											
YL2201252-001	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 722336)											

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Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 722336) - continued</b>											
KS2203679-012	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0048	0.0041	0.0007	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610439)</b>											
YL2201252-003	Anonymous	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610440)</b>											
YL2201252-003	Anonymous	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610441)</b>											
YL2201252-003	Anonymous	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 616518)</b>											
YL2201252-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.19	3.24	0.05	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 616519)</b>											
YL2201252-001	Anonymous	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.24	3.32	0.08	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 610774)</b>											
CG2210993-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 619150)</b>											
CG2211053-001	Anonymous	mercury, total	7439-97-6	E508-L	0.50	ng/L	<0.00050 µg/L	<0.50	0	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 614290)</b>											
YL2201253-001	Anonymous	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00988	0.0101	2.64%	20%	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000071	0.0000063	0.0000008	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000208	0.000213	2.57%	20%	----
		barium, total	7440-39-3	E466	0.000020	mg/L	0.00470	0.00471	0.0910%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000041	0.0000040	0.0000002	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	2.45	2.44	0.213%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	0.000057	0.000058	0.0000007	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000109	0.000111	2.08%	20%	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.00130	0.00133	2.07%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.0362	0.0366	1.20%	20%	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000091	0.000093	0.000002	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00065	0.00067	0.00002	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	1.57	1.56	0.245%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 614290) - continued											
YL2201253-001	Anonymous	manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00289	0.00291	0.754%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000012	0.000011	0.0000006	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.00256	0.00259	1.22%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	0.352	0.360	2.16%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	0.000026	<0.000025	0.000001	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	0.071	0.075	0.005	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	0.612	0.606	0.924%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0111	0.0114	3.04%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	2.15	2.19	0.04	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000016	0.0000017	0.00000010	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	0.000078	0.000085	0.000007	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000056	0.0000054	0.0000003	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000033	0.000034	0.0000010	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00034	0.00041	0.00008	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000020	0.000022	0.0000010	Diff <2x LOR	----
Dissolved Metals (QC Lot: 614299)											
YL2201253-001	Anonymous	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00533	0.00546	2.39%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000083	0.0000082	0.00000004	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000200	0.000201	0.446%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00465	0.00463	0.547%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000028	0.0000026	0.0000003	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.31	2.34	1.37%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000043	0.000044	0.0000009	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000674	0.0000698	3.46%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00124	0.00125	0.338%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0103	0.0106	2.57%	20%	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00065	0.00066	0.000008	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.49	1.48	0.978%	20%	----

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 Work Order : YL2201254 Amendment 1  
 Client : Sabina Gold & Silver Corporation  
 Project : 21505757/17000/43



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 614299) - continued											
YL2201253-001	Anonymous	manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00155	0.00156	0.512%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000011	0.000011	0.0000003	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00252	0.00252	0.174%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.336	0.340	1.23%	20%	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.069	0.069	0.0001	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.581	0.577	0.643%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0113	0.0112	1.34%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.19	2.13	0.06	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000020	0.0000016	0.0000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000059	0.0000060	0.0000001	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000023	0.000024	0.0000006	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00046	0.00056	0.00010	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000021	0.000023	0.000002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 616221)											
YL2201252-001	Anonymous	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.00054 µg/L	0.64	0.10	Diff <2x LOR	----
Dissolved Metals (QC Lot: 616222)											
YL2201254-002	BRP-37B	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.00072 µg/L	0.73	0.007	Diff <2x LOR	----

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

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 609901)						
turbidity	----	E121	0.1	NTU	<0.10	----
Physical Tests (QCLot: 610020)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 610021)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 610487)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 610505)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 610024)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 610027)						
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 610028)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 610029)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 610030)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 610031)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 615324)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 616520)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 616521)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 666317)						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 666349)						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 722336)						





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 722336) - continued</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Cyanides (QCLot: 610439)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610440)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610441)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 616518)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 616519)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 610774)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 619150)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 614290)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	# 0.0000013	B
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 614290) - continued</b>						
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 614299)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 614299) - continued						
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
Dissolved Metals (QCLot: 616221)						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----
Dissolved Metals (QCLot: 616222)						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----

Qualifiers

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.



Laboratory Control Sample (LCS) Report

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

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 609901)									
turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Physical Tests (QCLot: 610019)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 610020)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	103	85.0	115	----
Physical Tests (QCLot: 610021)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	98.9	90.0	110	----
Physical Tests (QCLot: 610487)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	98.7	85.0	115	----
Physical Tests (QCLot: 610505)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 610024)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 610027)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 610028)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 610029)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 610030)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 610031)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 615324)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.6	85.0	115	----
Anions and Nutrients (QCLot: 616520)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 616521)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 666317)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	87.7	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit					
Anions and Nutrients (QCLot: 666349)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	95.3	80.0	120	----
Anions and Nutrients (QCLot: 722336)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.05 mg/L	100	80.0	120	----
Cyanides (QCLot: 610439)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	89.9	80.0	120	----
Cyanides (QCLot: 610440)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	87.2	80.0	120	----
Cyanides (QCLot: 610441)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 616518)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 616519)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Total Sulfides (QCLot: 610774)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	95.6	80.0	120	----
Total Metals (QCLot: 619150)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	104	80.0	120	----
Total Metals (Undigested) (QCLot: 614290)									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	96.6	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	96.5	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	97.1	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	91.1	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	92.7	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	97.1	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	97.4	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	94.7	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	94.8	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.7	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	115	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.1	80.0	120	----





Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
<b>Total Metals (Undigested) (QCLot: 614290) - continued</b>									
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	96.7	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	94.0	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	94.1	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	95.8	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	98.0	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	92.1	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	94.2	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	93.9	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	98.0	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	90.6	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	97.3	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	97.3	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	94.8	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	94.8	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	97.2	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	94.9	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	107	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	96.1	80.0	120	----
<b>Dissolved Metals (QCLot: 614299)</b>									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	102	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	101	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	95.2	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	100	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	94.8	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	91.4	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	92.6	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	95.7	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	98.3	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	95.9	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	96.4	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	# 124	80.0	120	MES
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	97.2	80.0	120	----



Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 614299) - continued									
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	94.1	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	96.1	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	99.3	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	99.7	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	94.5	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	94.7	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	97.8	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	96.9	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	94.8	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	97.9	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	87.6	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	97.5	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	97.4	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	95.1	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	94.4	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	96.3	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	92.3	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	116	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	100	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	106	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	92.9	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	115	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	115	80.0	120	----

Qualifiers

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



Matrix Spike (MS) Report

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

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	Target	MS	Low	High	
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method						
Anions and Nutrients (QCLot: 610024)										
YL2201197-002	Anonymous	nitrite (as N)	14797-65-0	E235.NO2-L	9.33 mg/L	10 mg/L	93.3	75.0	125	----
Anions and Nutrients (QCLot: 610027)										
YL2201197-002	Anonymous	sulfate (as SO4)	14808-79-8	E235.SO4-L	1910 mg/L	2000 mg/L	95.7	75.0	125	----
Anions and Nutrients (QCLot: 610028)										
YL2201254-002	BRP-37B	nitrate (as N)	14797-55-8	E235.NO3-L	46.8 mg/L	50 mg/L	93.5	75.0	125	----
Anions and Nutrients (QCLot: 610029)										
YL2201254-002	BRP-37B	fluoride	16984-48-8	E235.F	18.7 mg/L	20 mg/L	93.5	75.0	125	----
Anions and Nutrients (QCLot: 610030)										
YL2201254-002	BRP-37B	chloride	16887-00-6	E235.Cl	1890 mg/L	2000 mg/L	94.6	75.0	125	----
Anions and Nutrients (QCLot: 610031)										
YL2201197-002	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0276 mg/L	0.03 mg/L	91.9	70.0	130	----
Anions and Nutrients (QCLot: 615324)										
YL2201253-004	Anonymous	silicate (as SiO2)	7631-86-9	E392	9.98 mg/L	10 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 616520)										
YL2201252-002	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 616521)										
YL2201252-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 722336)										
KS2203679-014	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0699 mg/L	0.067 mg/L	104	70.0	130	----
Cyanides (QCLot: 610439)										
YL2201252-006	Anonymous	cyanide, weak acid dissociable	----	E336	1.52 mg/L	1.25 mg/L	122	75.0	125	----
Cyanides (QCLot: 610440)										
YL2201252-006	Anonymous	cyanide, strong acid dissociable (total)	----	E333	2.93 mg/L	2.5 mg/L	117	75.0	125	----
Cyanides (QCLot: 610441)										
YL2201252-006	Anonymous	cyanide, free	----	E339	1.48 mg/L	1.25 mg/L	118	75.0	125	----
Organic / Inorganic Carbon (QCLot: 616518)										
YL2201252-002	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	4.82 mg/L	5 mg/L	96.4	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 616519)										
YL2201252-002	Anonymous	carbon, total organic [TOC]	----	E355-L	4.74 mg/L	5 mg/L	94.7	70.0	130	----
Total Sulfides (QCLot: 610774)										
YL2201252-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.228 mg/L	0.2 mg/L	114	75.0	125	----
Total Metals (QCLot: 619150)										
CG2211053-002	Anonymous	mercury, total	7439-97-6	E508-L	6.06 ng/L	5 ng/L	121	70.0	130	----
Total Metals (Undigested) (QCLot: 614290)										
YL2201253-002	Anonymous	aluminum, total	7429-90-5	E466	0.203 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, total	7440-36-0	E466	0.0212 mg/L	0.02 mg/L	106	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0210 mg/L	0.02 mg/L	105	70.0	130	----
		barium, total	7440-39-3	E466	0.0198 mg/L	0.02 mg/L	98.8	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0434 mg/L	0.04 mg/L	108	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00960 mg/L	0.01 mg/L	96.0	70.0	130	----
		boron, total	7440-42-8	E466	0.114 mg/L	0.1 mg/L	114	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00406 mg/L	0.004 mg/L	101	70.0	130	----
		calcium, total	7440-70-2	E466	4.32 mg/L	4 mg/L	108	70.0	130	----
		chromium, total	7440-47-3	E466	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		copper, total	7440-50-8	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		iron, total	7439-89-6	E466	2.10 mg/L	2 mg/L	105	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00244 mg/L	0.0025 mg/L	97.6	70.0	130	----
		lead, total	7439-92-1	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E466	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0219 mg/L	0.02 mg/L	109	70.0	130	----
		nickel, total	7440-02-0	E466	0.0399 mg/L	0.04 mg/L	99.8	70.0	130	----
		potassium, total	7440-09-7	E466	4.05 mg/L	4 mg/L	101	70.0	130	----
		selenium, total	7782-49-2	E466	0.0433 mg/L	0.04 mg/L	108	70.0	130	----
		silicon, total	7440-21-3	E466	9.24 mg/L	10 mg/L	92.4	70.0	130	----
		silver, total	7440-22-4	E466	0.00391 mg/L	0.004 mg/L	97.7	70.0	130	----
		sodium, total	7440-23-5	E466	2.08 mg/L	2 mg/L	104	70.0	130	----
		strontium, total	7440-24-6	E466	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		sulfur, total	7704-34-9	E466	19.9 mg/L	20 mg/L	99.7	70.0	130	----
		thallium, total	7440-28-0	E466	0.00372 mg/L	0.004 mg/L	93.0	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 614290) - continued										
YL2201253-002	Anonymous	tin, total	7440-31-5	E466	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		titanium, total	7440-32-6	E466	0.0408 mg/L	0.04 mg/L	102	70.0	130	----
		uranium, total	7440-61-1	E466	0.00406 mg/L	0.004 mg/L	102	70.0	130	----
		vanadium, total	7440-62-2	E466	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		zinc, total	7440-66-6	E466	0.391 mg/L	0.4 mg/L	97.9	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0419 mg/L	0.04 mg/L	105	70.0	130	----
Dissolved Metals (QCLot: 614299)										
YL2201253-002	Anonymous	aluminum, dissolved	7429-90-5	E465	0.201 mg/L	0.2 mg/L	100	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0208 mg/L	0.02 mg/L	104	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0199 mg/L	0.02 mg/L	99.6	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0200 mg/L	0.02 mg/L	100	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0410 mg/L	0.04 mg/L	102	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00924 mg/L	0.01 mg/L	92.4	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00398 mg/L	0.004 mg/L	99.4	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.17 mg/L	4 mg/L	104	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0388 mg/L	0.04 mg/L	97.1	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0194 mg/L	0.02 mg/L	97.1	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		iron, dissolved	7439-89-6	E465	2.03 mg/L	2 mg/L	102	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0196 mg/L	0.02 mg/L	98.1	70.0	130	----
		lithium, dissolved	7439-93-2	E465	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0199 mg/L	0.02 mg/L	99.5	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0209 mg/L	0.02 mg/L	104	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0385 mg/L	0.04 mg/L	96.2	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.29 mg/L	10 mg/L	92.9	70.0	130	----
		potassium, dissolved	7440-09-7	E465	3.91 mg/L	4 mg/L	97.7	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00249 mg/L	0.0025 mg/L	99.7	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0425 mg/L	0.04 mg/L	106	70.0	130	----
		silicon, dissolved	7440-21-3	E465	8.83 mg/L	10 mg/L	88.3	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00385 mg/L	0.004 mg/L	96.2	70.0	130	----
		sodium, dissolved	7440-23-5	E465	1.98 mg/L	2 mg/L	99.0	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0194 mg/L	0.02 mg/L	97.2	70.0	130	----
				sulfur, dissolved	7704-34-9	E465	19.8 mg/L	20 mg/L	99.1	70.0





Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 614299) - continued										
YL2201253-002	Anonymous	thallium, dissolved	7440-28-0	E465	0.00358 mg/L	0.004 mg/L	89.6	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0200 mg/L	0.02 mg/L	99.9	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0391 mg/L	0.04 mg/L	97.7	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00392 mg/L	0.004 mg/L	98.0	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.386 mg/L	0.4 mg/L	96.4	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0390 mg/L	0.04 mg/L	97.4	70.0	130	----
Dissolved Metals (QCLot: 616221)										
YL2201252-002	Anonymous	mercury, dissolved	7439-97-6	E509-L	4.62 ng/L	5 ng/L	92.5	70.0	130	----

SRC Group # 2022-10040

Sep 01, 2022

ALS  
314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3  
Attn: Oliver Gregg

Date Samples Received: Aug-23-2022

Client P.O.: YL2201254

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All results have been reviewed and approved by a Qualified Person in accordance with the Saskatchewan Environmental Code, Corrective Action Plan Chapter, for the purposes of certifying a laboratory analysis

Results from Lab Section 4 approved by Smith-Windsor, Jenna

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- \* Test methods and data are validated by the laboratory's Quality Assurance Program.
- \* Routine methods follow recognized procedures from sources such as
  - \* Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
  - \* Environment Canada
  - \* US EPA
  - \* CANMET
- \* The results reported relate only to the test samples as provided by the client. Results apply to the sample as received, unless otherwise indicated.
- \* Data marked as "by Client" has been provided by the client and may affect the validity of results.
- \* Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.
- \* Additional information is available upon request.
- \* Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

This is a final report.

**SRC Group # 2022-10040**

Sep 01, 2022

ALS

314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3  
Attn: Oliver Gregg

Sample #: **2022032769**  
Date Sampled: **Aug 11, 2022**  
Sample Matrix: **WATER**  
Description: **08/11/2022 08:59 BRP-37A YL2201254-001**

Client PO #: **YL2201254**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.005
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Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 16.1 °C upon receipt.

**SRC Group # 2022-10040**

Sep 01, 2022

ALS

Sample #: **2022032770**  
Date Sampled: **Aug 11, 2022**  
Sample Matrix: **WATER**  
Description: **08/11/2022 09:38 BRP-37B YL2201254-002**

Client PO #: **YL2201254**  
Date Received: **Aug 23, 2022**

**Analyte****Units****Result****Lab Section 4**

Radium-226

Bq/L

&lt;0.005

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 16.1 °C upon receipt.

SRC Group # 2022-10040

Sep 01, 2022

ALS

**Analyte Methods**

<b>Name</b>	<b>Units</b>	<b>Method</b>
Radium-226	Bq/L	Rad-105



Sep 01, 2022

This report was generated for samples included in SRC Group # 2022-10040

## Quality Control Report

Oliver Gregg  
ALS  
314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3

### Reference Materials and Standards:

A reference material of known concentration is used whenever possible as either a control sample or control standard and analyzed with each batch of samples. These "QC" results are used to assess the performance of the method and must be within clearly defined limits; otherwise corrective action is required.

QC Analysis	Units	Target Value	Obtained Value
Radium-226	Bq/L	19.8	20.3
Radium-226	Bq	2.13	2.16

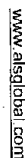
### Duplicates:

Duplicates are used to assess problems with precision and help ensure that samples within a given batch were processed appropriately. The difference between duplicates must be within strict limits, otherwise corrective action is required. Please note, the duplicate(s) in this report are duplicates analyzed within a given batch of test samples and may not be from this specific group of samples.

Duplicate Analysis	Units	Sample ID	First Result	Second Result
Radium-226	Bq/L	32752	0.02	0.02

All quality control results were within the specified limits and considered acceptable.

Approved by Section Supervisor



## Chain of Custody (COC) / Analytical Request Form

**Canada Toll Free: 1 800 668 9878**

**Affix ALS barcode label here**  
(lab use only)

COC Number: 1

Page 1 of 1

[illegible]

## CERTIFICATE OF ANALYSIS

Work Order	: YL2201252	Page	: 1 of 14
Amendment	: 1		
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife NT Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 18-Aug-2022 12:05
PO	: ----	Date Analysis Commenced	: 19-Aug-2022
C-O-C number	: ----	Issue Date	: 08-Nov-2022 15:19
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

## Signatories

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

Signatories	Position	Laboratory Department
Christopher Li	Lab Assistant	Metals, Burnaby, British Columbia
Hamideh Moradi	Analyst	Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia
Oleksandr Busel		Inorganics, Winnipeg, Manitoba
Oliver Gregg	Client Services Supervisor	External Subcontracting, Saskatoon, Saskatchewan
Parnian Sane	Analyst	Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Inorganics, Burnaby, British Columbia



## General Comments

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

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

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

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

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

Unit	Description
-	No Unit
µg/L	micrograms per litre
µS/cm	Microsiemens per centimetre
Bq/L	Becquerels per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

<: less than.

>: greater than.

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

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

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

## Qualifiers

Qualifier	Description
DLA	Detection Limit adjusted for required dilution.
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).
SRU	Sample Received Unpreserved. Results may be biased low for indicated parameter(s).



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time					09-Aug-2022 12:41	09-Aug-2022 14:03	09-Aug-2022 14:55	09-Aug-2022 11:49	09-Aug-2022 13:20	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.4	5.0	4.7	4.8	4.8	
conductivity	----	E100	2.0	µS/cm	33.7	33.7	33.9	33.9	34.1	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	11.7	12.0	12.2	11.9	12.3	
pH	----	E108	0.10	pH units	6.86	6.89	6.86	6.88	6.86	
solids, total dissolved [TDS]	----	E162	10	mg/L	24	27	22	26	25	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	19.5	20.1	20.2	20.0	20.3	
solids, total suspended [TSS]	----	E160	3.0	mg/L	<3.0	<3.0	<3.0	<3.0	4.0	
turbidity	----	E121	0.10	NTU	0.26	0.26	0.26	0.28	0.30	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.01	1.99	2.00	1.98	1.99	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.024	0.024	0.023	0.024	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0106	<0.0050	<0.0050	<0.0050	0.0063	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0056	0.0033	0.0060	0.0020	0.0031	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0071	0.0031	0.0017	0.0040	0.0020	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	6.78	6.72	6.74	6.72	6.76	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	<0.200	<0.200	<0.200	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0200 <sup>DLA</sup>	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0200 <sup>DLM</sup>	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0200 <sup>DLA</sup>	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.19	3.34	3.54	3.36	3.55	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.24	3.22	3.63	3.67	3.40	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	





## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00062	0.00090	0.00106	0.00080	0.00093	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00969	0.00923	0.00984	0.0102	0.00944	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000067	0.0000064	0.0000066	0.0000069	0.0000066	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000209	0.000190	0.000209	0.000198	0.000205	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00472	0.00454	0.00461	0.00469	0.00470	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000038	0.0000031	<0.0000025	0.0000038	0.0000030	
calcium, total	7440-70-2	E466	0.010	mg/L	2.40	2.38	2.40	2.40	2.34	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000057	0.000050	0.000053	0.000051	0.000051	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000956	0.0000921	0.0000917	0.0000912	0.0000887	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00129	0.00128	0.00129	0.00130	0.00128	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0292	0.0264	0.0281	0.0275	0.0275	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000087	0.000082	0.000088	0.000086	0.000087	
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00071	0.00069	0.00073	0.00071	0.00070	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.50	1.51	1.51	1.50	1.49	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00262	0.00255	0.00264	0.00262	0.00258	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000011	<0.000010	<0.000010	<0.000010	0.000010	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00267	0.00260	0.00262	0.00266	0.00261	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.348	0.344	0.346	0.349	0.339	
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
silicon, total	7440-21-3	E466	0.050	mg/L	0.072	0.069	0.069	0.071	0.071	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	0.580	0.586	0.590	0.592	0.578	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0110	0.0108	0.0110	0.0114	0.0110	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.16	2.21	2.11	2.19	2.18	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000015	0.0000017	0.0000014	0.0000015	0.0000015	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
(Matrix: Water)										
Client sampling date / time										
Analyte	CAS Number	Method	LOR	Unit	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	<0.000050	0.000050	<0.000050	<0.000050
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000056	0.0000057	0.0000062	0.0000069	0.0000051	0.0000051
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000028	0.000027	0.000028	0.000026	0.000025	0.000025
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00096	0.00127	0.00066	0.00054	0.00047	0.00047
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000023	0.000023	0.000021	0.000022	0.000022
Dissolved Metals										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00620	0.00660	0.00645	0.00640	0.00646	0.00646
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000092	0.0000082	0.0000088	0.0000091	0.0000072	0.0000072
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000196	0.000202	0.000206	0.000193	0.000197	0.000197
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00437	0.00460	0.00467	0.00462	0.00464	0.00464
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000026	0.0000032	0.0000032	0.0000029	0.0000031	0.0000031
calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.30	2.34	2.43	2.36	2.42	2.42
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000047	0.000047	0.000048	0.000052	0.000045	0.000045
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000558	0.0000548	0.0000570	0.0000522	0.0000522	0.0000522
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00122	0.00129	0.00128	0.00125	0.00128	0.00128
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	Field
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00914	0.00971	0.00971	0.00972	0.00967	0.00967
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	0.0000054	<0.0000050	<0.0000050	<0.0000050	<0.0000050
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00067	0.00067	0.00066	0.00068	0.00067	0.00067
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.45	1.50	1.50	1.47	1.53	1.53
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00133	0.00135	0.00140	0.00135	0.00133	0.00133
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00054	0.00072	0.00069	0.00086	0.00102	0.00102
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000011	<0.000010	0.000011	0.000011	0.000010	0.000010
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00257	0.00265	0.00266	0.00263	0.00265	0.00265
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.331	0.341	0.346	0.351	0.347	0.347



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Client sampling date / time					09-Aug-2022 12:41	09-Aug-2022 14:03	09-Aug-2022 14:55	09-Aug-2022 11:49	09-Aug-2022 13:20	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005	
					Result	Result	Result	Result	Result	
Dissolved Metals										
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.068	0.070	0.069	0.070	0.068	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.575	0.602	0.587	0.605	0.602	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0106	0.0109	0.0114	0.0109	0.0112	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.25	2.20	2.17	2.22	2.16	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000017	0.0000016	0.0000019	0.0000019	0.0000017	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000047	0.0000052	0.0000047	0.0000044	0.0000045	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000020	0.000023	0.000020	0.000021	0.000022	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00072	0.00063	0.00053	0.00058	0.00041	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000022	0.000023	0.000022	0.000021	0.000021	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
Radiological Parameters										
radium-226	13982-63-3	Ra-226	0.005	Bq/L	----	<0.005	<0.005	<0.005	<0.005	
radium-226	13982-63-3	Ra-226	0.006	Bq/L	<0.006	----	----	----	----	

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



## Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	BRP-34-A	BRP-34-B	BRP-33-5	BRP-33-4	BRP-33-3
Client sampling date / time					10-Aug-2022 09:42	10-Aug-2022 10:22	10-Aug-2022 11:16	10-Aug-2022 12:36	10-Aug-2022 13:56	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-006	YL2201252-007	YL2201252-008	YL2201252-009	YL2201252-010	
					Result	Result	Result	Result	Result	
Physical Tests										
alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.8	5.0	4.9	4.4	5.1	
conductivity	----	E100	2.0	µS/cm	33.5	33.5	33.9	33.9	33.9	
hardness (as CaCO3), dissolved	----	EC100	0.50	mg/L	11.8	11.9	12.1	12.1	12.1	
pH	----	E108	0.10	pH units	6.91	6.92	6.88	6.87	6.87	
solids, total dissolved [TDS]	----	E162	10	mg/L	22	28	23	26	24	
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	20.1	20.2	20.0	19.6	20.1	
solids, total suspended [TSS]	----	E160	3.0	mg/L	4.6	<3.0	3.4	3.0	<3.0	
turbidity	----	E121	0.10	NTU	0.38	0.40	0.27	0.41	0.32	
Anions and Nutrients										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0059	0.0055	<0.0050	<0.0050	<0.0050	
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.04	2.02	2.00	1.99	2.00	
fluoride	16984-48-8	E235.F	0.020	mg/L	0.026	0.026	0.024	0.024	0.024	
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0035	0.0037	0.0031	0.0026	0.0029	
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0034	0.0029	0.0017	0.0024	0.0024	
silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	6.21	6.22	6.73	6.73	6.73	
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	0.218	0.229	0.202	<0.200	<0.200	
Cyanides										
cyanide, free	----	E339	0.0050	mg/L	<0.0200 <sup>DLA</sup>	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0200 <sup>DLM</sup>	<0.0050	<0.0050	<0.0050	<0.0050	
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0200 <sup>DLA</sup>	<0.0050	<0.0050	<0.0050	<0.0050	
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.92	3.89	3.30	3.24	3.25	
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.59	3.41	3.65	3.49	3.38	
Total Sulfides										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	<0.0015 <sup>SRU</sup>	<0.0015	<0.0015	
Total Metals										



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34-A	BRP-34-B	BRP-33-5	BRP-33-4	BRP-33-3
(Matrix: Water)										
Client sampling date / time										
					10-Aug-2022 09:42	10-Aug-2022 10:22	10-Aug-2022 11:16	10-Aug-2022 12:36	10-Aug-2022 13:56	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-006	YL2201252-007	YL2201252-008	YL2201252-009	YL2201252-010	
					Result	Result	Result	Result	Result	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00102	0.00096	0.00105	0.00093	0.00073	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00788	0.00817	0.00990	0.00985	0.00974	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000069	0.0000075	0.0000069	0.0000072	0.0000067	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000214	0.000208	0.000202	0.000194	0.000204	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00439	0.00428	0.00461	0.00478	0.00466	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000033	0.0000036	0.0000037	<0.0000025	0.0000037	
calcium, total	7440-70-2	E466	0.010	mg/L	2.37	2.35	2.40	2.40	2.39	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000050	0.000050	0.000050	0.000050	0.000052	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.000151	0.000158	0.0000946	0.0000932	0.0000926	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00124	0.00122	0.00132	0.00129	0.00128	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0856	0.0900	0.0291	0.0293	0.0289	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000080	0.000080	0.000087	0.000087	0.000088	
lead, total	7439-92-1	E466	0.0000050	mg/L	0.0000073	0.0000062	<0.0000050	<0.0000050	<0.0000050	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00070	0.00069	0.00070	0.00070	0.00071	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.50	1.49	1.52	1.50	1.50	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00579	0.00608	0.00272	0.00268	0.00266	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	<0.000010	0.000011	<0.000010	0.000011	0.000010	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00217	0.00216	0.00262	0.00263	0.00264	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.367	0.349	0.346	0.343	0.347	
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	
silicon, total	7440-21-3	E466	0.050	mg/L	0.078	0.080	0.074	0.074	0.073	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
sodium, total	7440-23-5	E466	0.010	mg/L	0.613	0.611	0.582	0.578	0.581	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0110	0.0108	0.0113	0.0109	0.0109	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.06	2.00	2.23	2.19	2.26	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000014	0.0000014	0.0000013	0.0000016	0.0000016	



Sub-Matrix: Water					Client sample ID	BRP-34-A	BRP-34-B	BRP-33-5	BRP-33-4	BRP-33-3
(Matrix: Water)										
Client sampling date / time					10-Aug-2022 09:42	10-Aug-2022 10:22	10-Aug-2022 11:16	10-Aug-2022 12:36	10-Aug-2022 13:56	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-006	YL2201252-007	YL2201252-008	YL2201252-009	YL2201252-010	
					Result	Result	Result	Result	Result	
Total Metals (Undigested)										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
titanium, total	7440-32-6	E466	0.000050	mg/L	0.000054	0.000054	0.000062	0.000059	<0.000050	
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000042	0.0000041	0.0000056	0.0000049	0.0000054	
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000033	0.000036	0.000028	0.000028	0.000027	
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00086	0.00078	0.00082	0.00053	0.00052	
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000018	0.000018	0.000022	0.000021	0.000022	
Dissolved Metals										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00417	0.00438	0.00641	0.00658	0.00645	
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000078	0.0000076	0.0000084	0.0000118	0.0000084	
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000206	0.000200	0.000195	0.000195	0.000199	
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00421	0.00422	0.00464	0.00448	0.00465	
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	<0.0000010	<0.0000010	<0.0000010	
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	0.0000037	0.0000033	<0.0000025	
calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.29	2.33	2.39	2.36	2.38	
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000040	0.000041	0.000045	0.000050	0.000050	
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.000103	0.000103	0.0000538	0.0000607	0.0000534	
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00112	0.00113	0.00127	0.00130	0.00128	
dissolved metals filtration location	----	EP465	-	-	Field	Field	Field	Field	Field	
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.0371	0.0394	0.00987	0.0101	0.00983	
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	0.0000057	0.0000055	
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00066	0.00066	0.00070	0.00066	0.00068	
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.49	1.47	1.50	1.50	1.50	
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00417	0.00437	0.00138	0.00143	0.00136	
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00068	0.00070	0.00064	0.00096	0.00056	
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000010	0.000012	<0.000010	0.000012	0.000011	
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00209	0.00208	0.00261	0.00266	0.00264	
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.344	0.352	0.342	0.354	0.342	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-34-A	BRP-34-B	BRP-33-5	BRP-33-4	BRP-33-3
(Matrix: Water)										
Client sampling date / time										
					10-Aug-2022 09:42	10-Aug-2022 10:22	10-Aug-2022 11:16	10-Aug-2022 12:36	10-Aug-2022 13:56	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-006	YL2201252-007	YL2201252-008	YL2201252-009	YL2201252-010	
					Result	Result	Result	Result	Result	
<b>Dissolved Metals</b>										
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025	<0.000025
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.074	0.076	0.068	0.067	0.070	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020	<0.0000020
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.610	0.609	0.584	0.613	0.590	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0113	0.0109	0.0112	0.0110	0.0110	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.05	2.01	2.19	2.19	2.22	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000025	0.0000018	0.0000027	0.0000024	0.0000019	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000040	0.0000041	0.0000050	0.0000063	0.0000041	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000023	0.000023	0.000022	0.000022	0.000022	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00052	0.00050	0.00075	0.00065	0.00065	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000017	0.000016	0.000021	0.000022	0.000022	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	Field	Field	Field	
<b>Radiological Parameters</b>										
radium-226	13982-63-3	Ra-226	0.005	Bq/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

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



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-2	BRP-QC-1	----	----	----
(Matrix: Water)					Client sampling date / time	10-Aug-2022 15:33	10-Aug-2022 16:13	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201252-011	YL2201252-012	-----	-----	-----	-----
					Result	Result	----	----	----	----
<b>Physical Tests</b>										
alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	4.9	4.8	----	----	----	----
conductivity	----	E100	2.0	µS/cm	34.1	33.9	----	----	----	----
hardness (as CaCO <sub>3</sub> ), dissolved	----	EC100	0.50	mg/L	12.0	12.3	----	----	----	----
pH	----	E108	0.10	pH units	6.90	6.88	----	----	----	----
solids, total dissolved [TDS]	----	E162	10	mg/L	27	28	----	----	----	----
solids, total dissolved [TDS], calculated	----	EC103	1.0	mg/L	20.3	20.1	----	----	----	----
solids, total suspended [TSS]	----	E160	3.0	mg/L	3.0	<3.0	----	----	----	----
turbidity	----	E121	0.10	NTU	0.27	0.28	----	----	----	----
<b>Anions and Nutrients</b>										
ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	0.0078	----	----	----	----
chloride	16887-00-6	E235.Cl	0.50	mg/L	2.00	2.00	----	----	----	----
fluoride	16984-48-8	E235.F	0.020	mg/L	0.023	0.023	----	----	----	----
nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	----	----	----	----
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	----	----	----	----
phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0031	0.0025	----	----	----	----
phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0025	0.0023	----	----	----	----
silicate (as SiO <sub>2</sub> )	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	----	----	----	----
sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4-L	0.050	mg/L	6.74	6.74	----	----	----	----
Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	----	----	----	----
<b>Cyanides</b>										
cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
<b>Organic / Inorganic Carbon</b>										
carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.60	3.33	----	----	----	----
carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.42	3.74	----	----	----	----
<b>Total Sulfides</b>										
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	----	----	----	----
<b>Total Metals</b>										



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-2	BRP-QC-1	----	----	----
(Matrix: Water)										
Client sampling date / time					10-Aug-2022 15:33	10-Aug-2022 16:13	----	----	----	
Analyte	CAS Number	Method	LOR	Unit	YL2201252-011	YL2201252-012	-----	-----	-----	
					Result	Result	----	----	----	
<b>Total Metals</b>										
mercury, total	7439-97-6	E508-L	0.00050	µg/L	0.00086	0.00086	----	----	----	
<b>Total Metals (Undigested)</b>										
aluminum, total	7429-90-5	E466	0.00020	mg/L	0.0113	0.00871	----	----	----	
antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000059	0.0000063	----	----	----	
arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000202	0.000201	----	----	----	
barium, total	7440-39-3	E466	0.000020	mg/L	0.00469	0.00433	----	----	----	
beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	
boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	----	----	----	
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	0.0000042	----	----	----	
calcium, total	7440-70-2	E466	0.010	mg/L	2.38	2.23	----	----	----	
chromium, total	7440-47-3	E466	0.000040	mg/L	0.000053	0.000045	----	----	----	
cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000941	0.0000821	----	----	----	
copper, total	7440-50-8	E466	0.000050	mg/L	0.00129	0.00120	----	----	----	
iron, total	7439-89-6	E466	0.00050	mg/L	0.0301	0.0244	----	----	----	
lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000088	0.000079	----	----	----	
lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
lithium, total	7439-93-2	E466	0.00010	mg/L	0.00070	0.00067	----	----	----	
magnesium, total	7439-95-4	E466	0.0010	mg/L	1.49	1.42	----	----	----	
manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00267	0.00232	----	----	----	
molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000011	<0.000010	----	----	----	
nickel, total	7440-02-0	E466	0.000020	mg/L	0.00262	0.00243	----	----	----	
potassium, total	7440-09-7	E466	0.0050	mg/L	0.349	0.320	----	----	----	
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	----	----	----	
silicon, total	7440-21-3	E466	0.050	mg/L	0.073	0.071	----	----	----	
silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
sodium, total	7440-23-5	E466	0.010	mg/L	0.578	0.555	----	----	----	
strontium, total	7440-24-6	E466	0.000020	mg/L	0.0110	0.0104	----	----	----	
sulfur, total	7704-34-9	E466	0.50	mg/L	2.21	2.33	----	----	----	
thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000016	0.0000014	----	----	----	



## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-2	BRP-QC-1	----	----	----
(Matrix: Water)					Client sampling date / time	10-Aug-2022 15:33	10-Aug-2022 16:13	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201252-011	YL2201252-012	-----	-----	-----	-----
					Result	Result	----	----	----	----
<b>Total Metals (Undigested)</b>										
tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	----	----	----	----
titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	<0.000050	----	----	----	----
uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000058	0.0000047	----	----	----	----
vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000030	0.000025	----	----	----	----
zinc, total	7440-66-6	E466	0.00010	mg/L	0.00089	0.00061	----	----	----	----
zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000024	0.000024	----	----	----	----
<b>Dissolved Metals</b>										
aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00631	0.00646	----	----	----	----
antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000086	0.0000076	----	----	----	----
arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000202	0.000201	----	----	----	----
barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00455	0.00459	----	----	----	----
beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	----
bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	----	----	----	----
boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	----	----	----	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	<0.0000025	----	----	----	----
calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.35	2.44	----	----	----	----
chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000049	0.000046	----	----	----	----
cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000625	0.0000588	----	----	----	----
copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00123	0.00125	----	----	----	----
dissolved metals filtration location	----	EP465	-	-	Field	Field	----	----	----	----
iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00986	0.00960	----	----	----	----
lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	----
lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00068	0.00069	----	----	----	----
magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.48	1.51	----	----	----	----
manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00142	0.00142	----	----	----	----
mercury, dissolved	7439-97-6	E509-L	0.00050	µg/L	0.00060	0.00078	----	----	----	----
molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000010	<0.000010	----	----	----	----
nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00258	0.00263	----	----	----	----
phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	----	----	----	----
potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.336	0.344	----	----	----	----





## Analytical Results

Sub-Matrix: Water					Client sample ID	BRP-33-2	BRP-QC-1	----	----	----
(Matrix: Water)										
					Client sampling date / time	10-Aug-2022 15:33	10-Aug-2022 16:13	----	----	----
Analyte	CAS Number	Method	LOR	Unit	YL2201252-011	YL2201252-012	-----	-----	-----	
					Result	Result	----	----	----	
Dissolved Metals										
rhenum, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	----	----	----	
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	0.000026	<0.000025	----	----	----	
silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.070	0.070	----	----	----	
silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	----	----	----	
sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.584	0.592	----	----	----	
strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0112	0.0111	----	----	----	
sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.26	2.22	----	----	----	
thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000026	0.0000018	----	----	----	
tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	----	----	----	
titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	----	----	----	
uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000041	0.0000058	----	----	----	
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000023	0.000022	----	----	----	
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00081	0.00056	----	----	----	
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000022	0.000021	----	----	----	
dissolved mercury filtration location	----	EP509-L	-	-	Field	Field	----	----	----	
Radiological Parameters										
radium-226	13982-63-3	Ra-226	0.005	Bq/L	----	<0.005	----	----	----	
radium-226	13982-63-3	Ra-226	0.006	Bq/L	<0.006	----	----	----	----	

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

## QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: YL2201252	Page	: 1 of 49
Amendment	: 1		
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	: 604 240 6619	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 18-Aug-2022 12:05
PO	: ----	Issue Date	: 08-Nov-2022 15:20
C-O-C number	: ----		
Sampler	: ----		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

### Key

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

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

**DQO:** Data Quality Objective.

**LOR:** Limit of Reporting (detection limit).

**RPD:** Relative Percent Difference.

### Workorder Comments

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

### Summary of Outliers

#### Outliers : Quality Control Samples

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

#### Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

### ***Outliers : Analysis Holding Time Compliance (Breaches)***

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

### ***Outliers : Frequency of Quality Control Samples***

- Quality Control Sample Frequency Outliers occur - please see following pages for full details.



## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-33-2	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-33-3	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-33-4	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-33-5	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34-A	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-34-B	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-QC-1	E298	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-1	E298	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-2	E298	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-3	E298	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-4	E298	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) BRP-32-5	E298	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-1	E235.Cl	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-2	E235.Cl	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-3	E235.Cl	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-4	E235.Cl	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓





Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-32-5	E235.Cl	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-2	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-3	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-4	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-33-5	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34-A	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-34-B	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE BRP-QC-1	E235.Cl	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-32-1	E378-U	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-2	E378-U	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-3	E378-U	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-4	E378-U	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-32-5	E378-U	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-33-2	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-33-3	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001)										
HDPE BRP-33-4	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR-FM</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-33-5	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-34-A	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-34-B	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE BRP-QC-1	E378-U	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-1	E235.F	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-2	E235.F	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-3	E235.F	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-4	E235.F	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-32-5	E235.F	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-33-2	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-33-3	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-33-4	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-33-5	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34-A	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-34-B	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE BRP-QC-1	E235.F	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO3-L	09-Aug-2022	19-Aug-2022	3 days	10 days	✖ EHTR	19-Aug-2022	3 days	0 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO3-L	09-Aug-2022	19-Aug-2022	3 days	10 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO3-L	09-Aug-2022	19-Aug-2022	3 days	10 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO3-L	09-Aug-2022	19-Aug-2022	3 days	10 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO3-L	09-Aug-2022	19-Aug-2022	3 days	10 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-2	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-3	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-4	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-33-5	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34-A	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-34-B	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrate in Water by IC (Low Level)										
HDPE BRP-QC-1	E235.NO3-L	10-Aug-2022	19-Aug-2022	3 days	9 days	✖ EHTR	19-Aug-2022	3 days	0 days	✔
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-1	E235.NO2-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-2	E235.NO2-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-3	E235.NO2-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-4	E235.NO2-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-32-5	E235.NO2-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	10 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-33-2	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	✖ EHTR-FM
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-33-3	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	✖ EHTR-FM



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-33-4	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-33-5	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34-A	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-34-B	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Nitrite in Water by IC (Low Level)										
HDPE BRP-QC-1	E235.NO2-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	3 days	9 days	<div>✖</div> <div>EHTR-FM</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-1	E392	09-Aug-2022	----	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-2	E392	09-Aug-2022	----	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-3	E392	09-Aug-2022	----	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-4	E392	09-Aug-2022	----	----	----		19-Aug-2022	28 days	10 days	<div>✔</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-33-2	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-33-3	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-33-4	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-33-5	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34-A	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-34-B	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-QC-1	E392	10-Aug-2022	----	----	----		23-Aug-2022	28 days	13 days	✔
Anions and Nutrients : Reactive Silica by Colourimetry										
HDPE BRP-32-5	E392	09-Aug-2022	----	----	----		23-Aug-2022	28 days	14 days	✔
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-1	E235.SO4-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-2	E235.SO4-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-3	E235.SO4-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-4	E235.SO4-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-32-5	E235.SO4-L	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-33-2	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-33-3	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-33-4	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-33-5	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-34-A	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-34-B	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Sulfate in Water by IC (Low Level)										
HDPE BRP-QC-1	E235.SO4-L	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-33-2	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-33-3	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-33-4	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-33-5	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34-A	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-34-B	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-QC-1	E375-U	10-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	30 days	✖ EHT





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E375-U	09-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	31 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E375-U	09-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	31 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E375-U	09-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	31 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E375-U	09-Aug-2022	08-Sep-2022	----	----		09-Sep-2022	28 days	31 days	✖ EHT
Anions and Nutrients : Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E375-U	09-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	48 days	✖ EHT
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-33-2	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-33-3	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-33-4	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✔
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-33-5	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✔



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34-A	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-34-B	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-QC-1	E318	10-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	15 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E318	09-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E318	09-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E318	09-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E318	09-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	16 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E318	09-Aug-2022	24-Aug-2022	----	----		25-Aug-2022	28 days	16 days	✓
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-33-2	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-33-3	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-33-4	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-33-5	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34-A	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-34-B	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-QC-1	E372-S	10-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	45 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-2	E372-S	09-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	46 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-3	E372-S	09-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	46 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-4	E372-S	09-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	46 days	✖ EHT



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-5	E372-S	09-Aug-2022	23-Sep-2022	----	----		24-Sep-2022	28 days	46 days	✖ EHT
Anions and Nutrients : Total Phosphorus by Colourimetry (0.001 mg/L)										
Amber glass total (sulfuric acid) BRP-32-1	E372-S	09-Aug-2022	22-Sep-2022	----	----		26-Sep-2022	28 days	48 days	✖ EHT
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E339	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E339	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E339	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E339	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E339	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-2	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-3	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-4	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-5	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-A	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-B	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Cyanides : Free Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-QC-1	E339	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E333	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E333	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E333	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E333	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓





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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E333	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-2	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-3	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-4	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-5	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-A	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-B	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : Total Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-QC-1	E333	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-1	E336	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-2	E336	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-3	E336	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-4	E336	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-32-5	E336	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-2	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-3	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-4	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-33-5	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-A	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-34-B	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Cyanides : WAD Cyanide										
UV-inhibited HDPE - total (sodium hydroxide) BRP-QC-1	E336	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-33-2	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-33-3	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-33-4	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-33-5	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-34-A	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-34-B	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-QC-1	E509-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-32-1	E509-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-32-2	E509-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-32-3	E509-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-32-4	E509-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - dissolved (lab preserved) BRP-32-5	E509-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-33-2	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-33-3	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-33-4	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-33-5	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34-A	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-34-B	E465	10-Aug-2022	24-Aug-2022	180 days	14 days	✓	24-Aug-2022	166 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-1	E465	09-Aug-2022	24-Aug-2022	180 days	15 days	✓	24-Aug-2022	165 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-3	E465	09-Aug-2022	24-Aug-2022	180 days	15 days	✓	24-Aug-2022	165 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-4	E465	09-Aug-2022	24-Aug-2022	180 days	15 days	✓	24-Aug-2022	165 days	0 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-5	E465	09-Aug-2022	24-Aug-2022	180 days	15 days	✓	24-Aug-2022	165 days	0 days	✓





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-32-2	E465	09-Aug-2022	24-Aug-2022	180 days	15 days	✓	24-Aug-2022	165 days	3 days	✓
Dissolved Metals : Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - dissolved (lab preserved) BRP-QC-1	E465	10-Aug-2022	24-Aug-2022	180 days	21 days	✓	24-Aug-2022	159 days	-7 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-33-2	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-33-3	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-33-4	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-33-5	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34-A	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-34-B	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-QC-1	E358-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-1	E358-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-2	E358-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-3	E358-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-4	E358-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) BRP-32-5	E358-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-33-2	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-33-3	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-33-4	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-33-5	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34-A	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-34-B	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-QC-1	E355-L	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	14 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-1	E355-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-2	E355-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-3	E355-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-4	E355-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Organic / Inorganic Carbon : Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)										
Amber glass total (sulfuric acid) BRP-32-5	E355-L	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	28 days	15 days	✔
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-1	E290	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✔



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-2	E290	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-3	E290	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-4	E290	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-32-5	E290	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	10 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-2	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-3	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-4	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-33-5	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34-A	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-34-B	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE BRP-QC-1	E290	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	14 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-1	E100	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-2	E100	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-3	E100	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-4	E100	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-32-5	E100	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	10 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-33-2	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-33-3	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Conductivity in Water										
HDPE BRP-33-4	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-33-5	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34-A	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-34-B	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : Conductivity in Water										
HDPE BRP-QC-1	E100	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	28 days	9 days	✓
Physical Tests : pH by Meter										
HDPE BRP-32-1	E108	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-2	E108	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-3	E108	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	✖ EHTR-FM
Physical Tests : pH by Meter										
HDPE BRP-32-4	E108	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	✖ EHTR-FM



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

Analyte Group	Method	Sampling Date	Extraction / Preparation				Analysis			
Container / Client Sample ID(s)			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter										
HDPE BRP-32-5	E108	09-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-33-2	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-33-3	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-33-4	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-33-5	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-34-A	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-34-B	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : pH by Meter										
HDPE BRP-QC-1	E108	10-Aug-2022	19-Aug-2022	----	----		19-Aug-2022	0.25 hrs	1.06 hrs	<div>✖</div> <div>EHTR-FM</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-4	E162	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	<div>✖</div> <div>EHTR</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-2	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-3	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-4	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-QC-1	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-1	E162	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-2	E162	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-3	E162	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-32-5	E162	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-33-5	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TDS by Gravimetry										
HDPE BRP-34-A	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TDS by Gravimetry										
HDPE BRP-34-B	E162	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-4	E160	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-33-2	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-33-3	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-QC-1	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	8 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-1	E160	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-2	E160	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-3	E160	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : TSS by Gravimetry										
HDPE BRP-32-5	E160	09-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-33-4	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-33-5	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-34-A	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : TSS by Gravimetry										
HDPE BRP-34-B	E160	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-1	E121	09-Aug-2022	----	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-2	E121	09-Aug-2022	----	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-3	E121	09-Aug-2022	----	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-4	E121	09-Aug-2022	----	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR</div>



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-32-5	E121	09-Aug-2022	----	----	----		19-Aug-2022	3 days	10 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-33-2	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-33-3	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-33-4	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-33-5	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34-A	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-34-B	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Physical Tests : Turbidity by Nephelometry										
HDPE BRP-QC-1	E121	10-Aug-2022	----	----	----		19-Aug-2022	3 days	9 days	<div>✖ EHTR</div>
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-32-1	Ra-226	09-Aug-2022	----	----	----		31-Aug-2022	----	----	





Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-32-2	Ra-226	09-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-32-3	Ra-226	09-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-32-4	Ra-226	09-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-32-5	Ra-226	09-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-33-2	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-33-3	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-33-4	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-33-5	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-34-A	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-34-B	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Radiological Parameters : Radium 226 in Water by Alpha Spectrometry										
HDPE total (nitric acid) BRP-QC-1	Ra-226	10-Aug-2022	----	----	----		31-Aug-2022	----	----	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-33-2	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-33-3	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-33-4	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-33-5	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-34-A	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-34-B	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✔



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-QC-1	E466	10-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	14 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-2	E466	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-3	E466	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-4	E466	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-5	E466	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	15 days	✓
Total Metals (Undigested) : Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine)										
Pre-cleaned HDPE - total (lab preserved) BRP-32-1	E466	09-Aug-2022	24-Aug-2022	----	----		24-Aug-2022	180 days	18 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-33-2	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-33-3	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓



Matrix: **Water**

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-33-4	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-33-5	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-34-A	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-34-B	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-QC-1	E508-L	10-Aug-2022	25-Aug-2022	28 days	15 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-32-1	E508-L	09-Aug-2022	25-Aug-2022	28 days	16 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-32-2	E508-L	09-Aug-2022	25-Aug-2022	28 days	16 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-32-3	E508-L	09-Aug-2022	25-Aug-2022	28 days	16 days	✓	25-Aug-2022	28 days	0 days	✓
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-32-4	E508-L	09-Aug-2022	25-Aug-2022	28 days	16 days	✓	25-Aug-2022	28 days	0 days	✓



Matrix: Water

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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Metals : Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)										
FLPE - total (lab preserved) BRP-32-5	E508-L	09-Aug-2022	25-Aug-2022	28 days	16 days	✓	25-Aug-2022	28 days	0 days	✓
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-1	E395	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-2	E395	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-3	E395	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-4	E395	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-32-5	E395	09-Aug-2022	----	----	----		19-Aug-2022	7 days	10 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-33-2	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-33-3	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	✖ EHTR
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-33-4	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	✖ EHTR

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 Project : 21505757/17000/43



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-33-5	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34-A	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-34-B	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>
Total Sulfides : Total Sulfide by Colourimetry (Automated Flow)										
HDPE total (zinc acetate+sodium hydroxide) BRP-QC-1	E395	10-Aug-2022	----	----	----		19-Aug-2022	7 days	9 days	<div>✖ EHTR</div>

**Legend & Qualifier Definitions**

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





## Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Laboratory Duplicates (DUP)							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Conductivity in Water	E100	609549	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614298	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610198	2	15	13.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
pH by Meter	E108	609547	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	610876	2	40	5.0	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	609378	2	36	5.5	5.0	✔
Total Cyanide	E333	610197	2	39	5.1	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	2	46	4.3	5.0	✖
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614289	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	662709	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	609383	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✔
WAD Cyanide	E336	610196	2	30	6.6	5.0	✔
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Conductivity in Water	E100	609549	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614298	1	12	8.3	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
<b>Laboratory Control Samples (LCS) - Continued</b>							
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610198	2	15	13.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
pH by Meter	E108	609547	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	610876	2	40	5.0	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	609378	2	36	5.5	5.0	✔
Total Cyanide	E333	610197	2	39	5.1	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	3	46	6.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614289	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	662709	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	609383	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✔
WAD Cyanide	E336	610196	2	30	6.6	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	609548	1	20	5.0	5.0	✔
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Conductivity in Water	E100	609549	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614298	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610198	2	15	13.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	610876	2	40	5.0	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
TDS by Gravimetry	E162	609378	2	36	5.5	5.0	✔
Total Cyanide	E333	610197	2	39	5.1	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	Method	QC Lot #	QC	Regular	Actual	Expected	Evaluation
Method Blanks (MB) - Continued							
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	3	46	6.5	5.0	✔
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614289	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	662709	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
TSS by Gravimetry	E160	609383	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	609712	1	20	5.0	5.0	✔
WAD Cyanide	E336	610196	2	30	6.6	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	616520	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	609551	1	20	5.0	5.0	✔
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L	616221	1	20	5.0	5.0	✔
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465	614298	1	12	8.3	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	616518	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	609555	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	609550	1	20	5.0	5.0	✔
Free Cyanide	E339	610198	2	15	13.3	5.0	✔
Nitrate in Water by IC (Low Level)	E235.NO3-L	609552	1	20	5.0	5.0	✔
Nitrite in Water by IC (Low Level)	E235.NO2-L	609553	1	20	5.0	5.0	✔
Reactive Silica by Colourimetry	E392	610876	2	40	5.0	5.0	✔
Sulfate in Water by IC (Low Level)	E235.SO4-L	609554	1	20	5.0	5.0	✔
Total Cyanide	E333	610197	2	39	5.1	5.0	✔
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U	638060	2	46	4.3	5.0	✖
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	616521	1	20	5.0	5.0	✔
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L	618896	1	20	5.0	5.0	✔
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466	614289	1	12	8.3	5.0	✔
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L	616519	1	20	5.0	5.0	✔
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S	662709	1	20	5.0	5.0	✔
Total Sulfide by Colourimetry (Automated Flow)	E395	610774	1	20	5.0	5.0	✔
WAD Cyanide	E336	610196	2	30	6.6	5.0	✔



## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100  Vancouver - Environmental	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108  Vancouver - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$ ). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121  Vancouver - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TSS by Gravimetry	E160  Vancouver - Environmental	Water	APHA 2540 D (mod)	Total Suspended Solids (TSS) are determined by filtering a sample through a glass fibre filter, following by drying of the filter at $104 \pm 1^\circ\text{C}$ , with gravimetric measurement of the filtered solids. Samples containing very high dissolved solid content (i.e. seawaters, brackish waters) may produce a positive bias by this method. Alternate analysis methods are available for these types of samples.
TDS by Gravimetry	E162  Vancouver - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at $180 \pm 2^\circ\text{C}$ for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC (Low Level)	E235.NO2-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC (Low Level)	E235.NO3-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Sulfate in Water by IC (Low Level)	E235.SO4-L  Vancouver - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290  Vancouver - Environmental	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298  Vancouver - Environmental	Water	Method Fialab 100, 2018	Ammonia in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021)
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318  Vancouver - Environmental	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
Total Cyanide	E333  Vancouver - Environmental	Water	ISO 14403 (mod)	Total or Strong Acid Dissociable (SAD) Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line UV digestion followed by colourmetric analysis.  Method Limitation: High levels of thiocyanate (SCN) may cause positive interference (up to 0.5% of SCN concentration).
WAD Cyanide	E336  Vancouver - Environmental	Water	APHA 4500-CN I (mod)	Weak Acid Dissociable (WAD) cyanide is determined by Continuous Flow Analyzer (CFA) with in-line distillation followed by colourmetric analysis.
Free Cyanide	E339  Vancouver - Environmental	Water	ASTM D7237 (mod)	Free Cyanide is determined by Continuous Flow Analyzer (CFA) with in-line gas diffusion followed by colourmetric analysis.
Total Organic Carbon (Non-Purgeable) by Combustion (Low Level)	E355-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Total Organic Carbon (Non-Purgeable), also known as NPOC (total), is a direct measurement of TOC after an acidified sample has been purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of total carbon (TC) is comprised of IC (which is common), this method is more accurate and more reliable than the TOC by subtraction method (i.e. TC minus TIC).
Dissolved Organic Carbon by Combustion (Low Level)	E358-L  Vancouver - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO <sub>2</sub> . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Total Phosphorus by Colourimetry (0.001 mg/L)	E372-S  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Total Phosphorus is determined colourimetrically after heated persulfate digestion of the sample.
Total Dissolved Phosphorus by Colourimetry (0.001 mg/L)	E375-U  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Total Dissolved Phosphorus is determined colourimetrically after filtration through a 0.45 micron filter followed by heated persulfate digestion of the sample.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U  Vancouver - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Reactive Silica by Colourimetry	E392  Vancouver - Environmental	Water	APHA 4500-SiO2 E (mod)	Silicate (molybdate-reactive silica) is determined by the molybdosilicate-heteropoly blue colourimetric method using a discrete analyzer. Method Limitation: Arsenic (5+) above 100 mg/L is a negative interference on this test
Total Sulfide by Colourimetry (Automated Flow)	E395  Vancouver - Environmental	Water	APHA 4500 -S E-Auto-Colorimetry	Sulfide is determined using the gas dialysis automated methylene blue colourimetric method. Results expressed "as H2S" if reported represent the maximum possible H2S concentration based on the total sulfide concentration in the sample. The H2S calculation converts Total Sulphide as (S2-) and reports it as Total Sulphide as (H2S)
Dissolved Metals (Field Filtered) in Water by Triple Quad ICPMS (Pristine Samples)	E465  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by Triple Quadrupole ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. Due to the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Total Metals (undigested) in Water by Triple Quad ICPMS (Pristine Samples)	E466  Vancouver - Environmental	Water	EPA 6020B (mod)	Ultra trace metals in water are analyzed by CRC ICPMS, based on US EPA Method 6020B (July 2014). The detection limits provided can only be met for undigested samples. This procedure is intended for colorless, non-turbid, acid-preserved water samples (i.e. pristine water samples), having turbidity < 1 NTU and no odor. Where turbidity exceeds 1 NTU, and/or the sample is colored and has an odor, results may be biased low compared to true Total Metals concentrations. ALS recommends that turbidity analysis be requested on samples submitted for this test to aid with interpretation of results. Where turbidity is <1NTU, undigested metals are equivalent to total metals concentrations.
Total Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E508-L  Vancouver - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.
Dissolved Mercury in Water by CVAFS (Low Level, LOR = 0.5 ppt)	E509-L  Vancouver - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAFS.





Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Hardness (Calculated)	EC100  Vancouver - Environmental	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
TDS in Water (Calculation)	EC103  Vancouver - Environmental	Water	APHA 1030E (mod)	Total Dissolved Solids is calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Dissolved species are used where available. Minor ions are included where data is present.
Radium 226 in Water by Alpha Spectrometry	Ra-226  Saskatchewan Research Council - 143 - 111 Research Drive Saskatoon Saskatchewan Canada S7N 3R2	Water		See attached report.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298  Vancouver - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Digestion for TKN in water	EP318  Vancouver - Environmental	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for Total Organic Carbon by Combustion	EP355  Vancouver - Environmental	Water		Preparation for Total Organic Carbon by Combustion
Preparation for Dissolved Organic Carbon for Combustion	EP358  Vancouver - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Digestion for Total Phosphorus in water	EP372  Edmonton - Environmental	Water	APHA 4500-P E (mod).	Samples are heated with a persulfate digestion reagent.
Digestion for Dissolved Phosphorus in water	EP375  Winnipeg - Environmental	Water	APHA 4500-P E (mod).	Samples are filtered through a 0.45 micron membrane filter and then heated with a persulfate digestion reagent.

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Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration for Triple Quad ICPMS	EP465  Vancouver - Environmental	Water	APHA 3030B	Low level metals in water are analyzed by Triple Quad ICPMS. This procedure is intended for pristine field-filtered acid-preserved water samples. The detection limits (LOR) for this test are based on lab instrumental analysis only, not including filtration. ALS-supplied field filtration equipment does not support these LOR. Therefore, because of the high probability of false positives due to filtration, it is strongly recommended that a filtration blank be analysed to aid in data interpretation.
Dissolved Mercury Water Filtration (Low Level)	EP509-L  Vancouver - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

## QUALITY CONTROL REPORT

Work Order	: YL2201252	Page	: 1 of 21
Amendment	: 1		
Client	: Sabina Gold & Silver Corporation	Laboratory	: Yellowknife - Environmental
Contact	: Merle Keefe	Account Manager	: Oliver Gregg
Address	: 375 - 555 Burrard St. Box 220, Bentall 2 Vancouver BC Canada V7X 1M7	Address	: 314 Old Airport Road, Unit 116 Yellowknife, Northwest Territories Canada X1A 3T3
Telephone	:	Telephone	: 1 867 446 5593
Project	: 21505757/17000/43	Date Samples Received	: 18-Aug-2022 12:05
PO	: ----	Date Analysis Commenced	: 19-Aug-2022
C-O-C number	: ----	Issue Date	: 08-Nov-2022 15:20
Sampler	: ---- 604 240 6619		
Site	: ----		
Quote number	: 2021 Under-Ice Field Program		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

This Quality Control Report contains the following information:

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

### Signatories

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

Signatories	Position	Laboratory Department
Christopher Li	Lab Assistant	Vancouver Metals, Burnaby, British Columbia
Hamideh Moradi	Analyst	Vancouver Metals, Burnaby, British Columbia
Jing Liu	Lab Assistant	Edmonton Inorganics, Edmonton, Alberta
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Vancouver Inorganics, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia
Oleksandr Busel		Winnipeg Inorganics, Winnipeg, Manitoba
Oliver Gregg	Client Services Supervisor	Saskatchewan Research Council External Subcontracting, Saskatoon, Saskatchewan
Parnian Sane	Analyst	Vancouver Metals, Burnaby, British Columbia
Tracy Harley	Supervisor - Water Quality Instrumentation	Vancouver Inorganics, Burnaby, British Columbia

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## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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

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

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 609378)											
VA22B9301-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	3100	3220	3.75%	20%	----
Physical Tests (QC Lot: 609379)											
YL2201252-004	BRP-32-4	solids, total dissolved [TDS]	----	E162	10	mg/L	26	28	3	Diff <2x LOR	----
Physical Tests (QC Lot: 609383)											
VA22B9120-023	Anonymous	solids, total suspended [TSS]	----	E160	3.0	mg/L	3.4	3.2	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 609547)											
YL2201252-001	BRP-32-1	pH	----	E108	0.10	pH units	6.86	6.87	0.146%	4%	----
Physical Tests (QC Lot: 609548)											
YL2201252-001	BRP-32-1	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	4.4	5.0	0.6	Diff <2x LOR	----
Physical Tests (QC Lot: 609549)											
YL2201252-001	BRP-32-1	conductivity	----	E100	2.0	µS/cm	33.7	34.0	0.3	Diff <2x LOR	----
Physical Tests (QC Lot: 609712)											
YL2201252-001	BRP-32-1	turbidity	----	E121	0.10	NTU	0.26	0.26	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609550)											
YL2201252-001	BRP-32-1	fluoride	16984-48-8	E235.F	0.020	mg/L	0.024	0.024	0.0008	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609551)											
YL2201252-001	BRP-32-1	chloride	16887-00-6	E235.Cl	0.50	mg/L	2.01	1.99	0.02	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609552)											
YL2201252-001	BRP-32-1	nitrate (as N)	14797-55-8	E235.NO3-L	0.0050	mg/L	0.0106	0.0094	0.0012	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609553)											
YL2201252-001	BRP-32-1	nitrite (as N)	14797-65-0	E235.NO2-L	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 609554)											
YL2201252-001	BRP-32-1	sulfate (as SO4)	14808-79-8	E235.SO4-L	0.050	mg/L	6.78	6.74	0.593%	20%	----
Anions and Nutrients (QC Lot: 609555)											
YL2201252-001	BRP-32-1	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 610876)											
VA22B9277-003	Anonymous	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	9.64	9.70	0.621%	20%	----
Anions and Nutrients (QC Lot: 615323)											
YL2201232-004	Anonymous	silicate (as SiO2)	7631-86-9	E392	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 616520)											

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Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 616520) - continued</b>											
YL2201252-001	BRP-32-1	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 616521)</b>											
YL2201252-001	BRP-32-1	Kjeldahl nitrogen, total [TKN]	----	E318	0.200	mg/L	<0.200	<0.200	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 638060)</b>											
WP2203068-002	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0500	mg/L	1.05	1.01	4.04%	20%	----
<b>Anions and Nutrients (QC Lot: 662709)</b>											
YL2201230-001	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0010	mg/L	0.0038	0.0034	0.0004	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 669748)</b>											
WP2203807-001	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	0.0010	mg/L	0.0141	0.0145	2.58%	20%	----
<b>Cyanides (QC Lot: 610196)</b>											
YL2201252-001	BRP-32-1	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610197)</b>											
YL2201252-001	BRP-32-1	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610198)</b>											
YL2201252-001	BRP-32-1	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610439)</b>											
YL2201252-003	BRP-32-3	cyanide, weak acid dissociable	----	E336	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610440)</b>											
YL2201252-003	BRP-32-3	cyanide, strong acid dissociable (total)	----	E333	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Cyanides (QC Lot: 610441)</b>											
YL2201252-003	BRP-32-3	cyanide, free	----	E339	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 616518)</b>											
YL2201252-001	BRP-32-1	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.19	3.24	0.05	Diff <2x LOR	----
<b>Organic / Inorganic Carbon (QC Lot: 616519)</b>											
YL2201252-001	BRP-32-1	carbon, total organic [TOC]	----	E355-L	0.50	mg/L	3.24	3.32	0.08	Diff <2x LOR	----
<b>Total Sulfides (QC Lot: 610774)</b>											
CG2210993-001	Anonymous	sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	<0.0015	0	Diff <2x LOR	----
<b>Total Metals (QC Lot: 618896)</b>											
YL2201252-001	BRP-32-1	mercury, total	7439-97-6	E508-L	0.50	ng/L	0.00062 µg/L	0.64	0.02	Diff <2x LOR	----
<b>Total Metals (Undigested) (QC Lot: 614289)</b>											
YL2201252-001	BRP-32-1	aluminum, total	7429-90-5	E466	0.00020	mg/L	0.00969	0.0110	12.9%	20%	----
		antimony, total	7440-36-0	E466	0.0000050	mg/L	0.0000067	0.0000078	0.0000011	Diff <2x LOR	----
		arsenic, total	7440-38-2	E466	0.000010	mg/L	0.000209	0.000206	1.45%	20%	----



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Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (Undigested) (QC Lot: 614289) - continued											
YL2201252-001	BRP-32-1	barium, total	7440-39-3	E466	0.000020	mg/L	0.00472	0.00476	0.888%	20%	----
		beryllium, total	7440-41-7	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, total	7440-69-9	E466	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, total	7440-42-8	E466	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.0000038	0.0000041	0.0000003	Diff <2x LOR	----
		calcium, total	7440-70-2	E466	0.010	mg/L	2.40	2.39	0.489%	20%	----
		chromium, total	7440-47-3	E466	0.000040	mg/L	0.000057	0.000050	0.000007	Diff <2x LOR	----
		cobalt, total	7440-48-4	E466	0.0000050	mg/L	0.0000956	0.0000936	2.14%	20%	----
		copper, total	7440-50-8	E466	0.000050	mg/L	0.00129	0.00131	1.40%	20%	----
		iron, total	7439-89-6	E466	0.00050	mg/L	0.0292	0.0282	3.18%	20%	----
		lanthanum, total	7439-91-0	E466	0.000010	mg/L	0.000087	0.000087	0.00000009	Diff <2x LOR	----
		lead, total	7439-92-1	E466	0.0000050	mg/L	<0.0000050	0.0000123	0.0000073	Diff <2x LOR	----
		lithium, total	7439-93-2	E466	0.00010	mg/L	0.00071	0.00072	0.000004	Diff <2x LOR	----
		magnesium, total	7439-95-4	E466	0.0010	mg/L	1.50	1.50	0.214%	20%	----
		manganese, total	7439-96-5	E466	0.0000050	mg/L	0.00262	0.00270	2.68%	20%	----
		molybdenum, total	7439-98-7	E466	0.000010	mg/L	0.000011	<0.000010	0.000001	Diff <2x LOR	----
		nickel, total	7440-02-0	E466	0.000020	mg/L	0.00267	0.00262	1.82%	20%	----
		potassium, total	7440-09-7	E466	0.0050	mg/L	0.348	0.343	1.57%	20%	----
		selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E466	0.050	mg/L	0.072	0.070	0.002	Diff <2x LOR	----
		silver, total	7440-22-4	E466	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E466	0.010	mg/L	0.580	0.639	9.65%	20%	----
		strontium, total	7440-24-6	E466	0.000020	mg/L	0.0110	0.0112	1.50%	20%	----
		sulfur, total	7704-34-9	E466	0.50	mg/L	2.16	2.13	0.03	Diff <2x LOR	----
		thallium, total	7440-28-0	E466	0.0000010	mg/L	0.0000015	0.0000017	0.0000001	Diff <2x LOR	----
		tin, total	7440-31-5	E466	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E466	0.000050	mg/L	<0.000050	0.000051	0.000001	Diff <2x LOR	----
		uranium, total	7440-61-1	E466	0.0000010	mg/L	0.0000056	0.0000064	0.0000009	Diff <2x LOR	----
		vanadium, total	7440-62-2	E466	0.000010	mg/L	0.000028	0.000034	0.000005	Diff <2x LOR	----
		zinc, total	7440-66-6	E466	0.00010	mg/L	0.00096	0.00088	0.00008	Diff <2x LOR	----
		zirconium, total	7440-67-7	E466	0.000010	mg/L	0.000021	0.000020	0.0000008	Diff <2x LOR	----
Dissolved Metals (QC Lot: 614298)											
YL2201252-001	BRP-32-1	aluminum, dissolved	7429-90-5	E465	0.00020	mg/L	0.00620	0.00642	3.55%	20%	----
		antimony, dissolved	7440-36-0	E465	0.0000050	mg/L	0.0000092	0.0000088	0.0000003	Diff <2x LOR	----

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 614298) - continued											
YL2201252-001	BRP-32-1	arsenic, dissolved	7440-38-2	E465	0.000010	mg/L	0.000196	0.000199	1.06%	20%	----
		barium, dissolved	7440-39-3	E465	0.000020	mg/L	0.00437	0.00440	0.664%	20%	----
		beryllium, dissolved	7440-41-7	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E465	0.0000010	mg/L	<0.0000010	<0.0000010	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E465	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.0000026	0.0000031	0.0000005	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E465	0.010	mg/L	2.30	2.36	2.91%	20%	----
		chromium, dissolved	7440-47-3	E465	0.000040	mg/L	0.000047	0.000049	0.000002	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E465	0.0000050	mg/L	0.0000558	0.0000576	3.14%	20%	----
		copper, dissolved	7440-50-8	E465	0.000050	mg/L	0.00122	0.00126	3.56%	20%	----
		iron, dissolved	7439-89-6	E465	0.00050	mg/L	0.00914	0.00963	5.25%	20%	----
		lead, dissolved	7439-92-1	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E465	0.00010	mg/L	0.00067	0.00068	0.00001	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E465	0.0010	mg/L	1.45	1.48	1.97%	20%	----
		manganese, dissolved	7439-96-5	E465	0.0000050	mg/L	0.00133	0.00135	1.89%	20%	----
		molybdenum, dissolved	7439-98-7	E465	0.000010	mg/L	0.000011	0.000011	0.00000010	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E465	0.000020	mg/L	0.00257	0.00264	2.46%	20%	----
		phosphorus, dissolved	7723-14-0	E465	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E465	0.0050	mg/L	0.331	0.338	2.36%	20%	----
		rhenium, dissolved	7440-15-5	E465	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	<0.000025	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E465	0.050	mg/L	0.068	0.070	0.002	Diff <2x LOR	----
		silver, dissolved	7440-22-4	E465	0.0000020	mg/L	<0.0000020	<0.0000020	0	Diff <2x LOR	----
		sodium, dissolved	7440-23-5	E465	0.010	mg/L	0.575	0.584	1.59%	20%	----
		strontium, dissolved	7440-24-6	E465	0.000020	mg/L	0.0106	0.0111	4.68%	20%	----
		sulfur, dissolved	7704-34-9	E465	0.50	mg/L	2.25	2.22	0.03	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E465	0.0000010	mg/L	0.0000017	0.0000021	0.0000004	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E465	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E465	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E465	0.0000010	mg/L	0.0000047	0.0000051	0.0000004	Diff <2x LOR	----
vanadium, dissolved	7440-62-2	E465	0.000010	mg/L	0.000020	0.000021	0.000001	Diff <2x LOR	----		
zinc, dissolved	7440-66-6	E465	0.00010	mg/L	0.00072	0.00071	0.00002	Diff <2x LOR	----		
zirconium, dissolved	7440-67-7	E465	0.000010	mg/L	0.000022	0.000022	0.0000006	Diff <2x LOR	----		
Dissolved Metals (QC Lot: 616221)											



Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Dissolved Metals (QC Lot: 616221) - continued											
YL2201252-001	BRP-32-1	mercury, dissolved	7439-97-6	E509-L	0.50	ng/L	0.00054 µg/L	0.64	0.10	Diff <2x LOR	----

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

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 609378)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 609379)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 609383)						
solids, total suspended [TSS]	----	E160	3	mg/L	<3.0	----
Physical Tests (QCLot: 609548)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 609549)						
conductivity	----	E100	1	µS/cm	1.1	----
Physical Tests (QCLot: 609712)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 609550)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 609551)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 609552)						
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 609553)						
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 609554)						
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 609555)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 610876)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 615323)						
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 616520)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 616521)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 638060)						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 638060) - continued</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 662709)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 666317)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 666349)</b>						
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 669748)</b>						
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	<0.0010	----
<b>Cyanides (QCLot: 610196)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610197)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610198)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610439)</b>						
cyanide, weak acid dissociable	----	E336	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610440)</b>						
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	<0.0020	----
<b>Cyanides (QCLot: 610441)</b>						
cyanide, free	----	E339	0.002	mg/L	<0.0020	----
<b>Organic / Inorganic Carbon (QCLot: 616518)</b>						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
<b>Organic / Inorganic Carbon (QCLot: 616519)</b>						
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	<0.50	----
<b>Total Sulfides (QCLot: 610774)</b>						
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	<0.0015	----
<b>Total Metals (QCLot: 618896)</b>						
mercury, total	7439-97-6	E508-L	0.5	ng/L	<0.50	----
<b>Total Metals (Undigested) (QCLot: 614289)</b>						
aluminum, total	7429-90-5	E466	0.0002	mg/L	<0.00020	----
antimony, total	7440-36-0	E466	0.000005	mg/L	<0.0000050	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	<0.000010	----
barium, total	7440-39-3	E466	0.00002	mg/L	<0.000020	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	<0.0000020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Total Metals (Undigested) (QCLot: 614289) - continued</b>						
bismuth, total	7440-69-9	E466	0.000001	mg/L	<0.0000010	----
boron, total	7440-42-8	E466	0.005	mg/L	<0.0050	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	<0.0000025	----
calcium, total	7440-70-2	E466	0.01	mg/L	<0.010	----
chromium, total	7440-47-3	E466	0.00004	mg/L	<0.000040	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	<0.0000050	----
copper, total	7440-50-8	E466	0.00005	mg/L	<0.000050	----
iron, total	7439-89-6	E466	0.0005	mg/L	<0.00050	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	<0.000010	----
lead, total	7439-92-1	E466	0.000005	mg/L	<0.0000050	----
lithium, total	7439-93-2	E466	0.0001	mg/L	<0.00010	----
magnesium, total	7439-95-4	E466	0.001	mg/L	<0.0010	----
manganese, total	7439-96-5	E466	0.000005	mg/L	<0.0000050	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	<0.000010	----
nickel, total	7440-02-0	E466	0.00002	mg/L	<0.000020	----
potassium, total	7440-09-7	E466	0.005	mg/L	<0.0050	----
selenium, total	7782-49-2	E466	0.000025	mg/L	<0.000025	----
silicon, total	7440-21-3	E466	0.05	mg/L	<0.050	----
silver, total	7440-22-4	E466	0.000002	mg/L	<0.0000020	----
sodium, total	7440-23-5	E466	0.01	mg/L	<0.010	----
strontium, total	7440-24-6	E466	0.00002	mg/L	<0.000020	----
sulfur, total	7704-34-9	E466	0.5	mg/L	<0.50	----
thallium, total	7440-28-0	E466	0.000001	mg/L	<0.0000010	----
tin, total	7440-31-5	E466	0.00001	mg/L	<0.000010	----
titanium, total	7440-32-6	E466	0.00005	mg/L	<0.000050	----
uranium, total	7440-61-1	E466	0.000001	mg/L	<0.0000010	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	<0.000010	----
zinc, total	7440-66-6	E466	0.0001	mg/L	<0.00010	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 614298)</b>						
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	<0.00020	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	<0.0000050	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	<0.000010	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	<0.000020	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	<0.0000020	----





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 614298) - continued</b>						
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	<0.0000010	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	<0.0050	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	<0.0000025	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	<0.010	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	<0.000040	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	<0.0000050	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	<0.000050	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	<0.00050	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	<0.0000050	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	<0.00010	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	<0.0010	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	<0.0000050	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	<0.000010	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	<0.000020	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	<0.010	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	<0.0050	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	<0.0000050	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	<0.000025	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	<0.0000020	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	<0.010	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	<0.000020	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	<0.50	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	<0.0000010	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	<0.000010	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	<0.000050	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	<0.0000010	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	<0.000010	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	<0.00010	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	<0.000010	----
<b>Dissolved Metals (QCLot: 616221)</b>						
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	<0.50	----





Laboratory Control Sample (LCS) Report

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

Sub-Matrix: Water

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 609378)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	110	85.0	115	----
Physical Tests (QCLot: 609379)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	110	85.0	115	----
Physical Tests (QCLot: 609383)									
solids, total suspended [TSS]	----	E160	3	mg/L	150 mg/L	93.3	85.0	115	----
Physical Tests (QCLot: 609547)									
pH	----	E108	----	pH units	7 pH units	100	98.0	102	----
Physical Tests (QCLot: 609548)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	500 mg/L	105	85.0	115	----
Physical Tests (QCLot: 609549)									
conductivity	----	E100	1	µS/cm	146.9 µS/cm	97.8	90.0	110	----
Physical Tests (QCLot: 609712)									
turbidity	----	E121	0.1	NTU	200 NTU	99.0	85.0	115	----
Anions and Nutrients (QCLot: 609550)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 609551)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 609552)									
nitrate (as N)	14797-55-8	E235.NO3-L	0.005	mg/L	2.5 mg/L	103	90.0	110	----
Anions and Nutrients (QCLot: 609553)									
nitrite (as N)	14797-65-0	E235.NO2-L	0.001	mg/L	0.5 mg/L	99.9	90.0	110	----
Anions and Nutrients (QCLot: 609554)									
sulfate (as SO4)	14808-79-8	E235.SO4-L	0.05	mg/L	100 mg/L	104	90.0	110	----
Anions and Nutrients (QCLot: 609555)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.03 mg/L	99.6	80.0	120	----
Anions and Nutrients (QCLot: 610876)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 615323)									
silicate (as SiO2)	7631-86-9	E392	0.5	mg/L	10 mg/L	98.9	85.0	115	----
Anions and Nutrients (QCLot: 616520)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	101	85.0	115	----

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 616521)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 638060)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	98.6	80.0	120	----
Anions and Nutrients (QCLot: 662709)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.05 mg/L	105	80.0	120	----
Anions and Nutrients (QCLot: 666317)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	87.7	80.0	120	----
Anions and Nutrients (QCLot: 666349)									
phosphorus, total	7723-14-0	E372-S	0.001	mg/L	0.01 mg/L	95.3	80.0	120	----
Anions and Nutrients (QCLot: 669748)									
phosphorus, total dissolved	7723-14-0	E375-U	0.001	mg/L	0.01 mg/L	95.2	80.0	120	----
Cyanides (QCLot: 610196)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	90.5	80.0	120	----
Cyanides (QCLot: 610197)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	85.0	80.0	120	----
Cyanides (QCLot: 610198)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.6	80.0	120	----
Cyanides (QCLot: 610439)									
cyanide, weak acid dissociable	----	E336	0.002	mg/L	0.125 mg/L	89.9	80.0	120	----
Cyanides (QCLot: 610440)									
cyanide, strong acid dissociable (total)	----	E333	0.002	mg/L	0.25 mg/L	87.2	80.0	120	----
Cyanides (QCLot: 610441)									
cyanide, free	----	E339	0.002	mg/L	0.125 mg/L	91.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 616518)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	103	80.0	120	----
Organic / Inorganic Carbon (QCLot: 616519)									
carbon, total organic [TOC]	----	E355-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Total Sulfides (QCLot: 610774)									
sulfide, total (as S)	18496-25-8	E395	0.0015	mg/L	0.08 mg/L	95.6	80.0	120	----
Total Metals (QCLot: 618896)									
mercury, total	7439-97-6	E508-L	0.5	ng/L	5 ng/L	98.2	80.0	120	----
Total Metals (Undigested) (QCLot: 614289)									

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 614289) - continued									
aluminum, total	7429-90-5	E466	0.0002	mg/L	2 mg/L	96.2	80.0	120	----
antimony, total	7440-36-0	E466	0.000005	mg/L	1 mg/L	96.6	80.0	120	----
arsenic, total	7440-38-2	E466	0.00001	mg/L	1 mg/L	93.6	80.0	120	----
barium, total	7440-39-3	E466	0.00002	mg/L	0.25 mg/L	98.6	80.0	120	----
beryllium, total	7440-41-7	E466	0.000002	mg/L	0.1 mg/L	98.2	80.0	120	----
bismuth, total	7440-69-9	E466	0.000001	mg/L	1 mg/L	90.2	80.0	120	----
boron, total	7440-42-8	E466	0.005	mg/L	1 mg/L	93.9	80.0	120	----
cadmium, total	7440-43-9	E466	0.0000025	mg/L	0.1 mg/L	95.5	80.0	120	----
calcium, total	7440-70-2	E466	0.01	mg/L	50 mg/L	96.5	80.0	120	----
chromium, total	7440-47-3	E466	0.00004	mg/L	0.25 mg/L	94.0	80.0	120	----
cobalt, total	7440-48-4	E466	0.000005	mg/L	0.25 mg/L	93.3	80.0	120	----
copper, total	7440-50-8	E466	0.00005	mg/L	0.25 mg/L	93.6	80.0	120	----
iron, total	7439-89-6	E466	0.0005	mg/L	1 mg/L	118	80.0	120	----
lanthanum, total	7439-91-0	E466	0.00001	mg/L	0.1 mg/L	99.8	80.0	120	----
lead, total	7439-92-1	E466	0.000005	mg/L	0.5 mg/L	95.1	80.0	120	----
lithium, total	7439-93-2	E466	0.0001	mg/L	0.25 mg/L	96.0	80.0	120	----
magnesium, total	7439-95-4	E466	0.001	mg/L	50 mg/L	94.0	80.0	120	----
manganese, total	7439-96-5	E466	0.000005	mg/L	0.25 mg/L	95.6	80.0	120	----
molybdenum, total	7439-98-7	E466	0.00001	mg/L	0.25 mg/L	96.3	80.0	120	----
nickel, total	7440-02-0	E466	0.00002	mg/L	0.5 mg/L	91.9	80.0	120	----
potassium, total	7440-09-7	E466	0.005	mg/L	50 mg/L	94.2	80.0	120	----
selenium, total	7782-49-2	E466	0.000025	mg/L	1 mg/L	94.9	80.0	120	----
silicon, total	7440-21-3	E466	0.05	mg/L	10 mg/L	100.0	80.0	120	----
silver, total	7440-22-4	E466	0.000002	mg/L	0.1 mg/L	88.6	80.0	120	----
sodium, total	7440-23-5	E466	0.01	mg/L	50 mg/L	93.3	80.0	120	----
strontium, total	7440-24-6	E466	0.00002	mg/L	0.25 mg/L	96.0	80.0	120	----
sulfur, total	7704-34-9	E466	0.5	mg/L	50 mg/L	96.8	80.0	120	----
thallium, total	7440-28-0	E466	0.000001	mg/L	1 mg/L	92.9	80.0	120	----
tin, total	7440-31-5	E466	0.00001	mg/L	0.5 mg/L	94.4	80.0	120	----
titanium, total	7440-32-6	E466	0.00005	mg/L	0.25 mg/L	92.1	80.0	120	----
uranium, total	7440-61-1	E466	0.000001	mg/L	0.005 mg/L	102	80.0	120	----
vanadium, total	7440-62-2	E466	0.00001	mg/L	0.5 mg/L	96.2	80.0	120	----
zinc, total	7440-66-6	E466	0.0001	mg/L	0.5 mg/L	102	80.0	120	----
zirconium, total	7440-67-7	E466	0.00001	mg/L	0.1 mg/L	95.8	80.0	120	----
Dissolved Metals (QCLot: 614298)									



Sub-Matrix: Water

Sub-Matrix: Water					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 614298) - continued									
aluminum, dissolved	7429-90-5	E465	0.0002	mg/L	2 mg/L	95.3	80.0	120	----
antimony, dissolved	7440-36-0	E465	0.000005	mg/L	1 mg/L	100	80.0	120	----
arsenic, dissolved	7440-38-2	E465	0.00001	mg/L	1 mg/L	94.4	80.0	120	----
barium, dissolved	7440-39-3	E465	0.00002	mg/L	0.25 mg/L	97.1	80.0	120	----
beryllium, dissolved	7440-41-7	E465	0.000002	mg/L	0.1 mg/L	95.3	80.0	120	----
bismuth, dissolved	7440-69-9	E465	0.000001	mg/L	1 mg/L	88.9	80.0	120	----
boron, dissolved	7440-42-8	E465	0.005	mg/L	1 mg/L	92.3	80.0	120	----
cadmium, dissolved	7440-43-9	E465	0.0000025	mg/L	0.1 mg/L	95.0	80.0	120	----
calcium, dissolved	7440-70-2	E465	0.01	mg/L	50 mg/L	99.4	80.0	120	----
chromium, dissolved	7440-47-3	E465	0.00004	mg/L	0.25 mg/L	93.2	80.0	120	----
cobalt, dissolved	7440-48-4	E465	0.000005	mg/L	0.25 mg/L	93.2	80.0	120	----
copper, dissolved	7440-50-8	E465	0.00005	mg/L	0.25 mg/L	92.8	80.0	120	----
iron, dissolved	7439-89-6	E465	0.0005	mg/L	1 mg/L	110	80.0	120	----
lead, dissolved	7439-92-1	E465	0.000005	mg/L	0.5 mg/L	95.6	80.0	120	----
lithium, dissolved	7439-93-2	E465	0.0001	mg/L	0.25 mg/L	93.0	80.0	120	----
magnesium, dissolved	7439-95-4	E465	0.001	mg/L	50 mg/L	91.6	80.0	120	----
manganese, dissolved	7439-96-5	E465	0.000005	mg/L	0.25 mg/L	93.8	80.0	120	----
molybdenum, dissolved	7439-98-7	E465	0.00001	mg/L	0.25 mg/L	94.2	80.0	120	----
nickel, dissolved	7440-02-0	E465	0.00002	mg/L	0.5 mg/L	92.4	80.0	120	----
phosphorus, dissolved	7723-14-0	E465	0.01	mg/L	10 mg/L	94.3	80.0	120	----
potassium, dissolved	7440-09-7	E465	0.005	mg/L	50 mg/L	92.9	80.0	120	----
rhenium, dissolved	7440-15-5	E465	0.000005	mg/L	0.1 mg/L	92.8	80.0	120	----
selenium, dissolved	7782-49-2	E465	0.000025	mg/L	1 mg/L	94.6	80.0	120	----
silicon, dissolved	7440-21-3	E465	0.05	mg/L	10 mg/L	97.7	80.0	120	----
silver, dissolved	7440-22-4	E465	0.000002	mg/L	0.1 mg/L	86.1	80.0	120	----
sodium, dissolved	7440-23-5	E465	0.01	mg/L	50 mg/L	95.1	80.0	120	----
strontium, dissolved	7440-24-6	E465	0.00002	mg/L	0.25 mg/L	93.4	80.0	120	----
sulfur, dissolved	7704-34-9	E465	0.5	mg/L	50 mg/L	94.1	80.0	120	----
thallium, dissolved	7440-28-0	E465	0.000001	mg/L	1 mg/L	92.7	80.0	120	----
tin, dissolved	7440-31-5	E465	0.00001	mg/L	0.5 mg/L	93.6	80.0	120	----
titanium, dissolved	7440-32-6	E465	0.00005	mg/L	0.25 mg/L	91.8	80.0	120	----
uranium, dissolved	7440-61-1	E465	0.000001	mg/L	0.005 mg/L	106	80.0	120	----
vanadium, dissolved	7440-62-2	E465	0.00001	mg/L	0.5 mg/L	96.0	80.0	120	----
zinc, dissolved	7440-66-6	E465	0.0001	mg/L	0.5 mg/L	100	80.0	120	----
zirconium, dissolved	7440-67-7	E465	0.00001	mg/L	0.1 mg/L	93.6	80.0	120	----
mercury, dissolved	7439-97-6	E509-L	0.5	ng/L	5 ng/L	115	80.0	120	----



[illegible]



Matrix Spike (MS) Report

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

Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 609550)										
YL2201252-002	BRP-32-2	fluoride	16984-48-8	E235.F	1.02 mg/L	1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 609551)										
YL2201252-002	BRP-32-2	chloride	16887-00-6	E235.Cl	103 mg/L	100 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 609552)										
YL2201252-002	BRP-32-2	nitrate (as N)	14797-55-8	E235.NO3-L	2.62 mg/L	2.5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 609553)										
YL2201252-002	BRP-32-2	nitrite (as N)	14797-65-0	E235.NO2-L	0.505 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 609554)										
YL2201252-002	BRP-32-2	sulfate (as SO4)	14808-79-8	E235.SO4-L	105 mg/L	100 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 609555)										
YL2201252-002	BRP-32-2	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0283 mg/L	0.03 mg/L	94.2	70.0	130	----
Anions and Nutrients (QCLot: 610876)										
VA22B9338-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	10.0 mg/L	10 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 615323)										
YL2201233-001	Anonymous	silicate (as SiO2)	7631-86-9	E392	ND mg/L	10 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 616520)										
YL2201252-002	BRP-32-2	ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 616521)										
YL2201252-002	BRP-32-2	Kjeldahl nitrogen, total [TKN]	----	E318	2.53 mg/L	2.5 mg/L	101	70.0	130	----
Anions and Nutrients (QCLot: 638060)										
WP2203068-003	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	0.01 mg/L	ND	70.0	130	----
Anions and Nutrients (QCLot: 662709)										
YL2201231-001	Anonymous	phosphorus, total	7723-14-0	E372-S	0.0632 mg/L	0.067 mg/L	94.3	70.0	130	----
Anions and Nutrients (QCLot: 669748)										
WP2203807-002	Anonymous	phosphorus, total dissolved	7723-14-0	E375-U	ND mg/L	0.01 mg/L	ND	70.0	130	----
Cyanides (QCLot: 610196)										
YL2201252-002	BRP-32-2	cyanide, weak acid dissociable	----	E336	1.36 mg/L	1.25 mg/L	108	75.0	125	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Cyanides (QCLot: 610197)										
YL2201252-002	BRP-32-2	cyanide, strong acid dissociable (total)	----	E333	2.72 mg/L	2.5 mg/L	109	75.0	125	----
Cyanides (QCLot: 610198)										
YL2201252-002	BRP-32-2	cyanide, free	----	E339	1.32 mg/L	1.25 mg/L	105	75.0	125	----
Cyanides (QCLot: 610439)										
YL2201252-006	BRP-34-A	cyanide, weak acid dissociable	----	E336	1.52 mg/L	1.25 mg/L	122	75.0	125	----
Cyanides (QCLot: 610440)										
YL2201252-006	BRP-34-A	cyanide, strong acid dissociable (total)	----	E333	2.93 mg/L	2.5 mg/L	117	75.0	125	----
Cyanides (QCLot: 610441)										
YL2201252-006	BRP-34-A	cyanide, free	----	E339	1.48 mg/L	1.25 mg/L	118	75.0	125	----
Organic / Inorganic Carbon (QCLot: 616518)										
YL2201252-002	BRP-32-2	carbon, dissolved organic [DOC]	----	E358-L	4.82 mg/L	5 mg/L	96.4	70.0	130	----
Organic / Inorganic Carbon (QCLot: 616519)										
YL2201252-002	BRP-32-2	carbon, total organic [TOC]	----	E355-L	4.74 mg/L	5 mg/L	94.7	70.0	130	----
Total Sulfides (QCLot: 610774)										
YL2201252-001	BRP-32-1	sulfide, total (as S)	18496-25-8	E395	0.228 mg/L	0.2 mg/L	114	75.0	125	----
Total Metals (QCLot: 618896)										
YL2201252-002	BRP-32-2	mercury, total	7439-97-6	E508-L	4.61 ng/L	5 ng/L	92.2	70.0	130	----
Total Metals (Undigested) (QCLot: 614289)										
YL2201252-002	BRP-32-2	aluminum, total	7429-90-5	E466	0.190 mg/L	0.2 mg/L	95.2	70.0	130	----
		antimony, total	7440-36-0	E466	0.0209 mg/L	0.02 mg/L	105	70.0	130	----
		arsenic, total	7440-38-2	E466	0.0201 mg/L	0.02 mg/L	101	70.0	130	----
		barium, total	7440-39-3	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		beryllium, total	7440-41-7	E466	0.0418 mg/L	0.04 mg/L	105	70.0	130	----
		bismuth, total	7440-69-9	E466	0.00923 mg/L	0.01 mg/L	92.3	70.0	130	----
		boron, total	7440-42-8	E466	0.109 mg/L	0.1 mg/L	109	70.0	130	----
		cadmium, total	7440-43-9	E466	0.00402 mg/L	0.004 mg/L	100	70.0	130	----
		calcium, total	7440-70-2	E466	3.97 mg/L	4 mg/L	99.3	70.0	130	----
		chromium, total	7440-47-3	E466	0.0370 mg/L	0.04 mg/L	92.5	70.0	130	----
		cobalt, total	7440-48-4	E466	0.0195 mg/L	0.02 mg/L	97.5	70.0	130	----
		copper, total	7440-50-8	E466	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		iron, total	7439-89-6	E466	2.01 mg/L	2 mg/L	101	70.0	130	----
		lanthanum, total	7439-91-0	E466	0.00252 mg/L	0.0025 mg/L	101	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (Undigested) (QCLot: 614289) - continued										
YL2201252-002	BRP-32-2	lead, total	7439-92-1	E466	0.0199 mg/L	0.02 mg/L	99.3	70.0	130	----
		lithium, total	7439-93-2	E466	0.107 mg/L	0.1 mg/L	107	70.0	130	----
		magnesium, total	7439-95-4	E466	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, total	7439-96-5	E466	0.0190 mg/L	0.02 mg/L	95.1	70.0	130	----
		molybdenum, total	7439-98-7	E466	0.0206 mg/L	0.02 mg/L	103	70.0	130	----
		nickel, total	7440-02-0	E466	0.0384 mg/L	0.04 mg/L	96.0	70.0	130	----
		potassium, total	7440-09-7	E466	3.79 mg/L	4 mg/L	94.7	70.0	130	----
		selenium, total	7782-49-2	E466	0.0426 mg/L	0.04 mg/L	107	70.0	130	----
		silicon, total	7440-21-3	E466	9.08 mg/L	10 mg/L	90.8	70.0	130	----
		silver, total	7440-22-4	E466	0.00382 mg/L	0.004 mg/L	95.6	70.0	130	----
		sodium, total	7440-23-5	E466	1.93 mg/L	2 mg/L	96.6	70.0	130	----
		strontium, total	7440-24-6	E466	0.0191 mg/L	0.02 mg/L	95.7	70.0	130	----
		sulfur, total	7704-34-9	E466	19.6 mg/L	20 mg/L	97.9	70.0	130	----
		thallium, total	7440-28-0	E466	0.00365 mg/L	0.004 mg/L	91.3	70.0	130	----
		tin, total	7440-31-5	E466	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		titanium, total	7440-32-6	E466	0.0397 mg/L	0.04 mg/L	99.2	70.0	130	----
		uranium, total	7440-61-1	E466	0.00397 mg/L	0.004 mg/L	99.4	70.0	130	----
		vanadium, total	7440-62-2	E466	0.0992 mg/L	0.1 mg/L	99.2	70.0	130	----
		zinc, total	7440-66-6	E466	0.409 mg/L	0.4 mg/L	102	70.0	130	----
		zirconium, total	7440-67-7	E466	0.0412 mg/L	0.04 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 614298)										
YL2201252-002	BRP-32-2	aluminum, dissolved	7429-90-5	E465	0.202 mg/L	0.2 mg/L	101	70.0	130	----
		antimony, dissolved	7440-36-0	E465	0.0205 mg/L	0.02 mg/L	102	70.0	130	----
		arsenic, dissolved	7440-38-2	E465	0.0202 mg/L	0.02 mg/L	101	70.0	130	----
		barium, dissolved	7440-39-3	E465	0.0192 mg/L	0.02 mg/L	96.2	70.0	130	----
		beryllium, dissolved	7440-41-7	E465	0.0420 mg/L	0.04 mg/L	105	70.0	130	----
		bismuth, dissolved	7440-69-9	E465	0.00898 mg/L	0.01 mg/L	89.8	70.0	130	----
		boron, dissolved	7440-42-8	E465	0.109 mg/L	0.1 mg/L	109	70.0	130	----
		cadmium, dissolved	7440-43-9	E465	0.00390 mg/L	0.004 mg/L	97.5	70.0	130	----
		calcium, dissolved	7440-70-2	E465	4.22 mg/L	4 mg/L	105	70.0	130	----
		chromium, dissolved	7440-47-3	E465	0.0379 mg/L	0.04 mg/L	94.8	70.0	130	----
		cobalt, dissolved	7440-48-4	E465	0.0197 mg/L	0.02 mg/L	98.7	70.0	130	----
		copper, dissolved	7440-50-8	E465	0.0199 mg/L	0.02 mg/L	99.7	70.0	130	----
		iron, dissolved	7439-89-6	E465	1.99 mg/L	2 mg/L	99.7	70.0	130	----
		lead, dissolved	7439-92-1	E465	0.0195 mg/L	0.02 mg/L	97.7	70.0	130	----



Sub-Matrix: Water					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Dissolved Metals (QCLot: 614298) - continued										
YL2201252-002	BRP-32-2	lithium, dissolved	7439-93-2	E465	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		magnesium, dissolved	7439-95-4	E465	ND mg/L	1 mg/L	ND	70.0	130	----
		manganese, dissolved	7439-96-5	E465	0.0198 mg/L	0.02 mg/L	99.0	70.0	130	----
		molybdenum, dissolved	7439-98-7	E465	0.0204 mg/L	0.02 mg/L	102	70.0	130	----
		nickel, dissolved	7440-02-0	E465	0.0387 mg/L	0.04 mg/L	96.9	70.0	130	----
		phosphorus, dissolved	7723-14-0	E465	9.50 mg/L	10 mg/L	95.0	70.0	130	----
		potassium, dissolved	7440-09-7	E465	3.86 mg/L	4 mg/L	96.6	70.0	130	----
		rhenium, dissolved	7440-15-5	E465	0.00250 mg/L	0.0025 mg/L	99.9	70.0	130	----
		selenium, dissolved	7782-49-2	E465	0.0427 mg/L	0.04 mg/L	107	70.0	130	----
		silicon, dissolved	7440-21-3	E465	8.88 mg/L	10 mg/L	88.8	70.0	130	----
		silver, dissolved	7440-22-4	E465	0.00374 mg/L	0.004 mg/L	93.5	70.0	130	----
		sodium, dissolved	7440-23-5	E465	1.96 mg/L	2 mg/L	97.9	70.0	130	----
		strontium, dissolved	7440-24-6	E465	0.0190 mg/L	0.02 mg/L	95.0	70.0	130	----
		sulfur, dissolved	7704-34-9	E465	19.5 mg/L	20 mg/L	97.6	70.0	130	----
		thallium, dissolved	7440-28-0	E465	0.00358 mg/L	0.004 mg/L	89.5	70.0	130	----
		tin, dissolved	7440-31-5	E465	0.0195 mg/L	0.02 mg/L	97.3	70.0	130	----
		titanium, dissolved	7440-32-6	E465	0.0396 mg/L	0.04 mg/L	99.1	70.0	130	----
		uranium, dissolved	7440-61-1	E465	0.00397 mg/L	0.004 mg/L	99.3	70.0	130	----
		vanadium, dissolved	7440-62-2	E465	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		zinc, dissolved	7440-66-6	E465	0.384 mg/L	0.4 mg/L	96.1	70.0	130	----
		zirconium, dissolved	7440-67-7	E465	0.0404 mg/L	0.04 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 616221)										
YL2201252-002	BRP-32-2	mercury, dissolved	7439-97-6	E509-L	4.62 ng/L	5 ng/L	92.5	70.0	130	----

SRC Group # 2022-10056

Sep 01, 2022

ALS  
314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3  
Attn: Oliver Gregg

Date Samples Received: Aug-23-2022

Client P.O.: YL2201252

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All results have been reviewed and approved by a Qualified Person in accordance with the Saskatchewan Environmental Code, Corrective Action Plan Chapter, for the purposes of certifying a laboratory analysis

Results from Lab Section 4 approved by Smith-Windsor, Jenna

- 
- \* Test methods and data are validated by the laboratory's Quality Assurance Program.
  - \* Routine methods follow recognized procedures from sources such as
    - \* Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF
    - \* Environment Canada
    - \* US EPA
    - \* CANMET
  - \* The results reported relate only to the test samples as provided by the client. Results apply to the sample as received, unless otherwise indicated.
  - \* Data marked as "by Client" has been provided by the client and may affect the validity of results.
  - \* Samples will be kept for 30 days after the final report is sent. Please contact the lab if you have any special requirements.
  - \* Additional information is available upon request.
  - \* Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

This is a final report.



SRC Group # 2022-10056

Sep 01, 2022

ALS

314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3  
Attn: Oliver Gregg

Sample #: **2022032722**  
Date Sampled: **Aug 09, 2022**  
Sample Matrix: **WATER**  
Description: **08/09/2022 13:41 BRP-32-1 YL2201252-001**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.006
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

**SRC Group # 2022-10056**

Sep 01, 2022

ALS

Sample #: **2022032723**  
Date Sampled: **Aug 09, 2022**  
Sample Matrix: **WATER**  
Description: **08/09/2022 15:03 BRP-32-2 YL2201252-002**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
---------	-------	--------

**Lab Section 4**

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032724**  
Date Sampled: **Aug 09, 2022**  
Sample Matrix: **WATER**  
Description: **08/09/2022 15:55 BRP-32-3 YL2201252-003**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

**SRC Group # 2022-10056**

Sep 01, 2022

ALS

Sample #: **2022032725**  
Date Sampled: **Aug 09, 2022**  
Sample Matrix: **WATER**  
Description: **08/09/2022 12:49 BRP-32-4 YL2201252-004**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
---------	-------	--------

**Lab Section 4**

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

**SRC Group # 2022-10056**

Sep 01, 2022

ALS

Sample #: **2022032726**  
Date Sampled: **Aug 09, 2022**  
Sample Matrix: **WATER**  
Description: **08/09/2022 14:20 BRP-32-5 YL2201252-005**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
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**Lab Section 4**

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032727**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 10:42 BRP-34-A YL2201252-006**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.



SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032728**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 11:22 BRP-34-B YL2201252-007**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		
Radium-226	Bq/L	<0.005

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032729**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 12:16 BRP-33-5 YL2201252-008**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		
Radium-226	Bq/L	<0.005

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032730**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 13:36 BRP-33-4 YL2201252-009**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		
Radium-226	Bq/L	<0.005

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032731**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 14:56 BRP-33-3 YL2201252-010**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.005
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032732**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 16:33 BRP-33-2 YL2201252-011**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		

Radium-226	Bq/L	<0.006
------------	------	--------

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.

SRC Group # 2022-10056

Sep 01, 2022

ALS

Sample #: **2022032733**  
Date Sampled: **Aug 10, 2022**  
Sample Matrix: **WATER**  
Description: **08/10/2022 17:13 BRP-QC-1 YL2201252-012**

Client PO #: **YL2201252**  
Date Received: **Aug 23, 2022**

Analyte	Units	Result
<b>Lab Section 4</b>		
Radium-226	Bq/L	<0.005

Symbol of "<" means "less than". This indicates that it was not detected at level stated above.

The temperature of the cooler was 12.8 °C upon receipt.



SRC Group # 2022-10056

Sep 01, 2022

ALS

**Analyte Methods**

<b>Name</b>	<b>Units</b>	<b>Method</b>
Radium-226	Bq/L	Rad-105

Sep 01, 2022

This report was generated for samples included in SRC Group # 2022-10056

## Quality Control Report

Oliver Gregg  
ALS  
314 Old Airport Road, Unit 116  
Yellowknife, NT X1A 3T3

### Reference Materials and Standards:

A reference material of known concentration is used whenever possible as either a control sample or control standard and analyzed with each batch of samples. These "QC" results are used to assess the performance of the method and must be within clearly defined limits; otherwise corrective action is required.

QC Analysis	Units	Target Value	Obtained Value
Radium-226	Bq/L	19.8	20.3
Radium-226	Bq	2.13	2.16

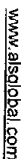
### Duplicates:

Duplicates are used to assess problems with precision and help ensure that samples within a given batch were processed appropriately. The difference between duplicates must be within strict limits, otherwise corrective action is required. Please note, the duplicate(s) in this report are duplicates analyzed within a given batch of test samples and may not be from this specific group of samples.

Duplicate Analysis	Units	Sample ID	First Result	Second Result
Radium-226	Bq/L	32752	0.02	0.02

All quality control results were within the specified limits and considered acceptable.

Approved by Section Supervisor




Environmental Division  
Yellowknife  
Work Order Reference  
YL2201252

(COC) / Analytical  
it Form  
: 1 800 668 9878

Affix ALS barcode label here

COC Number: 1

Page 1 of 1

<b>Report To</b>		Contact and company details	
<b>Company:</b>	Golder Associates Ltd.		
<b>Contact:</b>	Zenovia Craciunescu		
<b>Phone:</b>	780-222-0567 (cell)		
	Company address below		
<b>Street:</b>	16820 107 Ave NW		
<b>City/Province:</b>	Edmonton, AB		
<b>Postal Code:</b>	T5P 4C3		
		Telephone : + 1 667 873 5683	
			
<b>Report Format / Distribution</b>			
Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL) Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Include Results to Client on Report - provide details below if box checked Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			
1 or Fax zenovia.craciunescu@wsp.com 2 kenne.sarben@wsp.com 3 mkeefe@sabinagoldsilver.com			
<b>Select Service Level Below - Contact your AM to confirm all E&amp;P TATs (surcharges may apply)</b>			
<b>Regular [R]</b> <input checked="" type="checkbox"/> Standard TAT (if received by 3 pm - business days - no surcharges apply)		<b>EMERGENCY</b>	
4 day [P4-20%] <input type="checkbox"/> 3 day [P3-25%] <input type="checkbox"/> 2 day [P2-50%] <input type="checkbox"/>	1 Business day [E - 100%] Same Day, Weekend or Statutory holiday [E2 -200%] (laboratory opening fees may apply) <input type="checkbox"/>		
Date and Time Required for all E&P TATs:			
For tests that can not be performed according to the service level selected, you will be contacted.			
<b>Analysis Request</b>			

<b>Invoice To</b>	Same as Report To	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	Copy of Invoice with Report	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
<b>Company:</b>	Sabina Gold And Silver Corp	
<b>Contact:</b>	Merle Keefe (804 998 4190) mkeefe@sabnagoldsilver.com	
	<b>Project Information</b>	
<b>ALS Account # / Quote #:</b>	YL2021SAB110000001_V2	
<b>Job #:</b>	21505757/17000/43	
<b>PO / AFE:</b>		
<b>LSD:</b>	Sabina Facility Code: 176233659	
	<b>Invoice Distribution</b>	
	Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	
	Email 1 or Fax mkeefe@sabnagoldsilver.com	
	Email 2 zenovia.craciunescu@wsp.com	
	<b>Oil and Gas Required Fields (client use)</b>	
	AFE/Cost Center:	PO#
	Major/Minor Code:	Routing Code:
	Requisitioner:	
	Location:	

INDICATE FILTERED (F), PRESERVED (P), OR FILTERED AND PRESERVED (F/P) BELOW									
Organic phosphorus,	P	F/P	F	F	P	P	P	F	
(including total nitrogen)									
Metals (including DOC)									
Metals									
(low level)									
Mercury (low level)									
Free, and WAD cyanide)									
(and calculated)									
(not attached)									

For Archive

HAZARD (see Special Instructions)

ALS Lab Work Order # (lab use only):		ALS Contact:		Oliver Gregg		Sampler: <b>A Wade</b> <b>B.P. Pappas</b>													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	NUMBER	ROUTINE ANALYSIS										SUSPECTED			
	<b>BRP-32-1</b>	09/08/22	12:41	Water	10	Routine (including reactive silica)	Total Nutrients (N, P, K)	Dissolved Nutrients (N, P, K)	Total Ultra Trace Elements	Dissolved Ultra Trace Elements	Total Mercury (ppm)	Dissolved Mercury (ppm)	Total Sulfide	Cyanide (total, ppm)	Radium-226	TDS (measured)	Chlorophyll a (µg/L)	Samples for Microbiology	SUSPECTED
	<b>BRP-32-2</b>	09/08/22	14:03	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-32-3</b>	09/08/22	14:55	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-32-4</b>	09/08/22	11:49	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-32-5</b>	09/08/22	13:20	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-34-A</b>	10/08/22	09:42	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-34-B</b>	10/08/22	10:22	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-33-5</b>	10/08/22	11:16	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-33-4</b>	10/08/22	12:36	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-33-3</b>	10/08/22	13:56	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-33-2</b>	10/08/22	15:33	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
	<b>BRP-32-1</b>	10/08/22	15:13	Water	10	R	R	R	R	R	R	R	R	R	R	R	R		
Drinking Water (DW) Samples (client use)					Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)														
Ave samples taken from a Regulated DW System?					Chlorophyll a Samples to follow later														
Ave samples for human consumption/ use?					Samples marked archive long term - please hold for a minimum of 120 days or until further notice.														
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					<input type="checkbox"/> Frozen <input type="checkbox"/> Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact <input type="checkbox"/> Cooling Initiated														
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					INITIAL COOLER TEMPERATURES °C: <input type="text"/> FINAL COOLER TEMPERATURES °C: <input type="text"/>														
					SAMPLE CONDITION AS RECEIVED (lab use only)														
					<input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> No														
					INITIAL COOLER TEMPERATURES °C: <input type="text"/> FINAL COOLER TEMPERATURES °C: <input type="text"/>														

SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)	
Released by: <i>John</i>	Date: 10/18/2012	Time: 17:20	Received by:	Date: AUG 18 2012	Time: 10:52
REPEAT TO BACK PAGE FOR ALL LOCATIONS AND SAMPLING INFORMATION Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy. 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.			WHITE - LABORATORY COPY      YELLOW - CLIENT COPY NOV 2016 PRESENT		

**APPENDIX B**

# 2022 Water Quality – Field Profile Tables and Graphs

Table B-1: Field Profiles at Goose Lake West Bay at BRP-29, April 2022

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(a)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-29-1	14-Apr-22	4.0	1.4	0.3	101	14.1	1.2	6.1	69.4
				0.5	99.3	13.7	1.3	6.1	69.5
				1.0	96.9	13.2	1.7	6.0	68.8
				1.5	94.7	12.8	2.0	6.0	67.3
				2.0	90.6	12.2	2.2	6.0	67.3
				2.5	87.8	11.8	2.3	6.0	67.2
BRP-29-2	14-Apr-22	3.6	1.1	0.3	98.7	13.7	1.1	6.2	66.8
				0.5	98.2	13.7	1.1	6.2	67.6
				1.0	95.6	13.1	1.5	6.2	69.8
				1.5	92.4	12.6	1.8	6.2	68.5
				2.0	90.3	12.1	2.0	6.2	68.2
				2.3	88.4	11.9	2.1	6.2	67.7
BRP-29-3	14-Apr-22	3.9	1.4	0.3	102	14.1	1.5	6.2	67.7
				0.5	99.1	13.6	1.5	6.2	68.8
				1.0	96.9	13.2	1.8	6.1	68.5
				1.5	94.9	13.0	2.0	6.0	68.3
				2.0	90.6	12.0	2.2	6.0	67.3
				2.3	87.5	11.8	2.3	6.0	67.6
BRP-29-4	14-Apr-22	7.9	1.5	0.3	101	14.0	1.4	7.0	68.2
				0.5	98.1	13.5	1.4	6.9	67.0
				1.0	96.1	13.1	1.9	6.9	65.5
				1.5	94.0	12.7	2.0	6.7	64.8
				2.0	93.0	12.5	2.3	6.8	64.8
				2.5	91.7	12.4	2.3	6.6	64.3
				3.0	91.6	12.3	2.3	6.6	64.3
				3.5	91.6	12.3	2.2	6.5	65.9
				4.0	91.6	12.3	2.2	6.4	66.5
				4.5	91.5	12.3	2.3	6.4	64.4
				5.0	92.3	12.3	2.4	6.4	65.1
				5.5	91.2	12.2	2.4	6.4	63.5
				6.0	91.0	12.0	2.5	6.4	63.3
				6.3	88.8	11.9	2.6	6.4	62.6
				0.3	97.3	13.5	1.6	6.4	67.4
BRP-29-5	14-Apr-22	3.4	1.7	0.5	97.8	13.3	1.9	6.4	71.5
				1.0	98.3	13.2	2.4	6.3	74.6
				1.5	97.2	13.0	2.6	6.3	76.2
BRP-29-6	14-Apr-22	30.7	1.5	0.3	99.9	13.7	1.4	6.4	69.4
				0.5	96.7	13.2	1.6	6.3	68.8
				1.0	96.3	13.1	1.8	6.3	67.7
				1.5	95.0	12.9	2.0	6.3	67.5
				2.0	93.6	12.6	2.2	6.3	66.5
				2.5	93.0	12.5	2.3	6.3	65.6
				3.0	92.9	12.4	2.3	6.3	65.0
				3.5	92.6	12.4	2.4	6.3	66.2
				4.0	91.3	12.4	2.4	6.3	66.0
				4.5	92.2	12.4	2.5	6.3	65.5
				5.0	91.3	12.3	2.5	6.3	64.9
				5.5	89.9	12.1	2.7	6.3	63.2
				6.0	90.5	12.1	2.7	6.3	62.2
				6.5	90.2	12.0	2.8	6.3	61.8
				7.0	90.1	12.0	2.8	6.3	61.4
				7.5	90	11.9	2.8	6.3	60.8
				8.0	89	12.0	2.8	6.3	60.2
				8.5	90	11.8	2.9	6.3	59.8
				9.0	90	11.8	3.0	6.3	58.9
				9.5	89	11.7	3.0	6.3	58.3
				10.0	88	11.6	3.1	6.3	57.7
				10.5	88	11.6	3.1	6.3	57.5
				11.0	89	11.7	3.1	6.3	56.8
				11.5	88	11.4	3.2	6.3	56.2
				12.0	87	11.5	3.3	6.3	55.6
				12.5	87	11.4	3.3	6.3	55.3
				13.0	88	11.2	3.4	6.3	55.0
				13.5	87	11.4	3.4	6.3	54.7
				14.0	87	11.3	3.2	6.3	54.3
				14.5	87	11.3	3.5	6.3	54.0
				15.0	87	11.3	3.6	6.3	53.8
				15.5	86	11.2	3.6	6.3	53.4
				16.0	88	11.2	3.7	6.3	53.2
				16.5	86	11.2	3.7	6.3	53.1
				17.0	86	11.2	3.7	6.3	52.9
				17.5	86	11.1	3.7	6.3	52.6
				18.0	86	11.1	3.8	6.3	52.6
				18.5	86	11.1	3.8	6.3	52.6
				19.0	87	11.2	3.8	6.3	52.6
				19.5	87	11.2	3.8	6.3	52.4
				20.0	86	11.2	3.8	6.3	52.3
				20.5	86	11.1	3.8	6.3	52.2
				21.0	86	11.1	3.8	6.3	52.2
				21.5	86	11.2	3.8	6.3	52.1
				22.0	86	11.1	3.8	6.3	52.1
				22.5	85	11.1	3.8	6.3	52.0
				23.0	85	11.1	3.8	6.3	52.0
				23.5	85	11.0	3.8	6.3	51.9
				24.0	86	11.1	3.8	6.3	51.9
				24.5	85	11.0	3.8	6.3	51.8
				25.0	85	11.0	3.8	6.3	51.8
				25.5	83	10.7	3.8	6.3	51.9
				26.0	80	10.3	3.8	6.3	52.1
				26.5	79	10.2	3.8	6.2	52.1
				27.0	76	9.9	3.8	6.2	52.0
				27.5	74	9.5	3.8	6.2	52.1
				28.0	71	9.2	3.8	6.2	52.7
				28.5	49	6.4	3.7	6.1	53.5

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; °C) = degrees Celsius; µS/cm = microsiemens per centimetre; - = data not available.  
(a) depth starting from underneath the ice layer

Table B-2: Field Profiles at Goose Lake West Bay at BRP-29, August 2022

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-29-1	13-Aug-22	2.3	2.3	0.3	103	10.2	14.3	6.4	40.0
				0.5	103	10.2	14.3	6.5	40.1
				1.0	103	10.2	14.3	6.6	40.0
				1.5	103	10.2	14.3	6.7	40.1
				2.0	103	10.2	14.3	6.6	40.1
BRP-29-2	13-Aug-22	2.8	2.8	0.3	102	10.2	14.2	6.4	39.3
				0.5	102	10.1	14.2	6.5	39.2
				1.0	102	10.1	14.2	6.6	39.1
				1.5	101	10.1	14.1	6.5	39.1
				2.0	101	10.1	14.2	6.6	39.1
				2.5	101	10.1	14.1	6.6	39.2
				0.3	102	10.1	14.2	6.4	39.1
BRP-29-3	13-Aug-22	4.3	4.3	0.5	102	10.1	14.2	6.5	39.2
				1.0	102	10.1	14.2	6.5	39.1
				1.5	102	10.1	14.2	6.5	39.7
				2.0	102	10.1	14.1	6.6	40.4
				2.5	102	10.1	14.1	6.6	40.6
				3.0	102	10.1	14.1	6.6	40.7
				3.5	102	10.1	14.1	6.6	40.5
				4.0	102	10.1	14.1	6.6	40.6
				0.3	102	10.1	14.2	6.4	39.4
BRP-29-4	13-Aug-22	6.8	6.8	0.5	102	10.1	14.2	6.5	39.3
				1.0	102	10.1	14.2	6.6	38.4
				1.5	101	10.1	14.2	6.6	39.3
				2.0	102	10.1	14.2	6.6	39.3
				2.5	102	10.1	14.2	6.6	39.3
				3.0	102	10.1	14.2	6.6	39.2
				3.5	102	10.1	14.2	6.6	39.2
				4.0	102	10.1	14.2	6.6	39.3
				4.5	101	10.1	14.1	6.6	39.2
				5.0	101	10.1	14.1	6.6	39.2
				5.5	102	10.1	14.1	6.6	39.2
				6.0	102	10.1	14.1	6.6	39.2
				0.3	101	10.1	14.0	6.2	38.9
				0.5	101	10.1	14.0	6.3	39.2
				1.0	101	10.0	14.0	6.3	39.4
				1.5	101	10.0	14.0	6.4	39.2
2.0	101	10.0	14.0	6.5	39.1				

Table B-3: Field Profiles at Goose Lake Central Basin at BRP-32, April 2022

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(a)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-1	10-Apr-22	4.3	1.7	0.3	118	14.4	6.0	5.8	48.0
				0.5	116	14.1	6.0	5.6	46.5
				1.0	114	13.7	6.2	5.5	45.4
				1.5	109	13.0	6.6	5.6	45.0
				2.0	98	11.6	6.8	5.6	44.9
				2.5	87	10.3	7.0	5.6	45.1
BRP-32-2	10-Apr-22	4.9	1.7	0.3	120	14.7	5.7	6.0	48.4
				0.5	118	14.4	5.9	5.9	49.3
				1.0	115	13.8	6.4	5.9	46.4
				1.5	113	13.5	6.7	5.9	45.5
				2.0	103	12.2	7.0	5.8	44.9
				2.5	82	9.6	7.2	5.7	45.7
BRP-32-3	10-Apr-22	4.6	1.5	3.0	73	8.6	7.4	5.8	47.5
				0.3	117	14.4	5.5	6.1	47.8
				0.5	113	13.8	5.9	6.0	45.3
				1.0	111	13.3	6.4	6.0	43.3
				1.5	106	12.6	6.9	6.0	43.1
				2.0	103	12.1	7.2	6.0	42.6
BRP-32-4	10-Apr-22	4.1	1.9	2.5	98	11.5	7.4	6.0	47.8
				2.9	97	11.3	7.6	6.0	43.1
				0.3	109	13.1	6.3	6.0	47.9
				0.5	108	12.9	6.7	6.0	46.8
				1.0	106	12.6	7.0	6.0	44.7
				1.5	103	12.1	7.4	6.0	42.8
BRP-32-5	10-Apr-22	4.7	2.0	2.0	104	12.2	7.6	6.0	45.0
				0.3	111	13.2	6.7	6.1	43.3
				0.5	110	13.0	7.0	6.1	42.7
				1.0	104	12.3	7.3	6.1	41.4
				1.5	98	11.5	7.6	6.1	41.1
				2.0	95	11.0	7.8	6.1	40.9
				2.5	95	11.0	7.9	6.0	47.5

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; ( °C) = degrees Celsius; µS/cm = microsiemens per centimetre.  
(a) depth starting from underneath the ice layer

Table B-4: Field Profiles at Goose Lake Central Basin at BRP-32, August 2022

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-32-1	09-Aug-22	4.0	4.0	0.3	105	10.2	15.1	6.3	31.3
				0.5	105	10.2	15.1	6.4	30.9
				1.0	105	10.2	15.1	6.4	30.8
				1.5	105	10.2	15.1	6.5	30.9
				2.0	105	10.2	15.1	6.5	30.9
				2.5	105	10.2	15.1	6.5	30.8
				3.0	104	10.2	15.1	6.5	30.9
				3.5	104	10.2	15.1	6.6	30.9
BRP-32-2	09-Aug-22	4.5	4.5	0.3	105	10.3	15.1	6.7	30.9
				0.5	105	10.3	15.0	6.7	30.8
				1.0	105	10.2	15.0	6.7	30.8
				1.5	105	10.2	15.1	6.7	30.8
				2.0	105	10.2	15.1	6.7	30.8
				2.5	105	10.2	15.1	6.7	30.8
				3.0	105	10.2	15.0	6.7	30.8
				3.5	105	10.2	15.1	6.8	30.8
BRP-32-3	09-Aug-22	4.5	4.5	4.0	105	10.3	15.0	6.7	30.7
				0.3	105	10.3	15.1	6.6	30.8
				0.5	105	10.2	15.1	6.6	31.0
				1.0	105	10.2	15.2	6.6	30.8
				1.5	105	10.2	15.2	6.6	30.8
				2.0	105	10.2	15.1	6.7	30.7
				2.5	105	10.2	15.1	6.6	30.8
				3.0	105	10.2	15.1	6.7	30.8
BRP-32-4	09-Aug-22	4.0	4.0	3.5	105	10.2	15.1	6.7	30.8
				4.0	105	10.3	15.1	6.7	30.7
				0.3	104	10.2	15.0	6.6	32.2
				0.5	104	10.2	15.1	6.5	31.1
				1.0	104	10.2	15.1	6.5	31.0
				1.5	104	10.2	15.1	6.6	30.9
				2.0	105	10.2	15.1	6.6	30.9
				2.5	104	10.2	15.0	6.6	30.9
BRP-32-5	09-Aug-22	4.5	4.5	3.0	104	10.2	15.0	6.5	30.9
				3.5	104	10.2	15.0	6.6	30.9
				0.3	105	10.2	15.1	6.5	30.5
				0.5	105	10.2	15.1	6.5	30.8
				1.0	104	10.2	15.1	6.5	30.9
				1.5	104	10.2	15.1	6.6	30.9
				2.0	104	10.2	15.1	6.6	30.9
				2.5	104	10.2	15.1	6.6	30.8
				3.0	104	10.2	15.1	6.6	30.8
				3.5	104	10.2	15.0	6.6	30.8
				4.0	105	10.25	14.9	6.6	30.8

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; ( °C) = degrees Celsius; µS/cm = microsiemens per centimetre; - = data not available.



Table B-5: Field Profiles at Goose Lake Southeast Basin at BRP-33, April 2022

Station <sup>(a)</sup>	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(b)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-33-3	14-Apr-22	4.1	1.8	0.3	119	16.4	1.2	6.3	67.0
				0.5	118	16.1	1.5	6.3	66.5
				1.0	116	15.9	1.9	6.2	67.0
				1.3	113	15.2	2.2	6.2	65.8
				1.5	106	14.2	2.3	6.2	66.4
				2.0	95	12.7	2.5	6.2	68.5

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.  
(a) only one station within the area has been sampled during this program (data for hydrodynamic model)  
(b) depth starting from underneath the ice layer

Table B-6: Field Profiles at Goose Lake Southeast Basin at BRP-33, August 2022

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-33-1	13-Aug-22	3.0	3.0	0.3	105	10.4	14.6	6.4	30.9
				0.5	105	10.3	14.6	6.5	30.5
				1.0	105	10.3	14.6	6.5	30.4
				1.5	105	10.3	14.6	6.6	30.5
				2.0	105	10.3	14.6	6.6	30.5
				2.5	105	10.3	14.6	6.6	30.6
BRP-33-2	10-Aug-22	5.0	5.0	0.3	106	10.2	15.2	6.4	29.4
				0.5	106	10.2	15.2	6.4	29.5
				1.0	106	10.2	15.2	6.2	29.3
				1.5	105	10.2	15.2	6.2	29.6
				2.0	106	10.2	15.2	6.3	29.9
				2.5	105	10.2	15.2	6.3	30.4
				3.0	105	10.2	15.2	6.3	30.5
				3.5	105	10.1	15.2	6.3	30.5
				4.0	105	10.1	15.2	6.4	30.5
BRP-33-3	10-Aug-22	3.3	3.3	4.5	105	10.1	15.3	6.4	30.5
				0.3	105	10.1	15.2	6.4	29.7
				0.5	105	10.1	15.2	6.5	30.5
				1.0	105	10.1	15.2	6.5	30.5
				1.5	105	10.1	15.2	6.5	30.5
				2.0	105	10.1	15.2	6.5	30.5
BRP-33-4	10-Aug-22	4.5	4.5	2.5	105	10.1	15.2	6.6	30.5
				3.0	105	10.1	15.2	6.6	30.5
				0.3	104	10.1	15.1	6.4	30.2
				0.5	104	10.1	15.1	6.4	30.2
				1.0	104	10.1	15.2	6.5	30.3
				1.5	104	10.2	15.2	6.5	30.5
				2.0	104	10.1	15.2	6.4	30.5
				2.5	104	10.1	15.2	6.4	30.5
				3.0	104	10.1	15.2	6.5	30.5
BRP-33-5	10-Aug-22	5.0	5.0	3.5	104	10.1	15.2	6.5	30.5
				4.0	104	10.1	15.2	6.5	30.5
				0.3	104	10.1	15.2	6.6	30.7
				0.5	104	10.1	15.2	6.5	30.4
				1.0	104	10.1	15.2	6.5	30.6
				1.5	104	10.1	15.2	6.6	30.7
				2.0	104	10.1	15.2	6.6	30.6
				2.5	104	10.1	15.2	6.6	30.6
				3.0	104	10.1	15.2	6.6	30.6

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-7: Field Profiles at Propeller Lake South Basin (near centre), April 2022

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(a)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-35-1	11-Apr-22	3.3	2.0	0.3	139	19.4	0.9	6.4	49.6
				0.5	131	18.1	1.4	6.4	55.1
				1.0	120	16.8	1.7	6.3	54.2
BRP-35-2	11-Apr-22	4.0	1.9	0.3	143	19.9	1.1	6.3	49.1
				0.5	143	19.8	1.2	6.3	49.0
				1.0	114	15.3	2.0	6.1	50.5
				1.5	86	11.4	2.5	6.0	49.2
BRP-35-3	11-Apr-22	5.0	2.1	2.0	64	8.5	2.7	6.0	48.5
				0.3	141	19.8	1.2	6.2	48.1
				0.5	140	19.1	1.5	6.1	47.7
				1.0	117	15.7	2.2	6.1	45.4
				1.5	53	7.1	2.8	6.0	43.2
				2.0	22	2.9	3.2	5.9	44.5
BRP-35-4	11-Apr-22	4.5	2.0	2.5	1	0.2	3.6	6.0	45.2
				0.3	144	20.2	1.0	6.2	49.0
				0.5	143	19.7	1.4	6.2	47.7
				1.0	114	15.5	2.0	6.1	46.2
				1.5	77	10.3	2.6	6.0	45.4
				2.0	38	4.9	3.1	5.9	46.1
BRP-35-5	11-Apr-22	4.8	1.8	2.3	26	3.5	3.2	5.9	46.6
				0.3	144	20.1	0.9	6.2	49.1
				0.5	140	19.5	1.1	6.2	48.1
				1.0	116	15.8	1.8	6.1	46.0
				1.5	102	13.7	2.3	6.1	45.3
				2.0	55	7.3	2.8	6.0	45.4
				2.5	11	1.5	2.3	6.0	45.4
				2.9	9.3	1.2	3.3	5.9	45.3

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.  
(a) depth starting from underneath the ice layer

Table B-8: Field Profiles at Propeller Lake South Basin (near centre), August 2022

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-35-1	08-Aug-22	2.8	2.8	0.3	105	10.3	14.7	6.4	23.5
				0.5	105	10.3	14.6	6.4	24.0
				1.0	104	10.3	14.6	6.5	23.8
				1.5	104	10.3	14.6	6.4	24.0
				2.0	105	10.3	14.5	6.5	23.8
BRP-35-2	07-Aug-22	3.3	3.3	0.3	107	10.6	14.5	6.2	22.8
				0.5	107	10.5	14.5	6.2	22.8
				1.0	107	10.5	14.6	6.3	22.9
				1.5	107	10.6	14.5	6.3	22.9
				2.0	107	10.5	14.5	6.4	22.8
				2.5	107	10.5	14.5	6.8	22.9
				3.0	107	10.5	14.5	6.3	22.8
BRP-35-3	07-Aug-22	4.8	4.8	0.3	106	10.5	14.1	6.4	22.6
				0.5	106	10.5	14.1	6.4	22.7
				1.0	106	10.5	14.1	6.4	22.7
				1.5	106	10.5	14.1	6.4	22.9
				2.0	106	10.5	14.1	6.3	23.0
				2.5	106	10.5	14.1	6.4	22.9
				3.0	106	10.5	14.1	6.4	23.0
				3.5	106	10.5	14.1	6.4	23.2
				4.0	106	10.5	14.1	6.4	22.9
				4.5	106	10.5	14.1	6.4	22.9
BRP-35-4	07-Aug-22	4.3	4.3	0.3	106	10.5	14.2	6.2	23.1
				0.5	106	10.5	14.2	6.2	22.9
				1.0	106	10.5	14.3	6.2	22.9
				1.5	106	10.5	14.2	6.3	23.1
				2.0	106	10.5	14.2	6.3	22.9
				2.5	106	10.5	14.2	6.4	22.9
				3.0	106	10.5	14.2	6.3	23.0
				3.5	106	10.5	14.2	6.4	22.9
				4.0	106	10.5	14.2	6.4	22.9
BRP-35-5	07-Aug-22	4.8	4.8	0.3	107	10.6	14.3	6.0	22.8
				0.5	107	10.5	14.3	6.1	22.8
				1.0	107	10.5	14.3	6.2	23.0
				1.5	107	10.5	14.3	6.2	22.8
				2.0	106	10.5	14.3	6.2	22.8
				2.5	106	10.6	14.3	6.3	22.8
				3.0	106	10.6	14.3	6.3	22.8
				3.5	106	10.5	14.3	6.4	22.8
				4.0	106	10.5	14.3	6.4	22.9

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-9: Field Profiles at Propeller Lake North Basin at BRP-36, April 2022

Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(a)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-36-1	12-Apr-22	4.4	2.0	0.3	120	16.8	1.2	6.1	38.0
				0.5	119	16.4	1.4	6.2	36.9
				1.0	116	16.1	1.6	6.1	35.9
				1.5	117	16.2	1.8	6.1	37.7
				2.0	119	16.3	1.9	6.1	39.2
				2.3	117	16.1	2.0	6.1	39.1
BRP-36-2	12-Apr-22	3.1	2.0	0.3	122	17.0	1.2	6.3	36.2
				0.5	120	16.8	1.3	6.3	36.0
				0.8	118	16.3	1.6	6.3	35.0
BRP-36-3	12-Apr-22	4.2	2.0	0.3	119	16.6	1.3	6.3	38.4
				0.5	119	16.6	1.4	6.3	38.3
				1.0	114	15.8	1.7	6.3	36.1
				1.5	116	16.1	1.9	6.3	37.0
				2.0	113	15.7	1.9	6.3	37.0
BRP-36-4	12-Apr-22	3.0	2.0	0.3	133	18.5	1.2	6.3	44.0
				0.5	131	18.3	1.3	6.4	44.0
				1.0	132	18.2	1.6	6.3	43.0
BRP-36-5	12-Apr-22	4.0	2.0	0.3	123	16.8	1.8	5.7	38.1
				0.5	118	16.3	1.8	5.8	37.1
				1.0	116	16.0	1.8	5.8	36.9
				1.5	118	16.2	1.9	5.9	37.9
				1.9	118	16.2	2.0	5.9	38.1

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.  
(a) depth starting from underneath the ice layer

Table B-10: Field Profiles at Propeller Lake North Basin at BRP-36, August 2022

Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-36-1	08-Aug-22	4.3	4.3	0.3	106	10.2	15.6	6.4	22.3
				0.5	106	10.2	15.6	6.4	22.1
				1.0	105	10.2	15.2	6.4	22.2
				1.5	105	10.2	15.2	6.4	22.3
				2.0	105	10.2	15.0	6.4	22.9
				2.5	104	10.2	14.1	6.4	22.9
				3.0	104	10.2	14.7	6.4	22.9
				3.5	104	10.2	14.6	6.5	22.9
BRP-36-2	08-Aug-22	4.3	4.3	0.3	105	10.2	15.0	6.3	22.7
				0.5	105	10.2	15.0	6.3	22.9
				1.0	105	10.2	15.0	6.4	22.9
				1.5	105	10.2	14.8	6.4	22.9
				2.0	104	10.2	14.7	6.4	22.9
				2.5	104	10.2	14.7	6.4	22.9
				3.0	104	10.2	14.6	6.4	22.9
				3.5	104	10.2	15.1	6.4	22.9
BRP-36-3	08-Aug-22	3.5	3.5	0.3	105	10.3	15.1	6.4	23.0
				0.5	105	10.3	15.0	6.5	23.0
				1.0	105	10.3	15.0	6.5	22.9
				1.5	105	10.3	14.9	6.4	22.9
				2.0	105	10.3	14.9	6.5	22.9
				2.5	105	10.3	14.8	6.6	22.9
				3.0	105	10.3	14.7	6.5	22.9
BRP-36-4	08-Aug-22	3.3	3.3	0.3	106	10.3	15.6	6.5	22.6
				0.5	106	10.3	15.5	6.4	22.4
				1.0	106	10.2	15.5	6.4	23.0
				1.5	106	10.2	15.5	6.5	23.0
				2.0	106	10.2	15.4	6.5	23.0
				2.5	105	10.3	15.2	6.5	23.0
				3.0	105	10.3	15.1	6.5	22.9
BRP-36-5	08-Aug-22	3.3	3.3	0.3	108	10.2	15.9	6.5	23.0
				0.5	107	10.2	15.8	6.4	23.1
				1.0	105	10.2	15.3	6.4	22.9
				1.5	105	10.3	15.1	6.4	23.0
				2.0	105	10.3	14.9	6.4	22.9
				2.5	105	10.3	14.7	6.5	22.9
				3.0	105	10.3	14.7	6.5	22.9

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; (°C) = degrees Celsius; µS/cm = microsiemens per centimetre.

Table B-11: Field Profiles at Reference B Lake at BRP-40, April 2022

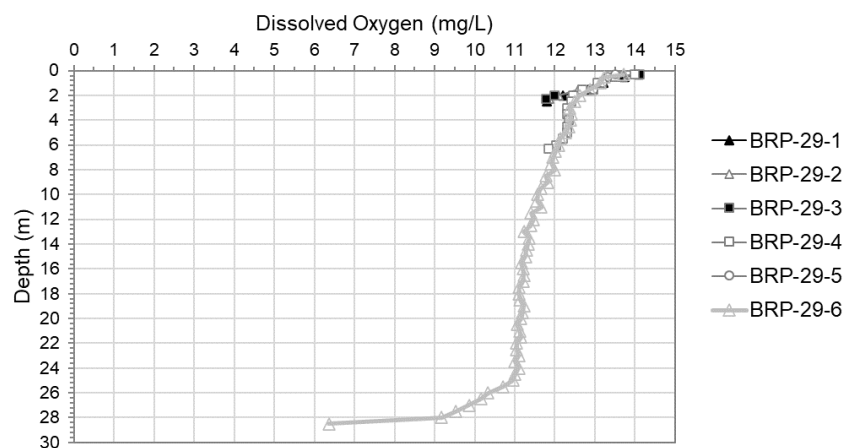
Station	Date	Total Depth (m)	Ice Thickness (m)	Effective Depth <sup>(a)</sup> (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-40-1	13-Apr-22	3.7	1.8	0.3	123	16.7	2.4	6.4	48.9
				0.5	117	15.6	2.8	6.5	47.1
				1.0	102	13.2	3.6	6.4	45.7
				1.5	41	5.3	4.4	6.3	43.6
				1.8	38	4.9	4.4	6.2	44.7
BRP-40-2	13-Apr-22	3.7	1.7	0.3	123	16.8	1.9	6.4	48.9
				0.5	121	16.4	2.2	6.4	48.0
				1.0	103	13.5	3.2	6.3	46.0
				1.5	91	11.9	3.7	6.3	45.0
BRP-40-3	13-Apr-22	4.2	1.8	1.8	44	5.7	4.3	6.3	43.5
				0.3	127	17.0	2.0	6.4	46.1
				0.5	121	16.2	2.5	6.4	45.5
				1.0	100	13.0	3.5	6.3	44.1
				1.5	58	7.2	4.2	6.3	42.2
				2.0	39	4.9	4.6	6.1	44.1
				2.3	36	4.5	4.7	6.1	44.6
BRP-40-4	13-Apr-22	3.7	1.7	0.3	124	17.0	1.8	6.4	48.3
				0.5	120	16.1	2.4	6.4	47.4
				1.0	100	13.1	3.4	6.3	45.5
				1.5	40	5.1	4.2	6.2	43.6
				1.8	39	4.9	4.3	6.1	43.2
BRP-40-5	13-Apr-22	3.7	1.7	0.3	118	15.7	2.0	6.2	47.4
				0.5	99	13.8	2.5	6.3	46.2
				1.0	87	11.4	3.4	6.2	45.5
				1.5	51	6.5	4.1	6.1	43.7
				1.8	43	5.4	4.3	6.1	43.2

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; ( °C) = degrees Celsius; µS/cm = microsiemens per centimetre.  
(a) - depth starting from underneath the ice layer

Table B-12: Field Profiles at Reference B Lake at BRP-40, August 2022

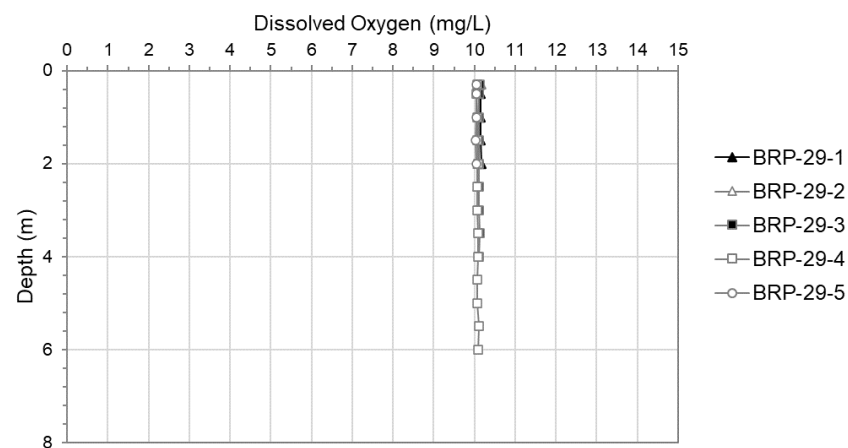
Station	Date	Total Depth (m)	Secchi Depth (m)	Depth (m)	DO (%)	DO (mg/L)	Water temperature (°C)	pH	Specific Conductivity (µS/cm)
BRP-40-1	06-Aug-22	3.8	3.8	0.3	106	10.4	14.1	6.8	18.0
				0.5	106	10.5	14.1	6.7	18.0
				1.0	106	10.4	14.1	6.8	18.1
				1.5	106	10.4	14.1	6.8	18.1
				2.0	106	10.4	14.1	6.8	18.1
				2.5	106	10.4	14.1	6.9	18.1
				3.0	106	10.4	14.1	6.8	18.1
BRP-40-2	06-Aug-22	3.5	3.5	0.3	106	10.4	14.0	6.7	18.2
				0.5	106	10.5	14.0	6.7	17.7
				1.0	106	10.5	14.0	6.7	18.0
				1.5	106	10.4	14.1	6.7	18.1
				2.0	106	10.4	14.1	6.7	18.0
				2.5	106	10.5	14.1	6.7	18.1
BRP-40-3	06-Aug-22	3.8	3.8	3.0	106	10.4	14.1	6.7	18.0
				0.3	105	10.4	14.0	6.6	15.5
				0.5	105	10.4	14.0	6.7	18.0
				1.0	105	10.4	14.0	6.7	18.0
				1.5	105	10.4	14.0	6.8	18.0
				2.0	105	10.4	14.0	6.8	18.0
				2.5	105	10.4	14.0	6.8	18.0
BRP-40-4	06-Aug-22	3.5	3.5	3.0	105	10.4	14.0	6.8	18.0
				3.5	104	10.2	14.0	6.7	18.3
				0.3	104	10.3	13.9	6.6	17.7
				0.5	104	10.3	13.9	6.6	18.0
				1.0	104	10.4	13.9	6.7	17.9
				1.5	104	10.4	13.9	6.6	17.8
				2.0	104	10.4	13.9	6.6	17.9
BRP-40-5	06-Aug-22	3.5	3.5	2.5	104	10.4	13.9	6.7	18.0
				3.0	105	10.4	13.9	6.7	18.0
				0.3	104	10.3	13.8	6.6	18.3
				0.5	104	10.3	13.8	6.6	18.3
				1.0	104	10.3	13.8	6.7	18.3
				1.5	103	10.3	13.8	6.6	18.3
				2.0	104	10.3	13.8	6.7	18.4
				2.5	104	10.3	13.7	6.6	18.3
				3.0	103	10.3	13.7	6.6	18.3

Notes: m - metre; DO = dissolved oxygen; % = percent saturation; mg/L = milligrams per litre; ( °C) = degrees Celsius; µS/cm = microsiemens per centimetre.

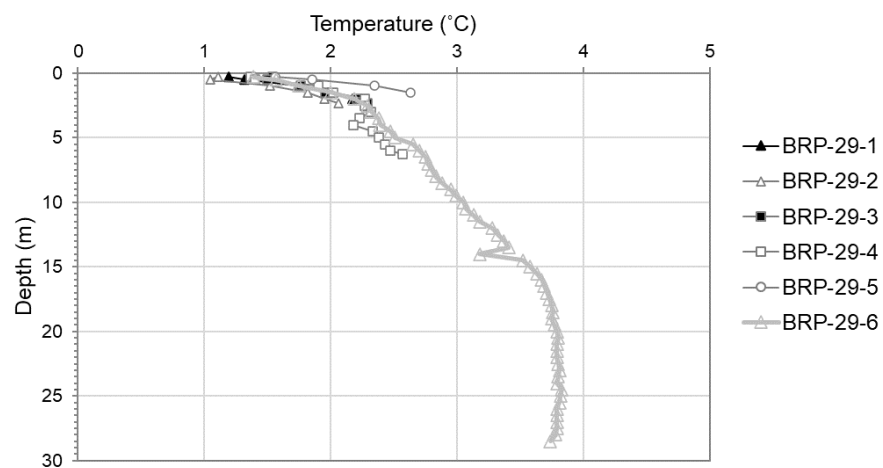
**Figure B-1: Dissolved Oxygen Profiles at Goose Lake West Bay at BRP-29, 2022**

Ice-cover Season, April 2022

m = metre; mg/L = milligrams per litre.

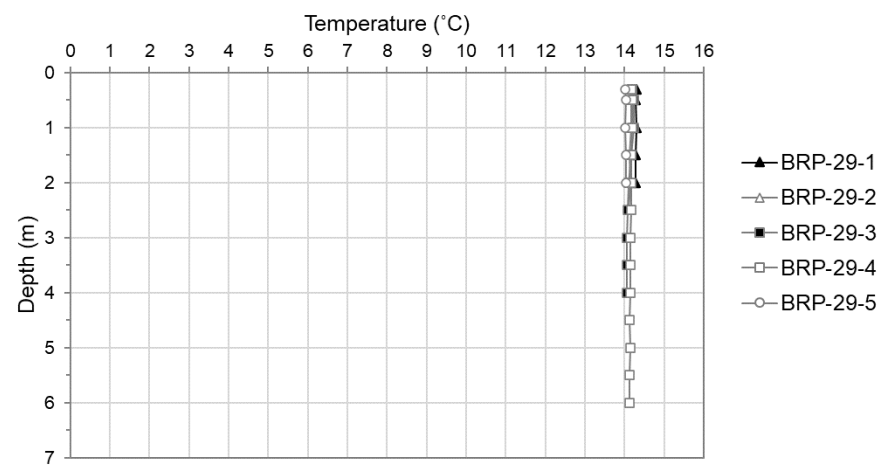


Open-water Season, August 2022

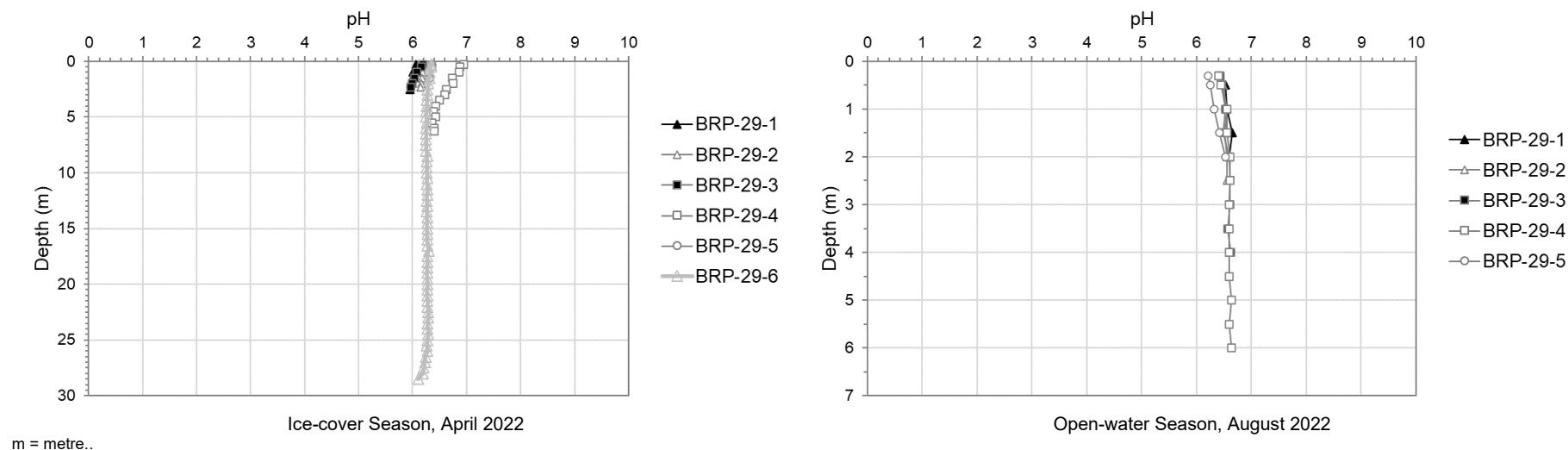
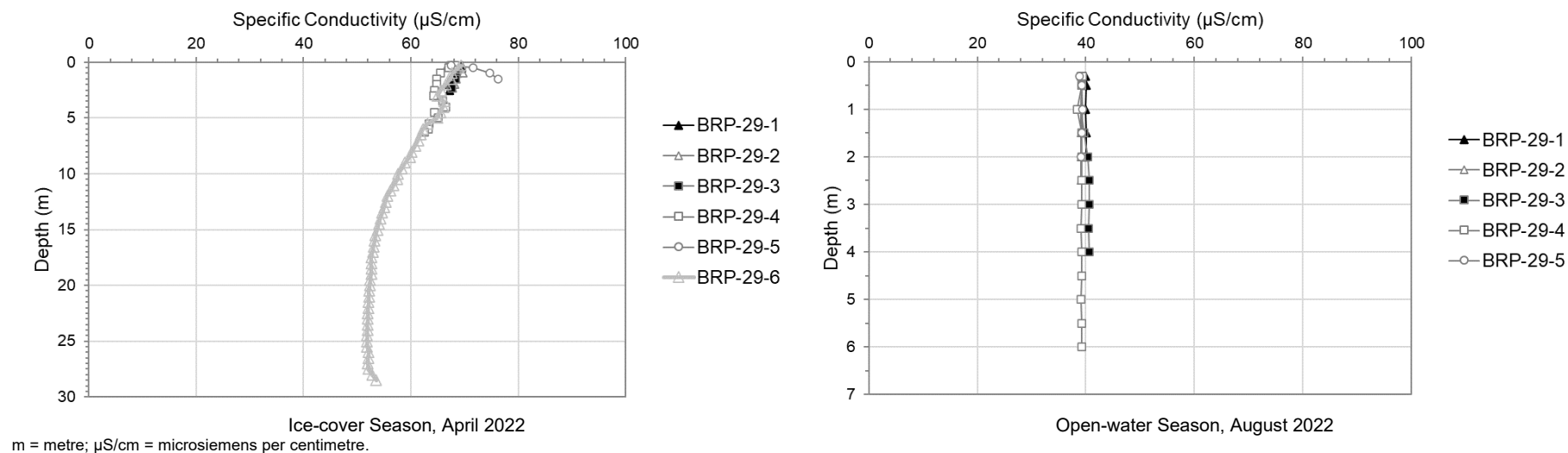
**Figure B-2: Water Temperature Profiles at Goose Lake West Bay at BRP-29, 2022**

Ice-cover Season, April 2022

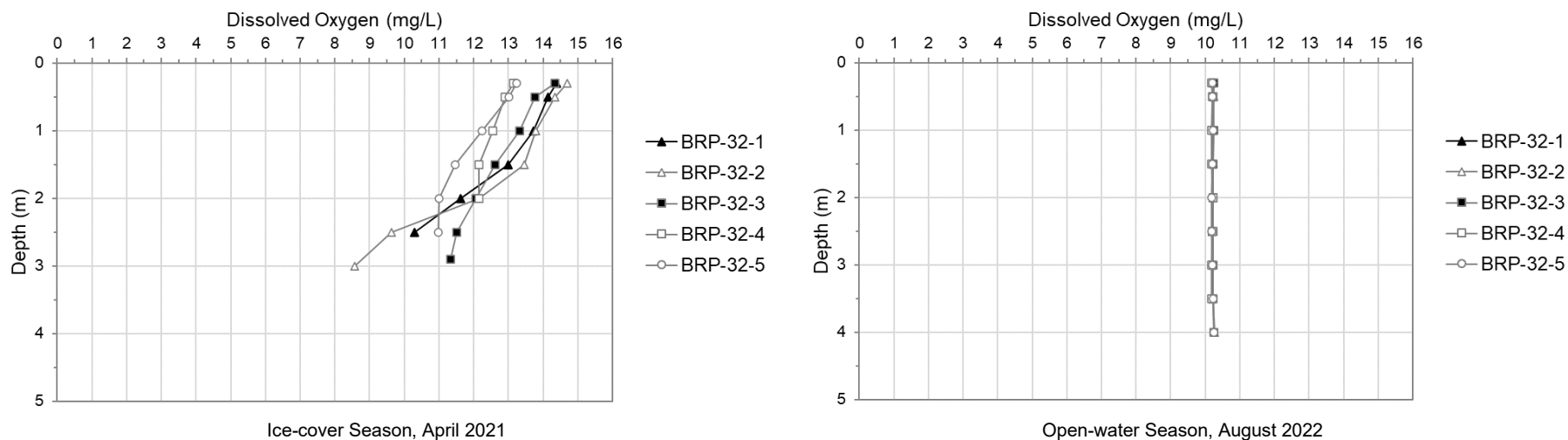
m = metre; °C = degree Celsius.



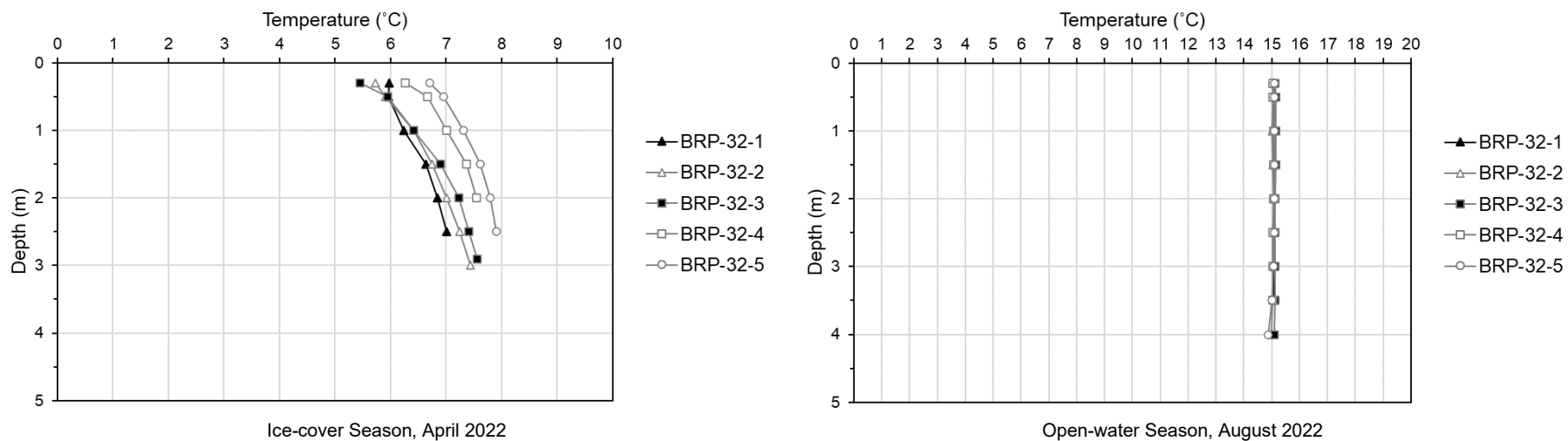
Open-water Season, August 2022

**Figure B-3: pH Profiles at Goose Lake West Bay at BRP-29, 2022****Figure B-4: Specific Conductivity Profiles at Goose Lake West Bay at BRP-29, 2022**



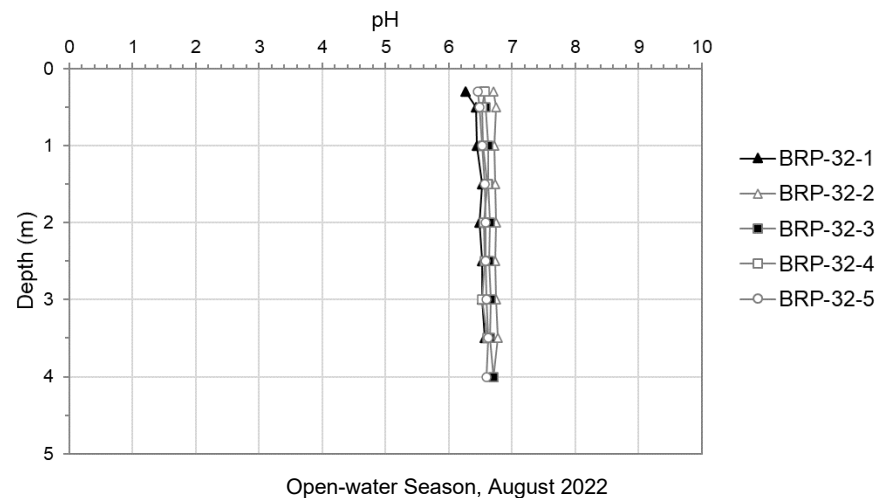
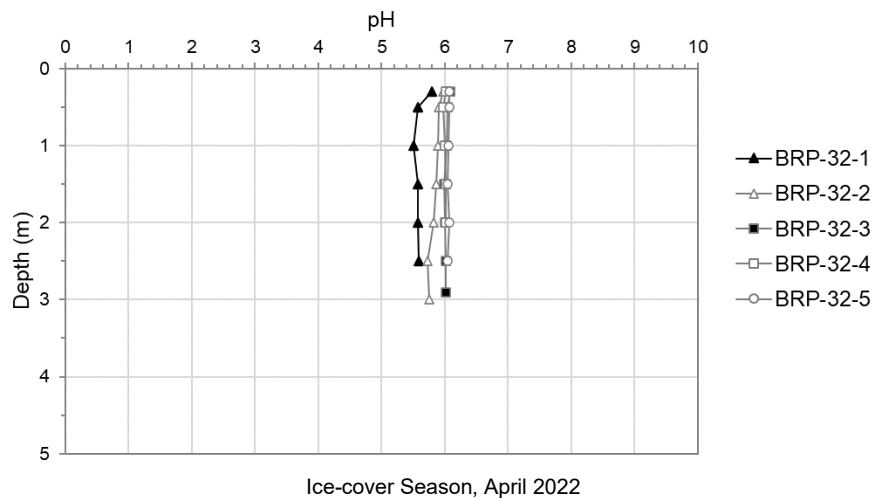
**Figure B-5: Dissolved Oxygen Profiles at Goose Lake Central Basin at BRP-32, 2022**

m = metre; mg/L = milligrams per litre.

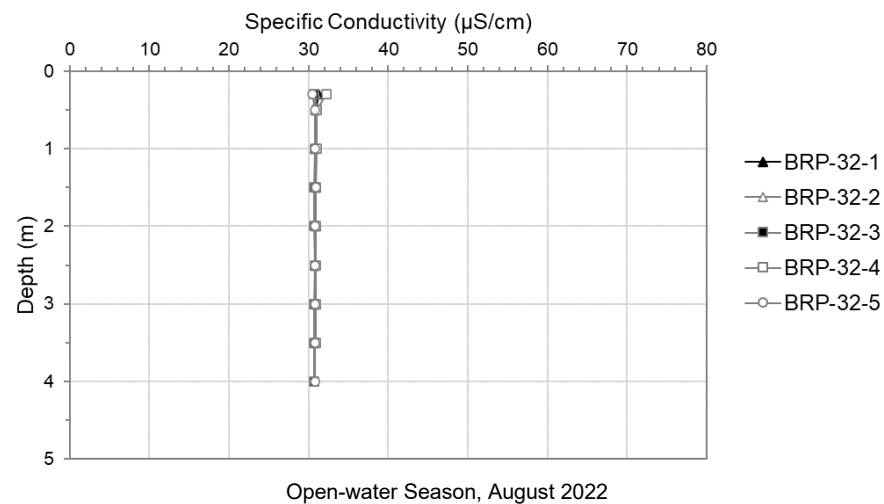
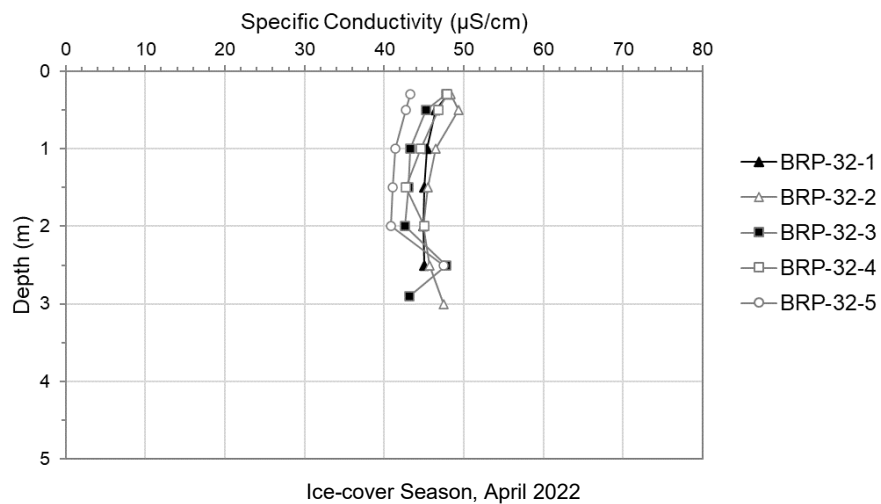
**Figure B-6: Water Temperature Profiles at Goose Lake Central Basin at BRP-32, 2022**

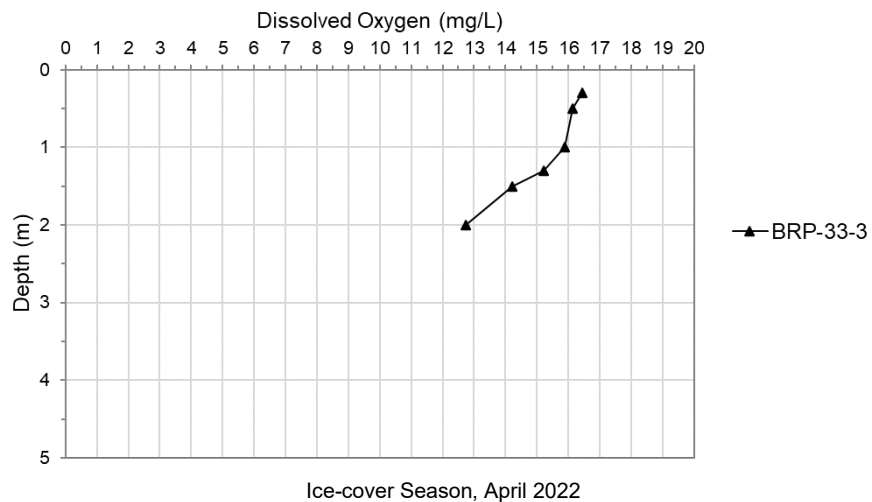
m = metre; °C = degree Celsius.

note: water temperatures recorded at BRP-32 stations were higher than temperatures recorded at other Goose Lake stations, and are likely a result of an equipment malfunction

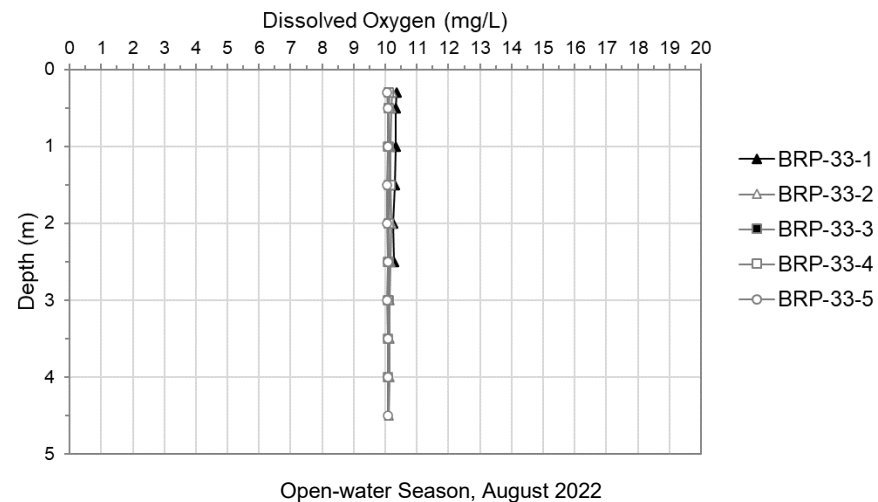
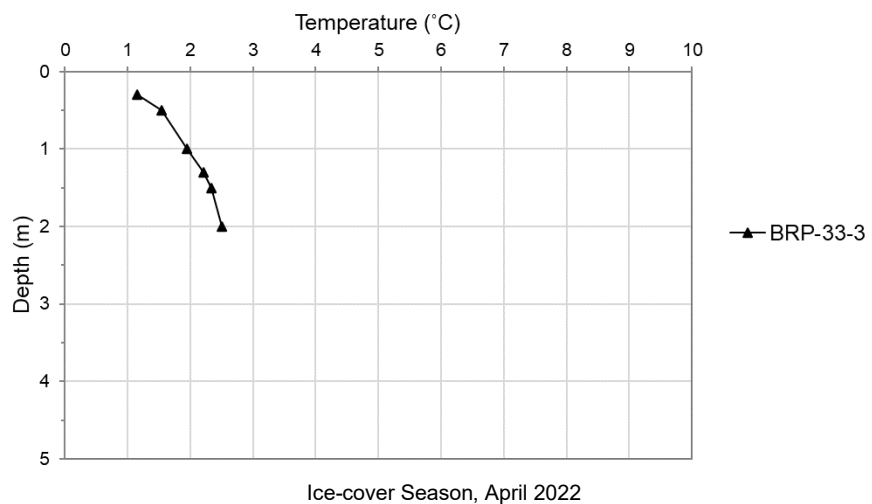
**Figure B-7: pH Profiles at Goose Lake Central Basin at BRP-32, 2022**

m = metre.

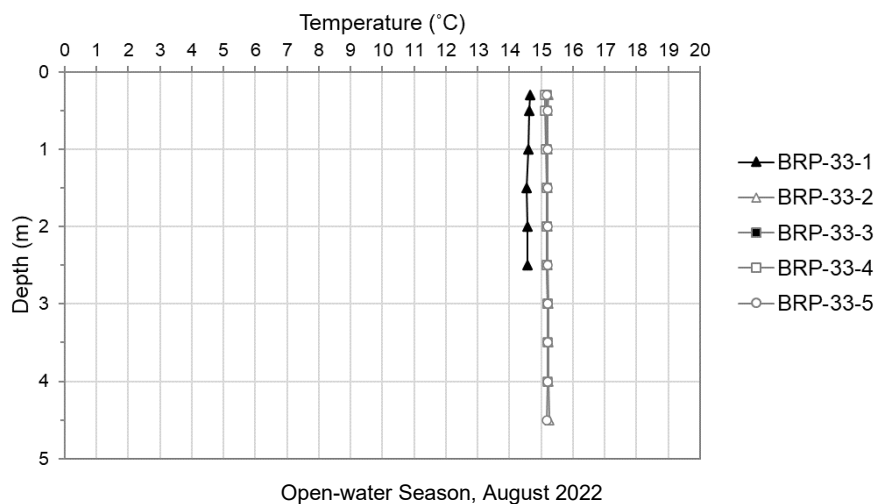
**Figure B-8: Specific Conductivity Profiles at Goose Lake Central Basin at BRP-32, 2022**m = metre;  $\mu\text{S}/\text{cm}$  = microsiemens per centimetre.

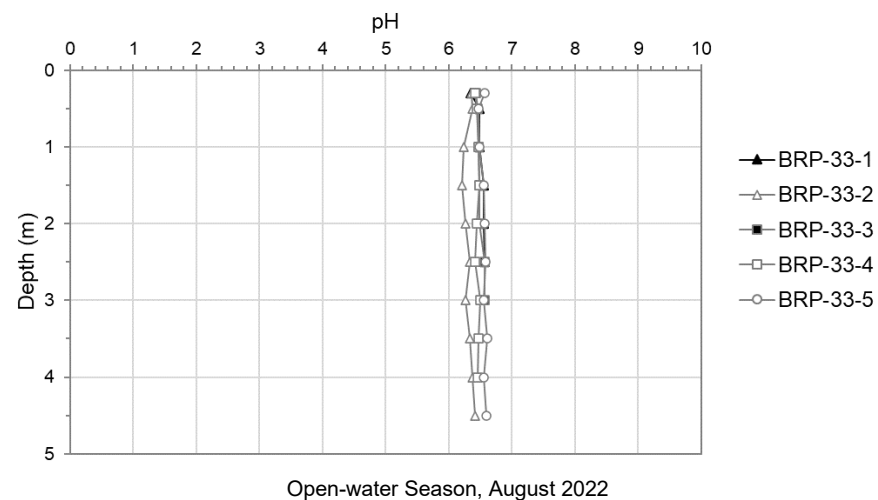
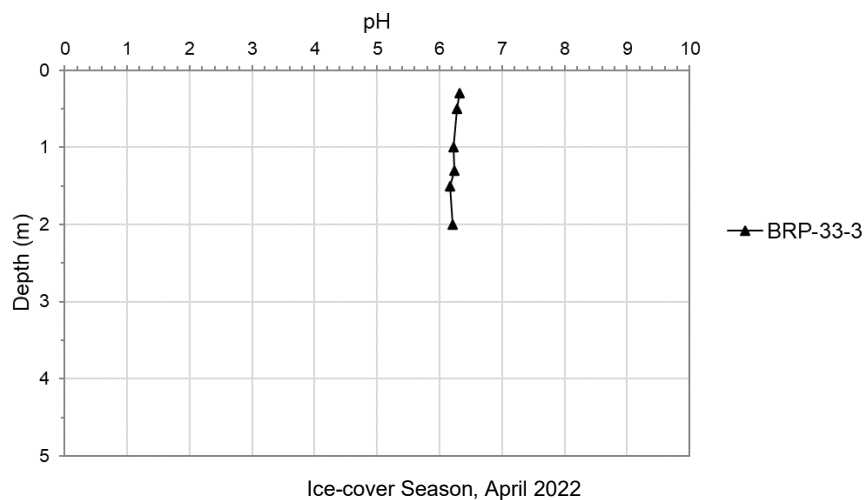
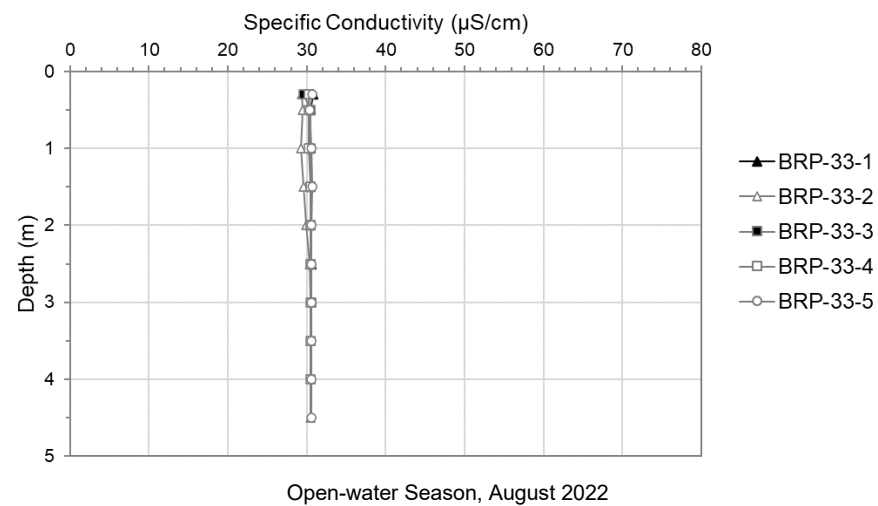
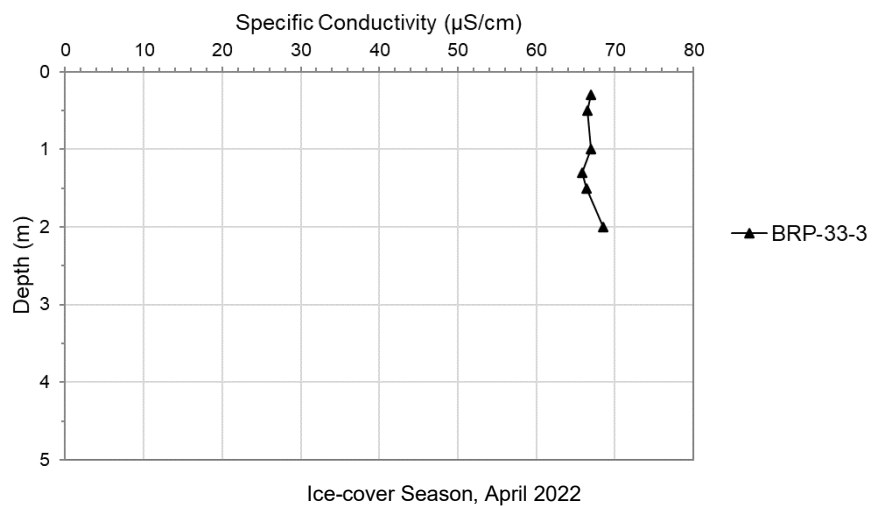
**Figure B-9: Dissolved Oxygen Profiles at Goose Lake Southeast Basin at BRP-33, 2022**

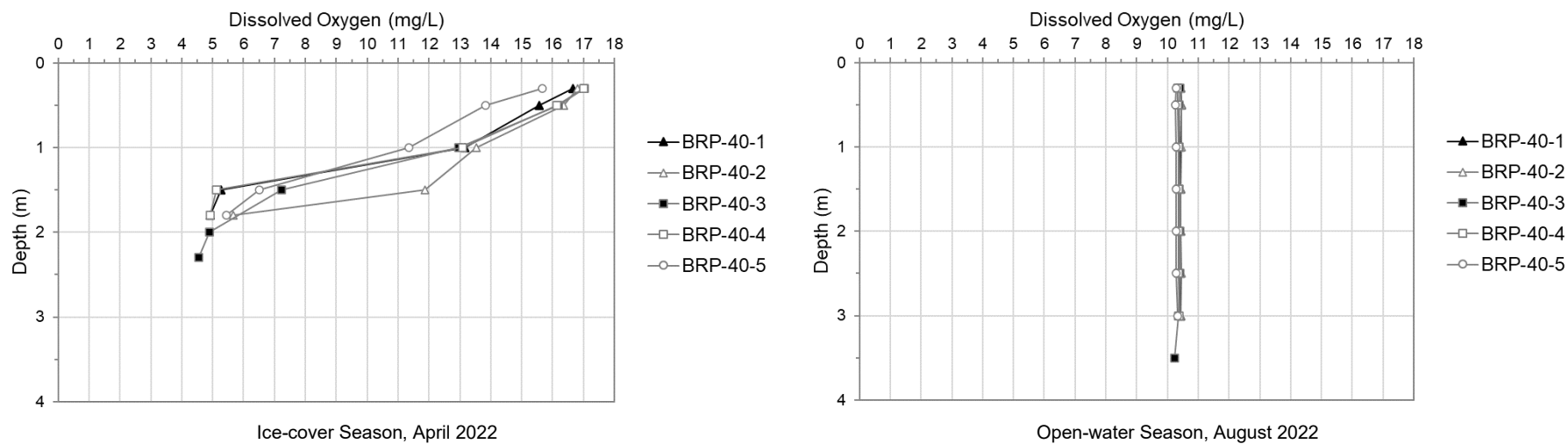
m = metre; mg/L = milligrams per litre.

**Figure B-10: Water Temperature Profiles at Goose Lake Southeast Basin at BRP-33, 2022**

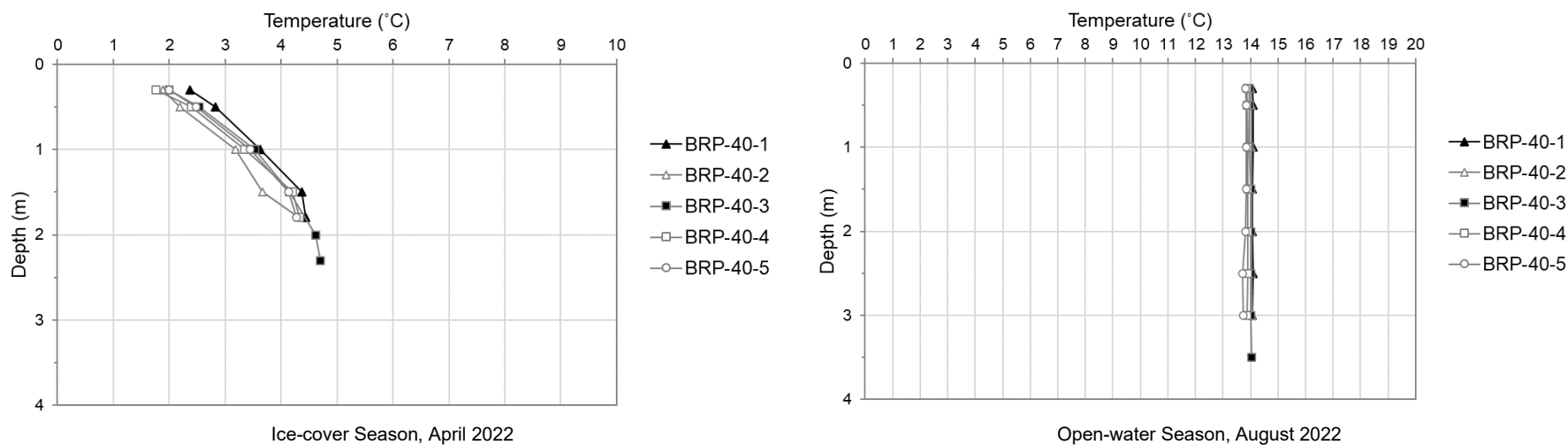
m = metre; °C = degree Celsius.



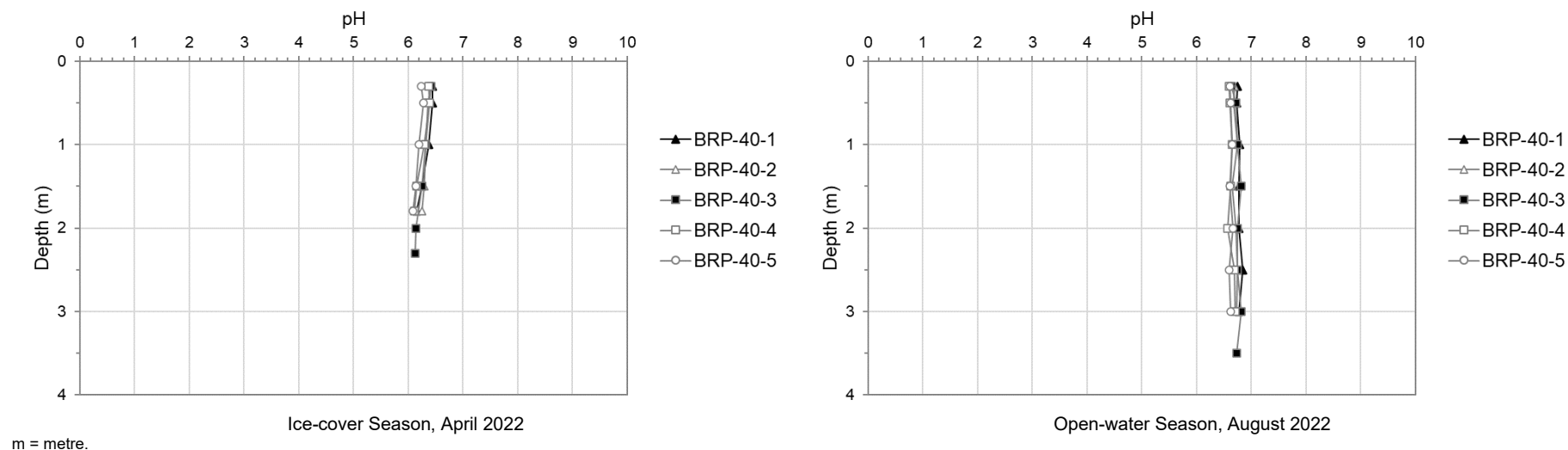
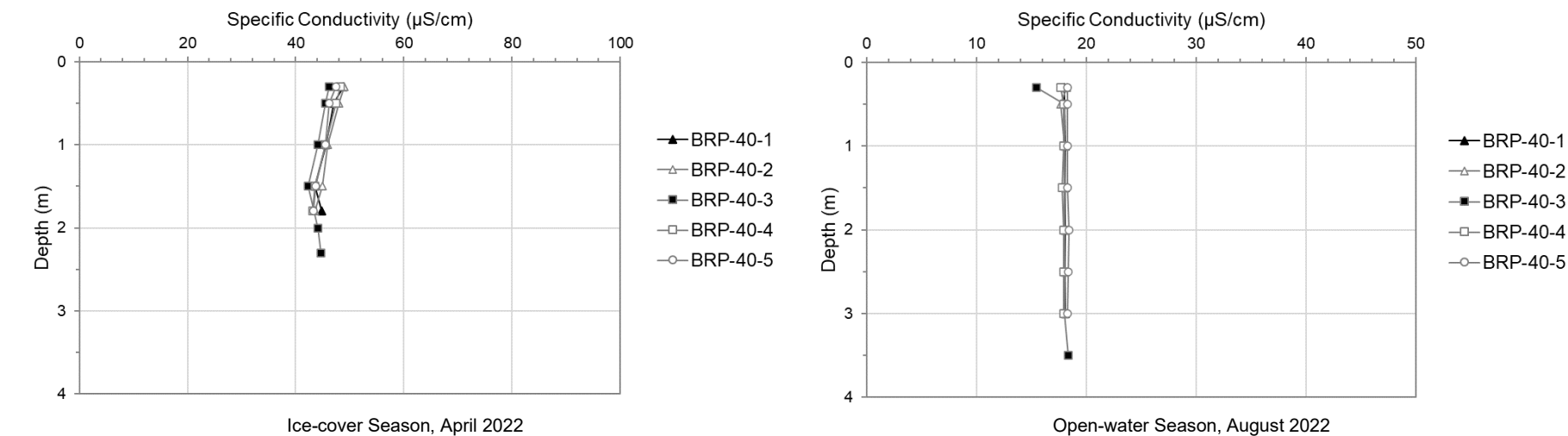
**Figure B-11: pH Profiles at Goose Lake Southeast Basin at BRP-33, 2022****Figure B-12: Specific Conductivity Profiles at Goose Lake Southeast Basin at BRP-33, 2022**

**Figure B-17: Dissolved Oxygen Profiles at Reference B Lake at BRP-40, 2022**

m = metre; mg/L = milligrams per litre.

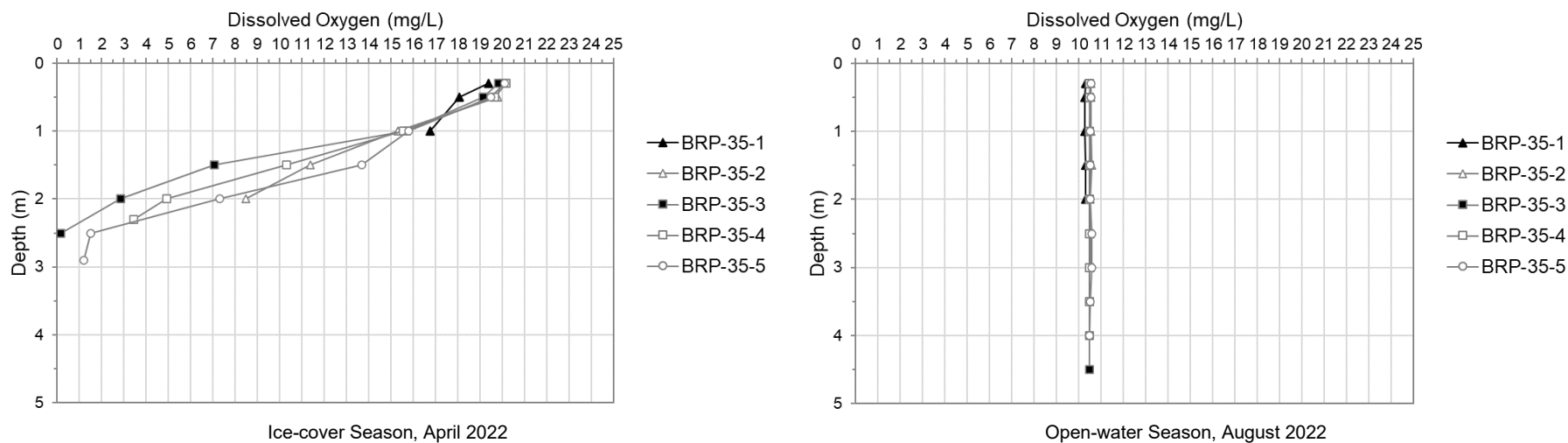
**Figure B-18: Water Temperature Profiles at Reference B Lake at BRP-40, 2022**

m = metre; °C = degree Celsius.

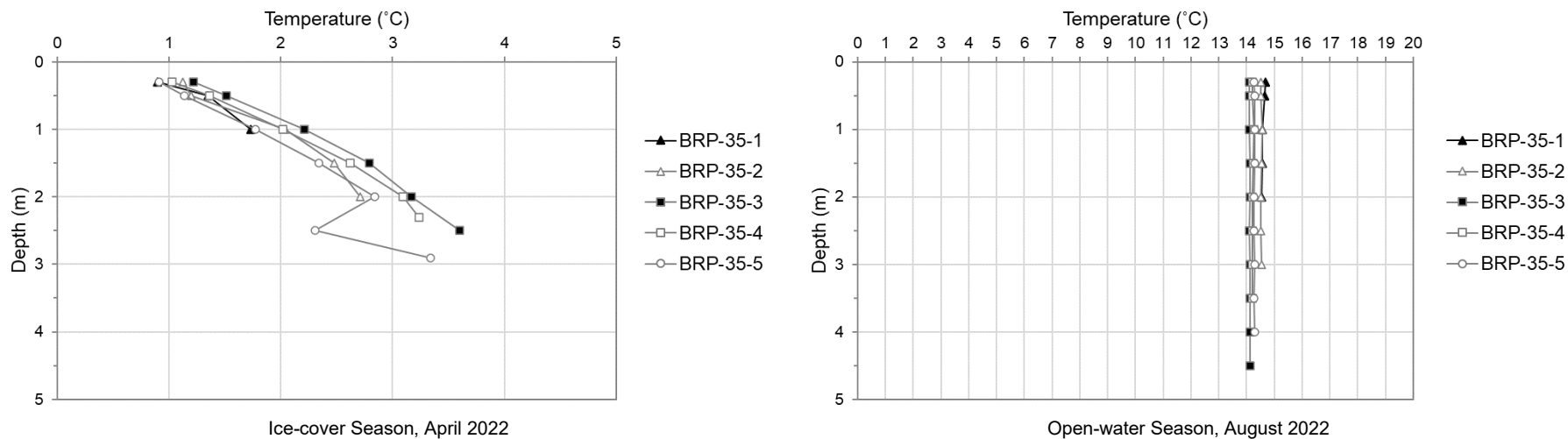
**Figure B-19: pH Profiles at Reference B Lake at BRP-40, 2022****Figure B-20: Specific Conductivity Profiles at Reference B Lake at BRP-40, 2022**

m = metre;  $\mu\text{S/cm}$  = microsiemens per centimetre.

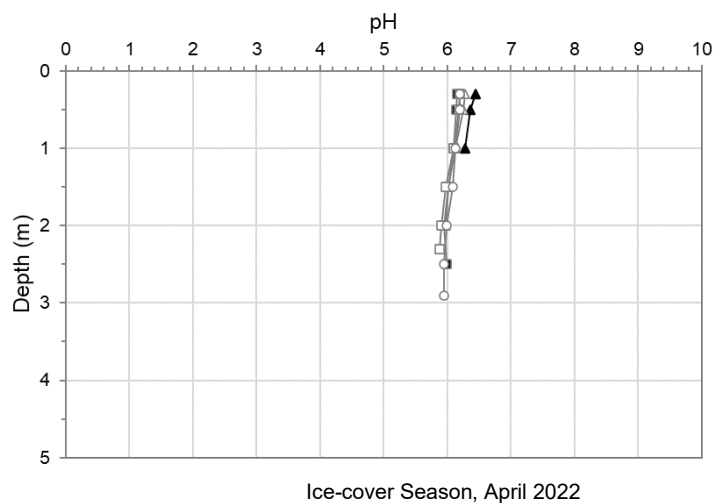


**Figure B-21: Dissolved Oxygen Profiles at Propeller Lake South Basin at BRP-35 (near centre), 2022**

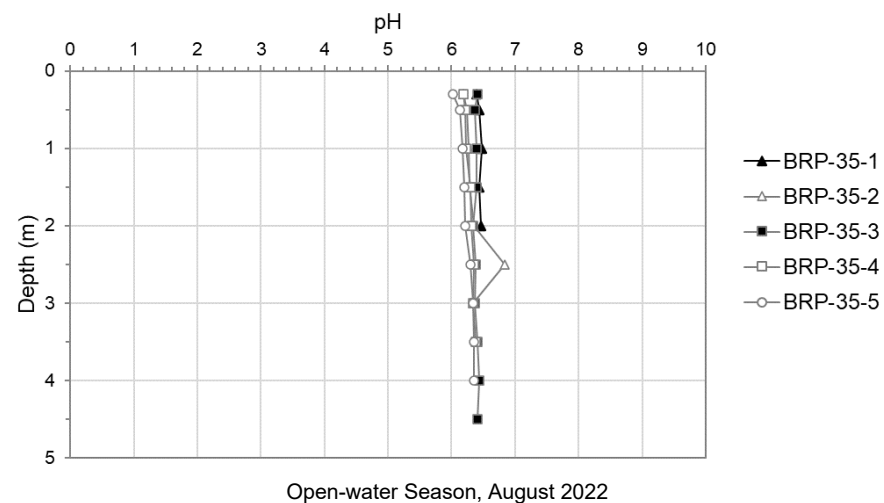
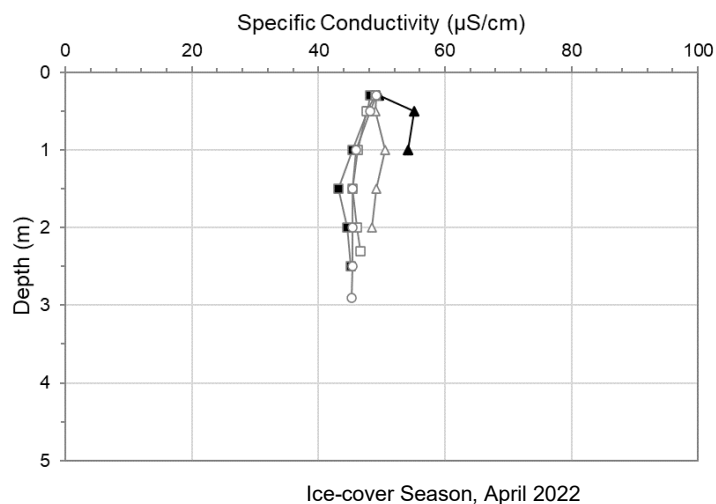
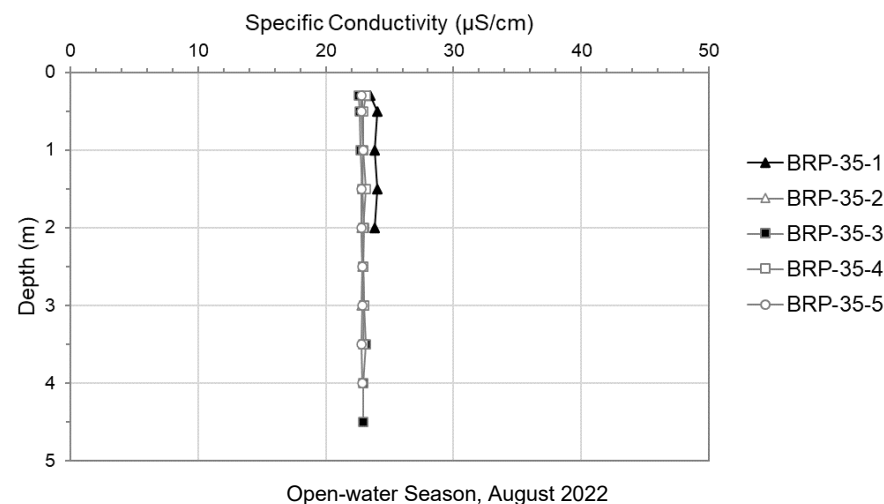
m = metre; mg/L = milligrams per litre.

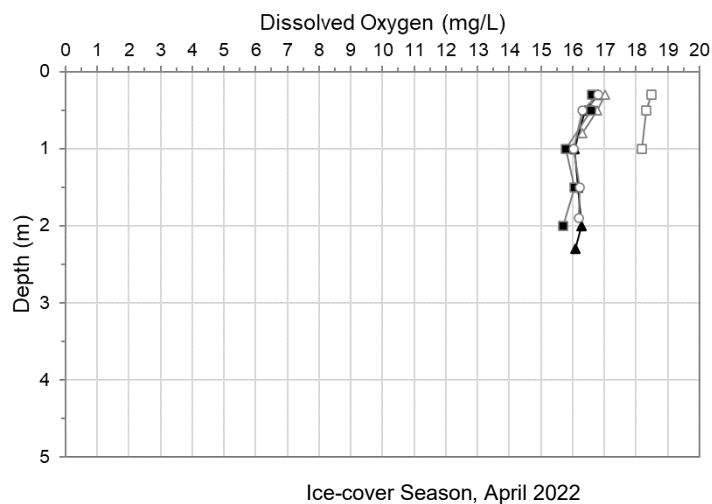
**Figure B-22: Water Temperature Profiles at Propeller Lake South Basin at BRP-35 (near centre), 2022**

m = metre; °C = degree Celsius.

**Figure B-23: pH Profiles at Propeller Lake South Basin at BRP-35 (near centre), 2022**

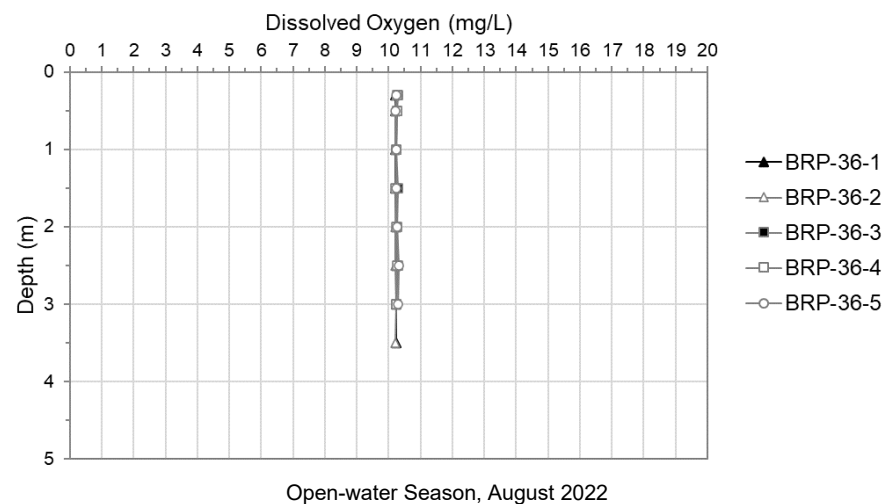
m = metre.

**Figure B-24: Specific Conductivity Profiles at Propeller Lake South Basin at BRP-35 (near centre), 2022**m = metre;  $\mu\text{S/cm}$  = microsiemens per centimetre.

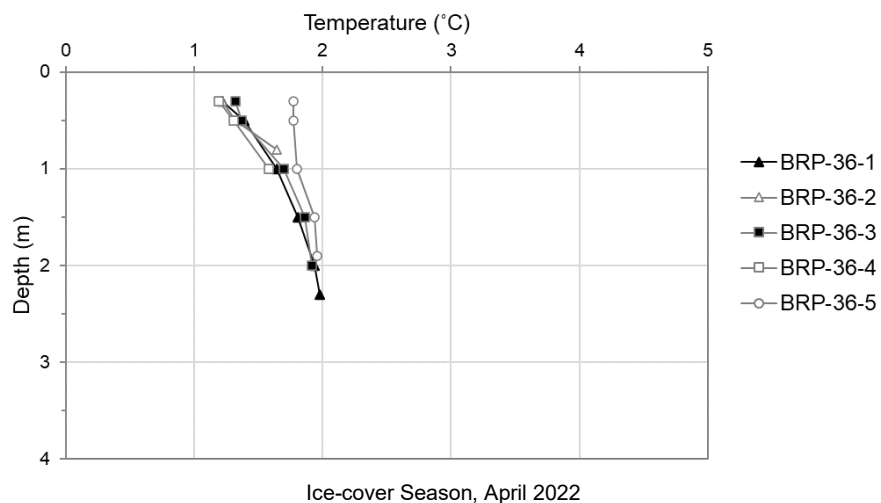
**Figure B-25: Dissolved Oxygen Profiles at Propeller Lake North Basin at BRP-36, 2022**

Ice-cover Season, April 2022

m = metre; mg/L = milligrams per litre.

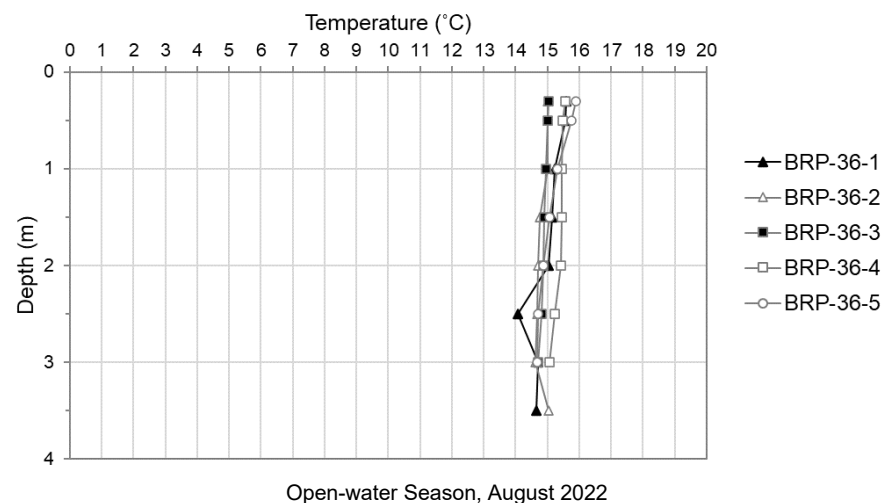


Open-water Season, August 2022

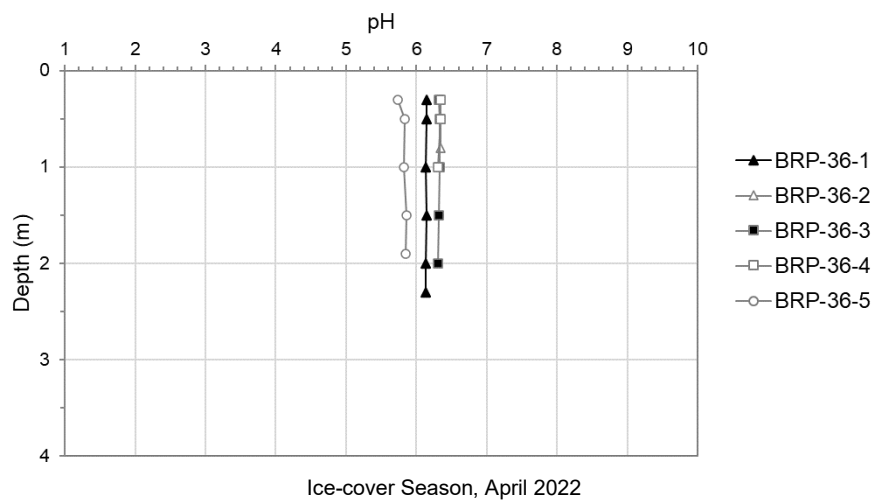
**Figure B-26: Water Temperature Profiles at Propeller Lake North Basin at BRP-36, 2022**

Ice-cover Season, April 2022

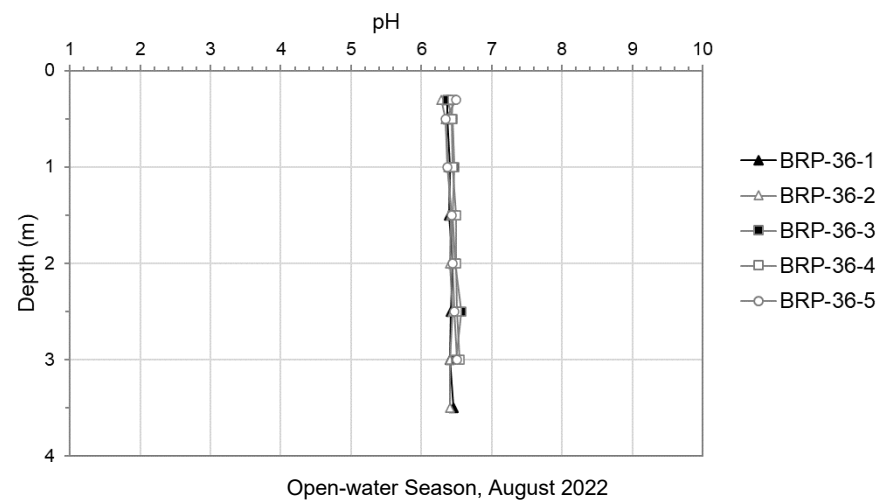
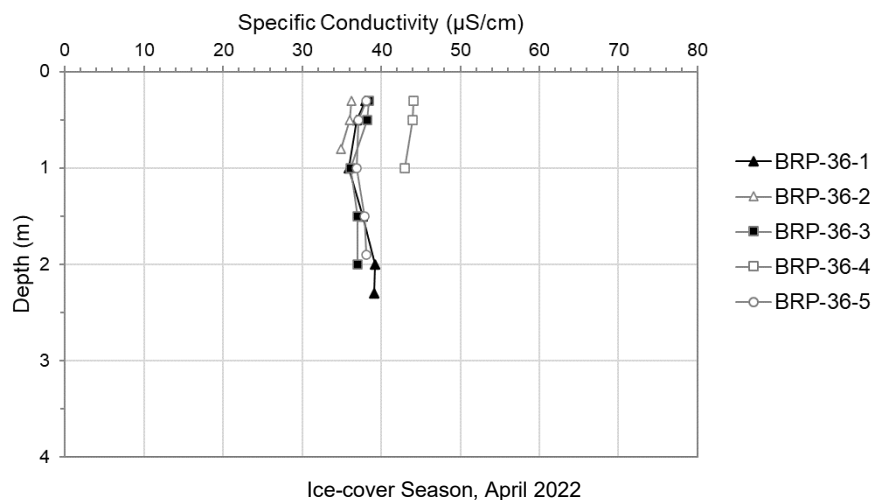
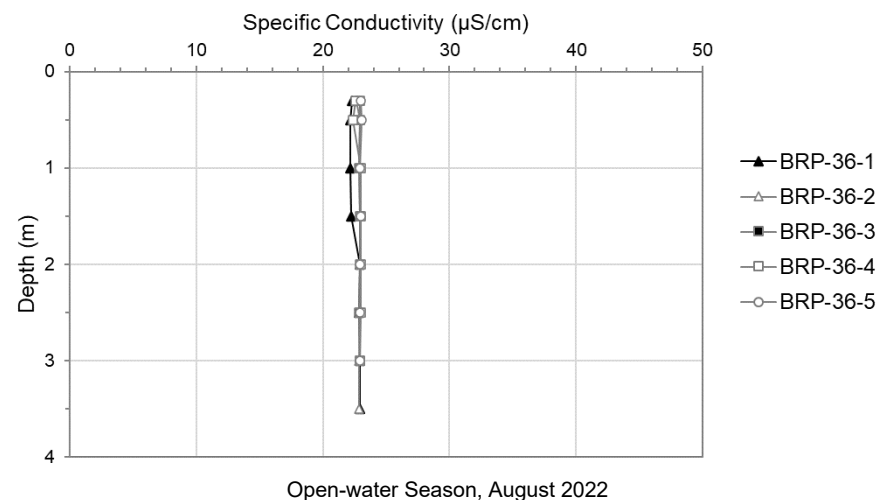
m = metre; °C = degree Celsius.



Open-water Season, August 2022

**Figure B-27: pH Profiles at Propeller Lake North Basin at BRP-36, 2022**

m = metre.

**Figure B-28: Specific Conductivity Profiles at Propeller Lake North Basin at BRP-36, 2022**m = metre;  $\mu\text{S/cm}$  = microsiemens per centimetre.

**APPENDIX C**

# 2022 Water Quality – Analytical Chemistry Results

Table C-1: Water Quality Summary at Goose Lake West Bay, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites													
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-007	YL2200337-008	YL2200337-013	YL2200337-009	YL2200337-010	YL2200337-011	YL2200337-014	YL2200337-015	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	YL2201253-006	
		Acute	Chronic			depth = 1 m	depth = 1 m	depth = 1.5 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 28 m	depth = 1 m	depth = 1.5 m	depth = 2 m	depth = 3 m	depth = 1.5 m
						BRP-29-1	BRP-29-2	BRP-29-2-BOTTOM	BRP-29-3	BRP-29-4	BRP-29-5	BRP-29-6-TOP	BRP-29-6-BOTTOM	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4	BRP-29-5	
						04-14-2022	04-14-2022	04-14-2022	04-14-2022	04-14-2022	04-14-2022	04-14-2022	04-14-2022	08-13-2022	08-13-2022	08-13-2022	08-13-2022	08-13-2022	
Field Measured																			
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.0 <sup>(C, Ae)</sup>	6.2 <sup>(C, Ae)</sup>	6.2 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.9 <sup>(Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.2 <sup>(C, Ae)</sup>	6.6 <sup>(Ae)</sup>	6.5 <sup>(Ae)</sup>	6.6 <sup>(Ae)</sup>	6.6 <sup>(Ae)</sup>	6.4 <sup>(C, Ae)</sup>	
Specific conductivity	µS/cm	-	-	-	-	69	70	68	69	65	75	68	53	40	39	40	39	39	
Temperature	°C	-	-	-	15	1.7	1.5	1.8	1.8	1.9	2.4	1.8	3.8	14	14	14	14	14	
Dissolved oxygen	mg/L	-	6.5	-	-	13	13	13	13	13	13	13	9.2	10	10	10	10	10	
Dissolved oxygen	%	-	-	-	-	97	96	92	97	96	98	96	71	103	102	102	102	101	
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	0.45	0.55	0.48	0.62	0.54	
Conventional Parameters																			
pH	-	-	6.5 - 9.0	-	7.0 - 11	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	-	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	-	-	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	
Specific conductivity	µS/cm	-	-	-	-	72	71	-	73	72	75	-	-	44	43	44	43	43	
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	29	28	-	29	29	30	-	-	16	15	16	15	16	
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	6.7	6.6	6.8	6.9	7.3	7.5	7.1	7.0	4.8	4.9	4.9	4.6	4.9	
Total dissolved solids	mg/L	-	-	-	500	46	46	51	48	47	48	47	50	43	47	45	41	44	
Total dissolved solids (calculated) <sup>(1)</sup>	mg/L	-	-	-	500	43	42	38	43	44	44	40	39	25	25	25	25	25	
Total dissolved solids (APHA 2005) <sup>(2)</sup>	mg/L	-	-	-	-	36	35	-	36	38	37	-	-	22	21	21	21	21	
Total suspended solids	mg/L	-	-	-	-	<3.0	<3.0	-	<3.0	<3.0	<3.0	-	-	<3.0	<3.0	<3.0	<3.0	<3.0	
Total organic carbon	mg/L	-	-	-	-	5.6	4.2	-	4.1	4.3	4.7	-	-	3.3	3.4	3.3	3.3	3.4	
Dissolved organic carbon	mg/L	-	-	-	-	4.7	4.7	-	4.3	4.2	4.5	-	-	3.3	3.1	3.3	3.4	3.1	
Turbidity	NTU	-	-	-	-	<0.1	<0.1	-	<0.1	0.13	0.15	-	-	0.37	0.34	0.37	0.52	0.35	
Major Ions																			
Calcium	mg/L	-	-	-	-	5.9	5.8	6.0	5.9	5.9	6.3	6.2	6.0	3.4	3.2	3.3	3.3	3.3	
Chloride	mg/L	640	120	-	250	6.3	6.1	6.4	6.4	7.5	6.6	6.8	6.5	3.8	3.7	3.8	3.7	3.7	
Cyanide (free)	mg/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	
Cyanide (wad)	mg/L	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	
Cyanide	mg/L	-	0.0050	0.2	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	
Fluoride	mg/L	-	0.12	1.5	-	0.021	0.021	-	0.021	0.022	0.021	-	-	0.025	0.024	0.024	0.025	0.025	
Magnesium	mg/L	-	-	-	-	3.4	3.3	3.1	3.4	3.4	3.5	3.2	3.0	1.8	1.7	1.8	1.7	1.8	
Potassium	mg/L	-	-	-	-	0.6	0.6	-	0.6	0.6	0.6	-	-	0.42	0.41	0.41	0.41	0.42	
Sodium	mg/L	-	-	-	200	1.1	1.1	-	1.2	1.2	1.2	-	-	0.68	0.65	0.68	0.66	0.68	
Sulphate	mg/L	-	-	-	500	14	13	14	14	14	14	14	14	7.3	7.3	7.3	7.3	7.2	
Sulphide	mg/L	-	-	-	0.05	<0.0015	<0.0015	-	<0.0015	0.0015	<0.0015	-	-	<0.0015	0.0016	0.0016	0.0016	<0.0015	
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	1.9	1.8	-	1.9	1.9	1.9	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	
Nutrients																			
Nitrate	mg-N/L	124	2.9	10	-	0.19	0.18	0.20	0.19	0.19	0.20	0.21	0.21	0.27	0.25	0.26	0.25	0.24	
Nitrite	mg-N/L	-	0.060	1	-	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-	0.0024	0.0022	0.0024	0.0023	0.0021	
Total ammonia	mg-N/L	-	15 - 165 <sup>(3)</sup>	-	-	0.022	0.021	-	0.022	0.021	0.021	-	-	0.041	0.038	0.042	0.035	0.033	
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	0.21	0.20	-	0.20	0.21	0.23	-	-	0.22	0.22	0.24	0.26	0.22	
Total phosphorus	mg-P/L	-	-	-	-	0.0031	0.0031	-	0.0032	0.0040	0.0040	-	-	-	-	-	-	0.0040	
Dissolved phosphorus	mg-P/L	-	-	-	-	0.0022	0.0019	-	0.0018	0.0014	0.0015	-	-	<0.01	<0.01	<0.01	<0.01	0.0022	
Orthophosphate	mg-P/L	-	-	-	-	<0.001	<0.001	-	0.0025	0.0013	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	
Total Metals																			
Aluminum	µg/L	-	5.0 - 100 <sup>(b, c)</sup>	2900	-	16 <sup>(c)</sup>	16 <sup>(c)</sup>	-	17 <sup>(c)</sup>	16	16 <sup>(c)</sup>	-	-	15	16	16	13	15 <sup>(c)</sup>	
Antimony	µg/L	-	-	6	-	0.015	0.050	-	0.058	0.027	0.016	-	-	0.0066	0.0076	0.0075	0.0070	0.0074	
Arsenic	µg/L	-	5.0	10	-	0.26	0.26	-	0.24	0.26	0.26	-	-	0.26	0.25	0.26	0.25	0.26	
Barium	µg/L	-	-	2,000	-	11	11	-	11	11	11	-	-	7.1	7.0	6.2	6.9	6.9	
Beryllium	µg/L	-	-	-	-	0.0039	0.0052	-	0.0046	0.0047	0.0049	-	-	0.0025	0.0020	<0.002	<0.002	0.0021	
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	-	<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001		



Table C-1: Water Quality Summary at Goose Lake West Bay, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites												
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-007	YL2200337-008	YL2200337-013	YL2200337-009	YL2200337-010	YL2200337-011	YL2200337-014	YL2200337-015	YL2201253-002	YL2201253-003	YL2201253-004	YL2201253-005	YL2201253-006
						depth = 1 m	depth = 1 m	depth = 1.5 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 28 m	depth = 1 m	depth = 1.5 m	depth = 2 m	depth = 3 m
		Acute	Chronic	BRP-29-1	BRP-29-2	BRP-29-2-BOTTOM	BRP-29-3	BRP-29-4	BRP-29-5	BRP-29-6-TOP	BRP-29-6-BOTTOM	BRP-29-1	BRP-29-2	BRP-29-3	BRP-29-4	BRP-29-5		
Molybdenum	µg/L	-	-	-	-	0.011	0.011	-	0.012	0.012	0.012	-	-	0.011	0.013	0.015	0.013	0.013
Nickel	µg/L	-	-	-	-	7.4	7.3	-	7.4	7.2	7.8	-	-	3.2	3.0	3.2	3.1	3.1
Selenium	µg/L	-	-	-	-	0.028	0.030	-	0.029	0.034	0.035	-	-	<0.025	0.027	0.025	0.025	<0.025
Silicon	µg/L	-	-	-	-	849	811	-	831	839	892	-	-	158	154	162	151	150
Silver	µg/L	-	-	-	-	<0.002	<0.002	-	<0.002	<0.002	<0.002	-	-	<0.002	0.0022	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	27	26	-	27	27	28	-	-	19	18	18	18	18
Sulphur	µg/L	-	-	-	-	4,780	4,560	-	4,490	4,460	4,780	-	-	2,340	2,350	2,360	2,360	2,360
Thallium	µg/L	-	-	-	-	0.0012	0.0010	-	0.0012	0.0012	0.0013	-	-	0.0020	0.0022	0.0032	0.0018	0.0019
Tin	µg/L	-	-	-	-	0.030	0.015	-	<0.01	<0.01	0.014	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	<0.05	<0.05	-	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	-	-	-	-	0.0090	0.0090	-	0.0085	0.0072	0.0078	-	-	0.0055	0.0066	0.0058	0.0072	0.0077
Vanadium	µg/L	-	-	-	-	0.023	0.025	-	0.024	0.022	0.026	-	-	0.026	0.027	0.029	0.026	0.028
Zinc	µg/L	21 - 42 <sup>(a)</sup>	15 - 23 <sup>(b)</sup>	-	-	3.3	3.4	-	3.7	2.7	3.8	-	-	0.78	0.74	1.3	0.89	1.2
Zirconium	µg/L	-	-	-	-	0.067	0.069	-	0.066	0.061	0.073	-	-	0.023	0.025	0.027	0.024	0.022
Radionuclides																		
Radium-226	Bq/l	-	-	0.5	-	-	-	-	-	-	-	-	-	<0.005	0.0080	<0.005	<0.005	<0.005

**Notes:**

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (15.19 mg-N/L) is based on the combination of field pH (6.6) and water temperature (14.3°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.0 to 6.9). The guideline is calculated based on the individual pH for each sample.

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (15 to 30 mg/L). The guideline is calculated based on the individual hardness value for each sample.

<sup>(e)</sup> = guideline is for chromium VI.

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.4), and hardness (15.5 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (21.5 µg/L) is based on the combination of hardness (15.2 mg/L) and DOC (3.1 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (14.9 µg/L) is based on the combination of field pH (6.6), hardness (15.8 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.4), and hardness (15.5 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (21.5 µg/L) is based on the combination of hardness (15.2 mg/L) and DOC (3.1 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (14.9 µg/L) is based on the combination of field pH (6.6), hardness (15.8 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 2.709 \* Si<sup>4+</sup>, 3.284 \* NO<sub>2</sub><sup>-</sup> (as nitrogen), 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 1.288 \* NH<sub>4</sub><sup>+</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCO<sub>3</sub>), Al<sup>3+</sup>, Cu<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup>, Zn<sup>2+</sup>, dissolved organic carbon).

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCO<sub>3</sub>)).

<sup>(n)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(A<sup>60</sup>)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

**Bolded** concentrations are higher than water quality guidelines

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision<sup>after</sup> comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:

CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.

Health Canada (HC), 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.

Table C-2: Water Quality Summary at Goose Lake Central Basin, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites										
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-006	YL2200334-004	YL2200334-005	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005
		Acute	Chronic			depth = 1 m	depth = 1 m	depth = 1 m	depth = 2.1 m	depth = 1 m	depth = 1 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m
						BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-3-BOTTOM	BRP-32-4	BRP-32-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
Field Measured																
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	5.5 <sup>(C, Ae)</sup>	5.9 <sup>(C, Ae)</sup>	6.0 <sup>(C, Ae)</sup>	6.0 <sup>(C, Ae)</sup>	6.0 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.5 <sup>(Ae)</sup>	6.7 <sup>(Ae)</sup>	6.7 <sup>(Ae)</sup>	6.6 <sup>(Ae)</sup>	6.6 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	45	46	43	43	45	41	31	31	31	31	31
Temperature	°C	-	-	-	15	6.2	6.4	6.4	7.2	7.0	7.3	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>
Dissolved oxygen	mg/L	-	6.5	-	-	14	14	13	12	13	12	10	10	10	10	10
Dissolved oxygen	%	-	-	-	-	114	115	111	103	106	104	105	105	105	105	104
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	0.43	0.45	0.42	0.44	0.45
Conventional Parameters																
pH	-	-	6.5 - 9.0	-	7.0 - 11	7.0	7.1	7.0	-	7.0	7.1	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	53	57	54	-	55	52	34	34	34	34	34
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	22	24	22	-	24	21	12	12	12	12	12
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	7.4	19	8.2	7.7	8.8	8.9	4.4	5.0	4.7	4.8	4.8
Total dissolved solids	mg/L	-	-	-	500	42	42	40	39	39	38	24	27	22	26	25
Total dissolved solids (calculated) <sup>(f)</sup>	mg/L	-	-	-	500	33	42	35	29	36	34	20	20	20	20	20
Total dissolved solids (APHA 2005) <sup>(m)</sup>	mg/L	-	-	-	-	28	35	28	26	30	28	16	16	16	16	17
Total suspended solids	mg/L	-	-	-	-	<3.0	<3.0	<3.0	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	4.0
Total organic carbon	mg/L	-	-	-	-	4.6	5.1	5.1	-	5.2	4.7	3.2	3.2	3.6	3.7	3.4
Dissolved organic carbon	mg/L	-	-	-	-	4.8	5.3	5.7	-	5.1	4.9	3.2	3.3	3.5	3.4	3.6
Turbidity	NTU	-	-	-	-	0.12	0.17	0.15	-	0.36	0.12	0.26	0.26	0.26	0.28	0.30
Major Ions																
Calcium	mg/L	-	-	-	-	4.2	4.5	4.0	4.3	4.6	4.1	2.3	2.3	2.4	2.4	2.4
Chloride	mg/L	640	120	-	250	2.8	3.0	2.9	2.9	3.1	2.8	2.0	2.0	2.0	2.0	2.0
Cyanide (free)	mg/L	-	-	-	-	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005
Cyanide (wad)	mg/L	-	-	-	-	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.02	<0.005	<0.005	<0.005
Cyanide	mg/L	-	0.0050	0.2	-	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.02 <sup>(DL&gt;C)</sup>	<0.005	<0.005	<0.005
Fluoride	mg/L	-	0.12	1.5	-	0.027	0.028	0.029	-	0.028	0.027	0.024	0.024	0.024	0.023	0.024
Magnesium	mg/L	-	-	-	-	2.9	3.1	2.8	2.8	3.0	2.7	1.5	1.5	1.5	1.5	1.5
Potassium	mg/L	-	-	-	-	0.6	0.6	0.5	-	0.6	0.5	0.33	0.34	0.35	0.35	0.35
Sodium	mg/L	-	-	-	200	1.0	1.0	1.0	-	1.0	0.9	0.58	0.60	0.59	0.61	0.60
Sulphate	mg/L	-	-	-	500	12	12	12	12	12	11	6.8	6.7	6.7	6.7	6.8
Sulphide	mg/L	-	-	-	0.05	0.0017	<0.0015	<0.0015	-	<0.0015	0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	0.70	0.75	0.71	-	0.72	0.70	<0.5	<0.5	<0.5	<0.5	<0.5
Nutrients																
Nitrate	mg-N/L	124	2.9	10	-	0.020	0.020	0.020	0.019	0.028	0.019	0.011	<0.005	<0.005	<0.005	0.0063
Nitrite	mg-N/L	-	0.060	1	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	-	11 - 360 <sup>(a)</sup>	-	-	0.019	0.020	0.019	-	0.017	0.019	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	0.25	0.24	0.23	-	0.24	0.24	<0.2	<0.2	<0.2	<0.2	<0.2
Total phosphorus	mg-P/L	-	-	-	-	0.0037	0.0039	0.0035	-	0.0032	0.0037	0.0056	0.0033	0.0060	0.0018	0.0031
Dissolved phosphorus	mg-P/L	-	-	-	-	0.0015	0.0022	0.0018	-	0.0010	0.0015	0.0071	0.0031	0.0017	0.0040	0.0020
Orthophosphate	mg-P/L	-	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001
Total Metals																
Aluminum	µg/L	-	5.0 - 100 <sup>(b, c)</sup>	2900	-	11 <sup>(c)</sup>	11 <sup>(c)</sup>	10 <sup>(c)</sup>	-	11 <sup>(c)</sup>	9.8 <sup>(c)</sup>	9.7	9.2	9.8	10	9.4
Antimony	µg/L	-	-	6	-	0.027	0.026	0.020	-	0.014	0.020	0.0067	0.0064	0.0066	0.0069	0.0066
Arsenic	µg/L	-	5.0	10	-	0.28	0.27	0.27	-	0.26	0.26	0.21	0.19	0.21	0.20	0.21
Barium	µg/L	-	-	2,000	-	7.9	7.8	7.8	-	8.6	7.4	4.7	4.5	4.6	4.7	4.7
Beryllium	µg/L	-	-	-	-	0.0026	<0.002	0.0020	-	0.0021	0.0028	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	5,000	-	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	0.24 - 0.49 <sup>(d)</sup>	0.040 - 0.048 <sup>(d)</sup>	7	-	0.0068	0.0060	0.0054	-	0.0068	0.0072	0.0038	0.0031	<0.0025	0.0038	0.0030
Calcium	µg/L	-	-	-	-	4,130	4,210	4,140	-	4,300	3,900	2,400	2,380	2,400	2,400	2,340
Chromium	µg/L	-	1.0 <sup>(e)</sup>	50 <sup>(e)</sup>	-	0.098	0.095	0.088	-	0.093	0.091	0.057	0.050	0.053	0.051	0.051
Cobalt	µg/L	-	-	-	-	0.074	0.086	0.068	-	0.085	0.070	0.096	0.092	0.092	0.091	0.089
Copper	µg/L	-	2.0 <sup>(d)</sup>	2,000	1,000	2.1 <sup>(c)</sup>	2.1 <sup>(c)</sup>	2.0 <sup>(c)</sup>	-	2.1 <sup>(c)</sup>	2.0	1.3	1.3	1.3	1.3	1.3
Iron	µg/L	-	300	-	300	8.7	9.6	7.9	-	11	7.8	29	26	28	28	28
Lanthanum	µg/L	-	-	-	-	0.15	0.15	0.15	-	0.16	0.14	0.087	0.082	0.088	0.086	0.087
Lead	µg/L	-	1.0 <sup>(d)</sup>	5												

Table C-2: Water Quality Summary at Goose Lake Central Basin, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites										
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200334-001	YL2200334-002	YL2200334-003	YL2200334-006	YL2200334-004	YL2200334-005	YL2201252-001	YL2201252-002	YL2201252-003	YL2201252-004	YL2201252-005
		Acute	Chronic			depth = 1 m	depth = 1 m	depth = 1 m	depth = 2.1 m	depth = 1 m	depth = 1 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m
						BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-3-BOTTOM	BRP-32-4	BRP-32-5	BRP-32-1	BRP-32-2	BRP-32-3	BRP-32-4	BRP-32-5
						04-10-2022	04-10-2022	04-10-2022	04-10-2022	04-10-2022	04-10-2022	08-09-2022	08-09-2022	08-09-2022	08-09-2022	08-09-2022
Barium	µg/L	-	-	-	-	7.9	8.0	7.7	-	8.9	7.4	4.4	4.6	4.7	4.6	4.6
Beryllium	µg/L	-	-	-	-	0.0024	0.0036	0.0032	-	0.0028	0.0022	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	0.0069	0.0066	0.0065	-	0.0043	0.0074	0.0026	0.0032	0.0032	0.0029	0.0031
Chromium	µg/L	-	-	-	-	0.092	0.097	0.087	-	0.096	0.091	0.047	0.047	0.048	0.052	0.045
Cobalt	µg/L	-	-	-	-	0.053	0.056	0.047	-	0.059	0.049	0.056	0.055	0.057	0.052	0.052
Copper	µg/L	-	-	-	-	2.1	2.2	2.0	-	2.2	2.0	1.2	1.3	1.3	1.3	1.3
Iron	µg/L	-	-	-	-	4.0	4.5	3.9	-	5.1	4.2	9.1	9.7	9.7	9.7	9.7
Lead	µg/L	-	-	-	-	0.15	0.11	0.012	-	0.040	0.033	<0.005	0.0054	<0.005	<0.005	<0.005
Lithium	µg/L	-	-	-	-	0.98	0.98	0.94	-	1.0	0.92	0.67	0.67	0.66	0.68	0.67
Manganese	µg/L	1,012 - 1,894 <sup>(d)</sup>	190 - 230 <sup>(i)</sup>	-	-	0.92	0.96	0.78	-	1.2	0.84	1.3	1.4	1.4	1.4	1.3
Mercury	µg/L	-	-	-	-	0.0013	0.00099	0.00062	-	0.00057	0.00055	0.00054	0.00072	0.00069	0.00086	0.0010
Molybdenum	µg/L	-	-	-	-	0.017	0.014	0.013	-	0.015	0.015	0.011	<0.01	0.011	0.011	0.010
Nickel	µg/L	-	-	-	-	5.7	6.0	5.4	-	6.2	5.5	2.6	2.7	2.7	2.6	2.7
Selenium	µg/L	-	-	-	-	0.034	0.030	0.032	-	0.034	0.030	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	-	-	-	-	346	349	337	-	355	326	68	70	69	70	68
Silver	µg/L	-	-	-	-	<0.002	<0.002	<0.002	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	19	20	18	-	20	18	11	11	11	11	11
Sulphur	µg/L	-	-	-	-	3,970	4,060	3,800	-	4,200	3,720	2,250	2,200	2,170	2,220	2,160
Thallium	µg/L	-	-	-	-	0.0012	0.0013	0.0010	-	<0.001	<0.001	0.0017	0.0016	0.0019	0.0019	0.0017
Tin	µg/L	-	-	-	-	0.014	<0.01	<0.01	-	0.060	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	-	-	-	-	0.0077	0.0076	0.0069	-	0.0087	0.0080	0.0047	0.0052	0.0047	0.0044	0.0045
Vanadium	µg/L	-	-	-	-	0.026	0.026	0.024	-	0.025	0.024	0.020	0.023	0.020	0.021	0.022
Zinc	µg/L	20 - 35 <sup>(j)</sup>	14 - 20 <sup>(k)</sup>	-	-	1.5	1.6	1.2	-	1.9	1.8	0.72	0.63	0.53	0.58	0.41
Zirconium	µg/L	-	-	-	-	0.048	0.049	0.044	-	0.049	0.049	0.022	0.023	0.022	0.021	0.021
Radionuclides																
Radium-226	Bq/l	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	-

**Notes:**

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (11.36 mg-N/L) is based on the combination of field pH (6.7) and water temperature (15.1°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (5.5 to 6.7). The guideline is calculated based on the individual pH for each sample.

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH ≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (12 to 24 mg/L). The guideline is calculated based on the individual hardness value for each sample.

<sup>(e)</sup> = guideline is for chromium VI.

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (190.0 µg/L) is based on the combination of field pH (5.5), and hardness (22.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.9 µg/L) is based on the combination of hardness (11.7 mg/L) and DOC (3.2 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (13.9 µg/L) is based on the combination of field pH (6.7), hardness (12.0 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (190.0 µg/L) is based on the combination of field pH (5.5), and hardness (22.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.9 µg/L) is based on the combination of hardness (11.7 mg/L) and DOC (3.2 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (13.9 µg/L) is based on the combination of field pH (6.7), hardness (12.0 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula TDS mg/L = Σ[Nā, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 2.709 \* Si<sup>4-</sup>, 3.284 \* NO<sub>2</sub><sup>-</sup> (as nitrogen), 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 1.288 \* NH<sub>4</sub><sup>+</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCQ), Al<sup>3+</sup>, Cu<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup>, Zn<sup>2+</sup>, dissolved organic carbon).

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (TDS mg/L = Σ[Nā, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCQ)).

<sup>(C)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(Ae)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

**Bolded** concentrations are higher than water quality guidelines

Grey highlighted data are considered irregular and not representative of the sampling area (Appendix A; Section 4.1.1)

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances. = no guideline or no data; B = near bottom, T = near top.

Sources:  
CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.  
Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.  
APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.

Table C-3: Water Quality Summary at Goose Lake Southeast Basin, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites						
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-017	YL2200337-016	YL2201253-001	YL2201252-011	YL2201252-010	YL2201252-009	YL2201252-008
		Acute	Chronic			depth = 1 m	depth = 1.3 m	depth = 1.5 m	depth = 2.5 m	depth = 1.5 m	depth = 2 m	depth = 2.5 m
						BRP-33-3-BOTTOM 04-14-2022	BRP-33-3-TOP 04-14-2022	BRP-33-1 08-13-2022	BRP-33-2 08-10-2022	BRP-33-3 08-10-2022	BRP-33-4 08-10-2022	BRP-33-5 08-10-2022
Field Measured												
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.2 <sup>(C, Ae)</sup>	6.2 <sup>(C, Ae)</sup>	6.6 <sup>(Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.5 <sup>(Ae)</sup>	6.4 <sup>(C, Ae)</sup>	6.6 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	66	67	31	30	31	31	31
Temperature	°C	-	-	-	15	2.2	1.9	15	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>	15 <sup>(Ae)</sup>
Dissolved oxygen	mg/L	-	6.5	-	-	15	16	10	10	10	10	10
Dissolved oxygen	%	-	-	-	-	113	116	105	105	105	104	104
Turbidity	NTU	-	-	-	-	-	-	0.49	0.45	0.44	0.44	0.40
Conventional Parameters												
pH	-	-	6.5 - 9.0	-	7.0 - 11	-	-	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	-	-	34	34	34	34	34
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	-	-	12	12	12	12	12
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	9.7	10	4.8	4.9	5.1	4.4	4.9
Total dissolved solids	mg/L	-	-	-	500	48	49	37	27	24	26	23
Total dissolved solids (calculated) <sup>(i)</sup>	mg/L	-	-	-	500	39	40	21	20	20	20	20
Total dissolved solids (APHA 2005) <sup>(m)</sup>	mg/L	-	-	-	-	36	37	16	16	17	16	16
Total suspended solids	mg/L	-	-	-	-	-	-	<3.0	3.0	<3.0	3.0	3.4
Total organic carbon	mg/L	-	-	-	-	-	-	3.6	3.4	3.4	3.5	3.7
Dissolved organic carbon	mg/L	-	-	-	-	-	-	3.9	3.6	3.3	3.2	3.3
Turbidity	NTU	-	-	-	-	-	-	0.38	0.27	0.32	0.41	0.27
Major Ions												
Calcium	mg/L	-	-	-	-	5.5	5.8	2.3	2.4	2.4	2.4	2.4
Chloride	mg/L	640	120	-	250	5.1	5.0	2.1	2.0	2.0	2.0	2.0
Cyanide (free)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (wad)	mg/L	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide	mg/L	-	0.0050	0.2	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	-	0.12	1.5	-	-	-	0.024	0.023	0.024	0.024	0.024
Magnesium	mg/L	-	-	-	-	3.4	3.5	1.5	1.5	1.5	1.5	1.5
Potassium	mg/L	-	-	-	-	-	-	0.34	0.34	0.34	0.35	0.34
Sodium	mg/L	-	-	-	200	-	-	0.58	0.58	0.59	0.61	0.58
Sulphate	mg/L	-	-	-	500	16	16	6.8	6.7	6.7	6.7	6.7
Sulphide	mg/L	-	-	-	0.05	-	-	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
Nutrients												
Nitrate	mg-N/L	124	2.9	10	-	0.056	0.058	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite	mg-N/L	-	0.060	1	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	-	14 - 102 <sup>(a)</sup>	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	0.20
Total phosphorus	mg-P/L	-	-	-	-	-	-	-	0.0031	0.0029	0.0026	0.0031
Dissolved phosphorus	mg-P/L	-	-	-	-	-	-	<0.01	0.0025	0.0024	0.0024	0.0017
Orthophosphate	mg-P/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001
Total Metals												
Aluminum	µg/L	-	5.0 - 100 <sup>(b, c)</sup>	2900	-	-	-	9.9	11 <sup>(C)</sup>	9.7	9.9 <sup>(C)</sup>	9.9
Antimony	µg/L	-	-	6	-	-	-	0.0071	0.0059	0.0067	0.0072	0.0069
Arsenic	µg/L	-	5.0	10	-	-	-	0.21	0.20	0.20	0.19	0.20
Barium	µg/L	-	-	2,000	-	-	-	4.7	4.7	4.7	4.8	4.6
Beryllium	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	5,000	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	0.24 - 0.25 <sup>(d)</sup>	0.040 <sup>(d)</sup>	7	-	-	-	0.0041	<0.0025	0.0037	<0.0025	0.0037
Calcium	µg/L	-	-	-	-	-	-	2,450	2,380	2,390	2,400	2,400
Chromium	µg/L	-	1.0 <sup>(e)</sup>	50 <sup>(b)</sup>	-	-	-	0.057	0.053	0.052	0.050	0.050
Cobalt	µg/L	-	-	-	-	-	-	0.11	0.094	0.093	0.093	0.095
Copper	µg/L	-	2.0 <sup>(d)</sup>	2,000	1,000	-	-	1.3	1.3	1.3	1.3	1.3
Iron	µg/L	-	300	-	300	-	-	36	30	29	29	29
Lanthanum	µg/L	-	-	-	-	-	-	0.091	0.088	0.088	0.087	0.087
Lead	µg/L	-	1.0 <sup>(d)</sup>	5	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	-	-	-	-	-	-	0.65	0.70	0.71	0.70	0.70
Magnesium	µg/L	-	-	-	-	-	-	1,570	1,490	1,500	1,500	1,520
Manganese	µg/L	1,027 - 1,042 <sup>(d)</sup>	200 - 210 <sup>(f)</sup>	120	20	-	-	2.9	2.7	2.7	2.7	2.7
Mercury	µg/L	-	0.026	1	-	-	-	0.00099	0.00086	0.00073	0.00093	0.0011
Molybdenum	µg/L	-	73	-	-	-	-	0.012	0.011	0.010	0.011	<0.01
Nickel	µg/L	-	25 <sup>(d)</sup>	-	-	-	-	2.6	2.6	2.6	2.6	2.6
Selenium	µg/L	-	1.0	50	-	-	-	0.026	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	-	-	-	-	-	-	71	73	73	74	74
Silver	µg/L	-	0.25	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	7,000	-	-	-	11	11	11	11	11
Sulphur	µg/L	-	-	-	-	-	-	2,150	2,210	2,260	2,190	2,230
Thallium	µg/L	-	0.80	-	-	-	-	0.0016	0.0016	0.0016	0.0016	0.0013
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	0.078	<0.05	<0.05	0.059	0.062
Uranium	µg/L	33	15	20	-	-	-	0.0056	0.0058	0.0054	0.0049	0.0056
Vanadium	µg/L	-	-	-	-	-	-	0.033	0.030	0.027	0.028	0.028
Zinc	µg/L	20 - 21 <sup>(g)</sup>	15 - 17 <sup>(h)</sup>	-	5,000	-	-	0.34	0.89	0.52	0.53	0.82
Zirconium	µg/L	-	-	-	-	-	-	0.020	0.024	0.022	0.021	0.022
Dissolved Metals												
Aluminum	µg/L	-	-	-	-	-	-	5.3	6.3	6.5	6.6	6.4
Antimony	µg/L	-	-	-	-	-	-	0.0083	0.0086	0.0084	0.012	0.0084
Arsenic	µg/L	-	-	-	-	-	-	0.20	0.20	0.20	0.20	0.20
Barium	µg/L	-	-	-	-	-	-	4.7	4.6	4.7	4.5	4.6

Table C-3: Water Quality Summary at Goose Lake Southeast Basin, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites						
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-017	YL2200337-016	YL2201253-001	YL2201252-011	YL2201252-010	YL2201252-009	YL2201252-008
		Acute	Chronic			depth = 1 m	depth = 1.3 m	depth = 1.5 m	depth = 2.5 m	depth = 1.5 m	depth = 2 m	depth = 2.5 m
						BRP-33-3-BOTTOM 04-14-2022	BRP-33-3-TOP 04-14-2022	BRP-33-1 08-13-2022	BRP-33-2 08-10-2022	BRP-33-3 08-10-2022	BRP-33-4 08-10-2022	BRP-33-5 08-10-2022
Beryllium	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	-	-	0.0028	<0.0025	<0.0025	0.0033	0.0037
Chromium	µg/L	-	-	-	-	-	-	0.043	0.049	0.050	0.050	0.045
Cobalt	µg/L	-	-	-	-	-	-	0.067	0.063	0.053	0.061	0.054
Copper	µg/L	-	-	-	-	-	-	1.2	1.2	1.3	1.3	1.3
Iron	µg/L	-	-	-	-	-	-	10	9.9	9.8	10	9.9
Lead	µg/L	-	-	-	-	-	-	<0.005	<0.005	0.0055	0.0057	<0.005
Lithium	µg/L	-	-	-	-	-	-	0.65	0.68	0.68	0.66	0.70
Manganese	µg/L	1,027 - 1,042 <sup>(d)</sup>	200 - 210 <sup>(i)</sup>	-	-	-	-	1.6	1.4	1.4	1.4	1.4
Mercury	µg/L	-	-	-	-	-	-	0.00061	0.00060	0.00056	0.00096	0.00064
Molybdenum	µg/L	-	-	-	-	-	-	0.011	0.010	0.011	0.012	<0.01
Nickel	µg/L	-	-	-	-	-	-	2.5	2.6	2.6	2.7	2.6
Selenium	µg/L	-	-	-	-	-	-	<0.025	0.026	<0.025	<0.025	<0.025
Silicon	µg/L	-	-	-	-	-	-	69	70	70	67	68
Silver	µg/L	-	-	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	-	-	11	11	11	11	11
Sulphur	µg/L	-	-	-	-	-	-	2,190	2,260	2,220	2,190	2,190
Thallium	µg/L	-	-	-	-	-	-	0.0020	0.0026	0.0019	0.0024	0.0027
Tin	µg/L	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	-	-	-	-	-	-	0.0059	0.0041	0.0041	0.0063	0.0050
Vanadium	µg/L	-	-	-	-	-	-	0.023	0.023	0.022	0.022	0.022
Zinc	µg/L	20 - 21 <sup>(j)</sup>	15 - 17 <sup>(k)</sup>	-	-	-	-	0.46	0.81	0.65	0.65	0.75
Zirconium	µg/L	-	-	-	-	-	-	0.021	0.022	0.022	0.022	0.021
Radionuclides												
Radium-226	Bq/l	-	-	0.5	-	-	-	<0.005	-	-	-	-

Notes:

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (14.19 mg-N/L) is based on the combination of field pH (6.6) and water temperature (15.2°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.2 to 6.6). The guideline is calculated based on the individual pH for each sample.

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH ≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (12 to 12 mg/L). The guideline is calculated based on the individual hardness value for each sample.

<sup>(e)</sup> = guideline is for chromium VI.

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.2), and hardness (12.0 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (20.0 µg/L) is based on the combination of hardness (12.1 mg/L) and DOC (3.2 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (15.0 µg/L) is based on the combination of field pH (6.6), hardness (12.1 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.2), and hardness (12.0 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (20.0 µg/L) is based on the combination of hardness (12.1 mg/L) and DOC (3.2 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (15.0 µg/L) is based on the combination of field pH (6.6), hardness (12.1 mg/L) and DOC (3.3 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula  $TDS\text{ mg/L} = \Sigma[Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 2.709 * Si^{+4}, 3.284 * NO_2^- (\text{as nitrogen}), 4.42 * NO_3^- (\text{as nitrogen}), 1.288 * NH_4^+ (\text{as nitrogen}), 0.6 * \text{total alkalinity (as CaCO}_3), Al^{3+}, Cu^{2+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, \text{dissolved organic carbon})]$ .

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005 ( $TDS\text{ mg/L} = \Sigma[Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 4.42 * NO_3^- (\text{as nitrogen}), 0.6 * \text{total alkalinity (as CaCO}_3)]$ ).

<sup>(C)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(Ae)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

**Bolded** concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:

CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.

Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.

**Table C-4: Water Quality Summary at Goose Lake Tail, 2022**

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites	
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2021)	Aesthetic (HC 2021)	YL2200334-019	YL2200334-020
		Acute	Chronic			depth = 1.0 m	depth = 2.5 m
						GLTL-TOP	GLTL-BOTTOM
						04-12-2022	04-12-2022
Field Measured							
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.2 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	57	61
Temperature	°C	-	-	-	15	3.3	4.1
Dissolved oxygen	mg/L	-	6.5	-	-	10	7.7
Dissolved oxygen	%	-	-	-	-	77	60
Conventional Parameters							
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	9.9	9.0
Total dissolved solids	mg/L	-	-	-	500	38	44
Total dissolved solids (calculated) <sup>(a)</sup>	mg/L	-	-	-	500	33	33
Major Ions							
Calcium	mg/L	-	-	-	-	4.9	5.0
Chloride	mg/L	640	120	-	250	3.3	3.4
Magnesium	mg/L	-	-	-	-	3.2	3.4
Potassium	mg/L	-	-	-	-	-	-
Sodium	mg/L	-	-	-	200	-	-
Sulphate	mg/L	-	-	-	500	13	13
Nutrients							
Nitrate	mq-N/L	124	2.9	10	-	0.013	0.016

**Notes:**

<sup>(a)</sup> = total dissolved solids calculated by ALS using the formula  $TDS\text{ mg/L} = \Sigma[Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 2.709 * Si^{+4}, 3.284 * NO_2^- \text{ (as nitrogen)}, 4.42 * NO_3^- \text{ (as nitrogen)}, 1.288 * NH_4^+ \text{ (as nitrogen)}, 0.6 * \text{total alkalinity (as CaCO}_3\text{)}, Al^{3+}, Cu^{2+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, \text{dissolved organic carbon})]$ .

<sup>(C)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(Ae)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

**Bolded** concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision *after* comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:

CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.

Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.



Table C-5: Water Quality Summary at Propeller Lake, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites																					
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010	YL2200334-011	YL2200334-013	YL2200334-014	YL2200334-015	YL2200334-016	YL2200334-017	YL2201189-005	YL2201189-004	YL2201189-003	YL2201189-002	YL2201189-001	YL2201189-007	YL2201189-009	YL2201189-008	YL2201189-010	YL2201189-006		
		Acute	Chronic			depth = 1 m BRP-35-1	depth = 1 m BRP-35-2	depth = 1 m BRP-35-3	depth = 1 m BRP-35-4	depth = 1 m BRP-35-5	depth = 1 m BRP-36-1	depth = 0.8 m BRP-36-2	depth = 1 m BRP-36-3	depth = 0.5 m BRP-36-4	depth = 1 m BRP-36-5	depth = 1 m BRP-35-1	depth = 1.5 m BRP-35-2	depth = 2.5 m BRP-35-3	depth = 2.5 m BRP-35-4	depth = 2.5 m BRP-35-5	depth = 2 m BRP-36-4	depth = 2 m BRP-36-2	depth = 2 m BRP-36-3	depth = 1.5 m BRP-36-1	depth = 1.5 m BRP-36-5		
						04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-12-2022	04-12-2022	04-12-2022	04-12-2022	04-11-2022	08-08-2022	08-07-2022	08-07-2022	08-07-2022	08-07-2022	08-07-2022	08-07-2022	08-08-2022	08-08-2022	08-08-2022	08-08-2022	08-08-2022
Field Measured																											
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.3 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.1 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.4 <sup>(C, Ae)</sup>	5.8 <sup>(C, Ae)</sup>	6.4 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.4 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.5 <sup>(Ae)</sup>	6.4 <sup>(C, Ae)</sup>	6.5 <sup>(Ae)</sup>	6.4 <sup>(C, Ae)</sup>	6.4 <sup>(C, Ae)</sup>		
Specific conductivity	µS/cm	-	-	-	-	54	50	45	46	46	36	35	36	44	37	24	23	23	23	23	23	23	23	23	23		
Temperature	°C	-	-	-	15	1.7	2.0	2.2	2.0	1.8	1.6	1.6	1.7	1.3	1.8	15	15	14	14	14	16 <sup>(S)</sup>	15	15	15	15 <sup>(S)</sup>		
Dissolved oxygen	mg/L	-	6.5	-	-	17	15	16	16	16	16	16	16	18	16	10	11	11	11	11	10	10	10	10	10		
Dissolved oxygen	%	-	-	-	-	121	114	117	115	116	116	118	114	131	116	105	107	106	106	107	106	104	105	105	105		
Turbidity	NTU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.42	0.37	0.33	0.41	0.44	0.36	0.39	0.44	0.36	0.33		
Conventional Parameters																											
pH	-	-	6.5 - 9.0	-	7.0 - 11	7.1	7.1	7.1	7.1	7.1	7.0	7.0	7.0	7.1	7.0	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>		
Specific conductivity	µS/cm	-	-	-	-	54	55	53	52	50	39	40	43	48	40	25	25	25	25	25	25	25	25	25	25		
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	23	23	23	23	23	17	16	17	19	16	8.5	8.6	8.6	8.5	8.4	8.7	8.8	8.6	8.7	8.6		
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	11	8.0	10	7.7	16	6.8	7.5	7.8	8.5	8.6	4.0	4.3	4.4	4.4	4.5	4.3	4.2	4.5	4.4	3.8		
Total dissolved solids	mg/L	-	-	-	500	40	42	36	37	38	22	24	24	23	23	26	21	20	25	21	21	25	24	23	24		
Total dissolved solids (calculated) <sup>(*)</sup>	mg/L	-	-	-	500	36	35	36	35	37	26	27	29	32	27	15	15	15	15	15	15	15	15	15	14		
Total dissolved solids (APHA 2005) <sup>(**)</sup>	mg/L	-	-	-	-	29	27	28	26	30	21	21	22	25	21	12	11	11	11	11	11	11	11	11	11		
Total suspended solids	mg/L	-	-	-	-	<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		
Total organic carbon	mg/L	-	-	-	-	6.4	6.4	6.3	6.3	5.6	4.9	4.9	5.2	5.8	4.8	3.2	3.5	3.4	3.3	3.1	3.1	3.2	3.2	3.5	3.2		
Dissolved organic carbon	mg/L	-	-	-	-	6.7	6.7	7.6	8.2	6.0	5.0	5.6	6.4	7.0	5.5	3.3	3.3	3.5	3.1	3.3	3.3	3.5	3.2	3.5	3.2		
Turbidity	NTU	-	-	-	-	0.15	0.16	0.23	0.16	0.16	0.20	0.20	0.16	0.22	0.30	0.23	0.26	0.27	0.26	0.26	0.26	0.29	0.24	0.26	0.24		
Major Ions																											
Calcium	mg/L	-	-	-	-	4.4	4.4	4.3	4.3	4.3	3.4	3.2	3.3	3.7	3.2	1.6	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7		
Chloride	mg/L	640	120	-	250	2.3	2.4	2.3	2.2	2.2	1.7	1.9	2.1	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1		
Cyanide (free)	mg/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		
Cyanide (wad)	mg/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		
Cyanide	mg/L	-	0.0050	0.2	-	<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		
Fluoride	mg/L	-	0.12	1.5	-	0.025	0.026	0.025	0.024	0.023	0.02	0.021	0.022	0.02	0.022	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02		
Magnesium	mg/L	-	-	-	-	2.9	3.0	3.0	2.9	2.9	2.3	2.2	2.3	2.5	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1		
Potassium	mg/L	-	-	-	-	0.7	0.7	0.7	0.7	0.7	0.5	0.5	0.5	0.6	0.5	0.33	0.28	0.28	0.27	0.28	0.28	0.29	0.28	0.28	0.28		
Sodium	mg/L	-	-	-	200	1.1	1.2	1.1	1.1	1.1	0.9	0.8	0.9	1.0	0.8	0.52	0.47	0.52	0.45	0.46	0.45	0.47	0.46	0.46	0.45		
Sulphate	mg/L	-	-	-	500	11	11	11	10	9.8	7.7	7.8	8.4	9.5	7.8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1		
Sulphide	mg/L	-	-	-	0.05	0.0020	0.0022	0.0021	0.0019	0.0016	<0.0015	<0.0015	<0.0015	0.0022	<0.0015	<0.0015	<0.0015	0.0015	<0.0015	0.0016	<0.0015	<0.0015	<0.0015	<0.0015	0.0020		
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	0.56	0.60	0.58	0.56	0.54	<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		
Nutrients																											
Nitrate	mg-N/L	124	2.9	10	-	0.012	0.012	0.011	0.012	0.013	0.015	0.025	0.014	0.013	0.013	0.083	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
Nitrite	mg-N/L	-	0.060	1	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Total ammonia	mg-N/L	-	17 - 259 <sup>(*)</sup>	-	-	0.0097	0.010	0.014	0.014	0.013	0.011	0.0096	0.011	0.0075	0.0097	<0.005	<0.005	<0.005	0.0058	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	0.29	0.33	0.28	0.26	0.26	0.22	0.23	0.25	0.25	0.22	0.16	0.17	0.18	0.17	0.16	0.18	0.15	0.19	0.17	0.16		
Total phosphorus	mg-P/L	-	-	-	-	0.0040	0.0043	0.0045	0.0031	0.0047	0.0033	0.0029	0.0032	0.0050	0.0033	0.0050	0.0062	0.0050	0.0050	0.0040	0.0042	0.0052	0.0042	0.0049	0.0		

Table C-5: Water Quality Summary at Propeller Lake, 2022

Parameter	Unit	Guidelines for the Protection of:																							Sampling Sites															
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200334-007	YL2200334-008	YL2200334-009	YL2200334-010	YL2200334-011	YL2200334-013	YL2200334-014	YL2200334-015	YL2200334-016	YL2200334-017	YL2201189-005	YL2201189-004	YL2201189-003	YL2201189-002	YL2201189-001	YL2201189-007	YL2201189-009	YL2201189-008	YL2201189-010	YL2201189-006															
						depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 0.8 m	depth = 1 m	depth = 0.5 m	depth = 1 m	depth = 1.5 m	depth = 1.5 m	depth = 2.5 m	depth = 2 m	depth = 2.5 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 1.5 m	depth = 1.5 m													
		Acute	Chronic			BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4	BRP-35-5	BRP-36-1	BRP-36-2	BRP-36-3	BRP-36-4	BRP-36-5	BRP-35-1	BRP-35-2	BRP-35-3	BRP-35-4	BRP-35-5	BRP-36-4	BRP-36-2	BRP-36-3	BRP-36-1	BRP-36-5	BRP-36-3	BRP-36-4	BRP-36-5												
		04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-11-2022	04-12-2022	04-12-2022	04-12-2022	04-12-2022	04-12-2022	04-12-2022	04-11-2022	08-08-2022	08-07-2022	08-07-2022	08-07-2022	08-07-2022	08-07-2022	08-08-2022	08-08-2022	08-08-2022	08-08-2022	08-08-2022														
Uranium	µg/L	-	-	-	-	0.0074	0.0080	0.0054	0.0064	0.0054	0.0069	0.0055	0.0050	0.0061	0.0062	0.0029	0.0019	0.0039	0.0028	0.0031	0.0041	0.0024	0.0024	0.0022	0.0037															
Vanadium	µg/L	-	-	-	-	0.030	0.029	0.031	0.026	0.026	0.023	0.021	0.023	0.025	0.022	0.014	0.016	0.017	0.016	0.014	0.014	0.015	0.014	0.014	0.013															
Zinc	µg/L	20 - 38 <sup>(b)</sup>	16 - 23 <sup>(k)</sup>	-	-	3.8	2.6	3.1	1.8	1.5	2.0	2.0	1.4	1.3	1.2	1.3	0.35	0.41	0.24	0.59	0.33	0.62	0.51	1.5	0.51															
Zirconium	µg/L	-	-	-	-	0.047	0.050	0.051	0.047	0.045	0.038	0.033	0.034	0.038	0.032	0.017	0.015	0.016	0.016	0.016	0.030	0.018	0.017	0.017																
Radionuclides																																								
Radium-226	Bq/l	-	-	0.5	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	0.0080	<0.005	<0.005	0.020	0.0050	<0.005	<0.005	<0.005															

**Notes:**

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (17.46 mg-N/L) is based on the combination of field pH (6.5) and water temperature (15.5°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (5.8 to 6.5). The guideline is calculated based on the individual pH for each sample.

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH ≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (8 to 23 mg/L). The guideline is calculated based on the individual hardness value for each sample.

<sup>(e)</sup> = guideline is for chromium VI.

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (190.0 µg/L) is based on the combination of field pH (5.8), and hardness (16.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.8 µg/L) is based on the combination of hardness (8.5 mg/L) and DOC (3.1 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (15.9 µg/L) is based on the combination of field pH (6.3), hardness (8.5 mg/L) and DOC (3.1 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (190.0 µg/L) is based on the combination of field pH (5.8), and hardness (16.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.8 µg/L) is based on the combination of hardness (8.5 mg/L) and DOC (3.1 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (15.9 µg/L) is based on the combination of field pH (6.3), hardness (8.5 mg/L) and DOC (3.1 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula  $TDS\text{ mg/L} = \sum [Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 2.709 \cdot Si^{+4}, 3.284 \cdot NO_3^-, (as\text{ nitrogen}), 4.42 \cdot NO_2^-, (as\text{ nitrogen}), 1.288 \cdot NH_4^+, (as\text{ nitrogen}), 0.6 \cdot \text{total alkalinity (as } CaCO_3), Al^{3+}, Cu^{2+}, Fe^{3+}, Mn^{2+}, Zn^{2+}, \text{dissolved organic carbon})]$ .

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005  $TDS\text{ mg/L} = \sum [Na^+, K^+, Ca^{2+}, Mg^{2+}, Cl^-, F^-, SO_4^{2-}, 4.42 \cdot NO_3^-, (as\text{ nitrogen}), 0.6 \cdot \text{total alkalinity (as } CaCO_3)]$ .

<sup>(c)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(Aes)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

**Bolded** concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision *after* comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:  
CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.  
Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.  
APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.

Table C-6: Water Quality Summary at Reference B Lake, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites									
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	YL2201163-003	YL2201163-004	YL2201163-005	YL2201163-006	YL2201163-007
		Acute	Chronic			depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m
						BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
						04-13-2022	04-13-2022	04-13-2022	04-13-2022	04-13-2022	08-06-2022	08-06-2022	08-06-2022	08-06-2022	08-06-2022
Field Measured															
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.4 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.3 <sup>(C, Ae)</sup>	6.2 <sup>(C, Ae)</sup>	6.8 <sup>(Ae)</sup>	6.7 <sup>(Ae)</sup>	6.8 <sup>(Ae)</sup>	6.6 <sup>(Ae)</sup>	6.7 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	46	46	44	45	45	18	18	18	18	18
Temperature	°C	-	-	-	15	3.6	3.2	3.5	3.4	3.4	14	14	14	14	14
Dissolved oxygen	mg/L	-	6.5	-	-	13	14	13	13	11	10	10	10	10	10
Dissolved oxygen	%	-	-	-	-	102	103	100	100	87	106	106	105	105	104
Turbidity	NTU	-	-	-	-	-	-	-	-	-	0.32	0.30	0.47	0.46	0.32
Conventional Parameters															
pH	-	-	6.5 - 9.0	-	7.0 - 11	7.2	7.3	7.2	7.3	7.3	7.0	7.0	7.0	7.0	7.0
Specific conductivity	µS/cm	-	-	-	-	53	54	52	54	57	23	23	23	23	24
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	23	24	25	24	24	9.0	9.2	9.1	9.2	9.0
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	15	15	15	15	16	6.2	7.1	6.5	6.8	6.6
Total dissolved solids	mg/L	-	-	-	500	36	32	32	36	20	21	22	21	21	21
Total dissolved solids (calculated) <sup>(f)</sup>	mg/L	-	-	-	500	33	33	33	34	35	14	15	14	14	14
Total dissolved solids (APHA 2005) <sup>(m)</sup>	mg/L	-	-	-	-	26	27	26	27	28	10	10	10	10	10
Total suspended solids	mg/L	-	-	-	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Total organic carbon	mg/L	-	-	-	-	5.0	5.3	4.6	5.1	5.2	3.2	3.5	3.1	3.1	3.1
Dissolved organic carbon	mg/L	-	-	-	-	5.4	5.4	5.1	5.9	6.3	3.0	3.2	3.1	3.2	3.0
Turbidity	NTU	-	-	-	-	0.22	0.22	0.22	0.20	0.23	0.29	0.45	0.26	0.25	0.24
Major Ions															
Calcium	mg/L	-	-	-	-	4.1	4.2	4.4	4.3	4.3	1.5	1.5	1.4	1.4	1.4
Chloride	mg/L	640	120	-	250	0.98	0.98	0.91	0.97	1.1	<0.5	<0.5	<0.5	<0.5	<0.5
Cyanide (free)	mg/L	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide (wad)	mg/L	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Cyanide	mg/L	-	0.0050	0.2	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Fluoride	mg/L	-	0.12	1.5	-	0.030	0.030	0.029	0.029	0.028	<0.02	<0.02	<0.02	<0.02	<0.02
Magnesium	mg/L	-	-	-	-	3.1	3.2	3.4	3.3	3.3	1.2	1.2	1.2	1.2	1.2
Potassium	mg/L	-	-	-	-	0.6	0.7	0.7	0.7	0.7	0.27	0.27	0.27	0.27	0.27
Sodium	mg/L	-	-	-	200	1.1	1.2	1.1	1.2	1.2	0.50	0.49	0.48	0.49	0.49
Sulphate	mg/L	-	-	-	500	7.2	7.2	6.7	7.1	7.7	3.1	3.1	3.1	3.1	3.1
Sulphide	mg/L	-	-	-	0.05	0.0041	<0.0015	0.0019	<0.0015	<0.0015	0.0016	0.0016	0.0016	0.0016	0.0015
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	0.57	0.56	0.59	0.55	0.62	<0.5	<0.5	<0.5	<0.5	<0.5
Nutrients															
Nitrate	mg-N/L	124	2.9	10	-	<0.005	0.0059	0.0053	0.019	0.0071	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrite	mg-N/L	-	0.060	1	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total ammonia	mg-N/L	-	9.7 - 90 <sup>(a)</sup>	-	-	0.10	0.099	0.11	0.10	0.11	0.0058	0.0078	0.0056	0.014	0.0065
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	0.39	0.39	0.37	0.38	0.40	0.21	0.19	0.18	0.19	0.18
Total phosphorus	mg-P/L	-	-	-	-	0.0049	0.0046	0.0046	0.0047	0.0053	0.0050	0.0035	0.0038	0.0042	0.0050
Dissolved phosphorus	mg-P/L	-	-	-	-	0.0035	0.0032	0.0053	0.0032	0.0031	0.0039	0.0037	0.0031	0.0041	0.0035
Orthophosphate	mg-P/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Metals															
Aluminum	µg/L	-	5.0 - 100 <sup>(b, c)</sup>	2900	-	1.6	1.8	1.8	2.6	2.2	3.4	3.3	3.0	2.9	3.4
Antimony	µg/L	-	-	6	-	0.0095	0.019	0.038	0.046	0.18	<0.005	<0.005	0.0097	0.0058	0.014
Arsenic	µg/L	-	5.0	10	-	0.27	0.29	0.29	0.30	0.30	0.17	0.18	0.18	0.16	0.16
Barium	µg/L	-	-	2,000	-	7.7	8.0	8.0	8.1	8.4	2.8	2.8	2.8	2.8	2.9
Beryllium	µg/L	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	5,000	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	0.18 - 0.51 <sup>(d)</sup>	0.040 - 0.050 <sup>(d)</sup>	7	-	<0.0025	0.0026	<0.0025	0.0028	0.0026	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Calcium	µg/L	-	-	-	-	3,970	4,150	4,040	4,130	4,370	1,550	1,540	1,560	1,530	1,570
Chromium	µg/L	-	1.0 <sup>(e)</sup>	50 <sup>(e)</sup>	-	0.051	0.057	0.052	0.061	0.057	<0.04	<0.04	16 <sup>(c)</sup>	<0.04	<0.04
Cobalt	µg/L	-	-	-	-	0.087	0.098	0.11	0.089	0.088	0.030	0.032	0.057	0.033	0.036
Copper	µg/L	-	2.0 <sup>(d)</sup>	2,000	1,000	0.86	0.90	0.87	0.93	0.94	0.55	0.54	1.1	0.52	0.57
Iron	µg/L	-	300	-	300	62	55	50	51	53	42	47	173	36	42
Lanthanum	µg/L	-	-	-	-	0.024	0.026	0.024	0.027	0.028	0.023	0.022	0.021	0.020	0.022
Lead	µg/L	-	1.0 <sup>(d)</sup>	5	-	0.039	0.21	0.57	0.94	0.14	<0.005	<0.005	<0.005	<0.005	0.0052
Lithium	µg/L	-	-	-	-	0.71	0.79	0.76	0.77	0.77	0.38	0.38	0.37	0.37	0.39
Magnesium	µg/L	-	-	-	-	2,960	3,240	3,100	3,150	3,360	1,230	1,250	1,260	1,240	1,290
Manganese	µg/L	801 - 1,957 <sup>(d)</sup>	200 - 230 <sup>(f)</sup>	120	20	7.8	9.7	14	8.2	7.3	1.3	1.2	2.7	1.2	1.4
Mercury	µg/L	-	0.026	1	-	<0.0005	<0.0005	<0.0005	0.00069	0.00052	<0.0005	0.00050	<0.0005	0.00056	<0.0005
Molybdenum	µg/L	-	73	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.092	<0.01	<0.01
Nickel	µg/L	-	25 <sup>(d)</sup>	-	-	1.8	1.8	1.8	1.9	2.4	0.58	0.59	0.97	0.59	0.64
Selenium	µg/L	-	1.0	50	-	0.034	0.031	0.030	0.032	0.033	0.028	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	-	-	-	-	274	282	288	286	304	133	134	136		

Table C-6: Water Quality Summary at Reference B Lake, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites									
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200337-001	YL2200337-002	YL2200337-003	YL2200337-004	YL2200337-005	YL2201163-003	YL2201163-004	YL2201163-005	YL2201163-006	YL2201163-007
		Acute	Chronic			depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 1 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m	depth = 2 m
						BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5	BRP-40-1	BRP-40-2	BRP-40-3	BRP-40-4	BRP-40-5
						04-13-2022	04-13-2022	04-13-2022	04-13-2022	04-13-2022	08-06-2022	08-06-2022	08-06-2022	08-06-2022	08-06-2022
Barium	µg/L	-	-	-	-	7.6	8.0	8.2	8.1	8.3	2.7	2.7	2.7	2.7	2.7
Beryllium	µg/L	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	0.0027	0.0032	0.0036	<0.0025	0.0029	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Chromium	µg/L	-	-	-	-	0.052	0.057	0.058	0.058	0.060	<0.04	<0.04	<0.04	<0.04	<0.04
Cobalt	µg/L	-	-	-	-	0.030	0.031	0.040	0.035	0.035	0.017	0.022	0.017	0.018	0.020
Copper	µg/L	-	-	-	-	0.92	0.92	0.96	0.93	0.95	0.52	0.54	0.52	0.53	0.54
Iron	µg/L	-	-	-	-	15	14	14	14	13	20	20	19	20	19
Lead	µg/L	-	-	-	-	0.033	0.074	0.050	0.032	0.022	<0.005	<0.005	<0.005	<0.005	<0.005
Lithium	µg/L	-	-	-	-	0.80	0.80	0.84	0.82	0.85	0.36	0.38	0.37	0.37	0.38
Manganese	µg/L	801 - 1,957 <sup>(d)</sup>	200 - 230 <sup>(i)</sup>	-	-	1.1	1.5	4.5	2.1	2.4	0.63	0.66	0.60	0.58	0.62
Mercury	µg/L	-	-	-	-	0.0013	0.0011	<0.0005	0.00075	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Molybdenum	µg/L	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nickel	µg/L	-	-	-	-	1.8	1.8	2.0	1.9	2.0	0.58	0.60	0.57	0.59	0.59
Selenium	µg/L	-	-	-	-	0.029	0.041	0.038	0.038	0.032	<0.025	<0.025	<0.025	<0.025	<0.025
Silicon	µg/L	-	-	-	-	271	286	292	285	314	127	129	130	129	129
Silver	µg/L	-	-	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	14	14	15	15	15	5.6	5.5	5.3	5.4	5.5
Sulphur	µg/L	-	-	-	-	2,530	2,610	2,680	2,740	2,720	1,080	1,120	1,120	1,140	1,140
Thallium	µg/L	-	-	-	-	<0.001	<0.001	0.0011	0.0011	0.0010	<0.001	<0.001	<0.001	<0.001	<0.001
Tin	µg/L	-	-	-	-	0.014	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	µg/L	-	-	-	-	0.0023	0.0031	0.0019	0.0022	0.0027	<0.001	0.0013	<0.001	<0.001	0.0015
Vanadium	µg/L	-	-	-	-	0.016	0.015	0.016	0.016	0.014	<0.01	0.012	0.011	0.011	0.011
Zinc	µg/L	20 - 38 <sup>(j)</sup>	12 - 22 <sup>(k)</sup>	-	-	1.6	2.0	1.6	1.3	1.7	0.22	0.44	0.32	0.37	0.46
Zirconium	µg/L	-	-	-	-	0.015	0.016	0.016	0.017	0.017	<0.01	<0.01	<0.01	<0.01	<0.01
Radionuclides															
Radium-226	Bq/l	-	-	0.5	-	-	-	-	-	-	<0.0061	<0.0068	<0.0065	<0.0066	<0.0066

Notes:

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (9.74 mg-N/L) is based on the combination of field pH (6.8) and water temperature (14.1°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.2 to 6.8). The guideline is calculated based on the individual pH for each samp

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (9 to 25 mg/L). The guideline is calculated based on the individual hardness value for each sam

<sup>(e)</sup> = guideline is for chromium VI

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.4), and hardness (23.2 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.6 µg/L) is based on the combination of hardness (9.0 mg/L) and DOC (3.0 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (12.2 µg/L) is based on the combination of field pH (6.8), hardness (9.0 mg/L) and DOC (3.0 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.4), and hardness (23.2 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 hardness 25 to 670 mq/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sam

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (19.6 µg/L) is based on the combination of hardness (9.0 mg/L) and DOC (3.0 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (12.2 µg/L) is based on the combination of field pH (6.8), hardness (9.0 mg/L) and DOC (3.0 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 2.709 \* Si<sup>4+</sup>, 3.284 \* NO<sub>2</sub><sup>-</sup> (as nitrogen), 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 1.288 \* NH<sub>4</sub><sup>+</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCQ<sub>3</sub>), Al<sup>3+</sup>, Cu<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup>, Zn<sup>2+</sup>, dissolved organic carbon).

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCQ<sub>3</sub>)).

<sup>(C)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity rang

<sup>(Ae)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range

**Bolded** concentrations are higher than water quality guidelines.

**Grey highlighted data are considered irregular and not representative of the sampling area (Appendix A; Section 4.1.1.**

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision<sup>a</sup> after comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:

CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.

Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.

Table C-7: Water Quality Summary at Goose Lake, Propeller Lake, and Reference B Lake Outflows, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites			
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200620-001	YL2201252-006	YL2201254-001	YL2201163-001
		Acute	Chronic			BRP-34 06-07-2022	BRP-34-A 08-10-2022	BRP-37-A 08-11-2022	BRP-39-A 08-06-2022
Field Measured									
pH	-	-	6.5 - 9.0	-	7.0 - 10.5	6.7 <sup>(Ae)</sup>	6.5 <sup>(Ae)</sup>	6.0 <sup>(C, Ae)</sup>	7.2
Specific conductivity	µS/cm	-	-	-	-	36	30	27	18
Temperature	°C	-	-	-	15	4.6	16 <sup>(Ae)</sup>	14	19 <sup>(Ae)</sup>
Dissolved oxygen	mg/L	-	6.5	-	-	16	10	8.5	10
Dissolved oxygen	%	-	-	-	-	125	107	85	114
Turbidity	NTU	-	-	-	-	-	0.51	0.28	0.70
Conventional Parameters									
pH	-	-	6.5 - 9.0	-	7.0 - 11	6.8 <sup>(Ae)</sup>	6.9 <sup>(Ae)</sup>	7.0	6.9 <sup>(Ae)</sup>
Specific conductivity	µS/cm	-	-	-	-	36	34	26	23
Hardness, as CaCO <sub>3</sub>	mg/L	-	-	-	-	14	12	9.4	9.1
Total alkalinity, as CaCO <sub>3</sub>	mg/L	-	-	-	-	6.0	4.8	4.6	5.7
Total dissolved solids	mg/L	-	-	-	500	23	22	32	22
Total dissolved solids (calculated) <sup>(l)</sup>	mg/L	-	-	-	500	24	20	17	16
Total dissolved solids (APHA 2005) <sup>(m)</sup>	mg/L	-	-	-	-	17	16	15	11
Total suspended solids	mg/L	-	-	-	-	<3.0	4.6	<3.0	4.6
Total organic carbon	mg/L	-	-	-	-	5.6	3.6	2.6	4.6
Dissolved organic carbon	mg/L	-	-	-	-	5.8	3.9	6.5	4.4
Turbidity	NTU	-	-	-	-	0.48	0.38	0.17	0.76
Major Ions									
Calcium	mg/L	-	-	-	-	2.7	2.3	1.8	1.5
Chloride	mg/L	640	120	-	250	2.5	2.0	<10	0.53
Cyanide (free)	mg/L	-	-	-	-	<0.005	<0.02	<0.005	<0.005
Cyanide (wad)	mg/L	-	-	-	-	<0.005	<0.02	<0.005	<0.005
Cyanide	mg/L	-	0.0050	0.2	-	<0.005	<0.02 <sup>(DL&gt;C)</sup>	<0.005	<0.005
Fluoride	mg/L	-	0.12	1.5	-	<0.02	0.026	<0.4 <sup>(DL&gt;C)</sup>	<0.02
Magnesium	mg/L	-	-	-	-	1.6	1.5	1.2	1.2
Potassium	mg/L	-	-	-	-	0.45	0.34	0.32	0.29
Sodium	mg/L	-	-	-	200	0.65	0.61	0.48	0.56
Sulphate	mg/L	-	-	-	500	5.6	6.2	3.0	3.3
Sulphide	mg/L	-	-	-	0.05	<0.0015	<0.0015	<0.0015	0.0029
Silicate (as SiO <sub>2</sub> )	mg/L	-	-	-	-	0.64	<0.5	<0.5	<0.5
Nutrients									
Nitrate	mg-N/L	124	2.9	10	-	0.083	<0.005	0.13	<0.005
Nitrite	mg-N/L	-	0.060	1	-	<0.001	<0.001	<0.02	<0.001
Total ammonia	mg-N/L	-	2.7 - 62 <sup>(a)</sup>	-	-	0.083	0.0059	<0.005	0.0084
Nitrogen, kjeldahl	mg-N/L	-	-	-	-	0.31	0.22	<0.2	0.67
Total phosphorus	mg-P/L	-	-	-	-	0.0059	0.0035	-	0.0082
Dissolved phosphorus	mg-P/L	-	-	-	-	0.0033	0.0034	<0.01	0.0043
Orthophosphate	mg-P/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001
Total Metals									
Aluminum	µg/L	-	5.0 - 100 <sup>(b, c)</sup>	2900	-	30	7.9	4.6	10
Antimony	µg/L	-	-	6	-	0.011	0.0069	<0.005	0.0051
Arsenic	µg/L	-	5.0	10	-	0.22	0.21	0.13	0.36
Barium	µg/L	-	-	2,000	-	6.6	4.4	4.1	3.2
Beryllium	µg/L	-	-	-	-	0.0042	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	29,000	1,500	5,000	-	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	0.18 - 0.28 <sup>(d)</sup>	0.040 <sup>(d)</sup>	7	-	0.0070	0.0033	<0.0025	<0.0025
Calcium	µg/L	-	-	-	-	2,730	2,370	1,930	1,580
Chromium	µg/L	-	1.0 <sup>(e)</sup>	50 <sup>(e)</sup>	-	0.11	0.050	0.066	0.056
Cobalt	µg/L	-	-	-	-	0.41	0.15	0.036	0.052
Copper	µg/L	-	2.0 <sup>(d)</sup>	2,000	1,000	1.4	1.2	0.90	0.81
Iron	µg/L	-	300	-	300	48	86	14	243
Lanthanum	µg/L	-	-	-	-	0.21	0.080	0.064	0.068
Lead	µg/L	-	1.0 <sup>(d)</sup>	5	-	0.019	0.0073	<0.005	0.015
Lithium	µg/L	-	-	-	-	0.70	0.70	0.49	0.43
Magnesium	µg/L	-	-	-	-	1,560	1,500	1,200	1,250
Manganese	µg/L	813 - 1,162 <sup>(d)</sup>	200 - 260 <sup>(f)</sup>	120	20	10	5.8	1.1	1.3
Mercury	µg/L	-	0.026	1	-	0.0021	0.0010	0.0011	0.0011
Molybdenum	µg/L	-	73	-	-	0.012	<0.01	<0.01	<0.01
Nickel	µg/L	-	25 <sup>(d)</sup>	-	-	4.3	2.2	1.5	0.91
Selenium	µg/L	-	1.0	50	-	<0.025	<0.025	<0.025	0.031
Silicon	µg/L	-	-	-	-	272	78	111	167
Silver	µg/L	-	0.25	-	-	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	7,000	-	13	11	8.2	5.7
Sulphur	µg/L	-	-	-	-	2,000	2,060	1,430	1,250
Thallium	µg/L	-	0.80	-	-	0.0017	0.0014	<0.001	0.0011
Tin	µg/L	-	-	-	-	0.015	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	0.23	0.054	<0.05	0.067
Uranium	µg/L	33	15	20	-	0.010	0.0042	0.0034	0.0019
Vanadium	µg/L	-	-	-	-	0.062	0.033	0.019	0.050
Zinc	µg/L	21 - 24 <sup>(g)</sup>	10 - 21 <sup>(h)</sup>	-	5,000	4.7	0.86	1.4	0.52
Zirconium	µg/L	-	-	-	-	0.12	0.018	0.013	0.022



Table C-7: Water Quality Summary at Goose Lake, Propeller Lake, and Reference B Lake Outflows, 2022

Parameter	Unit	Guidelines for the Protection of:				Sampling Sites			
		Freshwater Aquatic Life (CCME 1999)		Drinking Water (HC 2022)	Aesthetic (HC 2022)	YL2200620-001	YL2201252-006	YL2201254-001	YL2201163-001
		Acute	Chronic			BRP-34	BRP-34-A	BRP-37-A	BRP-39-A
						06-07-2022	08-10-2022	08-11-2022	08-06-2022
Dissolved Metals									
Aluminum	µg/L	-	-	-	-	23	4.2	3.6	6.6
Antimony	µg/L	-	-	-	-	0.0094	0.0078	0.0065	0.0073
Arsenic	µg/L	-	-	-	-	0.20	0.21	0.12	0.31
Barium	µg/L	-	-	-	-	6.4	4.2	4.2	3.1
Beryllium	µg/L	-	-	-	-	0.0037	<0.002	<0.002	<0.002
Bismuth	µg/L	-	-	-	-	<0.001	<0.001	<0.001	<0.001
Boron	µg/L	-	-	-	-	<5.0	<5.0	<5.0	<5.0
Cadmium	µg/L	-	-	-	-	0.0084	<0.0025	<0.0025	0.0067
Chromium	µg/L	-	-	-	-	0.085	0.040	0.041	0.046
Cobalt	µg/L	-	-	-	-	0.39	0.10	0.028	0.051
Copper	µg/L	-	-	-	-	1.4	1.1	0.85	0.78
Iron	µg/L	-	-	-	-	29	37	7.9	162
Lead	µg/L	-	-	-	-	0.0078	<0.005	<0.005	0.0093
Lithium	µg/L	-	-	-	-	0.67	0.66	0.50	0.42
Manganese	µg/L	813 - 1,162 <sup>(d)</sup>	200 - 260 <sup>(i)</sup>	-	-	10	4.2	0.60	1.4
Mercury	µg/L	-	-	-	-	0.0016	0.00068	0.00070	0.00089
Molybdenum	µg/L	-	-	-	-	0.013	0.010	<0.01	<0.01
Nickel	µg/L	-	-	-	-	4.3	2.1	1.5	0.88
Selenium	µg/L	-	-	-	-	<0.025	<0.025	<0.025	0.026
Silicon	µg/L	-	-	-	-	270	74	108	158
Silver	µg/L	-	-	-	-	<0.002	<0.002	<0.002	<0.002
Strontium	µg/L	-	-	-	-	13	11	8.1	5.7
Sulphur	µg/L	-	-	-	-	2,040	2,050	1,500	1,240
Thallium	µg/L	-	-	-	-	0.0017	0.0025	0.0013	<0.001
Tin	µg/L	-	-	-	-	0.017	<0.01	<0.01	<0.01
Titanium	µg/L	-	-	-	-	0.089	<0.05	<0.05	<0.05
Uranium	µg/L	-	-	-	-	0.0084	0.0040	0.0044	0.0025
Vanadium	µg/L	-	-	-	-	0.036	0.023	0.018	0.037
Zinc	µg/L	21 - 24 <sup>(j)</sup>	10 - 21 <sup>(k)</sup>	-	-	2.2	0.52	0.50	0.59
Zirconium	µg/L	-	-	-	-	0.050	0.017	0.016	0.014
Radionuclides									
Radium-226	Bq/l	-	-	0.5	-	<0.0067	-	-	<0.0055

**Notes:**

<sup>(a)</sup> = the ammonia guideline is pH and temperature dependent. The guideline that results in the minimum ammonia guideline (2.72 mg-N/L) is based on the combination of field pH (7.2) and water temperature (18.9°C). Guidelines calculated with temperature and pH values falling outside the defined range (i.e., pH 6.0 to 10.0 and temperature 0°C to 30°C) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and temperature extremes. The guideline is calculated based on the individual field pH and temperature measurements for each sample.

<sup>(b)</sup> = guideline is pH dependent. The guideline range shown is based on the pH range observed in the dataset (6.0 to 7.2). The guideline is calculated based on the individual pH for each sample.

<sup>(c)</sup> = guideline is pH dependent: 5 µg/L at pH < 6.5 and 100 µg/L at pH ≥ 6.5.

<sup>(d)</sup> = guideline is hardness dependent. The guideline range shown is based on the hardness range observed in the dataset (9 to 14 mg/L). The guideline is calculated based on the individual hardness value for each sample.

<sup>(e)</sup> = guideline is for chromium VI.

<sup>(f)</sup> = guideline is for dissolved manganese, but comparison to total manganese is appropriate when no dissolved manganese concentrations are available. The chronic dissolved manganese guideline is pH and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.0), and hardness (9.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(g)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (20.9 µg/L) is based on the combination of hardness (11.8 mg/L) and DOC (3.9 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(h)</sup> = guideline is for dissolved zinc, but comparison to total zinc is appropriate when no dissolved zinc concentrations are available. The chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (10.3 µg/L) is based on the combination of field pH (7.2), hardness (9.1 mg/L) and DOC (4.4 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(i)</sup> = the chronic dissolved manganese guideline is pH, and hardness dependent. The guideline that results in the minimum chronic manganese guideline (200.0 µg/L) is based on the combination of field pH (6.0) and hardness (9.4 mg/L). Guidelines calculated with pH and hardness values falling outside the defined range (i.e., pH 5.8 to 8.4 and hardness 25 to 670 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH and hardness extremes. The guideline is calculated based on the individual pH and hardness measurements for each sample.

<sup>(j)</sup> = the acute dissolved zinc guideline is hardness and DOC dependent. The guideline that results in the minimum acute zinc guideline (20.9 µg/L) is based on the combination of hardness (11.8 mg/L) and DOC (3.9 mg/L). Guidelines calculated with hardness and DOC values falling outside the defined range (i.e., hardness 13.8 to 250.5 mg/L and DOC 0.3 to 17.3 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high hardness and DOC extremes. The guideline is calculated based on the individual hardness and DOC measurements for each sample.

<sup>(k)</sup> = the chronic dissolved zinc guideline is pH, hardness and DOC dependent. The guideline that results in the minimum chronic zinc guideline (10.3 µg/L) is based on the combination of field pH (7.2), hardness (9.1 mg/L) and DOC (4.4 mg/L). Guidelines calculated with pH, hardness, and DOC values falling outside the defined range (i.e., pH 6.5 to 8.13, hardness 23.4 to 399 mg/L and DOC 0.3 to 22.9 mg/L) should be used with caution, as the WQG does not necessarily accurately reflect toxic effects at the low and high pH, hardness and DOC extremes. The guideline is calculated based on the individual pH, hardness and DOC measurements for each sample.

<sup>(l)</sup> = total dissolved solids calculated by ALS using the formula TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 2.709 \* Si<sup>4+</sup>, 3.284 \* NO<sub>2</sub><sup>-</sup> (as nitrogen), 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 1.288 \* NH<sub>4</sub><sup>+</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCO<sub>3</sub>), Al<sup>3+</sup>, Cu<sup>2+</sup>, Fe<sup>3+</sup>, Mn<sup>2+</sup>, Zn<sup>2+</sup>, dissolved organic carbon).

<sup>(m)</sup> = total dissolved solids calculated by WSP using the Standard Method by APHA 2005 (TDS mg/L = Σ[Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>2+</sup>, Mg<sup>2+</sup>, Cl<sup>-</sup>, F<sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, 4.42 \* NO<sub>3</sub><sup>-</sup> (as nitrogen), 0.6 \* total alkalinity (as CaCO<sub>3</sub>)).

<sup>(C)</sup> = concentration is higher than the chronic aquatic life CCME guideline or outside the recommended pH, DO or total alkalinity range.

<sup>(Ae)</sup> = concentration is higher than the aesthetic Health Canada guideline or outside the recommended pH range.

<sup>(DL>C)</sup> = analytical detection limit is higher than the chronic aquatic life CCME guideline.

**Bolded** concentrations are higher than water quality guidelines.

Water quality data and guidelines shown in this table were rounded to reflect laboratory or field instrument precision<sup>after</sup> comparisons to guidelines. Therefore, values slightly above guidelines may be displayed as being equal to the guidelines and identified as exceedances. Concentrations equal to the guideline values were not identified as exceedances.

= no guideline or no data; B = near bottom, T = near top.

Sources:

CCME 1999 (with updates to 2021) = Canadian Environmental Quality Guidelines. Canadian Council of Ministers of the Environment, Winnipeg, MB, Canada.

Health Canada (HC). 2022. Guidelines for Canadian Drinking Water Quality—Summary Tables. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

APHA 2005 = Standard Methods for Examination of Water and Wastewater. Standard Methods of Water Analysis, American Public Health Association, New York, 2005.





## **Appendix D. Sabina's Back River Blasting Plan for Plant Site and Portal Decline**

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## TECHNICAL MEMORANDUM

**DATE** April 23, 2021

**Project No.** 20412211-075-TM-Rev0-2600

**TO** Merle Keefe; Manager, Environmental Permitting, Sabina Gold & Silver Corp.

**CC** Dionne Filiatrault, Erin Salo (Golder)

**FROM** Sarah Proctor and Cam Stevens

**EMAIL** SProctor@Golder.com

### SABINA BACK RIVER BLASTING PLAN FOR PLANT SITE AND PORTAL DECLINE

## 1.0 INTRODUCTION

Sabina Gold & Silver Corp. (Sabina) has retained Golder Associates Ltd. (Golder) through Nuqsana Golder to develop a Blasting Plan (the Plan) associated with proposed blasting works at their Plant Site and Portal Decline at the Goose Site of the Back River Project. The purpose of the Plan is to assess the radius of which detonations may impact fish or fish habitat, and to provide mitigation measures to avoid the death of fish and harmful alteration, disruption, or destruction (HADD) of fish habitat. The Plan focuses on protecting valued ecosystem components for the Project, including Lake Trout (*Salvelinus namaycush*) and Arctic Grayling (*Thymallus arcticus*).

## 2.0 PROJECT SETTING

The proposed blast locations (Plant Site and Portal Decline) are situated between two known fish bearing waterbodies including Goose Lake and Fox Creek. The blast locations are west of Fox Creek and east Goose Lake, both of which are fish-bearing waters, and south of the lower reach of Umwelt Outflow, which is non-fish bearing reach of Umwelt Outflow (Golder 2019).

Goose Lake is known to support populations of Arctic Grayling, Burbot (*Lota lota*), Lake Trout, Ninespine Stickleback (*Pungitius pungitius*), Round Whitefish (*Prosopium cylindraceum*), and Slimy Sculpin (*Cottus cognatus*) (Golder 2019). Known spawning shoals for fall-spawning species such as Lake Trout and Round Whitefish are located in the main body of Goose Lake, and greater than 1 km east of the blasting locations (Sabina 2015; Appendix V6). The waters closest to the Plant Site and Portal decline were assessed as having low potential for spawning and rearing fish based on substrate and location in Goose Lake (Sabina 2015, Appendix V6-6D, Table 3.3-5).

Fox Creek is known to seasonally support Slimy Sculpin and Arctic Grayling, spring-spawning species. Arctic Grayling young-of-year were observed in the Fox Creek during 2012 baseline fish and fish habitat assessments (Sabina 2015, Appendix V6-6C). While habitat data for the entire reach of Fox Creek was not documented, the entire reach of Fox Creek is conservatively assumed to provide spawning habitat for Arctic Grayling for the purposes of the Plan. Although channel depth in Fox Creek has not been documented, fish habitat assessments for watercourses of similar size have been completed within the Project area (e.g., Umwelt Outflow and Llama Outflow). These watercourses have been documented as shallow, with no potential habitat for overwintering fish (Sabina 2015, Appendix V6-6D). As such, Fox Creek is also expected to be shallow (i.e., less than 2 m), to be completely frozen to the creek during winter, and is not expected to provide suitable overwintering habitat for fish.

## 3.0 METHODS

### Guidelines

To determine appropriate setback distances to protect fish and fish habitat from blasting activities for the Plant Site and Portal Decline, calculations derived from Fisheries and Oceans Canada (DFO) Guidelines for the Use of Explosives In or Near Canadian Fisheries (Wright and Hopky 1998) were applied. When using these calculations two scenarios were considered:

- Direct effects to fish caused by overpressure exceeding a site-specific limit of 50 kPa.
- Effects to spawning habitat by peak particle velocity (PPV) exceeding 13 mm/s.

The guideline for overpressure applies to all fish species and to all habitats supporting fish either throughout the year or only on seasonal basis. The guideline for peak particle velocity applies only to areas of fish-bearing watercourses or waterbodies where spawning habitat is present, and during appropriate spawning windows for the respective species. Site specific spawning windows for affected species are described under mitigation, if required.

### Input Information

Calculations for setback distances to avoid impacts to fish and fish habitat were based on the following information:

- Shapefile for Goose Site layout received from Sabina on 18 February 2021.
- Shapefile for Goose Lake received from Sabina on 14 February 2020, offset by approximately 10 m and re-digitized within the area of interest for consistency with 2016 PhotoSAT Imagery.
- Shapefile for Fox Creek digitized based on 2016 PhotoSAT Imagery.
- Fish and fish habitat data collected during baseline assessments of waterbodies at Goose Site (Sabina 2015).
- Blast specification of 250 kg per delay in either bedrock or frozen overburden (assumed as frozen soil for calculation purposes) at the Plant Site blast location.
- Blast specifications of 100 kg per delay in bedrock at the Portal Decline blast location.

## 4.0 RESULTS

### Plant Site

Calculations completed for the Plant Site blast location indicate that the setback distance for a 250 kg charge weight (per delay) is insufficient to avoid effects to fish and fish habitat in Fox Creek when detonated in rock (Table 1, Figure 1 and Figure 2). Manipulation of charge weights to achieve appropriate setbacks for the protection of fish and fish habitat are presented in Table 1, Figure 1, and Figure 2.

**Table 1: Setback Distances for Plant Site Blast Location**

Charge Weight Per Delay (kg)	Distance to Goose Lake (m) <sup>(b)</sup>	Distance to Fox Creek (m) <sup>(b)</sup>	Overpressure Setback (m)		Peak Particle Velocity Setback (m)	Scenario Outcome:
			Rock	Frozen Soil		
250 <sup>(a)</sup>	232.2	107.8	<b>122.8<sup>(c)</sup></b>	<b>113.5<sup>(c)</sup></b>	<b>238.6<sup>(d)</sup></b>	Setback for 250 kg charge weight (per delay) is appropriate to protect fish within Goose Lake but has potential to impact fish and fish habitat within Fox Creek.
190			107.0	98.9	<b>208.0<sup>(d)</sup></b>	Setback for 190 kg charge weight (per delay) is appropriate to protect fish within Goose Lake and Fox Creek but has potential to impact spawning habitat in Fox Creek.
50			54.9	50.7	106.7	Setback for 50 kg charge weight (per delay) is appropriate to protect fish and fish habitat in Goose Lake and Fox Creek

(a) Proposed charge weight

(b) Distance measured from the closest point of blast location to respective waterbody

(c) Setback distance insufficient to protect fish within Fox Creek

(d) Setback distance insufficient to protect fish habitat within Fox Creek

Note: **Bold** indicates limiting factor; kg = kilograms; m = meters

### Portal Decline

Calculations completed for the Portal Decline blast location indicate that the setback distance for a 100 kg charge weight (per delay) is sufficient to protect fish and fish habitat in Goose Lake and Fox Creek (Table 2, Figure 1 and Figure 2). Therefore, blasting at the specified charge weight (per delay) can occur at any time throughout the year, with no additional mitigation measures required.

**Table 2: Setback Distances for Portal Decline Blast Location**

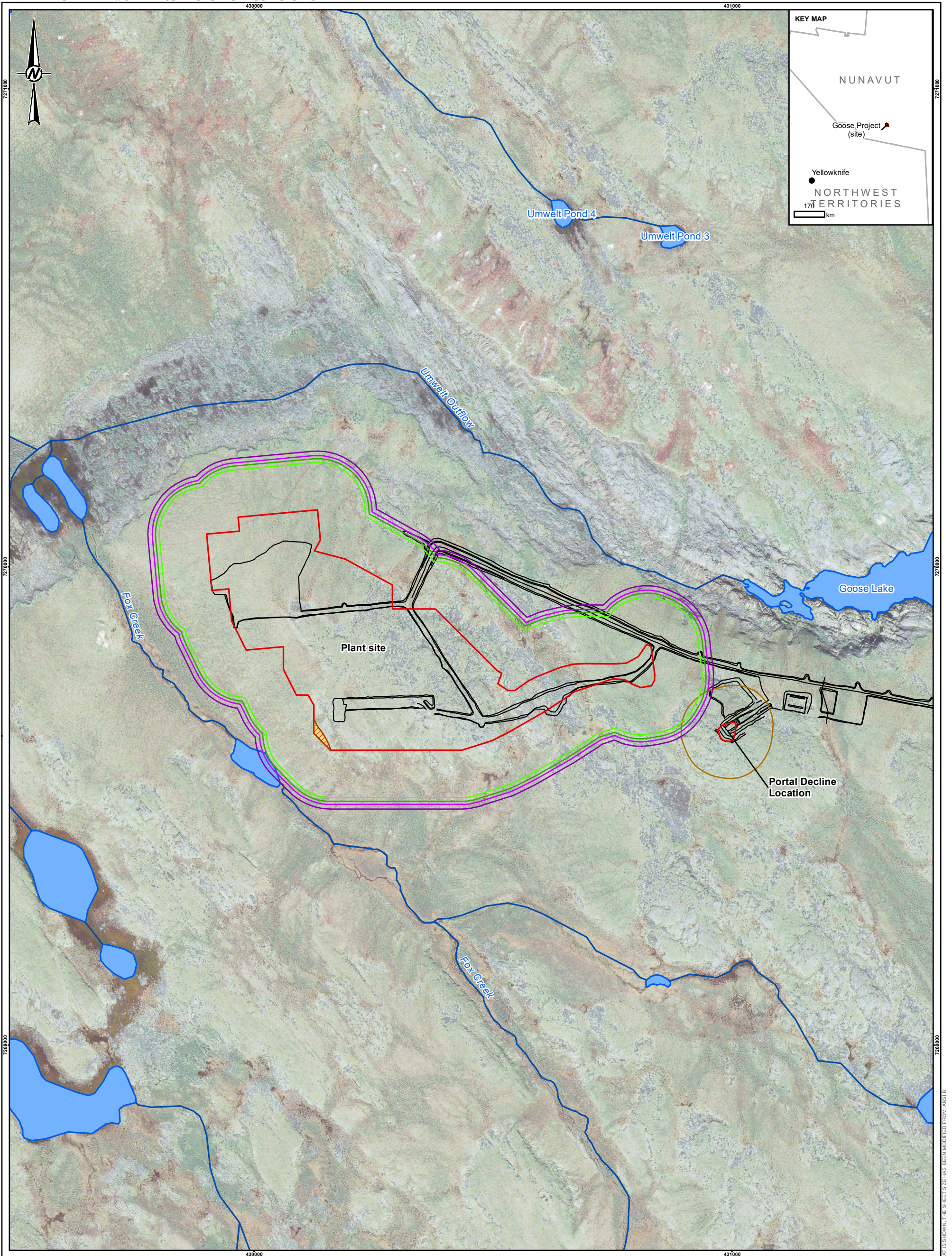
Charge Weight Per Delay (kg)	Distance to Goose Lake (m) <sup>(b)</sup>	Distance to Fox Creek (m) <sup>(b)</sup>	Overpressure Setback (m)	Peak Particle Velocity Setback (m)	Scenario Outcome:
			Rock	Rock	
100 <sup>(a)</sup>	250.6	696.2	77.6	150.9	Set back for 100 kg charge weight (per delay) is appropriate to protect fish and fish habitat in Goose Lake and Fox Creek.

(a) Proposed charge weight

(b) Distance measured from the closest point of blast location to respective waterbody

Note: kg = kilogram; m = meters





LEGEND

- 2020 AS-BUILT FOOTPRINT
- BLASTING LOCATION
- BLASTING LOCATION EXCULSION ZONE
- WATERCOURSE
- WATERBODY

BLAST LOCATION SETBACK

- PLANT SITE 122.8 m SETBACK FOR 250 kg CHARGE WEIGHT BLAST IN ROCK
- PLANT SITE 113.5 m SETBACK FOR 250 kg CHARGE WEIGHT BLAST IN FROZEN SOIL
- PLANT SITE 107.0 m SETBACK FOR 190 kg CHARGE WEIGHT BLAST IN ROCK
- PLANT SITE 98.9 m SETBACK FOR 190 kg CHARGE WEIGHT BLAST IN FROZEN SOIL
- PORTAL DECLINE LOCATION 77.6 m SETBACK FOR 100 kg CHARGE WEIGHT BLAST IN ROCK



REFERENCE(S)

HYDROLOGY LAYERS OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED, REVISED BY GOLDER ASSOCIATES LTD. PHOTOSAT IMAGERY OBTAINED FROM THE CLIENT. PROJECTION: UTM ZONE 13 DATUM: NAD 83

CLIENT  
SABINA GOLD & SILVER CORP.

PROJECT  
BACK RIVER PROJECT ENVIRONMENT AND PERMITTING

TITLE  
**SETBACK DISTANCE FOR THE OVERPRESSURE GUIDELINE (50 kPa) TO PROTECT FISH**

CONSULTANT



YYYY-MM-DD 2021-04-23

DESIGNED SP

PREPARED SK

REVIEWED SP

APPROVED CS

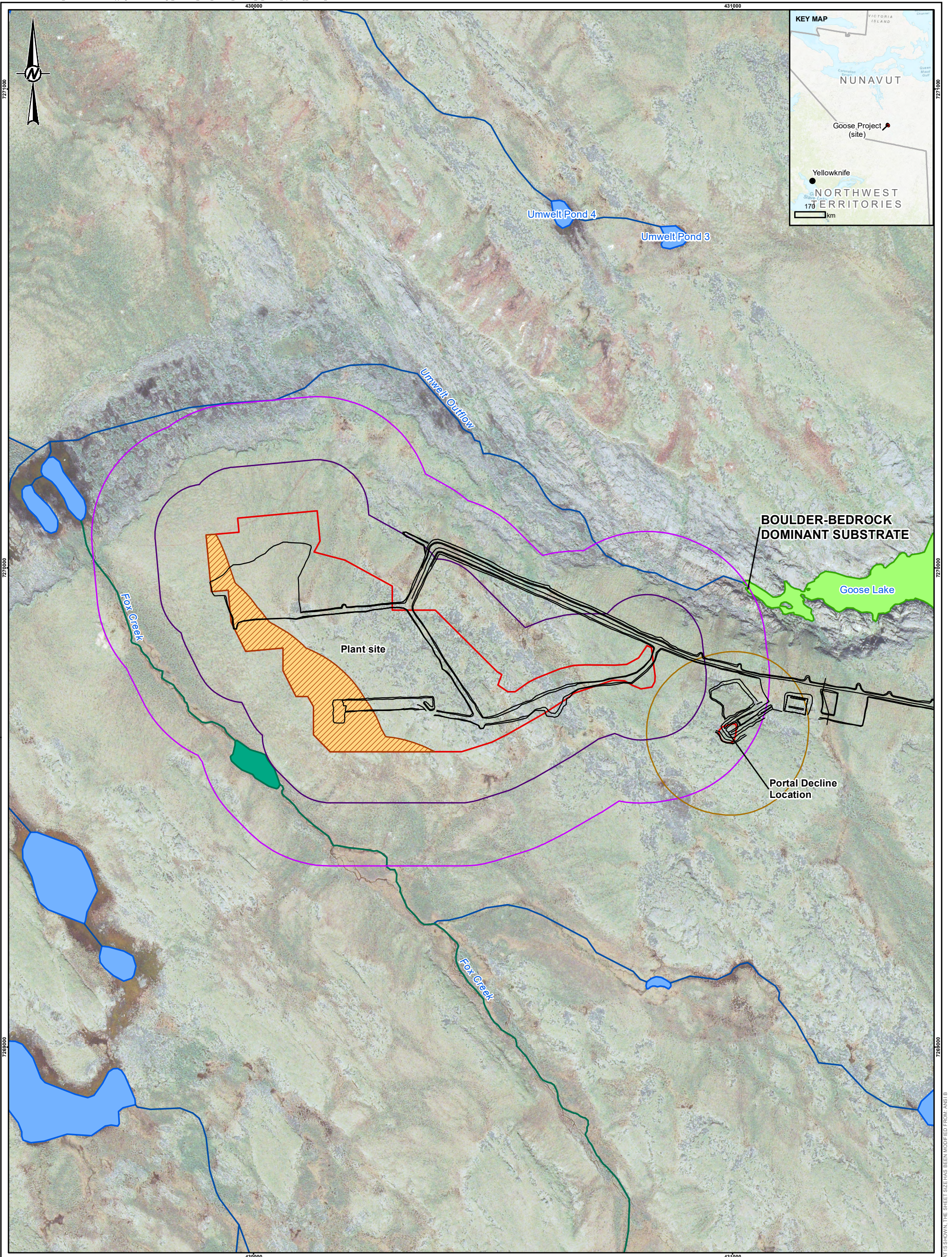
PROJECT NO.  
20412211

CONTROL

REV.  
0

FIGURE  
1





LEGEND

- 2020 AS-BUILT
- BLASTING LOCATION
- BLASTING LOCATION EXCULSION ZONE
- FOX CREEK AND POND – POTENTIAL TO SUPPORT SPAWNING AND REARING HABITAT FOR ARGR
- POND ON FOX CREEK – POTENTIAL TO SUPPORT SPAWNING AND REARING HABITAT FOR ARGR
- WEST BAY (NARROWS) OF GOOSE LAKE – LOW POTENTIAL TO SUPPORT SPAWNING AND REARING HABITAT FOR LKTR\*
- WATERCOURSE
- WATERBODY

BLAST LOCATION SETBACK

- PLANT SITE 106.7 m SETBACK FOR 50 kg CHARGE WEIGHT BLAST IN ROCK OR FROZEN SOIL
- PLANT SITE 238.6 m SETBACK FOR 250 kg CHARGE WEIGHT BLAST IN ROCK OR FROZEN SOIL
- PORTAL DECLINE LOCATION 150.9 m SETBACK FOR 100 kg CHARGE WEIGHT BLAST IN ROCK



NOTE(S)  
\*THIS PORTION OF GOOSE LAKE IS NOT CONSIDERED SPAWNING HABITAT.

REFERENCE(S)  
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PROJECTION: UTM ZONE 13 DATUM: NAD 83

CLIENT  
SABINA GOLD & SILVER CORP.

PROJECT  
BACK RIVER PROJECT ENVIRONMENT AND PERMITTING

TITLE  
**SETBACK DISTANCE FOR THE PEAK PARTICLE VELOCITY GUIDELINE (13 mm/s) TO PROTECT FISH HABITAT**

CONSULTANT	YYYY-MM-DD	2021-04-23
	DESIGNED	SP
	PREPARED	SK
	REVIEWED	SP
	APPROVED	CS



PROJECT NO. 20412211 CONTROL REV. 0 FIGURE 2



## 5.0 MITIGATION STRATEGIES FOR PLANT SITE BLAST LOCATION

### Spawning Window Avoidance for the Protection of Fish Habitat

It is recommended that blasting in the western portion of the Plant Site be completed outside of the spawning window for Arctic Grayling (see “exclusion zones” marked on Figure 1 and 2). The DFO restricted activity timing window for the protection of spring spawning fish and fish habitat (Nunavut Zone 2) is 1 May to 15 July of any given calendar year (DFO 2013). This timing window covers all spring spawning species (e.g., Arctic Grayling and Northern Pike (*Esox lucius*)). However, the timing of the early part of the window in May is not applicable to the Plan (e.g., spring freshet does not start until June, Northern Pike do not occur in the study area), while the later part of the window may not be protective of later stages of egg development of Arctic Grayling based on field observations. As such, a restricted timing window was developed for the Plan based on Arctic Grayling life history and baseline data for the Goose Site.

Arctic Grayling spawning migrations are closely tied to temperature; a rise in temperature to 4°C and spring flooding may be factors for the onset of migrations (Stewart et al. 2007). Spawning migrations may begin as early as late May but typically mid-June at the Goose Site, just after ice breakup, and spawning takes place over a two to three week period. Once spawning has occurred, fertilized eggs incubate for approximately 13-18 days depending on water temperature (Stewart et al. 2007, Richardson et al. 2001). Incubating eggs become highly sensitive to impacts of peak particle velocity (i.e., physical shock) during epiboly, which occurs approximately 5 days after fertilization at approximately 10°C for salmonids (Kolden and Aimone-Martin 2013).

With consideration of typical site conditions at the Back River Project, the recommended restricted timing window was defined as the spawning and hatching periods for Arctic Grayling to begin just prior to the peak freshet for a period of 40 days through both spawning and egg incubation stages. The restricted activity period may begin as early as Mid-May and continue to late-July, depending on local weather conditions for the construction year under review, and should be avoided while blasting to mitigate the effects of peak particle velocity on spawning habitat on Arctic Grayling. Avoiding blasting during this potentially sensitive time is considered to be a very protective strategy.

### Charge Weight Manipulation for Protection of Fish and Fish Habitat

When considering blasting within the spawning and rearing period for Arctic Grayling, the following may apply:

- Because PPV from blasting at the proposed charge weight of 250 kg per delay has the potential to impact Arctic Grayling spawning habitat throughout Fox Creek, manipulation of charge weights is recommended to achieve an appropriate setback for blasting within the spawning window for Arctic Grayling. The reduction in weight is significant, and limits blasts to a 50 kg charge weight per delay (Table 1; Figure 2). This approach is recommended for blasting within the “exclusion zone” marked on Figure 2 and summarized in Table 3.

If considering blasting outside of the spawning and rearing window for Arctic Grayling, the following may still apply:

- Within the open-water season, overpressure from blasting at the proposed charge weight of 250 kg per delay may affect a small area within Fox Creek (Table 1; Figure 1). Reducing the charge weight to 190 kg per delay within the southwest corner of the Plant Site (“exclusion zone” marked on Figure 1; Table 3) is recommended to provide an appropriate setback distance for fish in Fox Creek for periods outside the spawning and rearing window for Arctic Grayling (Table 1; Figure 1).

Within most of the ice-covered season (i.e., when stream flows are not apparent), Fox Creek and any small ponds within the Fox Creek system are not expected to provide overwintering habitat for fish because of frozen conditions extending to the creekbed. Therefore, Sabina's proposed blasting plan for the Plant Site does not pose any risks to fish and fish habitat during this period (Table 3).

**Table 3: Charge Weight Restrictions Within Exclusion Zones by Season**

Season	Exclusion Zone Reference	Charge Weight Per Delay (kg)
Arctic Grayling Spawning	PPV Guideline (Figure 2)	50
Open Water	Overpressure Guideline (Figure 1)	190
Ice-Covered	Overpressure Guideline (Figure 1)	250 <sup>1</sup>

Note: kg = kilograms; PPV = peak particle velocity; <sup>1</sup> a heavier charge weight was not evaluated in this assessment

## 6.0 CLOSURE

We trust the Blasting Plan meets the expectation of Sabina and the proposed mitigation measures are acceptable. Please contact Sarah Proctor at (639) 317-7382 or Sarah\_Proctor@Golder.com for any clarification, or to discuss further mitigation measures as required.



Sarah Proctor, B.Sc.  
Aquatic Biologist

SP/CS/tt/jlb



Cameron Stevens, MSc, PhD, PBiol  
Associate, Fish Biologist

[https://golderassociates.sharepoint.com/sites/136792/project\\_files/5\\_technical\\_work/2600\\_fisheries/blast\\_plan/blasting\\_plan/20412211-075-tm-rev0-2600-blasting\\_plan\\_final/sabina\\_back\\_river\\_blasting\\_plan\\_plant\\_site\\_and\\_portal\\_decline.docx](https://golderassociates.sharepoint.com/sites/136792/project_files/5_technical_work/2600_fisheries/blast_plan/blasting_plan/20412211-075-tm-rev0-2600-blasting_plan_final/sabina_back_river_blasting_plan_plant_site_and_portal_decline.docx)

Attachment: Appendix A - Lake Trout Spawning Survey Observations

## 7.0 REFERENCES

- DFO (Fisheries and Oceans Canada). 2013. Nunavut Restricted Activity Timing Windows for the Protection of Fish and Fish habitat. Accessed March 1, 2021. Available at <https://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/nu-eng.html>.
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**APPENDIX A**

# Lake Trout Spawning Survey Observations



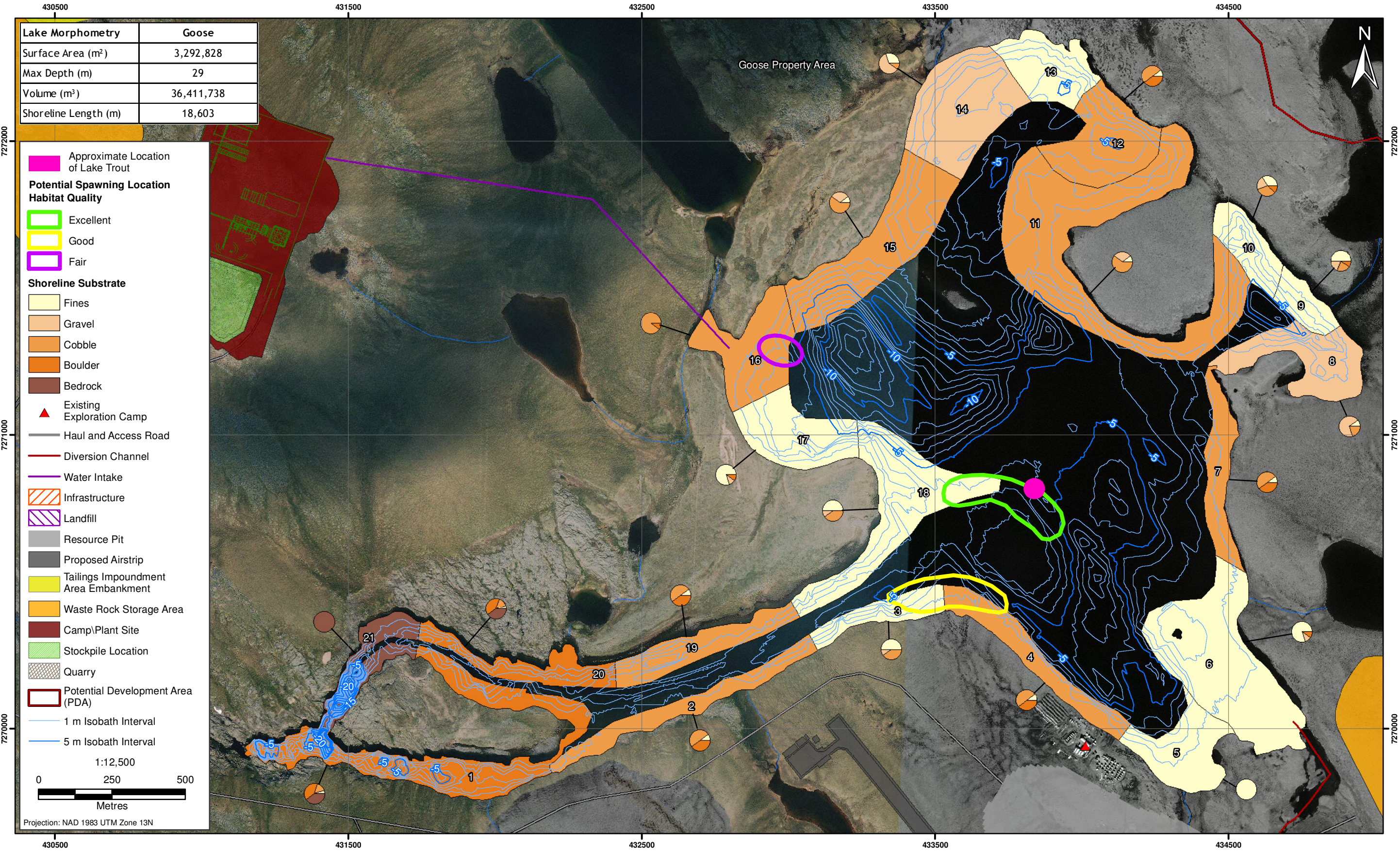


Figure 3.4-8

Lake Trout Spawning Survey  
Observations, Goose Lake, 2013