

2022-2023 Monitoring and Maintenance Program

Upper Trinity South (New Harbour) Waste Disposal Site - New Harbour, NL

Government of Newfoundland and Labrador-
Department of Environment and Climate Change
Final Report

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Executive Summary

The 2022-2023 Monitoring and Maintenance Program has been conducted by Englobe Corp. (Englobe) at the property identified as the Upper Trinity (New Harbour) Waste Disposal Site property located on Route 73, approximately 5 km from the junction of Route 80 and Route 73 in the community of New Harbour, Newfoundland and Labrador (NL) (herein referred to as 'the site'). The purpose of the work was to conduct one groundwater and surface water sampling event at the site, inspect the monitor wells, and leachate control system and address outstanding maintenance issues that have been identified for the site.

The monitoring program was conducted on January 5, 2023 and included groundwater monitoring and sampling of eight existing monitor wells as well as the collection of surface water samples from three locations on and/or near the site.

Analytical results for petroleum hydrocarbons (PHCs), polychlorinated biphenyls (PCBs), metals and general chemistry parameters were compared to the 2021 Atlantic Risk-Based Correction Action (RBCA) Version 4 Human Health-Based and Ecological Tier I Environmental Quality Standards (EQS) (updated July 2022) for groundwater >10 m from a surface water body and discharging into fresh water with coarse-grained soil and a non-potable groundwater supply.

The results of the 2022/2023 monitoring and maintenance program are summarized as follows:

- Seven of the eight existing monitor wells were located and sampled including MW-02 to MW-04, MW-05A and MW-06 to MW-08 and two surface water samples were collected including one from the site's leachate collection pond (i.e., SW-POND) and a stream located upgradient (i.e., SW-UPSTREAM) of the site;
- Access to MW-01 was not possible during the site visit due to standing water located in the area;
- A sample of the surface water at the downstream sampling location (i.e., SW-DOWNSTREAM) was not possible due to ice cover in the stream;
- The depths to groundwater in the monitor wells ranged from ground surface (i.e., 1.05 metres below ground surface (mbgs) in monitor well MW-04 to 2.55 mbgs in monitor well MW-02);
- Concentrations of aluminum and iron in the eight groundwater samples and aluminum, iron, copper, lead and/or zinc in the three surface water samples exceeded the applicable Ecological Health Tier I EQSs. Detected concentrations of aluminum and iron in groundwater and surface water may be the result of background soil condition and thus, are not considered to be an environmental concern in the tested areas of the site;
- PCB concentrations were not detected above the laboratory's standard reportable detection limit in the groundwater or surface water samples collected during the current assessment. It should be noted that although PCB concentrations were below the detection limits for both surface water samples collected, regulatory guidance criteria for PCBs in the Tier I Ecological EQSs for the protection of freshwater is lower than the current detection limit (i.e., 0.001 µg/L);
- The pH in surface water sample SW-UPSTREAM (5.83) was reported to be outside the Tier I EQS pH range of 6.5 - 9.0;
- Some metals (i.e., cobalt, iron, manganese, nickel, barium, cadmium, copper and lead) present in monitor well MW-04 were identified to have elevated concentrations in 2023. Future results should be reviewed to ensure no trends of increased metals concentrations are identified given this monitor well is inferred to be down-gradient of the landfill;

- Englobe conducted an inspection of the monitor wells on January 5, 2023 and noted that the casings for the monitor wells were loose in the ground and the hinge of the casing of MW-07 was broken. Repairs to the monitor wells protective casings including resealing the bases and replacement of the casing could not be conducted at the time of the site visit due to frozen ground conditions and colder temperatures encountered at the site. Englobe will complete these repairs and provide a summary document under separate cover; and,
- Historical data from 2007-2017, 2021 and 2022 groundwater and surface water quality results are consistent in terms of metal and general chemistry parameters detected during some or all sampling events.

Based on the available environmental data, no unacceptable risks to human and/or ecological receptors are anticipated at the site under current site conditions.

However, some considerations with respect to future operations of the site are outlined below:

- Continue to conduct annual groundwater and surface water monitoring and sampling in 2023/2024 to confirm groundwater and surface water quality at the site and down-gradient of the site. Conduct a trend analysis of the historical data using the updated groundwater and surface water quality data;
- Complete a groundwater level survey of the monitor wells to determine actual groundwater flow direction on the site; and,
- Continue to complete an inspection of monitor wells and the leachate control system including slopes of waste landfill for signs of damage or natural degradation.

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Englobe Corp.’s subcontractors who have carried out on-site or laboratory work are duly assessed according to the purchase procedure of our quality system. For further information, please contact your project manager.”

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1 Introduction

Englobe Corp. (Englobe) was retained by the Province of Newfoundland and Labrador's Department of Environment and Climate Change (ECC) to undertake the 2022/2023 Monitoring and Maintenance Program at the former Upper Trinity South (New Harbour) Waste Disposal Site located in New Harbour, Newfoundland and Labrador (hereafter referred to as the "site"). The purpose of the work was to conduct one groundwater and surface water sampling event at the site, inspect the monitor wells and leachate control system and address outstanding maintenance issues that have been previously identified for the site.

The 2022/2023 Monitoring and Maintenance Program was based on accepted environmental site assessment standards including those published by the Canadian Council of Ministers of the Environment (CCME) and followed ECC developed operating procedures and guidance.

2 Background

2.1 Site Background

Historically, the site operated as a domestic waste disposal site from the early 1970s until November 2009. The site accepted waste from the surrounding communities of Blaketown, Dildo, Green's Harbour, Hopeall, Markland, New Harbour, Old Shop, South Dildo, and from the Towns of Bay Roberts and Cupids.

During the operational period, the site was managed by a local contractor who collected waste from residents and businesses in the area and disposed of the material in excavated cells or pits. Waste was also delivered to the site by private individuals and businesses; however, the waste delivered by private sources was often placed on the ground and not within excavated pits or cells. Historically, open burning of refuse was a common practice carried out at the site to help reduce the volume of waste and to control pests.

In addition to municipal solid waste disposed at the site, a quantity of low-level polychlorinated biphenyls (PCB)-impacted scrap metal and transformer casings originating from the Makinson's scrap yard were disposed on the northwest area of the site from 1992 to 1995. The site was also used by a local seal processing plant to dispose of seal pelt trim and fat, sawdust and sludge. A smaller portion of the site was used for metals disposal, including car wrecks and bulk items.

The waste disposal site was constructed as an unlined site and potential leachate impacts were not effectively managed until the construction of interception ditches and a leachate collection pond in 2006 and 2007. In addition, seven monitor wells (MW-01 to MW-07) were installed around the perimeter of the waste disposal site to monitor potential leachate impacts in groundwater and one monitor well (MW-08) was installed up-gradient of the waste disposal site to monitor background concentrations for comparison purposes. One monitor well (MW-05A) was installed in 2013 to replace MW-05, which was damaged and reported as having heavy siltation. Monitoring of groundwater and surface water quality has been ongoing since 2007.

Closure activities at the site in 2011 and 2012 included compaction and grading as well as the placement of an interim cover consisting of locally available fill to facilitate consolidation and settling of

the municipal solid waste. In 2013, a final soil cover was placed over the entire site along with an engineered cap liner system over the PCB-impacted area. The on-site infrastructure and access routes were removed, and a soil berm was installed to block the view of the site from Route 73. Signage was installed indicating the site as a former landfill and that no trespassing is permitted.

The Post-Decommissioning Monitoring and Maintenance Program Plan developed by AMEC Earth and Environmental in March of 2011, was developed in accordance with Section 7.5.4 of the Department of Environment and Conservations Guidance Document “Environmental Standards for Municipal Solid Waste Landfills Sites”, GD-PPD049.1 and includes: groundwater monitoring, surface water monitoring, leachate system monitoring and the monitoring and maintenance of settlement and final cover of the site.

2.2 Previous Environmental Reports

Fourteen previous environmental reports prepared for the subject property were provided by ECC within the Request for Proposal (RFP) and reviewed as part of the assessment.

- Removal of PCB-Impacted Material, Upper Trinity South Waste Disposal Facility, New Harbour, NL. Prepared by AMEC dated January 2, 2011 (AMEC Project No. TF1012730);
- Closure Plan Upper Trinity South (New Harbour) Waste Disposal Site. Prepared by AMEC Earth and Environmental, dated March 2011 (AMEC Reference No. TF1112731);
- Completion Report for Grading, Compaction and Interim Cover of Former Upper Trinity South waste Disposal Site, New Harbour, NL. Prepared by AMEC Earth and Environmental, dated March 2012 (AMEC Project No. TF1112732);
- 2011 - 2012 Annual Report of Activities Upper Trinity South (New Harbour) Waste Disposal Site. Prepared by SNC Lavalin, dated July 2012 (Ref. No. 723162);
- Surface Water and Sediment Sampling Report, Three Corner Pond and Denny’s Pond, Upper Trinity South (New Harbour) Waste Disposal Site. Prepared SNC-Lavalin Inc., dated October 2012 (Project No. 508907-0001);
- Test Pitting and Soil Sampling Program, PCB Disposal Area, Upper Trinity South (New Harbour), Waste Disposal Site at New Harbour Barrens, NL. Prepared by AMEC, dated February 28, 2013 (AMEC Project No. TF1312736);
- 2012 - 2013 Annual Report of Activities Upper Trinity South (New Harbour) Waste Disposal Site. Prepared by AMEC Earth and Environmental, dated March 29, 2013 (Ref. No. TF1212735);
- Completion Report for Maintenance of Interim Soil Cover for Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL. Prepared by AMEC Environment & Infrastructure a Division of AMEC Americas Limited, dated May 2013 (AMEC Project No. TF1212734);
- Human Health and Ecological Risk Assessment of the PCB Area at the Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour Barrens, Newfoundland and Labrador. Prepared by Dillion Consulting Limited, dated July 2013 (Project No. 13-7515-1000);
- 2013/2014 Monitoring and Maintenance Program, Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour Barrens, Newfoundland and Labrador. Prepared by CRA, dated January 2014 (Ref. No. 084308(4));
- 2014/2015 Monitoring and Maintenance Program, Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour Barrens, Newfoundland and Labrador. Prepared by CRA, dated February 2015 (Ref. No. 084308(7));

- 2015-16 Monitoring and Maintenance Program, Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour Barrens, Newfoundland and Labrador. Prepared by Fracflow Consultants Inc., dated June 2016 (FFC File No. 3073N);
- 2017 - 2018 Monitoring Program, Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour Barrens, Newfoundland and Labrador. Prepared by GHD, dated May 2018 (Ref. No. 084308(10)); and,
- 2021 - 2022 Monitoring and Maintenance Program, Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL. Prepared by Strum Consulting, dated March 31, 2022 (Project No. 21-8365).

3 Scope of Work

The scope of work for the Maintenance and Monitoring Program is as follows:

- Review previous environmental reports completed for the site as provided by ECC;
- Locate (where possible with visual inspection and reasonable effort) the existing monitoring wells at the site. Conduct a water level and free product survey in each of the monitoring wells identified at the site using an electronic interface meter to determine the depth to and thickness of free product;
- Complete inspection of monitor well and leachate control system;
- Collect and submit selected groundwater samples to ALS Laboratories in Dartmouth, NS for analysis of dissolved metals including mercury and polychlorinated biphenyls (PCBs);
- Collect and submit selected surface water samples to ALS Laboratories in Dartmouth, NS for analysis of total metals including mercury, PCBs and general chemistry;
- Comparing analytical results to the commercial guidelines;
- Repair loose casings on monitor wells MW-01, MW-03, MW-06, MW-07 and MW-08 as well as replace the j-plug of MW-06;
- Replace missing 'No Trespassing / No Dumping' sign with steel posts or pressure treated wood; and,
- Prepare a report from the site detailing the scope of work, methodology, findings, and recommendations as warranted.

4 Property Description

4.1 Site Description

The site is located on Route 73, approximately 5 km from the junction of Route 80 and Route 73, in the community of New Harbour, NL. The site has an approximate area of 4.5 hectares and is located on land zoned as 'dump buffer site' by Digital Government and Service NL (DGSNL). Site photographs are provided in Appendix A and a general Site Location Map, Figure 2.1 indicates the site's approximate extent for this investigation.

Figure 4-1 - Site Location Map - Route 73, New Harbour Barrens, NL



Image source: ECC Request for Proposal.

The area surrounding the waste disposal site is comprised mostly of vacant, undeveloped dense forest with numerous wetlands (bogs, ponds, streams, etc.).

4.2 Geology, Hydrology and Hydrogeology

The following information has been obtained from available provincial mapping:

Surficial deposits: Based on our review of publicly available surficial geological maps and our previous experience from other investigations near this site, the site's surficial geology at the site placed below the fill material comprises thin glacial deposits and/or poorly drained accumulations of peat, peat moss or other organic material over bedrock that is concealed by vegetation.

Bedrock: Based on publicly available bedrock mapping of the area, bedrock at the site is mapped as consisting of thickly bedded, light-grey sandstone with locally thin bedded, greenish-grey to red sandstone. Siltstone, tuff and conglomerate of the Gibbett Hill Formation of the Signal Hill Group.

Hydrogeology: Groundwater flow in the area is expected to vary, but to be generally to the west towards Denny's Pond located approximately 1.6 km from the southwestern boundary line of the site. Surface drainage at the site appears to follow the general slope of the property, which is engineered to flow downward towards the southwest towards the leachate collection pond.

5 Assessment Methodology

5.1 Groundwater Sampling

Englobe personnel were on-site on January 5, 2023, to collect groundwater samples from eight monitoring wells, including MW-01 to MW-08. Prior to sampling, static groundwater levels were measured at each monitoring well using a Solinst interface probe and were verified for the presence of free phase petroleum product. Each well was developed by purging a minimum of three well casing volumes using dedicated bailers. After allowing sufficient time for groundwater recovery, groundwater samples were collected from the monitor wells using dedicated bailers and placed in laboratory supplied bottles and vials (with preservative as necessary).

Samples were then placed in a secure ice-packed cooler until delivery to the laboratory. Groundwater samples were submitted to ALS Laboratories (ALS) in Dartmouth, NS for analysis of metals and polychlorinated biphenyls (PCBs). ALS is certified by the Standards Council of Canada (SCC). Where applicable, analyses were performed in accordance with the protocols stipulated in the Atlantic RBCA Guidelines for Laboratories, Version 3.1, May 2016.

The locations of all monitor wells are shown on Figure 1 of Appendix B. Information from the groundwater sampling program is presented in Tables 1 and 2 of Appendix C.

5.2 Surface Water Sampling

On January 5, 2023, surface water samples were collected from the two sampling locations during the sampling event. Samples were collected from the leachate pond (SW-POND) and the stream upgradient of the site (SW-UPSTREAM). A sample was not collected from the stream located downgradient of the site (SW-DOWNSTREAM) due to stream surface being frozen at the time of the site visit. Analytical data from the surface water-sampling program is presented in Tables 3 to 5 of Appendix C.

Surface water samples were collected directly into laboratory supplied bottles and vials (with preservative as necessary). Samples were collected by positioning the laboratory supplied sampling bottles into the water column at an approximate depth of 0 - 0.15 m below the water's surface. Caution was used to prevent the bottles from disturbing the sediment on the bottom of the pond and stream. Samples were maintained in secure ice-packed cooler and transported to the laboratory for analysis. The surface water samples collected were submitted for analysis of metals, PCBs and general chemistry parameters. The surface water sampling locations are shown on Figure 1 of Appendix B.

6 Assessment Standards

Based on past usage (waste disposal site), the site is classified as a commercial property. Site soils are coarse-grained and groundwater resources are not used as a potable water source and therefore considered to be non-potable.

The applicable exposure pathways for natural areas could vary considerably among different sites due to differences, for example, in resident wildlife species or consumption of country foods by residents. As a result, both human health-based and ecological standards are applicable to the site.

As such, analytical results were compared to Atlantic Risk-Based Correction Action (RBCA) Tier I Human Health and Ecological Environmental Quality Guidelines (EQSs) for groundwater >10 m from a surface water body and discharging into fresh water are applicable (Version 4.0, July 2021, updated July 2022).

7 Results

7.1 Hydrogeologic Assessment

On, January 5, 2023, Englobe completed a hydrogeologic assessment by measuring the groundwater depths in each groundwater well. Table 7-1 presents the results of the static groundwater measurements.

Table 7-1- Summary of Groundwater Depths

Well ID	Depth of Water (mbgs)	Depth of Free Product (mbgs)
MW-01	-	-
MW-02	2.55	NP
MW-03	1.10	NP
MW-04	1.05	NP
MW-05A	1.85	NP
MW-06	1.15	NP
MW-07	1.35	NP
MW-08	2.08	NP

Notes: MW-01 was not measured due to access restrictions of high volume of surface water in the area.

NP - Not Present

7.2 Samples Submitted

In total ten water samples including seven groundwater plus one field duplicate, and two surface water samples were submitted for chemical analysis.

Details of the analysis performed on each sample can be found in Table 7-2, below. The locations of the wells and surface water sample locations are shown on Figure 1, Appendix B.

Table 7-2 - Summary of Samples Submitted

Sample ID	Location(s)	Analysis
MW2	MW-02	Metals (dissolved) and PCBs.
MW2-DUP	MW-02	Metals (dissolved) and PCBs.
MW3	MW-03	Metals (dissolved) and PCBs.
MW4	MW-04	Metals (dissolved) and PCBs.
MW5A	MW-05A	Metals (dissolved) and PCBs.
MW6	MW-06	Metals (dissolved) and PCBs.
MW7	MW-07	Metals (dissolved) and PCBs.
MW8	MW-08	Metals (dissolved) and PCBs.
SW-UPSTREAM	SW-UPSTREAM	Metals (total), PCBs, and General Chemistry.
SW-POND	SW-POND	Metals (total), PCBs, and General Chemistry.

Laboratory analytical results are included in Tables 1 to 5 of Appendix C and discussed below. The laboratory certificates are included in Appendix D.

7.3 Groundwater Results

7.3.1 Dissolved Metals

Eight groundwater samples (including a field duplicate sample) were analyzed for metals. Metal exceedances of the Tier I EQSs for human and/or ecological health were identified as follows:

- Aluminum in monitor wells MW2, MW3, MW7, MW8 and the field duplicate; and,
- Cadmium, Cobalt and Zinc in monitor well MW4.

Where detected, all other metal concentrations were below the applicable Tier I EQSs.

Metal analytical results for all groundwater samples analyzed are summarized in Table 1, Appendix C.

7.3.2 PCBs in Groundwater

Eight groundwater samples (including a field duplicate sample) were analyzed for PCB analysis. Laboratory analytical results are included in Table 2 of Appendix C. The laboratory certificates are included in Appendix D.

The PCB parameters reported non-detectable concentrations for all submitted groundwater samples, thus, satisfying the applicable Human Health-Based and Ecological Tier I EQSs.

7.4 Surface Water Results

7.4.1 Metals in Surface Water

Two surface water samples were analyzed for metals. Metal exceedances of the Tier I EQSs for ecological health were identified as follows:

- Aluminum in surface water samples SW-UPSTREAM and SW-POND; and,
- Iron and Lead in surface water sample SW-UPSTREAM.

Where detected, all other metal concentrations were below the applicable Tier I EQSs.

Metal results for all surface water samples analyzed are summarized in Table 3, Appendix C.

It is our opinion that the elevated concentrations of these metals are not evidence of anthropogenic contamination.

7.4.2 PCBs in Surface Water

Two surface water samples were analyzed for PCB analysis. Laboratory analytical results are included in Table 4 of Appendix C. The laboratory certificates are included in Appendix D.

The PCB parameters reported non-detectable concentrations for all submitted surface water samples, thus, satisfying the applicable Human Health-Based and Ecological Tier I EQSs.

7.4.3 General Chemistry in Surface Water

Two surface water samples were submitted for general chemistry analysis. Laboratory analytical results are included in Table 5 of Appendix C. The laboratory certificates are included in Appendix D.

The general chemistry parameters were reported to range from non-detectable to detectable concentrations which satisfy the applicable Ecological based Tier I EQSs, with the exception of the pH parameter.

The parameter of pH in the stream located upgradient from the site (i.e., SW-UPSTREAM) was reported to be 5.83 which is lower than acceptable range for pH under the Ecological based Tier I EQSs.

7.5 Inspection of Monitor Well and Waste Disposal Area

Englobe conducted a visual inspection of the site infrastructure and groundwater monitor wells during the site visit conducted on January 5, 2023.

The following items were noted:

- The hinge of monitor well MW07 was broken on the protective casing and requires replacement;
- The leachate ditch system and collection pond were observed to be in good condition with no signs of blockages or erosion;
- Casings of the monitor wells were loose in the ground; and,
- The ‘No Trespassing / No Dumping’ should be reinstalled.

Englobe will complete the necessary repairs and installations and provide a summary document under a separate cover.

7.6 Quality Assurance/Quality Control

Englobe conducted the environmental sampling following standard operating procedures, including job procedures and safe work practices. The sampling was conducted in accordance with all pertinent acts, regulations, codes, guidelines, and standard practices.

All groundwater and surface water samples were logged by Englobe personnel and submitted under chain of custody to ALS. ALS conducts their own internal QA/QC programs consistent with relevant standards and requirements for laboratory certification. The measured values and recoveries are compared to acceptable lower and upper limits. ALS's QA/QC results were reviewed by Englobe and were found to be within acceptable limits and details can be found on the laboratory certificates in Appendix D.

Based on the results of the QA/QC program, the analytical results are considered reliable and acceptable.

7.7 Discussion

Based on the results of the 2022-2023 monitoring sampling event, observations, information gathered, and historical laboratory analytical data obtained during previous sampling events completed at the site, the following environmental information has been used to determine the potential for trends. As guidance criteria has been updated since the initial analytical data was reviewed, a direct comparison of exceedances observed from data collected from 2007 to 2017 could not be made with the two most recent programs. Historical analytical data prior to 2021 was compared to the MOE Guidelines for Full Depth Generic Site Condition Standards and the CCME CWQGs, while data collected during monitoring programs completed since 2021 has been compared to the Atlantic RBCA - User Guidance (Version 4.0, July 2021, updated July 2022).

7.7.1 Groundwater

Concentrations of PCBs have reported to be non-detect since the initial groundwater monitoring event conducted in 2007.

The historical 2007-2017, 2021 and 2022 groundwater quality results are consistent in terms of metals detected during some or all sampling events. Current and historical concentrations of aluminum have been reported to exceed the applicable guidelines; however, based on the reported concentration observed within the background sample (i.e., MW-08) this is likely due to background levels associated with the ground and subsurface conditions of the area and not likely due to influence from the landfill. Other metals (i.e., Cobalt, Copper, Cadmium, Lead and Mercury) have reported exceedances of the applicable guidelines; however, associated trends cannot be identified due to the annual variability of the identified exceedances year to year. Historical data of mercury identified exceedances from four of the monitor wells in the years 2009 and 2010; however, although concentrations have fluctuated, exceedances of mercury have not been identified since 2010.

Some metals present in groundwater in monitor well MW-04 were identified to have elevated concentrations in 2023 compared to previous years. As this monitor well is inferred to be down-gradient of the landfill, future results should be reviewed to ensure no trends of increased metal concentrations are identified.

7.7.2 Surface Water

Concentrations of PCBs have reported to be non-detect since the initial surface water monitoring event conducted in 2007.

The historical 2007-2017, 2021 and 2022 surface water quality results are consistent in terms of metals detected during some or all sampling events. Current and historical concentrations of aluminum have been reported to exceed the applicable guidelines; however, based on the reported concentration observed within the background sample (i.e., SW-UPSTREAM) this is likely due to background levels associated with the ground and subsurface conditions of the area and not likely due to influence from the landfill. Various other metals (i.e., Copper and Iron) have reported exceedances of the applicable guidelines; however, the identified exceedances are variable and therefore potential trends are not able to be extrapolated.

Based on historical surface water data, surface water quality at the upstream location (i.e., SW-UPSTREAM) and at the downstream location (i.e., SW-DOWNSTREAM) has remained consistent except for some seasonal elevated concentrations of individual parameters. Historical surface water data from the sample collected from the pond (i.e., SW-POND) located on the southwest portion of the site indicated historical exceedances of the parameter 'Nitrite as N'; however, data shows a decline in concentration to non-detectable levels since the 2013 monitoring event. In addition, historical trends indicate pH concentrations in the upstream sample (i.e., SW-UPSTREAM) have been below the applicable guideline since 2014. Prior to 2014, no sampling occurred upstream.

8 Conclusion and Recommendations

The results of the 2022/2023 monitoring and maintenance program are summarized as follows:

- Seven of the eight existing monitor wells were located and sampled including MW-02 to MW-04, MW-05A and MW-06 to MW-08 and two surface water samples were collected including one from the site's leachate collection pond (i.e., SW-POND) and a stream located upgradient (i.e., SW-UPSTREAM) of the site;
- Access to MW-01 was not possible during the site visit due to standing water located in the area;
- A sample of the surface water at the downstream sampling location (i.e., SW-DOWNSTREAM) was not possible due to ice cover in the stream;
- The depths to groundwater in the monitor wells ranged from ground surface (i.e., 1.05 metres below ground surface (mbgs) in monitor well MW-04 to 2.55 mbgs in monitor well MW-02);
- Concentrations of aluminum and iron in the eight groundwater samples and aluminum, iron, copper, lead and/or zinc in the three surface water samples exceeded the applicable Ecological Health Tier I EQSs. Detected concentrations of aluminum and iron in groundwater and surface water may be the result of background soil condition and thus, are not considered to be an environmental concern in the tested areas of the site;
- PCB concentrations were not detected above the laboratory's standard reportable detection limit in the groundwater or surface water samples collected during the current assessment. It should be noted that although PCB concentrations were below the detection limits for both surface water

samples collected, regulatory guidance criteria for PCBs in the Tier I Ecological EQSs for the protection of freshwater is lower than the current detection limit (i.e., 0.001 µg/L);

- The pH in surface water sample SW-UPSTREAM (5.83) was reported to be outside the Tier I EQS pH range of 6.5 - 9.0;
- Some metals present in monitor well MW-04 were identified to have elevated concentrations in 2023. Future results should be reviewed to ensure no trends of increased metals concentrations are identified given this monitor well is inferred to be down-gradient of the landfill;
- Englobe conducted an inspection of the monitor wells on January 5, 2023 and noted that the casings for the monitor wells were loose in the ground and the hinge of the casing of MW-07 was broken. Repairs to the monitor wells protective casings including resealing the bases and replacement of the casing could not be conducted at the time of the site visit due to frozen ground conditions and colder temperatures encountered at the site. Englobe will complete these repairs and provide a summary document under separate cover; and,
- Historical data from 2007-2017, 2021 and 2022 groundwater and surface water quality results are consistent in terms of metal and general chemistry parameters detected during some or all sampling events.

Based on the available environmental data, no unacceptable risks to human and/or ecological receptors are anticipated at the site under current site conditions.

However, some considerations with respect to future operations of the site are outlined below:

- Continue to conduct annual groundwater and surface water monitoring and sampling in 2023/2024 to confirm groundwater and surface water quality at the site and down-gradient of the site. Conduct a trend analysis of the historical data using the updated groundwater and surface water quality data;
- Complete a groundwater level survey of the monitor wells to determine actual groundwater flow direction on the site; and,
- Continue to complete an inspection of monitor wells and the leachate control system including slopes of waste landfill for signs of damage or natural degradation.

9 Report Use and Conditions

This report was prepared for the exclusive use of Newfoundland and Labrador Department of Environment and Climate Change and is based on data and information obtained during a site visit by Englobe on the subject property; and is based solely upon the condition of the property on the date of such inspection, supplemented by information obtained and described herein.

The evaluation and conclusions contained in this report have been prepared in light of the expertise and experience of Englobe Corp. In evaluating the property, Englobe has relied in good faith upon representation and information furnished by individuals noted in the report with respect to operations and existing property conditions and the historic use of the property to the extent that they have not been contradicted by data obtained by other sources. Accordingly, Englobe accepts no responsibility for any deficiency or inaccuracy in this report as a result of omissions, misstatements or misrepresentations of the persons interviewed. In addition, Englobe will not accept liability for loss, injury, claim or damage arising from any use or reliance on this report as a result of misrepresentation or fraudulent information.

Environmental conditions are dynamic in nature and changing circumstances in the environment and in the use of the property can alter radically the conclusions and information contained herein.

Appendix A

Site Photographs



eNGLOBE



Photo 1: View of entrance into hazardous waste landfill.



Photo 2: Overview of northern portion of hazardous waste landfill.



Photo 3: Overview of cap conditions at the hazardous waste landfill.



Photo 4: Overview showing current slope conditions of the hazardous waste landfill.



Appendix B

Site Figure





LEGEND

-  MONITORING WELL LOCATION
-  SURFACE WATER SAMPLE LOCATION

GENERAL NOTES:

1. PROJECTION: MTM NAD83, ZONE 1.
2. SITE FEATURES ARE APPROXIMATE ONLY. SUBJECT TO SURVEY.

CLIENT:

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

PROJECT:

2022/2023 MONITORING AND MAINTENANCE UPPER
TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
NEW HARBOUR BARRENS, NL

DRAWING TITLE:

SITE PLAN

SCALE:

1:3500

CONSULTANT:



Project manager : - Date : MAY. 2023

Drawn : SM Checked : LC Approved :

Department	Project	Otp	Disc.	Type	Drawing n°	Rev.
	21-8365				1	

Appendix C

Analytical Tables



TABLE 1: METALS (DISSOLVED) in Groundwater
Client: Department of Environment and Climate Change (ECC)
Site Location: Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL
Englobe Project No.: 2210292.000

PARAMETER	RDL	UNITS	Tier I EQSs for Human Health ¹	Tier I EQSs for Eco Health ²	Sample ID & Date								
					MW-01	MW-02	MW-02-DUP	MW-03	MW-04	MW-05A	MW-06	MW-07	MW-08
					-	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23
Aluminum	1	ug/L	-	50	-	91.8	52.4	74.4	15.1	30.8	3.8	827	415
Antimony	0.1	ug/L	-	90	-	0.1	<0.1	<0.1	0.25	<0.1	<0.1	0.21	<0.1
Arsenic	0.1	ug/L	-	50	-	<0.1	<0.1	0.16	0.51	<0.1	0.2	0.43	0.55
Barium	0.1	ug/L	-	10,000	-	3.37	3.23	2.25	19.4	1.41	3.19	5.15	4.79
Beryllium	0.02	ug/L	-	1.5	-	0.11	0.06	<0.02	0.17	0.03	<0.02	0.09	0.08
Bismuth	0.05	ug/L	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Boron	10	ug/L	-	15,000	-	<10	<10	10	16	<10	67	<10	<0.05
Cadmium	0.005	ug/L	-	0.9	-	0.04	0.04	<0.005	1.46	0.01	<0.005	0.05	0.0251
Calcium	50	ug/L	-	-	-	1670	1580	5180	9410	1670	27700	2480	544
Cesium	0.01	ug/L	-	-	-	0.02	0.05	0.25	1.34	0.01	0.04	0.01	0.04
Chromium (total)	0.5	ug/L	-	89	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.79	<0.01
Cobalt	0.1	ug/L	-	10	-	1.06	1.40	0.1	30.7	<0.1	1	0.76	0.28
Copper	0.2	ug/L	-	20	-	0.97	0.64	0.89	8.93	1.27	0.56	5.21	5.68
Iron	10	ug/L	-	3,000	-	28	40	53	45	22	238	2450	238
Lead	0.05	ug/L	-	10	-	<0.05	<0.05	<0.05	0.29	<1	<0.05	1.91	0.08
Lithium	1	ug/L	-	-	-	<1	<1	<1	2.60	<1	<1	3.3	<1
Magnesium	5	ug/L	-	-	-	806	699	1440	2000	579	3610	690	534
Manganese	0.1	ug/L	-	4,300	-	21	38.3	8.24	731	15.8	229	68.9	12.4
Mercury	0.005	ug/L	-	0.26	-	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.1	<0.005
Molybdenum	0.05	ug/L	-	730	-	<0.05	<0.05	<0.05	0.24	0.06	0.13	0.11	<0.05
Nickel	0.5	ug/L	-	250	-	0.70	1	<0.5	6.65	1.60	1.57	1.48	0.92
Phosphorus	50	ug/L	-	-	-	<50	<50	<50	<50	<50	<50	<50	<50
Potassium	50	ug/L	-	-	-	151	182	919	951	229	2550	77	194
Rubidium	0.2	ug/L	-	-	-	0.21	0.32	1.49	1.67	0.40	1.27	0.37	0.32
Selenium	0.05	ug/L	-	10	-	<0.05	<0.05	0.05	0.18	<0.05	<0.05	0.13	<0.05
Silicon	50	ug/L	-	-	-	2510	2460	2530	3820	3060	1620	2400	3220
Silver	0.01	ug/L	-	2.5	-	<0.1	<0.1	<0.1	<0.1	0.02	<0.1	<0.1	0.02
Sodium	50	ug/L	-	-	-	6390	6800.00	19100	32200	4780	8220	4690	4380
Strontium	0.2	ug/L	-	210,000	-	9.62	9.29	20.2	32.2	6	61.5	11.9	6.56
Sulfur	500	ug/L	-	-	-	<500	<500	650	3580	640	12900	<500	<500
Tellurium	0.2	ug/L	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Thallium	0.01	ug/L	-	8	-	<0.01	<0.01	<0.01	1.17	<0.01	<0.01	<0.01	<0.01
Thorium	0.1	ug/L	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.38	<0.1
Tin	0.1	ug/L	-	-	-	<0.1	<0.1	<0.1	<0.1	0.18	2.76	<0.1	<0.1
Titanium	0.3	ug/L	-	-	-	0.35	0.43	1.14	0.74	1.02	<0.3	22.2	3.94
Tungsten	0.1	ug/L	-	-	-	<0.1	<0.1	<0.1	<0.1	0.65	<0.1	0.45	5.47
Uranium	0.01	ug/L	-	150	-	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.19	0.02
Vanadium	0.5	ug/L	-	1200	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.72	0.82
Zinc	1	ug/L	-	70	-	3.7	2.8	1.4	196	10.2	<1	7.4	5.6
Zirconium	0.3	ug/L	-	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.96	<0.3

Notes:

value	exceeds Tier I Ecological guideline
-	no guideline or value

² Atlantic RBCA Tier I EQSs for Groundwater, for the protection of Ecological Health, for a commercial site with coarse grained soil >10 m away from a fresh water (July 2021, updated 2022).
 MW2-DUP - Field Duplicate

TABLE 2: POLYCHLORINATED BIPHENYLS in Groundwater
Client: Department of Environment and Climate Change (ECC)
Site Location: Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL
Englobe Project No.: 2210292.000

PARAMETER	RDL	UNITS	RBCA Human Health-Based Tier I EQS ¹	RBCA Ecological Tier I EQS Fresh Water ²	Sample ID & Date									
					MW-01	MW-02	MWS-02-DUP	MW-03	MW-04	MW-05A	MW-06	MW-07	MW-08	
					-	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	5-Jan-23	
Polychlorinated Biphenyls	0.060	ug/L	180	0.01	-	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060

Notes:
¹ Atlantic RBCA Tier I Environmental Quality Standards (EQS) for Groundwater of Human Health, for a commercial site with coarse grained soil, non-potable groundwater (July 2021, updated July 2022)
² Atlantic RBCA Tier I EQSs for Groundwater, for the protection of Ecological Health, for a commercial site with coarse grained soil >10 m away from a fresh water (July 2021, updated July 2022).

value	exceeds Tier I Ecological guideline
value	exceeds Tier I Human Health guideline

TABLE 3: METALS (TOTAL) in Surface Water

Client: Department of Environment and Climate Change (ECC)

Site Location: Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL

Englobe Project No.: 2210292.000

PARAMETER	RDL	UNITS	Tier I EQSs for Eco Health 2	Sample ID & Date		
				SW-STREAM	SW-UPSTREAM	SW-POND
				-	5-Jan-23	5-Jan-23
Aluminum	3	ug/L	5	-	533	37.5
Antimony	0.1	ug/L	9	-	<0.1	0.2
Arsenic	0.1	ug/L	5	-	0.43	0.23
Barium	0.1	ug/L	1,000	-	4.13	11.9
Beryllium	0.02	ug/L	0.15	-	0.06	<0.02
Bismuth	0.05	ug/L	-	-	<0.05	<0.05
Boron	10	ug/L	1,500	-	<10	205
Cadmium	0.005	ug/L	0.09	-	0.03	0.01
Calcium	100	ug/L	-	-	1,210	62,600
Cesium	0.01	ug/L	-	-	0.09	0.33
Chromium (total)	0.5	ug/L	8.9	-	0.6	<0.5
Cobalt	0.1	ug/L	1	-	0.28	0.28
Copper	0.5	ug/L	2	-	1.45	1.3
Iron	10	ug/L	300	-	809	121
Lead	0.05	ug/L	1	-	1.06	0.2
Lithium	1	ug/L	-	-	<1	<1
Magnesium	5	ug/L	-	-	790	6,070
Manganese	0.1	ug/L	430	-	59	171
Mercury	0.005	ug/L	0.026	-	0.01	<0.05
Molybdenum	0.05	ug/L	73	-	<0.05	0.16
Nickel	0.5	ug/L	25	-	<0.5	2
Phosphorus	50	ug/L	-	-	<50	<50
Potassium	50	ug/L	-	-	286	5720
Rubidium	0.2	ug/L	-	-	0.48	4.46
Selenium	0.05	ug/L	1	-	0.12	0.06
Silicon (as SiO2)	210	ug/L	-	-	3,980	7530
Silicon	100	ug/L	-	-	1,860	3520
Silver	0.01	ug/L	0.25	-	0	<0.01
Sodium	50	ug/L	-	-	6,210	20,400
Strontium	0.2	ug/L	21,000	-	7.22	170
Sulfur	500	ug/L	-	-	<500	18,600
Tellurium	0.2	ug/L	-	-	<0.2	<0.2
Thallium	0.01	ug/L	0.8	-	<0.01	<0.01
Thorium	0.1	ug/L	-	-	<0.1	<0.1
Tin	0.1	ug/L	-	-	<0.1	<0.1
Titanium	0.3	ug/L	-	-	34.50	1.09
Tungsten	0.1	ug/L	-	-	<0.1	<0.1
Uranium	0.01	ug/L	15	-	0.0	0.02
Vanadium	0.5	ug/L	120	-	0.6	<0.5
Zinc	3	ug/L	7	-	5.80	4.40
Zirconium	0.2	ug/L	-	-	0.26	<0.2

Notes:

value	exceeds Tier I Ecological guideline
-	no guideline or value

¹ Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQSs) for Surface Water, Discharge to Fresh Water (July 2021, updated July 2022).

TABLE 4: POLYCHLORINATED BIPHENYLS in Surface Water
Client: Department of Environment and Climate Change (ECC)
Site Location: Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL
Englobe Project No.: 2210292.000

PARAMETER	RDL	UNITS	RBCA Ecological Tier I EQS Fresh Water ¹	Sample ID & Date		
				SW-STREAM	SW-UPSTREAM	SW-POND
				-	5-Jan-23	5-Jan-23
Polychlorinated Biphenyls	0.060	ug/L	0.001	-	<0.060	<0.060

Notes: Value Reportable Detection Limit (RDL) exceeds Fresh Water criteria reference below.

¹ Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQS) for Surface Water, Discharge to Fresh Water (July 2021, updated July 2022).

TABLE 5: GENERAL CHEMISTRY in Surface Water
Client: Department of Environment and Climate Change (ECC)
Site Location: Upper Trinity South (New Harbour) Waste Disposal Site, New Harbour, NL
Englobe Project No.: 2210292.000

PARAMETER	RDL	UNITS	RBCA Ecological Tier I EQS	Sample ID & Date		
			Fresh Water ¹	SW-STREAM	SW-UPSTREAM	SW-POND
			-	5-Jan-23	5-Jan-23	
pH	0.1	-	6.5 - 9	-	5.83	7.62
Chloride	500	ug/L	120,000	-	9,980	18,400
Fluoride	20	ug/L	120	-	<20	69
Sulphate	300	ug/L	128,000	-	1,420	54,600
Alkalinity	1000	ug/L	-	-	1,600	162,000
True Color	2	TCU	-	-	107	19
Turbidity	0.1	NTU	-	-	14	1
Electrical Conductivity	1	uS/cm	-	-	46	507
Nitrate + Nitrite as N	22.4	ug/L	-	-	<22.4	2,290
Nitrate as N	20	ug/L	13,000	-	<20	2,280
Nitrite as N	10	ug/L	60	-	<10	10
Ammonia as N	5	ug/L	231,000 (SW-UPSTREAM) and 7,320 (SW-POND)	-	6.7	618
DOC	500	ug/L	-	-	9,990	7,660
Ortho-Phosphates as P	1	ug/L	-	-	<1	<1
Bicarb. Alkalinity (as CaCO ₃)	1000	ug/L	-	-	1,900	197,000
Carb. Alkalinity (as CaCO ₃)	1000	ug/L	-	-	<1000	<1000
Hydroxide	1000	ug/L	-	-	<1000	<1000
Calculated TDS	10	ug/L	-	-	28,000	296,000
Hardness	0.5	ug/L	-	-	6,270	181,000
Langelier Index (@20C)	0.01	NA	-	-	-5	0
Langelier Index (@4C)	0.01	NA	-	-	-	-
Saturation pH (@20C)	0.01	NA	-	-	11.2	7.66
Saturation pH (@4C)	0.01	NA	-	-	11.0	7.42
Anion Sum	0.1	me/L	-	-	0.34	5.06
Cation Sum	0.1	me/L	-	-	0.50	4.72
% Difference / Ion Balance	0.01	%	-	-	147	93.3

Notes:

¹ Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQSs) for Surface Water, Discharge to Fresh Water (July 2021, updated July 2022).

Value - exceeds Tier I Ecological guideline

Appendix D

Laboratory Certificates





CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p>Work Order : WT2300426</p> <p>Client : Englobe Corp.</p> <p>Contact : Mike Smith</p> <p>Address : Geotechnical Materials and Environmental Engineering 39 Sagona Avenue Mount Pearl NL Canada A1N 4P9</p> <p>Telephone : 709-576-8148</p> <p>Project : 2210292</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Upper Trinity South (New Harbour) Waste Landfill</p> <p>Quote number : Landfill Monitoring - Upper Trinity South (New Harbour) and Come By Chance Landfills</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 25</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Emily Smith</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 07-Jan-2023 09:30</p> <p>Date Analysis Commenced : 09-Jan-2023</p> <p>Issue Date : 16-Jan-2023 11:46</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

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>
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Organics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Metals, Waterloo, Ontario

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.

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to fitness for a particular purpose, or non-infringement. ALS assumes no responsibility for errors or omissions in the information. Guidelines are not adjusted for the hardness, pH or temperature of the sample (the most conservative values are used). Measurement uncertainty is not applied to test results prior to comparison with specified criteria values.

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

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
µg/L	micrograms per litre
µS/cm	microsiemens per centimetre
CU	colour units (1 cu = 1 mg/l pt)
meq/L	milliequivalents per litre
mg/L	milligrams per litre
NTU	nephelometric turbidity units
pH units	pH units

>: greater than.

<: less than.

Red shading is applied where the result is greater than the Guideline Upper Limit or the result is lower than the Guideline Lower Limit.

For drinking water samples, Red shading is applied where the result for E.coli, fecal or total coliforms is greater than or equal to the Guideline Upper Limit .

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLHC	<i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i>
PEHT	<i>Parameter exceeded recommended holding time prior to analysis.</i>
RRR	<i>Refer to report comments for issues regarding this analysis.</i>



Analytical Results

				Client sample ID							
				Sampling date/time	MW2						
Sub-Matrix: Water (Matrix: Water)				05-Jan-2023 00:00	WT2300426-001	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII				
Analyte	Method	LOR	Unit								
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	0.0918	--	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	<0.00010	20 mg/L	20 mg/L	--	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	<0.00010	1.9 mg/L	1.9 mg/L	--	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00337	29 mg/L	29 mg/L	--	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000107	0.067 mg/L	0.067 mg/L	--	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	<0.010	45 mg/L	45 mg/L	--	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.0000439	0.0027 mg/L	0.0027 mg/L	--	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	1.67	--	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000021	--	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.00106	0.066 mg/L	0.066 mg/L	--	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00097	0.087 mg/L	0.087 mg/L	--	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.028	--	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	<0.000050	0.025 mg/L	0.025 mg/L	--	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	0.806	--	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.0210	--	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	<0.000050	9.2 mg/L	9.2 mg/L	--	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00070	0.49 mg/L	0.49 mg/L	--	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.151	--	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00021	--	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	<0.000050	0.063 mg/L	0.063 mg/L	--	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	2.51	--	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	6.39	2300 mg/L	2300 mg/L	--	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.00962	--	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	<0.50	--	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-001 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00035	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	<0.000010	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0037	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	50.5	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	107	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Analyte	Method	LOR	Unit	Client sample ID	MW3	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII				
				Sampling date/time	05-Jan-2023 00:00						
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	WT2300426-002	0.0744	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L		<0.00010	20 mg/L	20 mg/L	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L		0.00016	1.9 mg/L	1.9 mg/L	--	--	--	--
barium, dissolved	E421	0.00010	mg/L		0.00225	29 mg/L	29 mg/L	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L		<0.000020	0.067 mg/L	0.067 mg/L	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L		<0.000050	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L		0.010	45 mg/L	45 mg/L	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L		<0.0000050	0.0027 mg/L	0.0027 mg/L	--	--	--	--
calcium, dissolved	E421	0.050	mg/L		5.18	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L		0.000254	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L		<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L		0.00010	0.066 mg/L	0.066 mg/L	--	--	--	--
copper, dissolved	E421	0.00020	mg/L		0.00089	0.087 mg/L	0.087 mg/L	--	--	--	--
iron, dissolved	E421	0.010	mg/L		0.053	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L		<0.000050	0.025 mg/L	0.025 mg/L	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L		<0.0010	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L		1.44	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L		0.00824	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L		<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L		<0.000050	9.2 mg/L	9.2 mg/L	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L		<0.00050	0.49 mg/L	0.49 mg/L	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L		<0.050	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L		0.919	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L		0.00149	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L		0.000053	0.063 mg/L	0.063 mg/L	--	--	--	--
silicon, dissolved	E421	0.050	mg/L		2.53	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L		<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
sodium, dissolved	E421	0.050	mg/L		19.1	2300 mg/L	2300 mg/L	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L		0.0202	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L		0.65	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L		<0.00020	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-002 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00114	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	<0.000010	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0014	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	86.6	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	90.5	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Analyte	Method	LOR	Unit	Client sample ID	MW4	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII				
				Sampling date/time	05-Jan-2023 00:00						
				WT2300426-003							
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	0.0151	--	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	0.00025	20 mg/L	20 mg/L	--	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	0.00051	1.9 mg/L	1.9 mg/L	--	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.0194	29 mg/L	29 mg/L	--	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000173	0.067 mg/L	0.067 mg/L	--	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	0.016	45 mg/L	45 mg/L	--	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.00146	0.0027 mg/L	0.0027 mg/L	--	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	9.41	--	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.00134	--	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.0307	0.066 mg/L	0.066 mg/L	--	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00893	0.087 mg/L	0.087 mg/L	--	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.045	--	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	0.000286	0.025 mg/L	0.025 mg/L	--	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	0.0026	--	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	2.00	--	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.731	--	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	0.000239	9.2 mg/L	9.2 mg/L	--	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00665	0.49 mg/L	0.49 mg/L	--	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.951	--	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00167	--	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	0.000180	0.063 mg/L	0.063 mg/L	--	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	3.82	--	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	32.2	2300 mg/L	2300 mg/L	--	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.0322	--	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	3.58	--	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-003 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	0.00117	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00074	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	0.000010	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.196	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	81.0	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	86.8	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Analyte	Method	LOR	Unit	Client sample ID	ON153/04	ON153/04				
				Sampling date/time	T3-NPGW-C-AI	T3-NPGW-F-AII				
Sub-Matrix: Water (Matrix: Water)				MW5A						
				05-Jan-2023 00:00						
				WT2300426-004	I					
Dissolved Metals										
aluminum, dissolved	E421	0.0010	mg/L	0.0308	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	<0.00010	20 mg/L	20 mg/L	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	<0.00010	1.9 mg/L	1.9 mg/L	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00141	29 mg/L	29 mg/L	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000028	0.067 mg/L	0.067 mg/L	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	<0.010	45 mg/L	45 mg/L	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.0000139	0.0027 mg/L	0.0027 mg/L	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	1.67	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000012	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	<0.00010	0.066 mg/L	0.066 mg/L	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00127	0.087 mg/L	0.087 mg/L	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.022	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	<0.000050	0.025 mg/L	0.025 mg/L	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	<0.0010	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	0.579	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.0158	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	0.000057	9.2 mg/L	9.2 mg/L	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00160	0.49 mg/L	0.49 mg/L	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.229	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00040	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	<0.000050	0.063 mg/L	0.063 mg/L	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	3.06	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	0.000021	0.0015 mg/L	0.0015 mg/L	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	4.78	2300 mg/L	2300 mg/L	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.00586	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	0.64	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-004 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	0.00018	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00102	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	0.00065	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	0.000023	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0102	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	92.7	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	109	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Analyte	Method	LOR	Unit	Client sample ID	MW6	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII				
				Sampling date/time	05-Jan-2023 00:00						
				WT2300426-005							
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	0.0038	--	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	<0.00010	20 mg/L	20 mg/L	--	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	0.00020	1.9 mg/L	1.9 mg/L	--	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00319	29 mg/L	29 mg/L	--	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	<0.000020	0.067 mg/L	0.067 mg/L	--	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	0.067	45 mg/L	45 mg/L	--	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	<0.0000050	0.0027 mg/L	0.0027 mg/L	--	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	27.7	--	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000041	--	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.00100	0.066 mg/L	0.066 mg/L	--	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00056	0.087 mg/L	0.087 mg/L	--	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.238	--	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	<0.000050	0.025 mg/L	0.025 mg/L	--	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	3.61	--	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.229	--	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	0.000131	9.2 mg/L	9.2 mg/L	--	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00157	0.49 mg/L	0.49 mg/L	--	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	2.55	--	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00127	--	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	<0.000050	0.063 mg/L	0.063 mg/L	--	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	1.62	--	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	8.22	2300 mg/L	2300 mg/L	--	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.0615	--	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	12.9	--	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-005 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	0.00276	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	<0.000010	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	<0.0010	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	72.6	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	90.3	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

				Client sample ID							
				Sampling date/time	MW7						
Sub-Matrix: Water (Matrix: Water)				05-Jan-2023 00:00							
Analyte	Method	LOR	Unit	WT2300426-006	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII					
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	0.827	--	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	0.00021	20 mg/L	20 mg/L	--	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	0.00043	1.9 mg/L	1.9 mg/L	--	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00515	29 mg/L	29 mg/L	--	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000092	0.067 mg/L	0.067 mg/L	--	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	<0.010	45 mg/L	45 mg/L	--	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.0000452	0.0027 mg/L	0.0027 mg/L	--	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	2.48	--	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000012	--	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	0.00079	0.81 mg/L	0.81 mg/L	--	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.00076	0.066 mg/L	0.066 mg/L	--	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00521	0.087 mg/L	0.087 mg/L	--	--	--	--	--
iron, dissolved	E421	0.010	mg/L	2.45	--	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	0.00191	0.025 mg/L	0.025 mg/L	--	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	0.0033	--	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	0.690	--	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.0689	--	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	0.000108	9.2 mg/L	9.2 mg/L	--	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00148	0.49 mg/L	0.49 mg/L	--	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.077	--	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00037	--	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	0.000134	0.063 mg/L	0.063 mg/L	--	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	2.40	--	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	4.69	2300 mg/L	2300 mg/L	--	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.0119	--	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	<0.50	--	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-006 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	0.00038	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.0222	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	0.00045	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	0.000193	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	0.00072	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0074	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	0.00096	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.050	RRR	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.050	RRR	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.050	RRR	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.099	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	36.8	RRR	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	84.5	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Analyte	Method	LOR	Unit	Client sample ID	MW8	ON153/04 T3-NPGW-C-AI I	ON153/04 T3-NPGW-F-AII				
				Sampling date/time	05-Jan-2023 00:00						
				WT2300426-007							
Dissolved Metals											
aluminum, dissolved	E421	0.0010	mg/L	0.415	--	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	<0.00010	20 mg/L	20 mg/L	--	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	0.00055	1.9 mg/L	1.9 mg/L	--	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00479	29 mg/L	29 mg/L	--	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000083	0.067 mg/L	0.067 mg/L	--	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	<0.010	45 mg/L	45 mg/L	--	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.0000251	0.0027 mg/L	0.0027 mg/L	--	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	0.544	--	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000042	--	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.00028	0.066 mg/L	0.066 mg/L	--	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00568	0.087 mg/L	0.087 mg/L	--	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.238	--	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	0.000078	0.025 mg/L	0.025 mg/L	--	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	0.534	--	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.0124	--	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	<0.000050	9.2 mg/L	9.2 mg/L	--	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00092	0.49 mg/L	0.49 mg/L	--	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.194	--	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00032	--	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	<0.000050	0.063 mg/L	0.063 mg/L	--	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	3.22	--	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	0.000015	0.0015 mg/L	0.0015 mg/L	--	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	4.38	2300 mg/L	2300 mg/L	--	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.00656	--	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	<0.50	--	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-007 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00394	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	0.00547	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	0.000022	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	0.00082	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0056	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	89.6	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	108	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Sub-Matrix: Water (Matrix: Water)		Client sample ID Sampling date/time		SW-UPSTREAM						
Analyte	Method	LOR	Unit	WT2300426-008	CCME FAL-LT	CCME FAL-ST				
Physical Tests										
alkalinity, bicarbonate (as HCO3)	E290	1.0	mg/L	1.9	--	--	--	--	--	--
alkalinity, carbonate (as CO3)	E290	1.0	mg/L	<1.0	--	--	--	--	--	--
alkalinity, hydroxide (as OH)	E290	1.0	mg/L	<1.0	--	--	--	--	--	--
alkalinity, total (as CaCO3)	E290	1.0	mg/L	1.6	--	--	--	--	--	--
colour, apparent	E330	2.0	CU	107	--	--	--	--	--	--
conductivity	E100	1.0	µS/cm	46.0	--	--	--	--	--	--
hardness (as CaCO3), from total Ca/Mg	EC100A	0.50	mg/L	6.27	--	--	--	--	--	--
Langelier index (@ 20°C)	EC105A	0.010	-	-5.16	--	--	--	--	--	--
Langelier index (@ 4°C)	EC105A	0.010	-	-5.41	--	--	--	--	--	--
pH, saturation (@ 20°C)	EC105A	0.010	pH units	11.0	--	--	--	--	--	--
pH, saturation (@ 4°C)	EC105A	0.010	pH units	11.2	--	--	--	--	--	--
pH	E108	0.10	pH units	5.83	6.5 - 9 pH units	--	--	--	--	--
solids, total dissolved [TDS]	E162	10	mg/L	28	DLDS	--	--	--	--	--
turbidity	E121	0.10	NTU	13.7	--	--	--	--	--	--
Anions and Nutrients										
ammonia, total (as N)	E298	0.0050	mg/L	0.0067	--	--	--	--	--	--
chloride	E235.Cl	0.50	mg/L	9.98	120 mg/L	--	--	--	--	--
fluoride	E235.F	0.020	mg/L	<0.020	0.12 mg/L	--	--	--	--	--
nitrate (as N)	E235.NO3	0.020	mg/L	<0.020	3 mg/L	--	--	--	--	--
nitrate + nitrite (as N)	EC235.N+N	0.0032	mg/L	<0.0224	--	--	--	--	--	--
nitrite (as N)	E235.NO2	0.010	mg/L	<0.010	0.06 mg/L	--	--	--	--	--
phosphate, ortho-, dissolved (as P)	E378-U	0.0010	mg/L	<0.0010	PEHT	--	--	--	--	--
sulfate (as SO4)	E235.SO4	0.30	mg/L	1.42	--	--	--	--	--	--
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	E358-L	0.50	mg/L	9.99	--	--	--	--	--	--
Ion Balance										
anion sum	EC101A	0.10	meq/L	0.34	--	--	--	--	--	--
cation sum (total)	EC101A	0.10	meq/L	0.50	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-008 (Continued)	CCME FAL-LT	CCME FAL-ST				
Ion Balance - Continued										
ion balance (cations/anions)	EC101A	0.01	%	147	--	--	--	--	--	--
Total Metals										
aluminum, total	E420	0.0030	mg/L	0.533	0.005 mg/L	--	--	--	--	--
antimony, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--
arsenic, total	E420	0.00010	mg/L	0.00043	0.005 mg/L	--	--	--	--	--
barium, total	E420	0.00010	mg/L	0.00413	--	--	--	--	--	--
beryllium, total	E420	0.000020	mg/L	0.000062	--	--	--	--	--	--
bismuth, total	E420	0.000050	mg/L	<0.000050	--	--	--	--	--	--
boron, total	E420	0.010	mg/L	<0.010	--	--	--	--	--	--
cadmium, total	E420	0.0000050	mg/L	0.0000259	4E-05 mg/L	--	--	--	--	--
calcium, total	E420	0.100	mg/L	1.21	--	--	--	--	--	--
cesium, total	E420	0.000010	mg/L	0.000094	--	--	--	--	--	--
chromium, total	E420	0.00050	mg/L	0.00056	0.001 mg/L	--	--	--	--	--
cobalt, total	E420	0.00010	mg/L	0.00028	--	--	--	--	--	--
copper, total	E420	0.00050	mg/L	0.00145	0.002 mg/L	--	--	--	--	--
iron, total	E420	0.010	mg/L	0.809	0.3 mg/L	--	--	--	--	--
lead, total	E420	0.000050	mg/L	0.00106	0.001 mg/L	--	--	--	--	--
lithium, total	E420	0.0010	mg/L	<0.0010	--	--	--	--	--	--
magnesium, total	E420	0.0050	mg/L	0.790	--	--	--	--	--	--
manganese, total	E420	0.00010	mg/L	0.0587	0.2 mg/L	2 mg/L	--	--	--	--
mercury, total	E508	0.0000050	mg/L	0.0000071	2.6E-05 mg/L	--	--	--	--	--
molybdenum, total	E420	0.000050	mg/L	<0.000050	0.073 mg/L	--	--	--	--	--
nickel, total	E420	0.00050	mg/L	<0.00050	0.025 mg/L	--	--	--	--	--
phosphorus, total	E420	0.050	mg/L	<0.050	--	--	--	--	--	--
potassium, total	E420	0.050	mg/L	0.286	--	--	--	--	--	--
rubidium, total	E420	0.00020	mg/L	0.00048	--	--	--	--	--	--
selenium, total	E420	0.000050	mg/L	0.000115	0.001 mg/L	--	--	--	--	--
silicon (as SiO2), total	EC420.SiO2	0.25	mg/L	3.98	--	--	--	--	--	--
silicon, total	E420	0.10	mg/L	1.86	--	--	--	--	--	--
silver, total	E420	0.000010	mg/L	0.000013	0.00025 mg/L	--	--	--	--	--
sodium, total	E420	0.050	mg/L	6.21	--	--	--	--	--	--
strontium, total	E420	0.00020	mg/L	0.00722	--	--	--	--	--	--
sulfur, total	E420	0.50	mg/L	<0.50	--	--	--	--	--	--
tellurium, total	E420	0.00020	mg/L	<0.00020	--	--	--	--	--	--
thallium, total	E420	0.000010	mg/L	<0.000010	0.0008 mg/L	--	--	--	--	--
thorium, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-008 (Continued)	CCME FAL-LT	CCME FAL-ST				
Total Metals - Continued										
tin, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, total	E420	0.00030	mg/L	0.0345	--	--	--	--	--	--
tungsten, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, total	E420	0.000010	mg/L	0.000042	--	--	--	--	--	--
vanadium, total	E420	0.00050	mg/L	0.00064	--	--	--	--	--	--
zinc, total	E420	0.0030	mg/L	0.0058	0.007 mg/L	0.037 mg/L	--	--	--	--
zirconium, total	E420	0.00020	mg/L	0.00026	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	--	--	--	--	--	--
decachlorobiphenyl	E687	0.1	%	66.2	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	83.2	--	--	--	--	--	--

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

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SW-UPSTREAM	Water	pH		CCME	FAL-LT	5.83 pH units	6.5-9 pH units
	Water	aluminum, total		CCME	FAL-LT	0.533 mg/L	0.005 mg/L
	Water	iron, total		CCME	FAL-LT	0.809 mg/L	0.3 mg/L
	Water	lead, total		CCME	FAL-LT	0.00106 mg/L	0.001 mg/L



Key:

CCME	Canada CCME Canadian Environmental Quality Guidelines (SEP, 2021)
FAL-LT	Freshwater Aquatic Life (Long Term)
FAL-ST	Freshwater Aquatic Life (Short Term)



Analytical Results

				Client sample ID						
				MW2-DUP						
				05-Jan-2023						
				00:00						
				WT2300426-009	ON153/04	ON153/04				
Analyte	Method	LOR	Unit		T3-NPGW-C-AI	T3-NPGW-F-AII				
Dissolved Metals										
aluminum, dissolved	E421	0.0010	mg/L	0.0524	--	--	--	--	--	--
antimony, dissolved	E421	0.00010	mg/L	<0.00010	20 mg/L	20 mg/L	--	--	--	--
arsenic, dissolved	E421	0.00010	mg/L	<0.00010	1.9 mg/L	1.9 mg/L	--	--	--	--
barium, dissolved	E421	0.00010	mg/L	0.00323	29 mg/L	29 mg/L	--	--	--	--
beryllium, dissolved	E421	0.000020	mg/L	0.000060	0.067 mg/L	0.067 mg/L	--	--	--	--
bismuth, dissolved	E421	0.000050	mg/L	<0.000050	--	--	--	--	--	--
boron, dissolved	E421	0.010	mg/L	<0.010	45 mg/L	45 mg/L	--	--	--	--
cadmium, dissolved	E421	0.0000050	mg/L	0.0000415	0.0027 mg/L	0.0027 mg/L	--	--	--	--
calcium, dissolved	E421	0.050	mg/L	1.58	--	--	--	--	--	--
cesium, dissolved	E421	0.000010	mg/L	0.000053	--	--	--	--	--	--
chromium, dissolved	E421	0.00050	mg/L	<0.00050	0.81 mg/L	0.81 mg/L	--	--	--	--
cobalt, dissolved	E421	0.00010	mg/L	0.00140	0.066 mg/L	0.066 mg/L	--	--	--	--
copper, dissolved	E421	0.00020	mg/L	0.00064	0.087 mg/L	0.087 mg/L	--	--	--	--
iron, dissolved	E421	0.010	mg/L	0.040	--	--	--	--	--	--
lead, dissolved	E421	0.000050	mg/L	<0.000050	0.025 mg/L	0.025 mg/L	--	--	--	--
lithium, dissolved	E421	0.0010	mg/L	<0.0010	--	--	--	--	--	--
magnesium, dissolved	E421	0.0050	mg/L	0.699	--	--	--	--	--	--
manganese, dissolved	E421	0.00010	mg/L	0.0383	--	--	--	--	--	--
mercury, dissolved	E509	0.0000050	mg/L	<0.0000050	0.00029 mg/L	0.0028 mg/L	--	--	--	--
molybdenum, dissolved	E421	0.000050	mg/L	<0.000050	9.2 mg/L	9.2 mg/L	--	--	--	--
nickel, dissolved	E421	0.00050	mg/L	0.00100	0.49 mg/L	0.49 mg/L	--	--	--	--
phosphorus, dissolved	E421	0.050	mg/L	<0.050	--	--	--	--	--	--
potassium, dissolved	E421	0.050	mg/L	0.182	--	--	--	--	--	--
rubidium, dissolved	E421	0.00020	mg/L	0.00032	--	--	--	--	--	--
selenium, dissolved	E421	0.000050	mg/L	<0.000050	0.063 mg/L	0.063 mg/L	--	--	--	--
silicon, dissolved	E421	0.050	mg/L	2.46	--	--	--	--	--	--
silver, dissolved	E421	0.000010	mg/L	<0.000010	0.0015 mg/L	0.0015 mg/L	--	--	--	--
sodium, dissolved	E421	0.050	mg/L	6.80	2300 mg/L	2300 mg/L	--	--	--	--
strontium, dissolved	E421	0.00020	mg/L	0.00929	--	--	--	--	--	--
sulfur, dissolved	E421	0.50	mg/L	<0.50	--	--	--	--	--	--
tellurium, dissolved	E421	0.00020	mg/L	<0.00020	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-009 (Continued)	ON153/04 T3-NPGW-C-All	ON153/04 T3-NPGW-F-All				
Dissolved Metals - Continued										
thallium, dissolved	E421	0.000010	mg/L	<0.000010	0.51 mg/L	0.51 mg/L	--	--	--	--
thorium, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
tin, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, dissolved	E421	0.00030	mg/L	0.00043	--	--	--	--	--	--
tungsten, dissolved	E421	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, dissolved	E421	0.000010	mg/L	<0.000010	0.42 mg/L	0.42 mg/L	--	--	--	--
vanadium, dissolved	E421	0.00050	mg/L	<0.00050	0.25 mg/L	0.25 mg/L	--	--	--	--
zinc, dissolved	E421	0.0010	mg/L	0.0028	1.1 mg/L	1.1 mg/L	--	--	--	--
zirconium, dissolved	E421	0.00030	mg/L	<0.00030	--	--	--	--	--	--
dissolved mercury filtration location	EP509		-	Laboratory	--	--	--	--	--	--
dissolved metals filtration location	EP421		-	Laboratory	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	7.8 µg/L	15 µg/L	--	--	--	--
decachlorobiphenyl	E687	0.1	%	72.2	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	118	--	--	--	--	--	--

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

No Breaches Found

Key:

- ON153/04 Ontario Regulation 153/04 - April 15, 2011 Standards (JUL, 2011)
- T3-NPGW-C-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Coarse)
- T3-NPGW-F-All 153 T3-Non-Potable Ground Water-All Types of Property Uses (Fine)



Analytical Results

Sub-Matrix: Water (Matrix: Water)		Client sample ID		SW-POND						
		Sampling date/time		05-Jan-2023 00:00						
Analyte	Method	LOR	Unit	WT2300426-010	CCME FAL-LT	CCME FAL-ST				
Physical Tests										
alkalinity, bicarbonate (as HCO3)	E290	1.0	mg/L	197	--	--	--	--	--	--
alkalinity, carbonate (as CO3)	E290	1.0	mg/L	<1.0	--	--	--	--	--	--
alkalinity, hydroxide (as OH)	E290	1.0	mg/L	<1.0	--	--	--	--	--	--
alkalinity, total (as CaCO3)	E290	1.0	mg/L	162	--	--	--	--	--	--
colour, apparent	E330	2.0	CU	19.2	--	--	--	--	--	--
conductivity	E100	1.0	µS/cm	507	--	--	--	--	--	--
hardness (as CaCO3), from total Ca/Mg	EC100A	0.50	mg/L	181	--	--	--	--	--	--
Langelier index (@ 20°C)	EC105A	0.010	-	0.235	--	--	--	--	--	--
Langelier index (@ 4°C)	EC105A	0.010	-	-0.014	--	--	--	--	--	--
pH, saturation (@ 20°C)	EC105A	0.010	pH units	7.42	--	--	--	--	--	--
pH, saturation (@ 4°C)	EC105A	0.010	pH units	7.66	--	--	--	--	--	--
pH	E108	0.10	pH units	7.65	6.5 - 9 pH units	--	--	--	--	--
solids, total dissolved [TDS]	E162	10	mg/L	296	DLDS	--	--	--	--	--
turbidity	E121	0.10	NTU	1.10	--	--	--	--	--	--
Anions and Nutrients										
ammonia, total (as N)	E298	0.0050	mg/L	0.618	DLHC	--	--	--	--	--
chloride	E235.Cl	0.50	mg/L	18.4		120 mg/L	--	--	--	--
fluoride	E235.F	0.020	mg/L	0.069		0.12 mg/L	--	--	--	--
nitrate (as N)	E235.NO3	0.020	mg/L	2.28		3 mg/L	--	--	--	--
nitrate + nitrite (as N)	EC235.N+N	0.0032	mg/L	2.29		--	--	--	--	--
nitrite (as N)	E235.NO2	0.010	mg/L	0.010		0.06 mg/L	--	--	--	--
phosphate, ortho-, dissolved (as P)	E378-U	0.0010	mg/L	<0.0010	PEHT	--	--	--	--	--
sulfate (as SO4)	E235.SO4	0.30	mg/L	54.6		--	--	--	--	--
Organic / Inorganic Carbon										
carbon, dissolved organic [DOC]	E358-L	0.50	mg/L	7.66		--	--	--	--	--
Ion Balance										
anion sum	EC101A	0.10	meq/L	5.06		--	--	--	--	--
cation sum (total)	EC101A	0.10	meq/L	4.72		--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-010 (Continued)	CCME FAL-LT	CCME FAL-ST				
Ion Balance - Continued										
ion balance (cations/anions)	EC101A	0.01	%	93.3	--	--	--	--	--	--
Total Metals										
aluminum, total	E420	0.0030	mg/L	0.0375	0.005 mg/L	--	--	--	--	--
antimony, total	E420	0.00010	mg/L	0.00016	--	--	--	--	--	--
arsenic, total	E420	0.00010	mg/L	0.00023	0.005 mg/L	--	--	--	--	--
barium, total	E420	0.00010	mg/L	0.0119	--	--	--	--	--	--
beryllium, total	E420	0.000020	mg/L	<0.000020	--	--	--	--	--	--
bismuth, total	E420	0.000050	mg/L	<0.000050	--	--	--	--	--	--
boron, total	E420	0.010	mg/L	0.205	--	--	--	--	--	--
cadmium, total	E420	0.0000050	mg/L	0.0000068	4E-05 mg/L	--	--	--	--	--
calcium, total	E420	0.100	mg/L	62.6	--	--	--	--	--	--
cesium, total	E420	0.000010	mg/L	0.000327	--	--	--	--	--	--
chromium, total	E420	0.00050	mg/L	<0.00050	0.001 mg/L	--	--	--	--	--
cobalt, total	E420	0.00010	mg/L	0.00028	--	--	--	--	--	--
copper, total	E420	0.00050	mg/L	0.00130	0.002 mg/L	--	--	--	--	--
iron, total	E420	0.010	mg/L	0.121	0.3 mg/L	--	--	--	--	--
lead, total	E420	0.000050	mg/L	0.000154	0.001 mg/L	--	--	--	--	--
lithium, total	E420	0.0010	mg/L	<0.0010	--	--	--	--	--	--
magnesium, total	E420	0.0050	mg/L	6.07	--	--	--	--	--	--
manganese, total	E420	0.00010	mg/L	0.171	0.2 mg/L	2 mg/L	--	--	--	--
mercury, total	E508	0.0000050	mg/L	<0.0000050	2.6E-05 mg/L	--	--	--	--	--
molybdenum, total	E420	0.000050	mg/L	0.000158	0.073 mg/L	--	--	--	--	--
nickel, total	E420	0.00050	mg/L	0.00152	0.025 mg/L	--	--	--	--	--
phosphorus, total	E420	0.050	mg/L	<0.050	--	--	--	--	--	--
potassium, total	E420	0.050	mg/L	5.72	--	--	--	--	--	--
rubidium, total	E420	0.00020	mg/L	0.00446	--	--	--	--	--	--
selenium, total	E420	0.000050	mg/L	0.000056	0.001 mg/L	--	--	--	--	--
silicon (as SiO2), total	EC420.SiO2	0.25	mg/L	7.53	--	--	--	--	--	--
silicon, total	E420	0.10	mg/L	3.52	--	--	--	--	--	--
silver, total	E420	0.000010	mg/L	<0.000010	0.00025 mg/L	--	--	--	--	--
sodium, total	E420	0.050	mg/L	20.4	--	--	--	--	--	--
strontium, total	E420	0.00020	mg/L	0.170	--	--	--	--	--	--
sulfur, total	E420	0.50	mg/L	18.6	--	--	--	--	--	--
tellurium, total	E420	0.00020	mg/L	<0.00020	--	--	--	--	--	--
thallium, total	E420	0.000010	mg/L	<0.000010	0.0008 mg/L	--	--	--	--	--
thorium, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--



Analyte	Method	LOR	Unit	WT2300426-010 (Continued)	CCME FAL-LT	CCME FAL-ST				
Total Metals - Continued										
tin, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--
titanium, total	E420	0.00030	mg/L	0.00109	--	--	--	--	--	--
tungsten, total	E420	0.00010	mg/L	<0.00010	--	--	--	--	--	--
uranium, total	E420	0.000010	mg/L	0.000020	--	--	--	--	--	--
vanadium, total	E420	0.00050	mg/L	<0.00050	--	--	--	--	--	--
zinc, total	E420	0.0030	mg/L	0.0044	0.007 mg/L	0.037 mg/L	--	--	--	--
zirconium, total	E420	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Polychlorinated Biphenyls										
Aroclor 1016	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1221	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1232	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1242	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1248	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1254	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1260	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1262	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
Aroclor 1268	E687	0.020	µg/L	<0.020	--	--	--	--	--	--
polychlorinated biphenyls [PCBs], total	E687	0.060	µg/L	<0.060	--	--	--	--	--	--
decachlorobiphenyl	E687	0.1	%	59.5	--	--	--	--	--	--
tetrachloro-m-xylene	E687	0.1	%	87.8	--	--	--	--	--	--

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

Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
SW-POND	Water	aluminum, total		CCME	FAL-LT	0.0375 mg/L	0.005 mg/L

Key:

- CCME Canada CCME Canadian Environmental Quality Guidelines (SEP, 2021)
- FAL-LT Freshwater Aquatic Life (Long Term)
- FAL-ST Freshwater Aquatic Life (Short Term)

QUALITY CONTROL REPORT

Work Order	: WT2300426	Page	: 1 of 18
Client	: Englobe Corp.	Laboratory	: Waterloo - Environmental
Contact	: Mike Smith	Account Manager	: Emily Smith
Address	: Geotechnical Materials and Environmental Engineering 39 Sagona Avenue Mount Pearl NL Canada A1N 4P9	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	:	Telephone	: +1 519 886 6910
Project	: 2210292	Date Samples Received	: 07-Jan-2023 09:30
PO	: ----	Date Analysis Commenced	: 09-Jan-2023
C-O-C number	: ----	Issue Date	: 16-Jan-2023 11:46
Sampler	: ---- 709-576-8148		
Site	: Upper Trinity South (New Harbour) Waste Landfill		
Quote number	: Landfill Monitoring - Upper Trinity South (New Harbour) and Come By Chance Landfills		
No. of samples received	: 10		
No. of samples analysed	: 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>
Danielle Gravel	Supervisor - Semi-Volatile Instrumentation	Waterloo Organics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario

Page : 2 of 18
Work Order : WT2300426
Client : Englobe Corp.
Project : 2210292



General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

Workorder Comments

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



Laboratory Duplicate (DUP) Report

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

Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 797433)											
WT2300426-008	SW-UPSTREAM	alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	1.6	1.4	0.2	Diff <2x LOR	----
Physical Tests (QC Lot: 797434)											
WT2300426-008	SW-UPSTREAM	conductivity	----	E100	1.0	µS/cm	46.0	45.7	0.654%	10%	----
Physical Tests (QC Lot: 797435)											
WT2300426-008	SW-UPSTREAM	pH	----	E108	0.10	pH units	5.83	5.75	1.38%	4%	----
Physical Tests (QC Lot: 797641)											
HA2300003-001	Anonymous	colour, apparent	----	E330	2.0	CU	17.7	18.2	0.4	Diff <2x LOR	----
Physical Tests (QC Lot: 799767)											
WT2300498-001	Anonymous	solids, total dissolved [TDS]	----	E162	20	mg/L	151	148	2	Diff <2x LOR	----
Physical Tests (QC Lot: 800698)											
WT2300709-001	Anonymous	turbidity	----	E121	0.10	NTU	108	108	0.00%	15%	----
Anions and Nutrients (QC Lot: 797428)											
WT2300426-008	SW-UPSTREAM	fluoride	16984-48-8	E235.F	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 797429)											
WT2300426-008	SW-UPSTREAM	nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 797430)											
WT2300426-008	SW-UPSTREAM	nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 797431)											
WT2300426-008	SW-UPSTREAM	chloride	16887-00-6	E235.Cl	0.50	mg/L	9.98	9.99	0.136%	20%	----
Anions and Nutrients (QC Lot: 797432)											
WT2300426-008	SW-UPSTREAM	sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	1.42	1.42	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 797442)											
WT2300229-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.181	0.181	0.166%	20%	----
Anions and Nutrients (QC Lot: 797577)											
WT2300343-004	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0013	0.0015	0.0002	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 797497)											
TY2300123-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	19.2	17.8	7.62%	20%	----
Total Metals (QC Lot: 797384)											
TY2300123-001	Anonymous	mercury, total	7439-97-6	E508	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Total Metals (QC Lot: 797887)											



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 797887) - continued											
WT2300262-001	Anonymous	aluminum, total	7429-90-5	E420	0.0030	mg/L	0.892	0.837	6.30%	20%	----
		antimony, total	7440-36-0	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, total	7440-38-2	E420	0.00010	mg/L	0.00046	0.00044	0.00002	Diff <2x LOR	----
		barium, total	7440-39-3	E420	0.00010	mg/L	0.00906	0.00865	4.56%	20%	----
		beryllium, total	7440-41-7	E420	0.000020	mg/L	0.000051	0.000043	0.000007	Diff <2x LOR	----
		bismuth, total	7440-69-9	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, total	7440-42-8	E420	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, total	7440-43-9	E420	0.0000050	mg/L	0.0000175	0.0000146	0.0000029	Diff <2x LOR	----
		calcium, total	7440-70-2	E420	0.050	mg/L	34.0	33.2	2.29%	20%	----
		cesium, total	7440-46-2	E420	0.000010	mg/L	0.000092	0.000093	0.000001	Diff <2x LOR	----
		chromium, total	7440-47-3	E420	0.00050	mg/L	0.00136	0.00136	0.000002	Diff <2x LOR	----
		cobalt, total	7440-48-4	E420	0.00010	mg/L	0.00121	0.00118	3.05%	20%	----
		copper, total	7440-50-8	E420	0.00050	mg/L	0.00226	0.00214	0.00012	Diff <2x LOR	----
		iron, total	7439-89-6	E420	0.010	mg/L	1.55	1.48	4.78%	20%	----
		lead, total	7439-92-1	E420	0.000050	mg/L	0.00138	0.00134	2.76%	20%	----
		lithium, total	7439-93-2	E420	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, total	7439-95-4	E420	0.0050	mg/L	2.03	1.99	1.72%	20%	----
		manganese, total	7439-96-5	E420	0.00010	mg/L	0.0794	0.0776	2.34%	20%	----
		molybdenum, total	7439-98-7	E420	0.000050	mg/L	0.000072	0.000061	0.000011	Diff <2x LOR	----
		nickel, total	7440-02-0	E420	0.00050	mg/L	0.00201	0.00185	0.00016	Diff <2x LOR	----
		phosphorus, total	7723-14-0	E420	0.050	mg/L	0.286	0.281	0.004	Diff <2x LOR	----
		potassium, total	7440-09-7	E420	0.050	mg/L	0.312	0.297	0.015	Diff <2x LOR	----
		rubidium, total	7440-17-7	E420	0.00020	mg/L	0.00168	0.00168	0.000002	Diff <2x LOR	----
		selenium, total	7782-49-2	E420	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, total	7440-21-3	E420	0.10	mg/L	1.42	1.31	7.71%	20%	----
		silver, total	7440-22-4	E420	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		sodium, total	7440-23-5	E420	0.050	mg/L	0.133	0.126	0.006	Diff <2x LOR	----
		strontium, total	7440-24-6	E420	0.00020	mg/L	0.0561	0.0568	1.32%	20%	----
		sulfur, total	7704-34-9	E420	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tellurium, total	13494-80-9	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, total	7440-28-0	E420	0.000010	mg/L	0.000023	0.000029	0.000006	Diff <2x LOR	----
		thorium, total	7440-29-1	E420	0.00010	mg/L	0.00041	0.00038	0.00003	Diff <2x LOR	----
		tin, total	7440-31-5	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		titanium, total	7440-32-6	E420	0.00030	mg/L	0.0356	0.0313	12.8%	20%	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Total Metals (QC Lot: 797887) - continued											
WT2300262-001	Anonymous	tungsten, total	7440-33-7	E420	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, total	7440-61-1	E420	0.000010	mg/L	0.000095	0.000091	0.000004	Diff <2x LOR	----
		vanadium, total	7440-62-2	E420	0.00050	mg/L	0.00200	0.00188	0.00012	Diff <2x LOR	----
		zinc, total	7440-66-6	E420	0.0030	mg/L	0.0051	0.0046	0.0005	Diff <2x LOR	----
		zirconium, total	7440-67-7	E420	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 797454)											
TY2300123-002	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 797894)											
WT2300426-001	MW2	aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0918	0.0920	0.215%	20%	----
		antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.00337	0.00335	0.591%	20%	----
		beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	0.000107	0.000107	0.0000003	Diff <2x LOR	----
		bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000439	0.0000425	0.0000014	Diff <2x LOR	----
		calcium, dissolved	7440-70-2	E421	0.050	mg/L	1.67	1.71	2.30%	20%	----
		cesium, dissolved	7440-46-2	E421	0.000010	mg/L	0.000021	0.000020	0.0000008	Diff <2x LOR	----
		chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00106	0.00104	0.981%	20%	----
		copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00097	0.00100	0.00002	Diff <2x LOR	----
		iron, dissolved	7439-89-6	E421	0.010	mg/L	0.028	0.026	0.002	Diff <2x LOR	----
		lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	0.806	0.813	0.790%	20%	----
		manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0210	0.0217	3.04%	20%	----
		molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00070	0.00071	0.00001	Diff <2x LOR	----
		phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.151	0.153	0.002	Diff <2x LOR	----
		rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00021	0.00020	0.000007	Diff <2x LOR	----
		selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		silicon, dissolved	7440-21-3	E421	0.050	mg/L	2.51	2.50	0.438%	20%	----
		silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD(%) or Difference</i>	<i>Duplicate Limits</i>	<i>Qualifier</i>
Dissolved Metals (QC Lot: 797894) - continued											
WT2300426-001	MW2	sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.39	6.37	0.245%	20%	----
		strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.00962	0.00965	0.336%	20%	----
		sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		thallium, dissolved	7440-28-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		tin, dissolved	7440-31-5	E421	0.00010	mg/L	0.00010	<0.00010	0.000005	Diff <2x LOR	----
		titanium, dissolved	7440-32-6	E421	0.00030	mg/L	0.00035	0.00030	0.00004	Diff <2x LOR	----
		tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		uranium, dissolved	7440-61-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0037	0.0035	0.0002	Diff <2x LOR	----
		zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----



Method Blank (MB) Report

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

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 797433)						
alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.1	----
Physical Tests (QCLot: 797434)						
conductivity	----	E100	1	µS/cm	<1.0	----
Physical Tests (QCLot: 797641)						
colour, apparent	----	E330	2	CU	<2.0	----
Physical Tests (QCLot: 799767)						
solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 800698)						
turbidity	----	E121	0.1	NTU	<0.10	----
Anions and Nutrients (QCLot: 797428)						
fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 797429)						
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 797430)						
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 797431)						
chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 797432)						
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 797442)						
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 797577)						
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 797497)						
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Total Metals (QCLot: 797384)						
mercury, total	7439-97-6	E508	0.000005	mg/L	<0.0000050	----
Total Metals (QCLot: 797887)						
aluminum, total	7429-90-5	E420	0.003	mg/L	<0.0030	----
antimony, total	7440-36-0	E420	0.0001	mg/L	<0.00010	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	<0.00010	----
barium, total	7440-39-3	E420	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Total Metals (QCLot: 797887) - continued						
beryllium, total	7440-41-7	E420	0.00002	mg/L	<0.000020	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	<0.000050	----
boron, total	7440-42-8	E420	0.01	mg/L	<0.010	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	<0.0000050	----
calcium, total	7440-70-2	E420	0.05	mg/L	<0.050	----
cesium, total	7440-46-2	E420	0.00001	mg/L	<0.000010	----
chromium, total	7440-47-3	E420	0.0005	mg/L	<0.00050	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	<0.00010	----
copper, total	7440-50-8	E420	0.0005	mg/L	<0.00050	----
iron, total	7439-89-6	E420	0.01	mg/L	<0.010	----
lead, total	7439-92-1	E420	0.00005	mg/L	<0.000050	----
lithium, total	7439-93-2	E420	0.001	mg/L	<0.0010	----
magnesium, total	7439-95-4	E420	0.005	mg/L	<0.0050	----
manganese, total	7439-96-5	E420	0.0001	mg/L	<0.00010	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	<0.000050	----
nickel, total	7440-02-0	E420	0.0005	mg/L	<0.00050	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	<0.050	----
potassium, total	7440-09-7	E420	0.05	mg/L	<0.050	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	<0.00020	----
selenium, total	7782-49-2	E420	0.00005	mg/L	<0.000050	----
silicon, total	7440-21-3	E420	0.1	mg/L	<0.10	----
silver, total	7440-22-4	E420	0.00001	mg/L	<0.000010	----
sodium, total	7440-23-5	E420	0.05	mg/L	<0.050	----
strontium, total	7440-24-6	E420	0.0002	mg/L	<0.00020	----
sulfur, total	7704-34-9	E420	0.5	mg/L	<0.50	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	<0.00020	----
thallium, total	7440-28-0	E420	0.00001	mg/L	<0.000010	----
thorium, total	7440-29-1	E420	0.0001	mg/L	<0.00010	----
tin, total	7440-31-5	E420	0.0001	mg/L	<0.00010	----
titanium, total	7440-32-6	E420	0.0003	mg/L	<0.00030	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	<0.00010	----
uranium, total	7440-61-1	E420	0.00001	mg/L	<0.000010	----
vanadium, total	7440-62-2	E420	0.0005	mg/L	<0.00050	----
zinc, total	7440-66-6	E420	0.003	mg/L	<0.0030	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 797454)						
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 797894)						
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 797894) - continued						
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
Polychlorinated Biphenyls (QCLot: 797494)						
Aroclor 1016	12674-11-2	E687	0.02	µg/L	<0.020	----
Aroclor 1221	11104-28-2	E687	0.02	µg/L	<0.020	----
Aroclor 1232	11141-16-5	E687	0.02	µg/L	<0.020	----
Aroclor 1242	53469-21-9	E687	0.02	µg/L	<0.020	----
Aroclor 1248	12672-29-6	E687	0.02	µg/L	<0.020	----
Aroclor 1254	11097-69-1	E687	0.02	µg/L	<0.020	----
Aroclor 1260	11096-82-5	E687	0.02	µg/L	<0.020	----
Aroclor 1262	37324-23-5	E687	0.02	µg/L	<0.020	----
Aroclor 1268	11100-14-4	E687	0.02	µg/L	<0.020	----



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				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 797433)									
alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	102	85.0	115	----
Physical Tests (QCLot: 797434)									
conductivity	----	E100	1	µS/cm	1409 µS/cm	98.4	90.0	110	----
Physical Tests (QCLot: 797435)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 797641)									
colour, apparent	----	E330	2	CU	25 CU	100	70.0	130	----
Physical Tests (QCLot: 799767)									
solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	88.2	85.0	115	----
Physical Tests (QCLot: 800698)									
turbidity	----	E121	0.1	NTU	200 NTU	91.4	85.0	115	----
Anions and Nutrients (QCLot: 797428)									
fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 797429)									
nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.9	90.0	110	----
Anions and Nutrients (QCLot: 797430)									
nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 797431)									
chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.1	90.0	110	----
Anions and Nutrients (QCLot: 797432)									
sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.4	90.0	110	----
Anions and Nutrients (QCLot: 797442)									
ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	96.6	85.0	115	----
Anions and Nutrients (QCLot: 797577)									
phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.0212 mg/L	101	80.0	120	----
Organic / Inorganic Carbon (QCLot: 797497)									
carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	106	80.0	120	----
Total Metals (QCLot: 797384)									
mercury, total	7439-97-6	E508	0.000005	mg/L	0.0001 mg/L	88.2	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
Total Metals (QCLot: 797887)									
aluminum, total	7429-90-5	E420	0.003	mg/L	0.1 mg/L	99.6	80.0	120	----
antimony, total	7440-36-0	E420	0.0001	mg/L	0.05 mg/L	101	80.0	120	----
arsenic, total	7440-38-2	E420	0.0001	mg/L	0.05 mg/L	105	80.0	120	----
barium, total	7440-39-3	E420	0.0001	mg/L	0.0125 mg/L	103	80.0	120	----
beryllium, total	7440-41-7	E420	0.00002	mg/L	0.005 mg/L	93.4	80.0	120	----
bismuth, total	7440-69-9	E420	0.00005	mg/L	0.05 mg/L	96.5	80.0	120	----
boron, total	7440-42-8	E420	0.01	mg/L	0.05 mg/L	88.6	80.0	120	----
cadmium, total	7440-43-9	E420	0.000005	mg/L	0.005 mg/L	98.6	80.0	120	----
calcium, total	7440-70-2	E420	0.05	mg/L	2.5 mg/L	97.5	80.0	120	----
cesium, total	7440-46-2	E420	0.00001	mg/L	0.0025 mg/L	106	80.0	120	----
chromium, total	7440-47-3	E420	0.0005	mg/L	0.0125 mg/L	98.7	80.0	120	----
cobalt, total	7440-48-4	E420	0.0001	mg/L	0.0125 mg/L	98.4	80.0	120	----
copper, total	7440-50-8	E420	0.0005	mg/L	0.0125 mg/L	95.3	80.0	120	----
iron, total	7439-89-6	E420	0.01	mg/L	0.05 mg/L	96.7	80.0	120	----
lead, total	7439-92-1	E420	0.00005	mg/L	0.025 mg/L	98.8	80.0	120	----
lithium, total	7439-93-2	E420	0.001	mg/L	0.0125 mg/L	91.1	80.0	120	----
magnesium, total	7439-95-4	E420	0.005	mg/L	2.5 mg/L	104	80.0	120	----
manganese, total	7439-96-5	E420	0.0001	mg/L	0.0125 mg/L	100	80.0	120	----
molybdenum, total	7439-98-7	E420	0.00005	mg/L	0.0125 mg/L	99.9	80.0	120	----
nickel, total	7440-02-0	E420	0.0005	mg/L	0.025 mg/L	96.8	80.0	120	----
phosphorus, total	7723-14-0	E420	0.05	mg/L	0.5 mg/L	104	80.0	120	----
potassium, total	7440-09-7	E420	0.05	mg/L	2.5 mg/L	97.5	80.0	120	----
rubidium, total	7440-17-7	E420	0.0002	mg/L	0.005 mg/L	104	80.0	120	----
selenium, total	7782-49-2	E420	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
silicon, total	7440-21-3	E420	0.1	mg/L	0.5 mg/L	101	80.0	120	----
silver, total	7440-22-4	E420	0.00001	mg/L	0.005 mg/L	94.2	80.0	120	----
sodium, total	7440-23-5	E420	0.05	mg/L	2.5 mg/L	101	80.0	120	----
strontium, total	7440-24-6	E420	0.0002	mg/L	0.0125 mg/L	102	80.0	120	----
sulfur, total	7704-34-9	E420	0.5	mg/L	2.5 mg/L	88.9	80.0	120	----
tellurium, total	13494-80-9	E420	0.0002	mg/L	0.005 mg/L	98.3	80.0	120	----
thallium, total	7440-28-0	E420	0.00001	mg/L	0.05 mg/L	98.8	80.0	120	----
thorium, total	7440-29-1	E420	0.0001	mg/L	0.005 mg/L	98.5	80.0	120	----
tin, total	7440-31-5	E420	0.0001	mg/L	0.025 mg/L	102	80.0	120	----
titanium, total	7440-32-6	E420	0.0003	mg/L	0.0125 mg/L	100	80.0	120	----
tungsten, total	7440-33-7	E420	0.0001	mg/L	0.005 mg/L	99.0	80.0	120	----
uranium, total	7440-61-1	E420	0.00001	mg/L	0.00025 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
Total Metals (QCLot: 797887) - continued									
vanadium, total	7440-62-2	E420	0.0005	mg/L	0.025 mg/L	100	80.0	120	----
zinc, total	7440-66-6	E420	0.003	mg/L	0.025 mg/L	98.1	80.0	120	----
zirconium, total	7440-67-7	E420	0.0002	mg/L	0.005 mg/L	96.6	80.0	120	----
mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0.0001 mg/L	85.9	80.0	120	----
Dissolved Metals (QCLot: 797894)									
aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	104	80.0	120	----
antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	96.9	80.0	120	----
arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.0125 mg/L	104	80.0	120	----
beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	100	80.0	120	----
bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	93.5	80.0	120	----
cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	100	80.0	120	----
calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.0025 mg/L	104	80.0	120	----
chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.0125 mg/L	99.2	80.0	120	----
cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.0125 mg/L	100	80.0	120	----
copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.0125 mg/L	96.8	80.0	120	----
iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	98.9	80.0	120	----
lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	106	80.0	120	----
lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.0125 mg/L	101	80.0	120	----
magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	106	80.0	120	----
manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.0125 mg/L	102	80.0	120	----
molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.0125 mg/L	98.7	80.0	120	----
nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	98.5	80.0	120	----
phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	108	80.0	120	----
potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	107	80.0	120	----
selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	101	80.0	120	----
silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	104	60.0	140	----
silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	92.8	80.0	120	----
sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.0125 mg/L	101	80.0	120	----
sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	93.8	80.0	120	----
tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	99.7	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 797894) - continued									
thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	101	80.0	120	----
titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.0125 mg/L	101	80.0	120	----
tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	103	80.0	120	----
uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0.00025 mg/L	104	80.0	120	----
vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	99.6	80.0	120	----
zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	94.5	80.0	120	----
Polychlorinated Biphenyls (QCLot: 797494)									
Aroclor 1016	12674-11-2	E687	0.02	µg/L	0.2 µg/L	107	60.0	140	----
Aroclor 1221	11104-28-2	E687	0.02	µg/L	0.2 µg/L	107	60.0	140	----
Aroclor 1232	11141-16-5	E687	0.02	µg/L	0.2 µg/L	107	60.0	140	----
Aroclor 1242	53469-21-9	E687	0.02	µg/L	0.2 µg/L	107	60.0	140	----
Aroclor 1248	12672-29-6	E687	0.02	µg/L	0.2 µg/L	85.7	60.0	140	----
Aroclor 1254	11097-69-1	E687	0.02	µg/L	0.2 µg/L	99.1	60.0	140	----
Aroclor 1260	11096-82-5	E687	0.02	µg/L	0.2 µg/L	112	60.0	140	----
Aroclor 1262	37324-23-5	E687	0.02	µg/L	0.2 µg/L	112	60.0	140	----
Aroclor 1268	11100-14-4	E687	0.02	µg/L	0.2 µg/L	112	60.0	140	----



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: 797428)										
WT2300426-008	SW-UPSTREAM	fluoride	16984-48-8	E235.F	0.987 mg/L	1 mg/L	98.7	75.0	125	----
Anions and Nutrients (QCLot: 797429)										
WT2300426-008	SW-UPSTREAM	nitrate (as N)	14797-55-8	E235.NO3	2.37 mg/L	2.5 mg/L	94.8	75.0	125	----
Anions and Nutrients (QCLot: 797430)										
WT2300426-008	SW-UPSTREAM	nitrite (as N)	14797-65-0	E235.NO2	0.494 mg/L	0.5 mg/L	98.8	75.0	125	----
Anions and Nutrients (QCLot: 797431)										
WT2300426-008	SW-UPSTREAM	chloride	16887-00-6	E235.Cl	94.3 mg/L	100 mg/L	94.3	75.0	125	----
Anions and Nutrients (QCLot: 797432)										
WT2300426-008	SW-UPSTREAM	sulfate (as SO4)	14808-79-8	E235.SO4	96.3 mg/L	100 mg/L	96.3	75.0	125	----
Anions and Nutrients (QCLot: 797442)										
WT2300229-001	Anonymous	ammonia, total (as N)	7664-41-7	E298	ND mg/L	0.1 mg/L	ND	75.0	125	----
Anions and Nutrients (QCLot: 797577)										
WT2300343-004	Anonymous	phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0205 mg/L	0.0196 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 797497)										
TY2300123-001	Anonymous	carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	5 mg/L	ND	70.0	130	----
Total Metals (QCLot: 797384)										
TY2300123-003	Anonymous	mercury, total	7439-97-6	E508	0.0000926 mg/L	0.0001 mg/L	92.6	70.0	130	----
Total Metals (QCLot: 797887)										
WT2300426-008	SW-UPSTREAM	aluminum, total	7429-90-5	E420	ND mg/L	0.1 mg/L	ND	70.0	130	----
		antimony, total	7440-36-0	E420	0.0497 mg/L	0.05 mg/L	99.3	70.0	130	----
		arsenic, total	7440-38-2	E420	0.0527 mg/L	0.05 mg/L	105	70.0	130	----
		barium, total	7440-39-3	E420	0.0120 mg/L	0.0125 mg/L	96.5	70.0	130	----
		beryllium, total	7440-41-7	E420	0.00467 mg/L	0.005 mg/L	93.4	70.0	130	----
		bismuth, total	7440-69-9	E420	0.0491 mg/L	0.05 mg/L	98.2	70.0	130	----
		boron, total	7440-42-8	E420	0.046 mg/L	0.05 mg/L	91.7	70.0	130	----
		cadmium, total	7440-43-9	E420	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		calcium, total	7440-70-2	E420	2.42 mg/L	2.5 mg/L	96.7	70.0	130	----
		cesium, total	7440-46-2	E420	0.00267 mg/L	0.0025 mg/L	107	70.0	130	----
		chromium, total	7440-47-3	E420	0.0126 mg/L	0.0125 mg/L	100	70.0	130	----



Sub-Matrix: Water

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Total Metals (QCLot: 797887) - continued										
WT2300426-008	SW-UPSTREAM	cobalt, total	7440-48-4	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		copper, total	7440-50-8	E420	0.0125 mg/L	0.0125 mg/L	99.9	70.0	130	----
		iron, total	7439-89-6	E420	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, total	7439-92-1	E420	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		lithium, total	7439-93-2	E420	0.0115 mg/L	0.0125 mg/L	92.2	70.0	130	----
		magnesium, total	7439-95-4	E420	2.63 mg/L	2.5 mg/L	105	70.0	130	----
		manganese, total	7439-96-5	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		molybdenum, total	7439-98-7	E420	0.0128 mg/L	0.0125 mg/L	102	70.0	130	----
		nickel, total	7440-02-0	E420	0.0253 mg/L	0.025 mg/L	101	70.0	130	----
		phosphorus, total	7723-14-0	E420	0.522 mg/L	0.5 mg/L	104	70.0	130	----
		potassium, total	7440-09-7	E420	2.44 mg/L	2.5 mg/L	97.7	70.0	130	----
		rubidium, total	7440-17-7	E420	0.00510 mg/L	0.005 mg/L	102	70.0	130	----
		selenium, total	7782-49-2	E420	0.0508 mg/L	0.05 mg/L	102	70.0	130	----
		silicon, total	7440-21-3	E420	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, total	7440-22-4	E420	0.00483 mg/L	0.005 mg/L	96.6	70.0	130	----
		sodium, total	7440-23-5	E420	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, total	7440-24-6	E420	0.0126 mg/L	0.0125 mg/L	101	70.0	130	----
		sulfur, total	7704-34-9	E420	2.52 mg/L	2.5 mg/L	101	70.0	130	----
		tellurium, total	13494-80-9	E420	0.00491 mg/L	0.005 mg/L	98.2	70.0	130	----
		thallium, total	7440-28-0	E420	0.0501 mg/L	0.05 mg/L	100	70.0	130	----
		thorium, total	7440-29-1	E420	0.00408 mg/L	0.005 mg/L	81.6	70.0	130	----
		tin, total	7440-31-5	E420	0.0250 mg/L	0.025 mg/L	100	70.0	130	----
		titanium, total	7440-32-6	E420	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		tungsten, total	7440-33-7	E420	0.00461 mg/L	0.005 mg/L	92.2	70.0	130	----
		uranium, total	7440-61-1	E420	0.000263 mg/L	0.00025 mg/L	105	70.0	130	----
		vanadium, total	7440-62-2	E420	0.0255 mg/L	0.025 mg/L	102	70.0	130	----
		zinc, total	7440-66-6	E420	0.0245 mg/L	0.025 mg/L	98.0	70.0	130	----
		zirconium, total	7440-67-7	E420	0.00273 mg/L	0.005 mg/L	54.6	70.0	130	K
Dissolved Metals (QCLot: 797454)										
TY2300123-004	Anonymous	mercury, dissolved	7439-97-6	E509	0.0000914 mg/L	0.0001 mg/L	91.4	70.0	130	----
Dissolved Metals (QCLot: 797894)										
WT2300426-002	MW3	aluminum, dissolved	7429-90-5	E421	0.0933 mg/L	0.1 mg/L	93.3	70.0	130	----
		antimony, dissolved	7440-36-0	E421	0.0484 mg/L	0.05 mg/L	96.8	70.0	130	----
		arsenic, dissolved	7440-38-2	E421	0.0521 mg/L	0.05 mg/L	104	70.0	130	----
		barium, dissolved	7440-39-3	E421	0.0128 mg/L	0.0125 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
Dissolved Metals (QCLot: 797894) - continued										
WT2300426-002	MW3	beryllium, dissolved	7440-41-7	E421	0.00479 mg/L	0.005 mg/L	95.8	70.0	130	----
		bismuth, dissolved	7440-69-9	E421	0.0482 mg/L	0.05 mg/L	96.4	70.0	130	----
		boron, dissolved	7440-42-8	E421	0.042 mg/L	0.05 mg/L	83.1	70.0	130	----
		cadmium, dissolved	7440-43-9	E421	0.00488 mg/L	0.005 mg/L	97.6	70.0	130	----
		calcium, dissolved	7440-70-2	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		cesium, dissolved	7440-46-2	E421	0.00252 mg/L	0.0025 mg/L	101	70.0	130	----
		chromium, dissolved	7440-47-3	E421	0.0119 mg/L	0.0125 mg/L	95.5	70.0	130	----
		cobalt, dissolved	7440-48-4	E421	0.0119 mg/L	0.0125 mg/L	95.2	70.0	130	----
		copper, dissolved	7440-50-8	E421	0.0115 mg/L	0.0125 mg/L	91.8	70.0	130	----
		iron, dissolved	7439-89-6	E421	ND mg/L	0.05 mg/L	ND	70.0	130	----
		lead, dissolved	7439-92-1	E421	0.0244 mg/L	0.025 mg/L	97.6	70.0	130	----
		lithium, dissolved	7439-93-2	E421	0.0116 mg/L	0.0125 mg/L	92.8	70.0	130	----
		magnesium, dissolved	7439-95-4	E421	2.67 mg/L	2.5 mg/L	107	70.0	130	----
		manganese, dissolved	7439-96-5	E421	0.0116 mg/L	0.0125 mg/L	93.2	70.0	130	----
		molybdenum, dissolved	7439-98-7	E421	0.0121 mg/L	0.0125 mg/L	97.0	70.0	130	----
		nickel, dissolved	7440-02-0	E421	0.0234 mg/L	0.025 mg/L	93.7	70.0	130	----
		phosphorus, dissolved	7723-14-0	E421	0.519 mg/L	0.5 mg/L	104	70.0	130	----
		potassium, dissolved	7440-09-7	E421	2.39 mg/L	2.5 mg/L	95.4	70.0	130	----
		rubidium, dissolved	7440-17-7	E421	0.00500 mg/L	0.005 mg/L	100.0	70.0	130	----
		selenium, dissolved	7782-49-2	E421	0.0521 mg/L	0.05 mg/L	104	70.0	130	----
		silicon, dissolved	7440-21-3	E421	ND mg/L	0.5 mg/L	ND	70.0	130	----
		silver, dissolved	7440-22-4	E421	0.00436 mg/L	0.005 mg/L	87.3	70.0	130	----
		sodium, dissolved	7440-23-5	E421	ND mg/L	2.5 mg/L	ND	70.0	130	----
		strontium, dissolved	7440-24-6	E421	ND mg/L	0.0125 mg/L	ND	70.0	130	----
		sulfur, dissolved	7704-34-9	E421	2.40 mg/L	2.5 mg/L	96.0	70.0	130	----
		tellurium, dissolved	13494-80-9	E421	0.00471 mg/L	0.005 mg/L	94.2	70.0	130	----
		thallium, dissolved	7440-28-0	E421	0.0493 mg/L	0.05 mg/L	98.5	70.0	130	----
		thorium, dissolved	7440-29-1	E421	0.00471 mg/L	0.005 mg/L	94.2	70.0	130	----
		tin, dissolved	7440-31-5	E421	0.0244 mg/L	0.025 mg/L	97.6	70.0	130	----
		titanium, dissolved	7440-32-6	E421	0.0118 mg/L	0.0125 mg/L	94.7	70.0	130	----
		tungsten, dissolved	7440-33-7	E421	0.00494 mg/L	0.005 mg/L	98.9	70.0	130	----
		uranium, dissolved	7440-61-1	E421	0.000250 mg/L	0.00025 mg/L	99.9	70.0	130	----
		vanadium, dissolved	7440-62-2	E421	0.0247 mg/L	0.025 mg/L	98.6	70.0	130	----
		zinc, dissolved	7440-66-6	E421	0.0242 mg/L	0.025 mg/L	96.8	70.0	130	----
		zirconium, dissolved	7440-67-7	E421	0.00463 mg/L	0.005 mg/L	92.5	70.0	130	----

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Work Order : WT2300426
Client : Englobe Corp.
Project : 2210292



Qualifiers

<i>Qualifier</i>	<i>Description</i>
K	<i>Matrix Spike recovery outside ALS DQO due to sample matrix effects.</i>



QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : WT2300426</p> <p>Client : Englobe Corp.</p> <p>Contact : Mike Smith</p> <p>Address : Geotechnical Materials and Environmental Engineering 39 Sagona Avenue Mount Pearl NL Canada A1N 4P9</p> <p>Telephone : 709-576-8148</p> <p>Project : 2210292</p> <p>PO : ----</p> <p>C-O-C number : ----</p> <p>Sampler : ----</p> <p>Site : Upper Trinity South (New Harbour) Waste Landfill</p> <p>Quote number : Landfill Monitoring - Upper Trinity South (New Harbour) and Come By Chance Landfills</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</p>	<p>Page : 1 of 16</p> <p>Laboratory : Waterloo - Environmental</p> <p>Account Manager : Emily Smith</p> <p>Address : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p>Telephone : +1 519 886 6910</p> <p>Date Samples Received : 07-Jan-2023 09:30</p> <p>Issue Date : 16-Jan-2023 11:48</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

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
Matrix Spike (MS) Recoveries								
Total Metals	WT2300426-008	SW-UPSTREAM	zirconium, total	7440-67-7	E420	54.6 % ^K	70.0-130%	Recovery less than lower data quality objective

Result Qualifiers

Qualifier	Description
K	Matrix Spike recovery outside ALS DQO due to sample matrix effects.

Regular Sample Surrogates

Sub-Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Result	Limits	Comment
Samples Submitted							
Polychlorinated Biphenyls Surrogates	WT2300426-006	MW7	decachlorobiphenyl	2051-24-3	36.8 %	50.0-140 %	Recovery less than lower data quality objective



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) SW-POND	E298	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) SW-UPSTREAM	E298	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW-POND	E235.Cl	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] SW-UPSTREAM	E235.Cl	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE [ON MECP] SW-POND	E378-U	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001										
HDPE [ON MECP] SW-UPSTREAM	E378-U	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] SW-POND	E235.F	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] SW-UPSTREAM	E235.F	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW-POND	E235.NO3	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] SW-UPSTREAM	E235.NO3	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW-POND	E235.NO2	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] SW-UPSTREAM	E235.NO2	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	7 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW-POND	E235.SO4	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] SW-UPSTREAM	E235.SO4	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Lab Split - Subsample from unpreserved bottle MW2	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 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		
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW2-DUP	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW3	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW4	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW5A	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW6	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW7	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Mercury in Water by CVAAS											
Lab Split - Subsample from unpreserved bottle MW8	E509	05-Jan-2023	09-Jan-2023	0.03 hrs	18 hrs	* EHTR-FM	09-Jan-2023	-92.11 hrs	0.03 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Metals in Water by CRC ICPSM											
Lab Split - Subsample from unpreserved bottle MW2	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	* EHTR-FM	
Dissolved Metals : Dissolved Metals in Water by CRC ICPSM											
Lab Split - Subsample from unpreserved bottle MW2-DUP	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 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		
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW3	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW4	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW5A	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW6	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW7	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS											
Lab Split - Subsample from unpreserved bottle MW8	E421	05-Jan-2023	10-Jan-2023	----	----		10-Jan-2023	0.25 hrs	8.25 hrs	*	EHTR-FM
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (lab preserved) SW-POND	E358-L	05-Jan-2023	09-Jan-2023	3 days	5 days	* EHT	10-Jan-2023	28 days	1 days	✓	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)											
Amber glass dissolved (lab preserved) SW-UPSTREAM	E358-L	05-Jan-2023	09-Jan-2023	3 days	5 days	* EHT	10-Jan-2023	28 days	1 days	✓	
Physical Tests : Alkalinity Species by Titration											
HDPE [ON MECP] SW-POND	E290	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	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 [ON MECP] SW-UPSTREAM	E290	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	14 days	6 days	✓	
Physical Tests : Colour (Apparent) by Spectrometer											
HDPE [ON MECP] SW-POND	E330	05-Jan-2023	----	----	----		09-Jan-2023	48 hrs	113 hrs	* EHTR	
Physical Tests : Colour (Apparent) by Spectrometer											
HDPE [ON MECP] SW-UPSTREAM	E330	05-Jan-2023	----	----	----		09-Jan-2023	48 hrs	113 hrs	* EHTR	
Physical Tests : Conductivity in Water											
HDPE [ON MECP] SW-POND	E100	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	28 days	6 days	✓	
Physical Tests : Conductivity in Water											
HDPE [ON MECP] SW-UPSTREAM	E100	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	28 days	6 days	✓	
Physical Tests : pH by Meter											
HDPE [ON MECP] SW-POND	E108	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	14 days	6 days	✓	
Physical Tests : pH by Meter											
HDPE [ON MECP] SW-UPSTREAM	E108	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	14 days	6 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE [ON MECP] SW-POND	E162	05-Jan-2023	----	----	----		11-Jan-2023	7 days	7 days	✓	
Physical Tests : TDS by Gravimetry											
HDPE [ON MECP] SW-UPSTREAM	E162	05-Jan-2023	----	----	----		11-Jan-2023	7 days	7 days	✓	



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

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : Turbidity by Nephelometry											
HDPE [ON MECP] SW-POND	E121	05-Jan-2023	----	----	----		12-Jan-2023	3 days	8 days	*	EHT
Physical Tests : Turbidity by Nephelometry											
HDPE [ON MECP] SW-UPSTREAM	E121	05-Jan-2023	----	----	----		12-Jan-2023	3 days	8 days	*	EHT
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW2	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW2-DUP	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW3	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW4	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW5A	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW6	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW7	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✓	10-Jan-2023	40 days	1 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		
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap MW8	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✔	10-Jan-2023	40 days	1 days	✔	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap SW-POND	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✔	10-Jan-2023	40 days	1 days	✔	
Polychlorinated Biphenyls : PCB Aroclors by GC-MS											
Amber glass/Teflon lined cap SW-UPSTREAM	E687	05-Jan-2023	09-Jan-2023	14 days	5 days	✔	10-Jan-2023	40 days	1 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) SW-POND	E508	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✔	
Total Metals : Total Mercury in Water by CVAAS											
Glass vial total (hydrochloric acid) SW-UPSTREAM	E508	05-Jan-2023	09-Jan-2023	----	----		09-Jan-2023	28 days	5 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE total (nitric acid) SW-POND	E420	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	180 days	5 days	✔	
Total Metals : Total metals in Water by CRC ICPMS											
HDPE total (nitric acid) SW-UPSTREAM	E420	05-Jan-2023	09-Jan-2023	----	----		10-Jan-2023	180 days	5 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	797433	1	3	33.3	5.0	✓
Ammonia by Fluorescence	E298	797442	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	797431	1	2	50.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	797641	1	9	11.1	5.0	✓
Conductivity in Water	E100	797434	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	797454	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	797894	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	797497	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	797577	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	797428	1	5	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	797429	1	2	50.0	5.0	✓
Nitrite in Water by IC	E235.NO2	797430	1	2	50.0	5.0	✓
pH by Meter	E108	797435	1	3	33.3	5.0	✓
Sulfate in Water by IC	E235.SO4	797432	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	799767	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	797384	1	12	8.3	5.0	✓
Total metals in Water by CRC ICPMS	E420	797887	1	14	7.1	5.0	✓
Turbidity by Nephelometry	E121	800698	1	12	8.3	5.0	✓
Laboratory Control Samples (LCS)							
Alkalinity Species by Titration	E290	797433	1	3	33.3	5.0	✓
Ammonia by Fluorescence	E298	797442	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	797431	1	2	50.0	5.0	✓
Colour (Apparent) by Spectrometer	E330	797641	1	9	11.1	5.0	✓
Conductivity in Water	E100	797434	1	2	50.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	797454	1	16	6.2	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	797894	1	8	12.5	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	797497	1	10	10.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	797577	1	13	7.6	5.0	✓
Fluoride in Water by IC	E235.F	797428	1	5	20.0	5.0	✓
Nitrate in Water by IC	E235.NO3	797429	1	2	50.0	5.0	✓
Nitrite in Water by IC	E235.NO2	797430	1	2	50.0	5.0	✓
PCB Aroclors by GC-MS	E687	797494	1	11	9.0	4.7	✓
pH by Meter	E108	797435	1	3	33.3	5.0	✓
Sulfate in Water by IC	E235.SO4	797432	1	3	33.3	5.0	✓
TDS by Gravimetry	E162	799767	1	8	12.5	5.0	✓
Total Mercury in Water by CVAAS	E508	797384	1	12	8.3	5.0	✓



Matrix: **Water**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Total metals in Water by CRC ICPMS	E420	797887	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	800698	1	12	8.3	5.0	✔
Method Blanks (MB)							
Alkalinity Species by Titration	E290	797433	1	3	33.3	5.0	✔
Ammonia by Fluorescence	E298	797442	1	8	12.5	5.0	✔
Chloride in Water by IC	E235.Cl	797431	1	2	50.0	5.0	✔
Colour (Apparent) by Spectrometer	E330	797641	1	9	11.1	5.0	✔
Conductivity in Water	E100	797434	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	797454	1	16	6.2	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	797894	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	797497	1	10	10.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	797577	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	797428	1	5	20.0	5.0	✔
Nitrate in Water by IC	E235.NO3	797429	1	2	50.0	5.0	✔
Nitrite in Water by IC	E235.NO2	797430	1	2	50.0	5.0	✔
PCB Aroclors by GC-MS	E687	797494	1	11	9.0	4.7	✔
Sulfate in Water by IC	E235.SO4	797432	1	3	33.3	5.0	✔
TDS by Gravimetry	E162	799767	1	8	12.5	5.0	✔
Total Mercury in Water by CVAAS	E508	797384	1	12	8.3	5.0	✔
Total metals in Water by CRC ICPMS	E420	797887	1	14	7.1	5.0	✔
Turbidity by Nephelometry	E121	800698	1	12	8.3	5.0	✔
Matrix Spikes (MS)							
Ammonia by Fluorescence	E298	797442	1	8	12.5	5.0	✔
Chloride in Water by IC	E235.Cl	797431	1	2	50.0	5.0	✔
Dissolved Mercury in Water by CVAAS	E509	797454	1	16	6.2	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	797894	1	8	12.5	5.0	✔
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	797497	1	10	10.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	797577	1	13	7.6	5.0	✔
Fluoride in Water by IC	E235.F	797428	1	5	20.0	5.0	✔
Nitrate in Water by IC	E235.NO3	797429	1	2	50.0	5.0	✔
Nitrite in Water by IC	E235.NO2	797430	1	2	50.0	5.0	✔
Sulfate in Water by IC	E235.SO4	797432	1	3	33.3	5.0	✔
Total Mercury in Water by CVAAS	E508	797384	1	12	8.3	5.0	✔
Total metals in Water by CRC ICPMS	E420	797887	1	14	7.1	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 Waterloo - 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 Waterloo - Environmental	Water	APHA 4500-H (mod)	pH is determined by potentiometric measurement with a pH electrode, and is conducted at ambient laboratory temperature (normally 20 ± 5°C). For high accuracy test results, pH should be measured in the field within the recommended 15 minute hold time.
Turbidity by Nephelometry	E121 Waterloo - Environmental	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry	E162 Waterloo - Environmental	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Chloride in Water by IC	E235.Cl Waterloo - 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 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrite in Water by IC	E235.NO2 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Nitrate in Water by IC	E235.NO3 Waterloo - 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 Waterloo - Environmental	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 Waterloo - 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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Ammonia by Fluorescence	E298 Waterloo - 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)
Colour (Apparent) by Spectrometer	E330 Waterloo - Environmental	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters. Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Dissolved Organic Carbon by Combustion (Low Level)	E358-L Waterloo - Environmental	Water	APHA 5310 B (mod)	Dissolved Organic Carbon (Non-Purgeable), also known as NPOC (dissolved), is a direct measurement of DOC after a filtered (0.45 micron) sample has been acidified and purged to remove inorganic carbon (IC). Analysis is by high temperature combustion with infrared detection of CO ₂ . NPOC does not include volatile organic species that are purged off with IC. For samples where the majority of DC (dissolved carbon) is comprised of IC (which is common), this method is more accurate and more reliable than the DOC by subtraction method (i.e. DC minus DIC).
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U Waterloo - Environmental	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter. Field filtration is recommended to ensure test results represent conditions at time of sampling.
Total metals in Water by CRC ICPMS	E420 Waterloo - Environmental	Water	EPA 200.2/6020B (mod)	Water samples are digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Metals in Water by CRC ICPMS	E421 Waterloo - Environmental	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Total Mercury in Water by CVAAS	E508 Waterloo - Environmental	Water	EPA 1631E (mod)	Water samples undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS
Dissolved Mercury in Water by CVAAS	E509 Waterloo - Environmental	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
PCB Aroclors by GC-MS	E687 Waterloo - Environmental	Water	EPA 8270E (mod)	PCB Aroclors are analyzed by GC-MS



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Hardness (Calculated) from Total Ca/Mg	EC100A Waterloo - Environmental	Water	APHA 2340B	"Hardness (as CaCO ₃), from total Ca/Mg" is calculated from the sum of total Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations. Hardness from total Ca/Mg is normally comparable to Dissolved Hardness in non-turbid waters.
Ion Balance using Total Metals	EC101A Waterloo - Environmental	Water	APHA 1030E	Cation Sum (using total metals), Anion Sum, and Ion Balance are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Minor ions are included where data is present. Ion Balance cannot be calculated accurately for waters with very low electrical conductivity (EC).
Langelier Index using Laboratory pH (Ca-T)	EC105A Waterloo - Environmental	Water	APHA 2330B	Langelier Index provides an indication of scale formation potential at a given pH and temperature, and is calculated as per APHA 2330B Saturation Index. Positive values indicate oversaturation with respect to CaCO ₃ . Negative values indicate undersaturation of CaCO ₃ . This calculation uses laboratory pH measurements and provides estimates of Langelier Index at temperatures of 4, 15, 20, 25, 66, and 77°C.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N Waterloo - Environmental	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).
Total Silicon as Silica (Calculation)	EC420.SiO2 Waterloo - Environmental	Water	N/A	Total Silicon (as SiO ₂) is a calculated parameter. Total Silicon (as SiO ₂ mg/L) = 2.139 x Total Silicon (mg/L).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 Waterloo - Environmental	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 Waterloo - Environmental	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Dissolved Metals Water Filtration	EP421 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO ₃ .
Dissolved Mercury Water Filtration	EP509 Waterloo - Environmental	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
Pesticides, PCB, and Neutral Extractable Chlorinated Hydrocarbons Extraction	EP660 Waterloo - Environmental	Water	EPA 3511 (mod)	Samples are extracted from aqueous sample using an organic solvent liquid-liquid extraction.

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Work Order : WT2300426
Client : Englobe Corp.
Project : 2210292





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Chain of Custody (COC) / Analytical Request Form

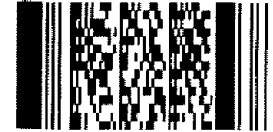
Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17 -

Page

Environmental Division
Waterloo
Work Order Reference
WT2300426



Telephone : + 1 519 666 6910

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm															
Company: Englobe Corp.		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - bu					EMERGENCY										
Contact: Mike Smith		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			4 day [P4-20%] <input type="checkbox"/>		1 Business day													
Phone: 709-743-6096		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			3 day [P3-25%] <input type="checkbox"/>		Same Day, Week (Laboratory open)													
Company address below will appear on the final report		Select Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			2 day [P2-50%] <input type="checkbox"/>															
Street: 39 Sagona Ave		Email 1 or Fax: Michael.Smith2@englobecorp.com			Date and Time Required for all E&P TATs:															
City/Province: Mount Pearl, NL		Email 2: lisa.clancey@englobecorp.com			For tests that can not be performed according to the service level selected, :															
Postal Code: A1N 4P9		Email 3			Analysis Request															
Invoice To		Invoice Distribution			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below															
Same as Report To <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Select Invoice Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																		
Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Email 1 or Fax: cp.factures@englobecorp.com																		
Company:		Email 2: Michael.Smith2@englobecorp.com																		
Contact:																				
Project Information		Oil and Gas Required Fields (client use)																		
ALS Account # / Quote #: HA2022ENGL1000001		AFE/Cost Center:		PO#																
Job #: 2210292		Major/Minor Code:		Routing Code:																
PO / AFE:		Requisitioner:																		
LSD: Upper Trinity South (New Harbour) Waste Landfill		Location:																		
ALS Lab Work Order # (lab use only):		ALS Contact: Emily Smith		Sampler: Lisa Clancey																
ALS Sample # (lab use only)		Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mmm-yy)		Time (hh:mm)		Sample Type											
MW2					5-Jan-22		-		Water											
MW3					5-Jan-22		-		Water											
MW4					5-Jan-22		-		Water											
MW5					5-Jan-22		-		Water											
MW6					5-Jan-22		-		Water											
MW7					5-Jan-22		-		Water											
MW8					5-Jan-22		-		Water											
SW-Upstream					5-Jan-22		-		Water											
MW2-Dup					5-Jan-22		-		Water											
SW-Pond					5-Jan-22		-		Water											
SW-stream					5-Jan-22		-		Water											
									Water											
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)															
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		* MW6 missing small vial as it broke after Sampling * No filtering completed / Pres. dumped and entire was washed 3x			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 checked="" 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													
							3.3 2.1													
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)															
Released by: Lisa Clancey		Date: Jan 6 th 22		Time:		Received by: [Signature]		Date: 01/07/23		Time: 9:30										

SAMPLES ON HOLD
SUSPECTED HAZARD (see Special Instructions)

Appendix E

Historical Analytical Tables



TABLE C1

HISTORICAL GROUNDWATER ANALYTICAL (2007 - 2023) - PCBs (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Sample Location	Criteria ¹	Sample Date															Criteria*		Sample Date			
		Feb 2007	Nov 2007	May 2008	Mar 2009 ¹	Mar 2009 ²	Oct 2009	Jan 2010	Dec 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Nov 2014	Dec 2015	Oct 2017	Tier 1 EQSs for Human ²	Tier 1 EQS for Eco Health ³	Dec 2021	Feb 2022	Jan 2022	Jan 2023
		MW-01	7.8	-	<	<	<	<	0.07	<	<	< (0.06)	<	<	<	<	<	<	180	0.01	-	<
MW-02	-	<		<	-	-	<	<	< (0.06)	-	<	<	<	<	<	<	<	-			-	<
MW-03	< (0.4)	<		<	<	-	<	<	< (0.06)	<	<	<	<	<	<	<	<	-			-	<
MW-04	-	<		<	<	-	<	<	<	<	<	<	<	<	<	<	<	-			-	<
MW-05	<	<		<	<	-	<	<	<	<	<	<	<	<	<	<	Well Destroyed ⁴					
MW-05A	Well Installed in 2014															<	<	<			<	
MW-06	-	<		<	-	-	<	<	<	< (0.06)	< (0.06)	<	<	<	<	<	<	-			-	<
MW-06 DUP-02	-	-		-	-	-	-	-	-	-	-	-	<	<	-	-	-	-			-	-
MW-07	-	<		<	<	<	<	<	<	<	<	<	<	<	<	<	<	-			-	<
MW-DUP	-	-		-	-	-	-	-	-	-	-	<	<	<	<	<	-	-			-	-
MW-08	-	-		-	-	-	-	-	-	<	<	<	<	<	<	<	<	-			-	<
MW-08 DUP-01	-	-		-	-	-	-	-	-	-	<	-	-	-	-	-	-	-			-	-
RDL	-	0.04		0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-			0.05	0.05

Analysis collected for all samples from 2007 to 2012 except March 2009² were completed by AMEC.

Analysis completed for samples from March 2009², 2013, and 2014 were completed by Maxxam Analytics Inc. in Bedford, NS.

Data from February 2007 to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC and dated March 29, 2013.

Data from November 2012 to October 2017 transcribed from the Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site available from ECC website.

¹ Ontario Ministry of the Environment (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition

² Atlantic RBCA Tier I Environmental Quality Standards (EQS) for Groundwater of Human Health, for a commercial site with coarse grained soil, non-potable groundwater (July 2021, updated July 2022)

³ Atlantic RBCA Tier I EQSs for Groundwater, for the protection of Ecological Health, for a commercial site with coarse grained soil >10 m away from a fresh water (July 2021, updated July 2022).

⁴ Monitor well MW-05 was destroyed in 2013 and replaced in 2014 with MW-05A

MW = Monitor Well

< = Parameter below detection limit

0.0

= above criteria

MW-DUP = Field Duplicate of MW-07.

< (0.00) = Parameter below elevated detection limit

MW-08 DUP-01 = Field Duplicate of MW-08.

- = No sample collected

RDL = Reportable Detection Limit

TABLE C2

HISTORICAL GROUNDWATER ANALYTICAL (2007 - 2023) - METALS (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Parameter	RDL ¹	Criteria ²	MW-01													MW-02									
			Feb 2007	Nov 2007	May 2008	Jan 2009	Oct 2009	Jan 2010	Dec 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015	Oct 2017	Feb 2007	Nov 2007	May 2008	Oct 2009	Jan 2010	Dec 2011	Nov 2014	Dec 2015	Oct 2017	
Aluminum (Al)	5.0	-	558,000	3,530	75	72.5	176	109	250	234	130	72.4	59	54	320	3,540	70	34	56.9	45.6	432	77	51	-	
Antimony (Sb)	1.0	20,000	<	<	<	<(2)	<(2)	<(2)	<	<	<	<	<	<	ND	<	<	<	<(2)	<(2)	<	<	ND	-	
Arsenic (As)	1.0	1,900	77	<	4	<(2)	<(2)	<(2)	<	<	<	<	<	ND	<	<	<	<(2)	<(2)	<	<	ND	-		
Barium (Ba)	1.0	29,000	870	15.1	2.1	<(5)	<(5)	<(5)	2	1.7	3.2	2.2	1.7	2.8	1.7	17.6	2.7	3.0	<(5)	<(5)	4.7	2.5	2.4	-	
Beryllium (Be)	1.0	67	36.9	0.2	<	<(2)	<(2)	<(2)	<	<	<	<	<	ND	<	0.5	<	<(2)	<(2)	<	<	ND	-		
Bismuth (Bi)	2.0	-	<	<	<	<	<	<	<	<	<	<	<	ND	<	<	<	<	<	<	<	ND	-		
Boron (B)	5.0	45,000	-	-	-	-	5.6	<	<(50)	<(50)	<	<	<	ND	<	-	-	-	<	<(50)	<	<	ND	-	
Cadmium (Cd)	0.017	2.7	1.792	0.380	0.058	0.021	0.020	0.026	0.020	<	<	0.017	0.046	ND	<	0.158	1.010	0.057	0.039	<	0.056	0.026	ND	-	
Calcium (Ca)	100	-	81,600	2,070	2,400	-	5,200	2,000	2,200	2,040	2,530	2,530	2,600	3,000	1,700	2,670	1,350	1,330	1,700	1,300	1,910	1,900	2,500	-	
Cesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chromium (Cr)	1.0	810	82	2	<	<	<	<	<	<	<	<	<	ND	<	10.8	<	<	<	<	<	3.7	ND	-	
Cobalt (Co)	0.4	66	79.85	2	<(1)	<	<(4)	<	<	0.4	0.95	0.65	<	ND	<	7	<(1)	<(1)	0.86	1.04	0.53	0.59	ND	-	
Copper (Cu)	2.0	87	1,250	12	2	5	18.5	3.1	3	<	<	<	<	ND	<	29	1	4	8.3	<	7.1	4.2	ND	-	
Iron (Fe)	50	-	75,000	2,180	246	140	107	<	290	167	968	100	<	70	290	4,170	64	59	<	<	245	220	ND	-	
Lead (Pb)	0.5	25	192.7	4	<(1)	<	<	<	<	<	<	<	<	ND	<	6	<(1)	<(1)	<	<	0.62	<	ND	-	
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Magnesium (Mg)	100	-	15,500	642	745	-	1,400	600	500	611	602	721	730	940	640	1,150	449	479	600	500	258	620	830	-	
Manganese (Mn)	2.0	-	2,120	58	31	34	20.5	9.7	17	15.9	83.3	52.7	13	21	12	150	13	19	8.3	33.4	4.5	24.0	4.6	-	
Mercury (Hg)	0.013	0.29 ³	<(0.02)	<(0.02)	0.13	0.08	0.030	0.11	-	-	-	0.033	0.017	0.04	<	<(0.01)	<(0.02)	0.03	-	0.015	<	<	ND	-	
Molybdenum (Mo)	2.0	9,200	16	<(5)	<(5)	<	<	<	<	<	<	<	<	ND	<	<(5)	<(5)	<	<	<	<	<	ND	-	
Nickel (Ni)	2.0	490	43	<(5)	<(5)	<	<	<	<	<	<	<	<	ND	<	5	<(5)	<(5)	<	<	<	<	ND	-	
Phosphorus (P)	100	-	32,200	127	<	-	<	200	140	-	<	<	<	130	ND	<	336	<	<	<	200	-	110	ND	-
Potassium (K)	100	-	9,180	595	212	-	2,100	200	150	166	275	266	180	250	<	546	239	148	400	200	238	250	260	-	
Rubidium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Selenium (Se)	1.0	63	1	<	<	<	<	<	<	<	<	<	<	ND	<	<	<	<	<	<	<	<	ND	-	
Silicon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Silver (Ag)	0.1	1.5	<	<	<	<	<	<	<	<	<	<	<	ND	<	<	<	<	<	<	<	<	ND	-	
Sodium (Na)	100	2,300,000	11,800	4,090	4,750	-	12,000	3,700	4,300	4,140	5,810	4,390	4,900	6,200	7,900	12,100	4,510	5,210	5,100	5,200	5,020	5,400	8,800	-	
Strontium (Sr)	2.0	-	-	-	-	-	13.4	6.9	7	6.9	12.3	10.2	9	11	6.8	-	-	-	6	6	5	9.7	9.0	-	
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tellurium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Thallium (Tl)	0.1	510	-	-	-	-	<	<	<	<	<	<	<	ND	<	-	-	-	<	<	<	<	ND	-	
Thorium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Tin (Sn)	2.0	-	-	-	-	-	<	<	<	<	<	<	3.2	ND	<	-	-	-	<	<	<	<	ND	-	
Titanium (Ti)	2.0	-	-	-	-	-	6.4	4.8	6	6.8	3.0	2.5	<	ND	4.1	-	-	-	<	<	24	<	2	-	
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Uranium (U)	0.1	420	-	-	-	-	<	<	<	<	<	<	<	ND	<	-	-	-	<	<	<	<	ND	-	
Vanadium (V)	2.0	250	108	<(5)	<(5)	<	<	<	<	<	<	<	<	ND	<	3	<(5)	<(5)	<	<	<	<	ND	-	
Zinc (Zn)	5.0	1,100	825	12	5	6	37.3	8.4	6	5.5	5.2	9.4	6.3	ND	7.8	22	4	6	21.1	<	19.5	7.2	ND	-	
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
pH	-	6.5 - 9.0	6.04	7.3	5.96	6.23	6.15	6.05	6.25	5.88	6.81	-	-	-	-	5.62	6.05	5.94	6.1	5.59	7.15	-	-	-	
Hardness	1,000	-	268,000	7,880	9,080	8,370	19,000	7,000	8,000	-	8,800	-	-	-	-	11,500	5,220	5,220	7,000	5,000	-	-	-	-	

Notes:

RDL = Reportable Detection Limit
 MW = Monitor Well
 - = Not analysed/No criteria

< = Parameter below detection limit
 <(0.0) = Parameter below elevated detection limit
 0.0 = above criteria

Samples collected by AMEC for all samples from 2007 to 2012.
 Analysis of samples from 2013 and 2014 was completed by Maxxam Analytics Inc. in Bedford, NS.
 Data to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC, dated March 29, 2013.
 Data from November 2012 to October 2017 transcribed from the Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site available from ECC website.
¹ Typical Reportable Detection Limit referenced based on Maxxam laboratory analysis, but RDL may be lower than shown for original data.
² Ontario Ministry of the Environment (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
³ Based on Coarse-grained soil conditions.

TABLE C2
 HISTORICAL GROUNDWATER ANALYTICAL (2007 - 2023) - METALS (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Parameter	RDL ¹	Criteria ²	MW-03													MW-04												
			Feb 2007	Nov 2007	Nov 2007	May 2008	Mar 2009 ¹	Oct 2009	Jan 2010	Dec 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015	Oct 2017	Feb 2007	Nov 2007	Jul 2008	Jan 2009	Oct 2009	Jan 2010	Dec 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015
Aluminum (Al)	5.0	-	5,450	129	145	45	146	120	87.9	190	163	78.4	167	140	130	76	275,000	1,580	41	105	197	131	60	84.1	1,610	53.8	53	85
Antimony (Sb)	1.0	20,000	<	<	<	<	<(2)	<(2)	<(2)	<	<	<	<	<	ND	<	<	<	<	<(2)	<(2)	<(2)	<	<	<	<	<	ND
Arsenic (As)	1.0	1,900	3	1	1	<	6	<(2)	7.8	4	7.4	6.6	9.9	1	2.8	13	15	2	13	8	11.1	3.1	2	2	3.2	2.3	<	ND
Barium (Ba)	1.0	29,000	64.8	25.5	25.0	7.7	12	29.3	13.4	6	9.8	10.2	12.1	4.9	5.7	13	356	14.7	34.8	92	20.4	25.8	12	14.9	51.1	11.7	6.1	7.3
Beryllium (Be)	1.0	67	1.6	<	0.2	0.3	<(2)	<(2)	<	<	<	<	<	<	ND	<	40.5	0.3	<	<(2)	<(2)	<(2)	<	<	<	<	<	ND
Bismuth (Bi)	2.0	-	<	<	<	<	<	<	<	<	<	<	<	<	ND	<	<	<	0.8	<	<	<	<	<	<	<	<	ND
Boron (B)	5.0	45,000	-	-	-	-	-	29.2	22.9	11	<(50)	<(50)	<	<	ND	<	-	-	-	-	22.4	37.1	22	<(50)	<(50)	<	<	ND
Cadmium (Cd)	0.017	2.7	0.109	0.067	0.221	0.102	<	0.049	0.018	<(0.02)	0.063	<	0.03	<	ND	<	1.013	0.059	0.166	<	<	<(0.02)	<	0.101	<	0.052	0.029	
Calcium (Ca)	100	-	15,800	11,300	10,500	5,060	-	15,000	13,000	7,000	8,780	10,800	11,900	7,300	5,800	13,000	34,600	17,500	32,500	-	19,000	9,400	6,700	8,710	15,700	8,970	5,900	6,800
Cesium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (Cr)	1.0	810	7.0	<	<	<	<	1.7	<	<	<	<	<	ND	<	37.0	1	1	<	1.1	<	<	<	2.9	<	<	<	ND
Cobalt (Co)	0.4	66	12	5	5	9	6	1.98	5.49	4.6	4.75	3.63	6.18	2.6	1.7	5.9	100	4	14	8.38	7.21	2.87	1.9	2.42	11.1	4.11	2.9	3.4
Copper (Cu)	2.0	87	3	4	4	4	<	5.0	<	<	3.5	<	2.1	<	2.3	<	137	6	<	2	2.6	<	<	5.3	<	4.1	3.4	
Iron (Fe)	50	-	6,680	2,410	2,230	312	1,400	4,390	1,590	1,500	1,030	9,570	3,220	6,800	1,800	8,600	64,100	1,170	2,430	7,600	2,030	2,020	1,100	1,950	6,530	1,680	590	660
Lead (Pb)	0.5	25	19	4	4	<(1)	<	1.11	<	<	<	<	0.97	<	ND	<	63	2	3	0.8	<	1.14	0.6	0.68	2.44	<	<	0.84
Lithium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium (Mg)	100	-	4,000	2,470	2,410	1,140	-	3,200	3,600	2,160	1,610	2,910	690	1,600	3,500	7,680	5,380	10,100	-	5,000	1,900	1,200	1,740	3,160	1,860	1,200	1,600	
Manganese (Mn)	2.0	-	2,040	1,010	964	171	3,800	721	3,930	1,900	2,090	1,570	3020	550	720	3900	8,950	2,370	6,740	2,500	4,510	925	370	549	1,300	465	190	130
Mercury (Hg)	0.013	0.29 ³	0.02	<(0.02)	<(0.02)	0.04	0.68	0.037	0.46	-	-	-	0.26	0.025	0.092	<	<(0.01)	<(0.02)	<(0.02)	0.01	0.18	0.083	-	-	-	0.022	0.037	ND
Molybdenum (Mo)	2.0	9,200	<(5)	<(5)	<(5)	<(5)	<	<	<	<	<	<	<	ND	<	8	<(5)	<(5)	<(5)	2.4	<	<	<	<	<	<	<	ND
Nickel (Ni)	2.0	490	5	<(5)	<(5)	<(5)	<	<	<	6	<	2.8	<	ND	<	22	<(5)	<(5)	3	<	<	<	<	3.3	<	<	<	ND
Phosphorus (P)	100	-	1,090	312	199	20	-	200	<	110	<	<	<	130	ND	<	11,100	93	28	<	100	130	-	335	104	110	ND	
Potassium (K)	100	-	6,560	3,630	3,540	633	-	4,800	2,400	1,100	1,350	1,730	1760	280	820	2000	4,810	3,150	4,440	-	3,600	2,900	1,500	2,130	2,900	1200	660	670
Rubidium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium (Se)	1.0	63	<	<	<	<	<	<	<	<	<	<	<	<	ND	<	<	<	<	<	<	<	<	<	<	<	<	ND
Silicon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver (Ag)	0.1	1.5	<	<	<	<	<	<	<	<	<	<	<	ND	<	0.1	<	0.7	<	<	<	<	<	<	<	<	<	ND
Sodium (Na)	100	2,300,000	189,000	102,000	103,000	24,500	-	96,000	73,000	32,000	32,300	37,000	36,200	7,200	19,000	33,000	60,700	91,200	149,000	-	88,000	77,000	40,000	41,900	43,500	32,800	23,000	29,000
Strontium (Sr)	2.0	-	-	-	-	-	-	56.2	38.0	21	22.9	50.5	38.2	27	19	34	-	-	-	-	51.9	34	24	29	89.7	29.1	21	23
Sulfur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tellurium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	0.1	510	-	-	-	-	-	<	<	<	<	<	<	ND	<	-	-	-	-	<	<	<	<	<	<	<	<	ND
Thorium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tin (Sn)	2.0	-	-	-	-	-	-	<	<	<	<	<	<	5.3	ND	<	-	-	-	<	<	<	<	<	<	<	8.6	ND
Titanium (Ti)	2.0	-	-	-	-	-	-	11.9	2.9	4	7.4	2.5	8.6	2.6	4.4	7.4	-	-	-	-	10.2	30.6	6	8.6	56.0	3.5	<	3.6
Tungsten	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Uranium (U)	0.1	420	-	-	-	-	-	<	0.11	<	<	<	0.13	<	ND	<	-	-	-	<	<	<	<	<	0.19	<	<	ND
Vanadium (V)	2.0	250	9	<(5)	<(5)	<(5)	<	2.4	<	<	<	<	<	<	ND	<	43	<(5)	5	4	<	3	<	<	3.6	<	<	ND
Zinc (Zn)	5.0	1,100	41	6	5	30	<	58.2	7.4	9	18.3	<	9.1	<	ND	6.2	212	4	8	6	16.2	<	7	7.7	19.3	7	23	16
Zirconium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
pH	-	6.5 - 9.0	6.66	6.6	6.61	5.96	6.95	6.94	6.57	7.27	6.93	7.11	-	-	-	-	6.01	6.53	6.69	6.84	6.8	6.75	7.45	6.68	7.08	-	-	-
Hardness	1,000	-	56,000	38,400	38,401	17,400	70,700	51,000	48,000	24,000	-	3,400	-	-	-	-	118	65,900	50,700	37,700	69,000	31,000	22,000	-	52,000	-	-	-

Notes:

RDL = Reportable Detection Limit
 MW = Monitor Well
 - = Not analysed/No criteria

< = Parameter below detection limit
 <(0.0) = Parameter below elevated detection limit
 0.0 = above criteria

Samples collected by AMEC for all samples from 2007 to 2012.
 Analysis of samples from 2013 and 2014 was completed by Maxxam Analytics Inc. in Bedford, NS.
 Data to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC, dated March 29, 2013.
 Data from November 2012 to October 2017 transcribed from the Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site available from ECC website.
¹ Typical Reportable Detection Limit referenced based on Maxxam laboratory analysis, but RDL may be lower than shown for original data.
² Ontario Ministry of the Environment (MOE) "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act", April 15, 2011, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition
³ Based on Coarse-grained soil conditions.

TABLE C2
HISTORICAL GROUNDWATER ANALYTICAL (2007 - 2023) - METALS (ug/L)
2022/23 MONITORING AND MAINTENANCE PROGRAM
UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
NEW HARBOUR BARRENS, NL

Table with columns for Parameter, RDL, Criteria, MW-05, MW-05 Well Destroyed, MW-05A, MW-06, MW-DUP02, MW-06, and MW-08. It lists various metals and their concentrations over time from 2007 to 2023.

Notes:

RDL = Reportable Detection Limit
MW = Monitor Well
- = Not analysed/No criteria
< = Parameter below detection limit
< (0.0) = Parameter below elevated detection limit
0.0 = above criteria

TABLE C2
 HISTORICAL GROUNDWATER ANALYTICAL (2007 - 2023) - METALS (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NT

Parameter	RDL ¹	Criteria ²		MW-01		MW-02		MW-03		MW-04		MW-05 Well Destroyed	MW-05A		MW-06		MW-07		MW-08		
		Tier 1 EQSs for Human Health ³	Tier 1 EQSs for Eco Health ⁴	Feb 2022	Jan 2023	Dec 2021	Jan 2023	Dec 2021	Jan 2023	Dec 2021	Jan 2023	Dec 2021	Jan 2023	Jan 2022	Jan 2023	Dec 2021	Jan 2023	Dec 2021	Jan 2023	Dec 2021	Jan 2023
Aluminum	1	-	50	113	-	135	92	127	74	62	15	-	56	30.8	61	4	1,340	827	604	415	
Antimony	0.1	-	90	<2	-	<1.0	0.1	<1.0	<0.1	<1.0	0.25	-	<2	<0.1	<1.0	<0.1	<2.0	0.21	<1.0	<0.1	
Arsenic	0.1	-	50	<2	-	<1.0	<0.1	4	0.16	<1.0	1	-	<2	<0.1	3	0.2	<2.0	0	1.42	0.6	
Barium	0.1	-	10,000	<5	-	<2.0	3.4	3.3	0.23	0.081	19.4	-	<5	1.41	5.5	3.2	<4.0	5.2	3.6	4.8	
Beryllium	0.02	-	2	<2	-	<0.50	0.107	<0.50	<0.02	<0.50	0.173	-	<2	0.028	<0.50	<0.02	<1.0	0.092	<0.50	0.083	
Bismuth	0.05	-	-	<2	-	<2.0	<0.05	<2.0	<0.05	<2.0	<0.05	-	<2	<0.05	<2.0	<0.05	<4.0	<0.05	<2.0	<0.05	
Boron	10	-	15,000	<5	-	<10.0	<10	16.5	10	15.9	16	-	<5	<10	96.7	67	<20	<10	12	<0.05	
Cadmium	0.005	-	0.9	<0.09	-	<0.10	0.044	<0.10	<0.005	<0.10	1.460	-	<0.09	0.0139	<0.10	<0.005	<0.20	0.045	<0.10	0.025	
Calcium	50	-	-	-	-	1.670	-	5,180	-	9,410	-	-	1.670	-	27,700	-	2480	-	544	-	
Cesium	0.01	-	-	-	-	0.02	-	0.25	-	1	-	-	0.01	-	0.04	-	0.01	-	0.04	-	
Chromium (total)	0.5	-	89	<1	-	<2.0	<0.5	<2.0	<0.5	<2.0	<0.5	-	<1	<0.5	<2.0	<0.5	<4.0	0.79	2.1	<0.01	
Cobalt	0.1	-	10	<1	-	1	1.06	3	0.10	4	31	-	<1	<0.1	1	1	<1.00	0.76	<0.50	0.28	
Copper	0.2	-	20	<2	-	<1.0	1	<1.0	1	4	8.93	-	3	1.27	<1.0	1	<2.0	5	4.1	5.7	
Iron	10	-	3,000	68	-	12	28	755	53	28	45	-	<50	22	16,200	238	2,820	2,450	367	238	
Lead	0.05	-	10	<0.5	-	<0.50	<0.05	<0.50	<0.05	<0.50	0	-	<0.5	<1	<0.50	<0.05	<1.00	1.91	<0.50	0.078	
Lithium	1	-	-	-	-	<50	<1	<50	<1	<50	3	-	-	<1	<50	<1	<100	3	<50	<1	
Magnesium	5	-	-	-	-	806	-	1,440	-	2,000	-	-	579	-	3,610	-	690	-	534	-	
Manganese	0.1	-	4,300	23	-	7	21	1,250	8	202	731	-	10	15.8	318	229	28	69	14	12.4	
Mercury	0.005	-	-	<0.026	-	<0.026	<0.005	<0.026	<0.005	<0.026	<0.005	-	<0.026	<0.05	<0.026	<0.005	0.038	<0.1	<0.026	<0.005	
Molybdenum	0.05	-	730	<2	-	<2.0	<0.05	<2.0	<0.05	<2.0	0.239	-	<2	0.057	<2.0	0.131	<4.0	0.108	<2.0	<0.05	
Nickel	0.5	-	250	2	-	<1.0	0.7	<1.0	<0.5	1	6.65	-	3	1.6	<1.0	1.57	2	1.48	4.1	0.9	
Phosphorus	50	-	-	-	-	56	<50	<50	<50	<50	<50	-	-	<50	163	<50	<100	<50	<50	<50	
Potassium	50	-	-	-	-	151	-	919	-	951	-	-	229	-	2550	-	77	-	194	-	
Rubidium	0.2	-	-	-	-	0.21	-	1	-	2	-	-	0.4	-	1	-	0	-	0.32	-	
Selenium	0.05	-	10	<1	-	<1.0	<0.05	2	0.05	<1.0	0.18	-	<1	<0.05	<1.0	<0.05	<2.0	0.13	<1.0	<0.05	
Silicon	50	-	-	-	-	2710	2510	2790	2530	3710	3820	-	-	3060	2390	1620	1930	2400	3280	3220	
Silver	0.01	-	2.5	<0.1	-	<0.10	<0.1	<0.10	<0.1	<0.10	<0.1	-	<0.1	0.021	<0.10	<0.1	<0.20	<0.1	<0.10	0.015	
Sodium	50	-	-	-	-	6390	-	19100	-	32200.0	-	-	4780	-	8220	-	4690	-	4380	-	
Strontium	0.2	-	210,000	<5	-	5.3	10	13.7	20	22.3	32	-	9	6	85.7	62	<10.0	12	6.1	7	
Sulfur	500	-	-	-	-	<500	-	650	-	3,580	-	-	640	-	12,900	-	<500	-	<500	-	
Tellurium	0.2	-	8	-	-	<0.2	-	<0.2	-	<0.2	-	-	<0.2	-	<0.2	-	<0.2	-	<0.2	-	
Thallium	0.01	-	-	<0.1	-	<0.30	<0.01	<0.30	<0.01	<0.30	1.17	-	<0.1	<0.01	<0.30	<0.01	<0.60	<0.01	<0.30	<0.01	
Thorium	0.1	-	-	-	-	<0.1	-	<0.1	-	<0.1	-	-	<0.1	-	<0.1	-	0.38	-	<0.1	-	
Tin	0.1	-	-	<2	-	<2.0	<0.1	<2.0	<0.1	<2.0	<0.1	-	<2	0.18	<2.0	2.76	<4.0	<0.1	<2.0	<0.1	
Titanium	0.3	-	150	<2	-	<2.0	0.35	<2.0	1.14	<2.0	0.74	-	<2	1.02	<2.0	<0.3	19	22.2	9.3	3.94	
Tungsten	0.1	-	1,200	-	-	<0.1	-	<0.1	-	<0.1	-	-	-	0.65	-	<0.1	-	0.45	-	5.47	
Uranium	0.01	-	-	<0.1	-	<0.50	<0.01	<0.50	<0.01	<0.50	<0.01	-	<0.1	0.023	<0.50	<0.01	<1.0	0.193	<0.50	0.0	
Vanadium	0.5	-	-	<2	-	<2.0	<0.5	<2.0	<0.5	<2.0	<0.5	-	<2	<0.5	<2.0	<0.5	<4.0	0.72	<2.0	0.82	
Zinc	1	-	70	8	-	<5.0	3.7	<5.0	1.4	15	196	-	13	10.2	<5.0	<1	17	7.4	10.2	5.6	
Zirconium	0.3	-	-	-	-	<4.0	<0.3	<4.0	<0.3	<4.0	<0.3	-	-	<0.3	<4.0	<0.3	<8.0	1	<4.0	<0.3	

RDL = Reportable Detection Limit
 MW = Monitor Well
 - = Not analysed/No criteria
 < = Parameter below detection limit
 < (0.0) = Parameter below elevated detection limit
 0.0

Notes:
 Analysis completed by AGAT Laboratories for all samples collected in Dec 2021 & Feb 2022.
 Analysis completed by ALS Labs for samples collected in Jan 2023
 Data from December 2021 and February 2022 transcribed from the Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site available from ECC website.
¹ Typical Reportable Detection Limit referenced based on ALS laboratory analysis, but RDL may be lower than shown for original data.
² Based on Coarse-grained soil conditions.
³ Atlantic RBCA Tier I Environmental Quality Standards (EQS) for Groundwater of Human Health, for a commercial site with coarse grained soil, non-potable groundwater (July 2021, updated July 2022)
⁴ Atlantic RBCA Tier I EQSs for Groundwater, for the protection of Ecological Health, for a commercial site with coarse grained soil >10 m away from a fresh water (July 2021, updated July 2022).

TABLE C3

HISTORICAL SURFACE WATER ANALYTICAL (2007 - 2023) - PCBs (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Sample Location	Criteria ¹	Sample Date													Tier 1 EQSs for Eco Health ²	Sample Date		
		Feb 2007	Nov 2007	May 2008	Mar 2009	Sep 2009	Jan 2010	Nov 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015	Oct 2017		Dec 21 / Jan 22	Jan 2023	
SW-POND	na	-	<	<	<	<	<	<	< (0.06)	<	<	<	<	<	<	<	<	<
SW-POND-1		-	-	-	-	<	-	-	< (0.06)	-	-	-	-	-	-	-	-	-
SW-UPSTREAM		-	-	-	-	-	-	-	-	-	-	-	<	<	<	<	<	<
SW-STREAM		-	<	<	<	<	<	< (0.06)	<	<	<	<	<	<	<	<	<	<
RDL			0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

Data from February 2007 to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC and dated March 29, 2013.

Analysis for Decemebr 2021 and January 2022 samples were completed by BV Labs in Bedford, NS.

Analysis completed by ALS Labs for samples collected in Jan 2023.

¹ Criteria does not exist

² Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQSs) for Surface Water, Discharge to Fresh Water (July 2021, updated July 2022).

SW = Surface Water

< = Parameter below detection limit

- = No sample collected

SW-POND-1 = Field Duplicate of SW-POND.

< (0.00) = Parameter below elevated detection limit

RDL = Reportable Detection Limit

TABLE C4

HISTORICAL SURFACE WATER ANALYTICAL (2007-2023) - METALS (ug/L)
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Parameter	Criteria ¹		SW-POND		SW-STREAM		SW-UPSTREAM	
	Tier 1 EQSs for Human Health	Tier 1 EQSs for Eco Health	Dec 2021	Jan 2023	Jan 2022	Jan 2023	Dec 2021	Jan 2023
Aluminum	-	5	78.7	38	29	-	404	533
Antimony	-	9	<3.0	0.16	<2	-	<3.0	<0.1
Arsenic	-	5	<3.0	0.23	<2	-	<3.0	0.43
Barium	-	1,000	15.6	11.9	8.0	-	10.5	4.13
Beryllium	-	0.15	<0.50	<0.02	<2	-	<0.50	0.062
Bismuth	-	-	<2.0	<0.05	<2	-	<2.0	<0.05
Boron	-	1,500	239	205	185	-	<10	<10
Cadmium	-	0.1	-	0.007	<0.09	-	<0.10	0.0259
Calcium	-	-	58	62,600	35	-	7	1,210
Cesium	-	-	-	0	-	-	-	0
Chromium (total)	-	9	<3.0	<0.5	<1	-	<3.0	0.56
Cobalt	-	1	0.65	0.28	<1	-	<0.50	0.28
Copper	-	2	2.4	1.3	1	-	41.4	1.45
Iron	-	300	260	121	113	-	465	809
Lead	-	1	<1.0	0.154	<0.5	-	2.8	1.06
Lithium	-	-	-	<1	-	-	-	<1
Magnesium	-	-	5.1	6,070	3.9	-	1.05	790
Manganese	-	430	416	171	346	-	25.5	58.7
Mercury	-	0.03	<0.026	<0.05	<0.026	-	<0.026	0.007
Molybdenum	-	73	<2.0	0.158	<2	-	<2.0	<0.05
Nickel	-	25	<3.0	1.52	3	-	<3.0	<0.5
Phosphorus	-	-	<0.10	<50	<0.02	-	<0.10	<50
Potassium	-	-	5.08	5720	4.1	-	<1.15	286
Rubidium	-	-	-	4.46	-	-	-	0
Selenium	-	1	-	0.056	<1	-	<1.0	0
Silicon (as SiO2)	-	-	-	-	-	-	-	-
Silicon	-	-	-	7530	-	-	-	3,980
Silver	-	0.3	<0.10	3520	<0.1	-	<0.10	1,860
Sodium	-	-	16.9	<0.1	22.5	-	6	0
Strontium	-	21,000	170	20,400	112	-	11	6,210
Sulfur	-	-	-	170	-	-	-	7
Tellurium	-	-	-	18,600	-	-	-	<500
Thallium	-	1	<0.30	<0.2	<0.1	-	<0.30	<0.2
Thorium	-	-	-	<0.01	-	-	-	<0.01
Tin	-	-	<2.0	<0.1	<2	-	<2.0	<0.1
Titanium	-	-	<10.0	<0.1	2	-	<10.0	<0.1
Tungsten	-	-	-	1.09	-	-	-	34.5
Uranium	-	15	<0.50	<0.1	<0.2	-	<0.50	<0.1
Vanadium	-	120	<2.0	0.02	<2	-	<2.0	0.042
Zinc	-	7	<20	<0.5	<5	-	44	0.64
Zirconium	-	-	-	4	-	-	-	5.8
pH	-	6.5 - 9.0	4.8	7.62	7.5	-	5.99	5.83
Hardness	-	-	167,000	181,000	103,000	-	21,900	6,270

RDL = Reportable Detection Limit
 SW = Surface Water
 - = Not analysed/No criteria
 RDL = Reportable Detection Limit
 - = Not analysed/No criteria
 < = Parameter below detection limit
 < (0.0) = Parameter below elevated detection limit
 0.0 = above criteria

Data from February 2007 to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC and dated March 29, 2013.
 Analysis for Decemehr 2021 and January 2022 samples were completed by BV Labs in Bedford, NS.
 Analysis completed by ALS Labs for samples collected in Jan 2023.

* Typical Reportable Detection Limit reference based on ALS laboratory analysis, but RDL may be lower than shown for original data.
¹ Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQSs) for Surface Water, Discharge to Fresh Water (July 2021, updated July 2022).

TABLE C5
 HISTORICAL SURFACE WATER ANALYTICAL (2007-2023) - GEN. CHEMISTRY
 2022/23 MONITORING AND MAINTENANCE PROGRAM
 UPPER TRINITY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
 NEW HARBOUR BARRENS, NL

Parameter	RDL*	Units	Criteria**	SW-POND												SW-STREAM												SW-UPSTREAM										
				SW-DUP1						SW-POND-1						SW-STREAM												Nov 2014	Dec 2015	Oct 2017								
				Feb 2007	Nov 2007	May 2008	Mar 2009	Sep 2009	Jan 2010	Nov 2010	Nov 2010	Dec 2011	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015	Oct 2017	Feb 2007	Nov 2007	May 2008	Mar 2009	Sep 2009	Jan 2010	Nov 2010	Dec 2011	Nov 2012	Aug 2013	Nov 2014	Dec 2015	Oct 2017	Nov 2014	Dec 2015	Oct 2017				
Anion Sum	N/A	meL	-	-	-	-	-	-	-	-	-	-	-	-	5.75	3.11	5.75	6.05	-	-	-	-	-	-	-	-	-	-	-	-	-	3.84	0.71	1.08	-	0.2	0.23	0.23
Bicarb. Alkalinity (calc. as CaCO3)	1,000	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	160,000	95,000	160	160	-	-	-	-	-	-	-	-	-	-	-	-	-	76,000	5,000	27	-	<	ND	<
Calculated TDS	1,000	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	380,000	180,000	330	340	-	-	-	-	-	-	-	-	-	-	-	-	250,000	46,000	70	-	17,000	18	16	
Carb. Alkalinity (calc. as CaCO3)	1,000	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	<	<	ND	<	-	-	-	-	-	-	-	-	-	-	-	-	<	<	ND	<	<	ND	<	
Cation Sum	N/A	meL	-	-	-	-	-	-	-	-	-	-	-	-	7.29	3.07	5.30	5.62	-	-	-	-	-	-	-	-	-	-	-	-	-	4.04	0.89	1.25	-	0.32	0.33	0.30
Colour	5	TCU	-	-	98	77	34	110	75	68	76	72	64	22	13	38	14	14	-	-	96	72	49	100	58	57	42	39	28	190	76	-	71	56	56	56 (1)		
Conductivity	1	µS/cm	-	-	1,190	927	1,010	1,100	1,100	720	720	850	850	770	560	290	490	600	-	-	1,070	936	1,190	470	810	540	400	390	82	99	-	35	32	37	37			
Dissolved Chloride (Cl)	1,000	µg/L	-	-	165,000	195,000	104,000	110,000	110,000	63,000	63,000	46,000	46,000	-	24,000	18,000	29	50	-	-	213,000	134,000	206,000	84,000	110,000	77,000	45,000	-	31,000	22,000	17	-	7,100	8	8			
DOC	500	µg/L	-	-	22,900	19,600	12,500	-	-	-	-	-	-	-	-	-	-	-	-	-	21,700	17,800	17,900	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved Sulphate (SO4)	2,000	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	73,000	27,000	68	54 (1)	-	-	-	-	-	-	-	-	-	-	-	-	49,000	<	3	-	<	ND	<	
Hardness (CaCO3)	1,000	µg/L	-	-	157,000	99,100	190,000	160,000	210,000	220,000	220,000	280,000	280,000	270,000	230,000	110,000	180	190	-	-	101,000	144,000	155,000	64,000	140,000	120,000	130,000	110,000	110,000	18,000	14	-	4,800	5	4			
Ion Balance (% Difference)	N/A	%	-	-	-	-	-	-	-	-	-	-	-	-	11.8	0.065	4.07	3.68	-	-	-	-	-	-	-	-	-	-	-	2.5	11.3	7.3	-	23.1	17.9	13.2		
Langelier Index (@ 20C)	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-0.018	-0.284	0.271	0.38	-	-	-	-	-	-	-	-	-	-	-	-0.827	-4.01	-2.48	-	NC	NC	NC (2)		
Langelier Index (@ 4C)	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-0.266	-0.534	0.022	0.132	-	-	-	-	-	-	-	-	-	-	-	-1.08	-4.27	-2.73	-	NC	NC	NC (2)		
Nitrate as N	50	µg/L	13,000	-	8,650	8,480	8,360	52,000	7,700	6,900	6,900	4,600	4,700	3,600	-	1,700	3.3	4	-	-	7,710	7,400	12,500	1,200	13,000	8,000	8,000	4,600	-	<	0	-	55	0	<			
Nitrite as N	15	µg/L	60	-	84	369	69	220	120	190	190	100	90	68	-	31	0.019	0.048	-	-	35	492	31	<	110	100	50	13	-	<	ND	-	<	ND	<			
Nitrate + Nitrite	50	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	4,100	1,700	3	4	-	-	-	-	-	-	-	-	-	-	-	5,800	<	0	-	55	0	<		
Nitrogen (Ammonia Nitrogen)	50	µg/L	-	-	33,000	641	30,000	13,000	24,000	12,000	13,000	9,000	11,000	-	4,000	1,300	4	2	-	-	10,800	24,100	26,500	<	8,200	780	1.6	-	1,400	<	ND	-	<	ND	<			
Orthophosphate (P)	10	µg/L	-	-	-	-	-	-	-	-	-	-	-	-	<	<	ND	<	-	-	-	-	-	-	-	-	-	-	-	<	<	ND	-	<	ND	<		
pH	N/A	pH	6.5 - 9	-	7.38	6.92	7.45	7.13	7.35	7.79	7.87	7.66	7.65	7.87	7.31	7.53	6.47	7.78	-	-	6.92	7.43	7.16	6.93	6.32	7.12	7.21	7.55	7.13	5.89	7.24	-	6.16	6.33	6.35			
Reactive Silica (SiO2)	0.5	µg/L	-	-	-	-	-	6,100	6,600	6,800	6,900	6,200	6,300	7,700	5,700	5,000	7	6	-	-	-	-	4,700	5,500	5,200	5,500	5,300	6,300	2,400	6	-	2.5	2.5	1.8				
Saturation pH (@ 20C)	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	7.33	7.81	7.41	7.4	-	-	-	-	-	-	-	-	-	-	-	7.96	9.9	9.3	-	NC	NC	NC (2)		
Saturation pH (@ 4C)	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	7.58	8.06	7.66	7.65	-	-	-	-	-	-	-	-	-	-	-	8.21	10.2	9.55	-	NC	NC	NC (2)		
Sulphate	10,000	µg/L	-	-	85,300	68,100	121,000	97,000	160,000	160,000	160,000	190,000	190,000	-	-	-	-	-	-	-	59,000	90,100	107,000	57,000	110,000	96,000	100,000	-	-	-	-	-	-	-	-			
Total Alkalinity (Total as CaCO3)	30,000	µg/L	-	-	214,000	76,600	167,000	150,000	190,000	130,000	130,000	130,000	140,000	180,000	160,000	95,000	160	160 (1)	-	-	90,900	143,000	129,000	50,000	65,000	41,000	44,000	52,000	76,000	5,000	27	-	<	ND	<			
Total Dissolved Solids	10,000	µg/L	-	-	771,000	549,000	658,000	493,000	638,000	518,000	520,000	529,000	532,000	-	-	-	-	-	-	-	698,000	496,000	775,000	274,000	493,000	371,000	321,000	-	-	-	-	-	-	-	-			
Total Organic Carbon (C)	500	µg/L	-	-	26,500	19,200	12,900	11,000	16,000 (1)	12,000	12,000	10,000	10,000	9,300	14,000	6,900	8.0 (2)	6	-	-	23,600	17,700	18,100	14,000	19,000	13,000	8,000	9,100	8,200	12,000	8.7 (2)	-	7,300	8	9			
Total Suspended Solids	2,000	µg/L	-	-	6,000	2,000	3,000	-	-	-	-	-	-	-	-	-	-	-	-	-	<	5,000	2,000	-	-	-	-	-	-	-	-	-	-	-	-			
Turbidity	0.1	NTU	-	-	5.7	1.4	2.0	4.20	9.40	2.1	1.7	7.0	6.1	1.4	180	2	4.6	1.4	-	-	1.6	3.8	1.8	1.30	13	1.8	1.2	32	31	30	-	-	-	1.2	1.1	1.1		

Notes:

RDL = Reportable Detection Limit
 SW = Surface Water

- = Not analysed/No criteria
 < = Parameter below detection limit

0.0 = above criteria
 (1) - Elevated reporting limit due to sample matrix

Analysis completed by AMEC for all samples from 2007 to 2012.
 Analysis of samples from 2013 was completed by Maxxam Analytics Inc. in Bedford, NS.

Data to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC, dated March 29, 2013.

* Typical Reportable Detection Limit reference based on Maxxam laboratory analysis, but RDL may be lower than shown for original data.
 ** Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (2007 - Update 7.1).

HISTORICAL SURFACE WATER ANALYTICAL (2007-2023)- GEN. CHEMISTRY
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 NEW HARBOUR BARRENS, NL

Parameter	RDL *	Units	Tier 1 EQSs for Eco Health	SW-POND		SW-STREAM		SW-UPSTREAM	
				Dec 2021	Jan 2023	Jan 2022	Jan 2023	Dec 2021	Jan 2023
Anion Sum	0.1	me/L	-	1.47	5.06	3.88	-	0.17	0.34
Bicarb. Alkalinity (calc. as CaCO3)	1,000	ug/L	-	<5	197,000	108	-	<5	1,900
Calculated TDS	10,000	ug/L	-	121	296,000	214	-	22	28,000
Carb. Alkalinity (calc. as CaCO3)	1,000	ug/L	-	<10	<1000	<10	-	<10	<1000
Cation Sum	0.1	me/L	-	2.56	4.72	3.41	-	0.79	0.50
Colour	2	TCU	-	46.4	19.2	32.6	-	<5.00	107
Conductivity	1	uS/cm	-	49	507	401	-	33	46
Dissolved Chloride (Cl)	500	ug/L	120,000	13,000	18,400	22,000	-	6,000	9,980
DOC	500		-	-	-	-	-	-	-
Dissolved Sulphate (SO4)	300		-	-	-	-	-	-	-
Hardness (CaCO3)	0.5	ug/L	-	167,000	181,000	103,000	-	22,000	6,270
Ion Balance (% Difference)	0.01	%	-	27.1	93.3	6.5	-	64.8	147
Langelier Index (@ 20C)	0.01	NA	-	-4.56	0.235	-0.54	-	-4	-5.16
Langelier Index (@ 4C)	0.01	NA	-	-4.88	-	-0.86	-	-4.32	-
Nitrate as N	20	ug/L	13,000	2,830	2280	4,300	-	<50	<20
Nitrite as N	10	ug/L	60	60	<10	60	-	<50	<10
Nitrate + Nitrite	3.2	ug/L	-	3	2,290	4	-	<0.05	<22.4
Nitrogen (Ammonia Nitrogen)	5	ug/L	231,000 (SW-UPSTREAM) and 7,320 (SW-POND)	50	618	3,370	-	260	7
Orthophosphate (P)	1	ug/L	-	<10	<1	<10	-	30	<1
pH	0.1	-	6.5 - 9.0	4.8	7.62	7.5	-	5.99	5.83
Reactive Silica (SiO2)	200	ug/L	-	3600.0	-	7400.0	-	<500	-
Saturation pH (@ 20C)	0.01	NA	-	9.36	7.66	8.04	-	9.99	11.2
Saturation pH (@ 4C)	0.01	NA	-	9.68	7.42	8.36	-	10.3	11.0
Sulphate	300	ug/L	-	43,000	54600	38,000	-	<2,000	1,420
Total Alkalinity (Total as CaCO3)	1	ug/L	-	<5,000	162,000	180,000	-	<5,000	1,600
Total Dissolved Solids	10,000		-	-	-	-	-	-	-
Total Organic Carbon (C)	0.5	ug/L	-	11,200.0	-	8,300.0	-	8,000	-
Total Suspended Solids			-	-	-	-	-	-	-
Turbidity	0.1	NTU	-	2	1.1	0.7	-	1.7	13.7

Notes:

RDL = Reportable Detection Limit
 SW = Surface Water

Data from February 2007 to November 2012 transcribed from the 2012-2013 Annual Report of Activities for the Upper Trinity South (New Harbour) Waste Disposal Site completed by AMEC and dated March 29, 2013.
 Analysis for Decemehr 2021 and January 2022 samples were completed by BV Labs in Bedford, NS.
 Analysis completed by ALS Labs for samples collected in Jan 2023.

< = Parameter below detection limit

0.0 = above criteria
 (1)- Elevated reporting limit due to sample matrix

* Typical Reportable Detection Limit reference based on ALS laboratory analysis, but RDL may be lower than shown for original data.

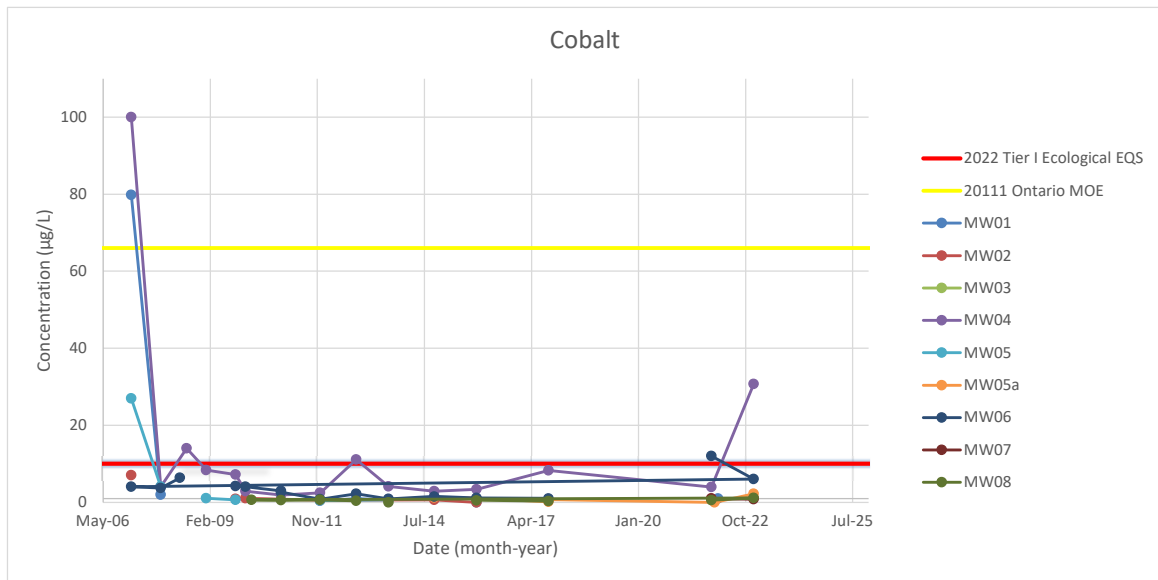
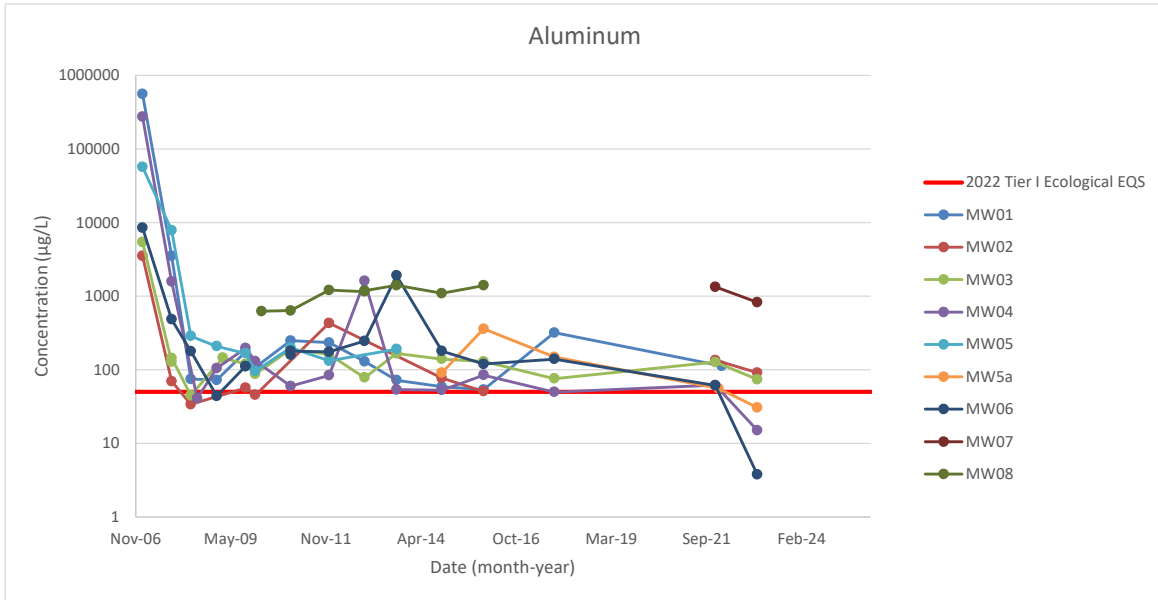
¹ Atlantic RBCA Ecological Tier I Environmental Quality Standards (EQSs) for Surface Water. Discharge to Fresh Water (July 2021, updated July 2022).

Appendix F

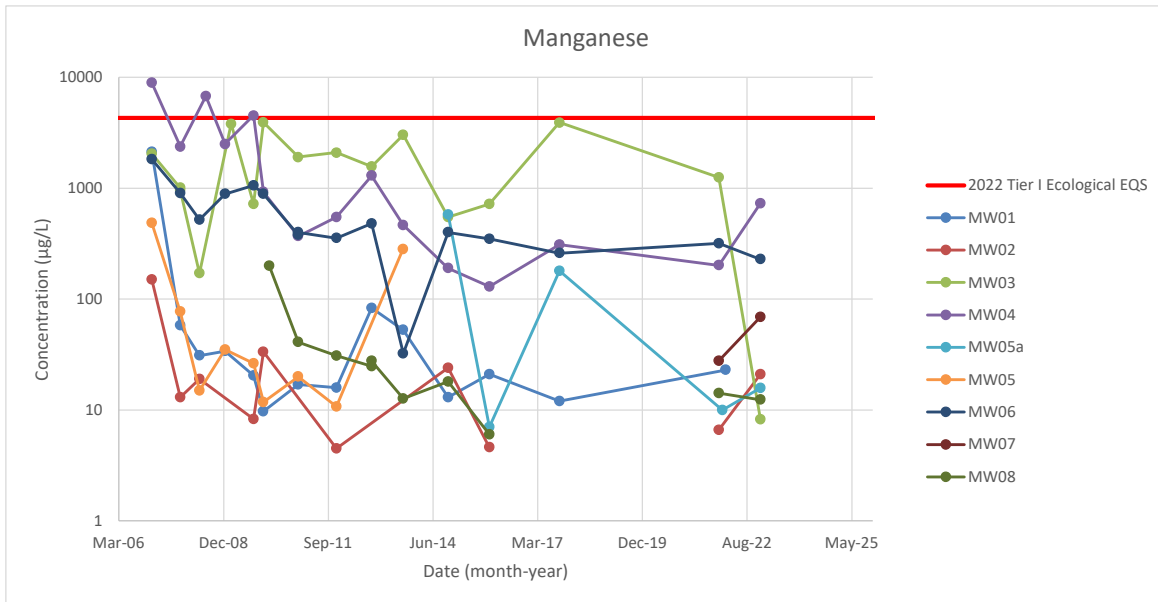
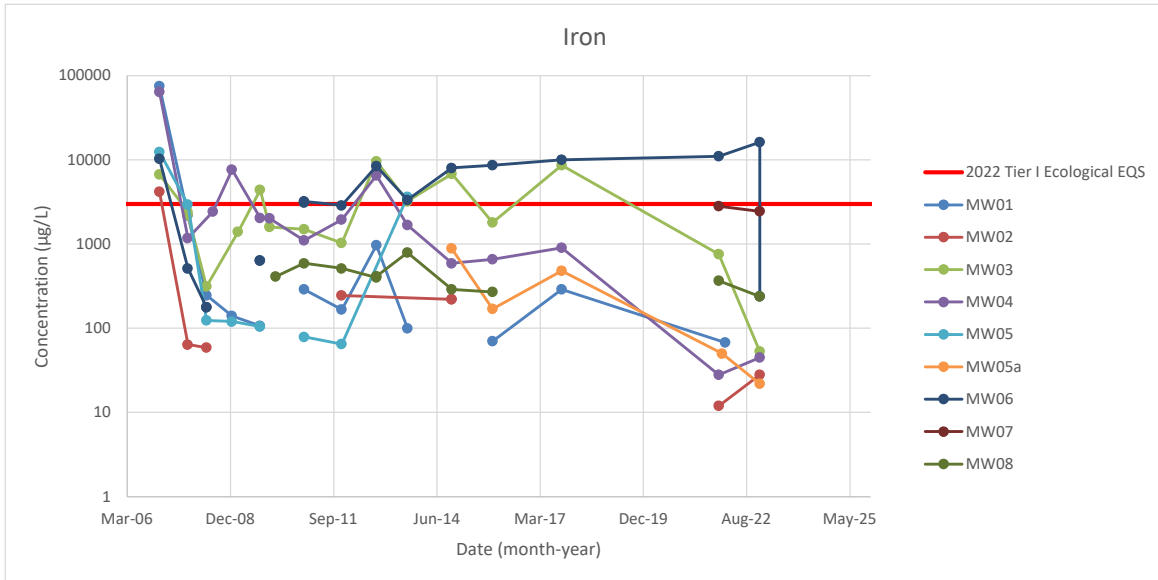
Analytical Trend Graphs



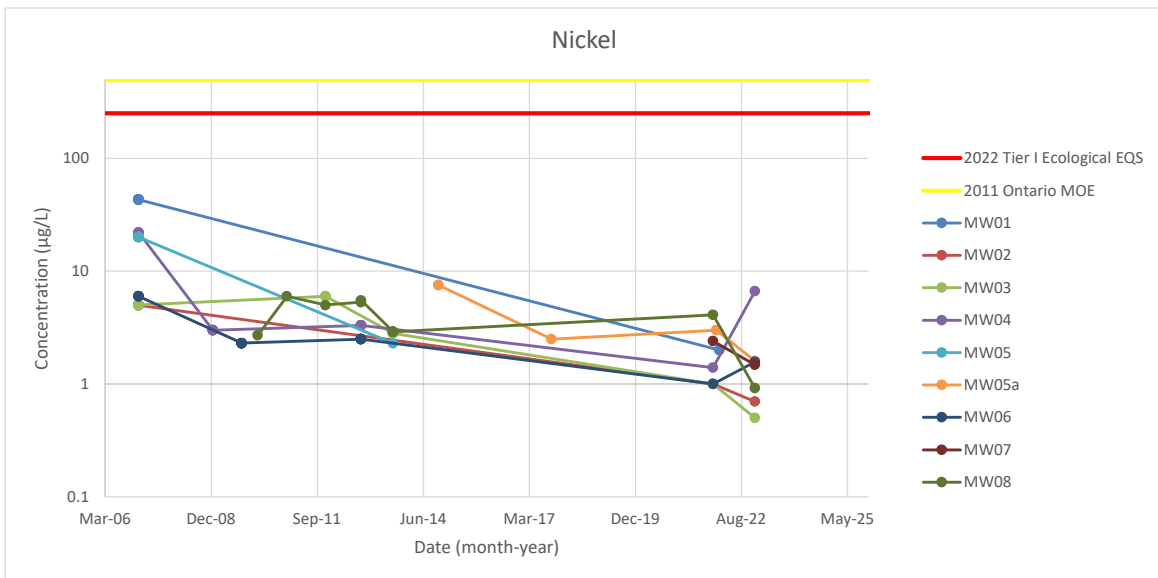
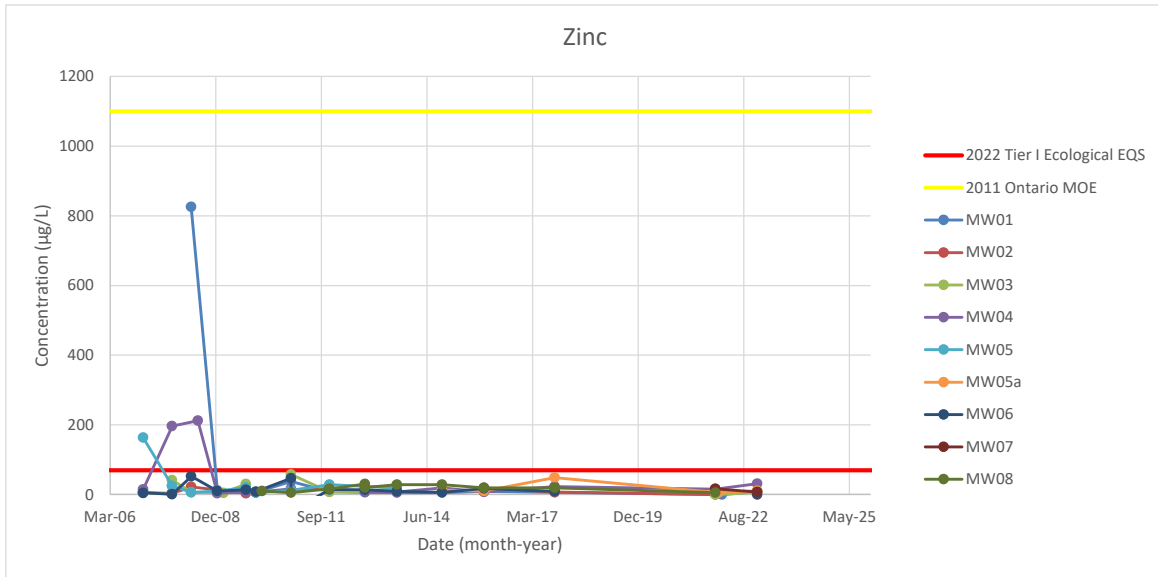
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 UPPER TRINTIY SOUTH (NEW HARBOUR) WASTE DISPOSAL SITE
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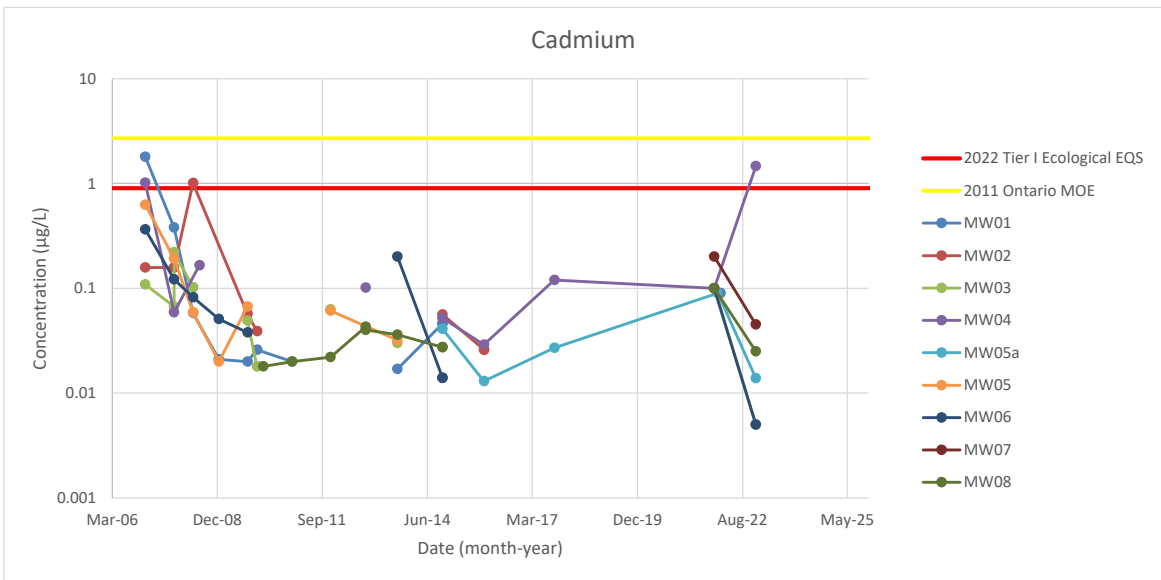
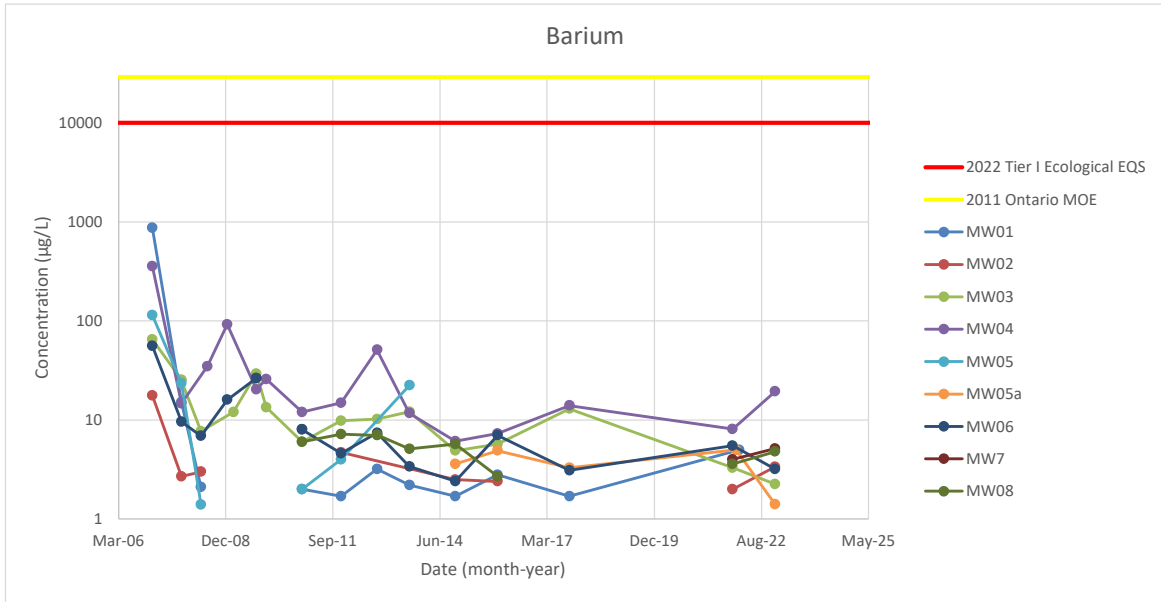
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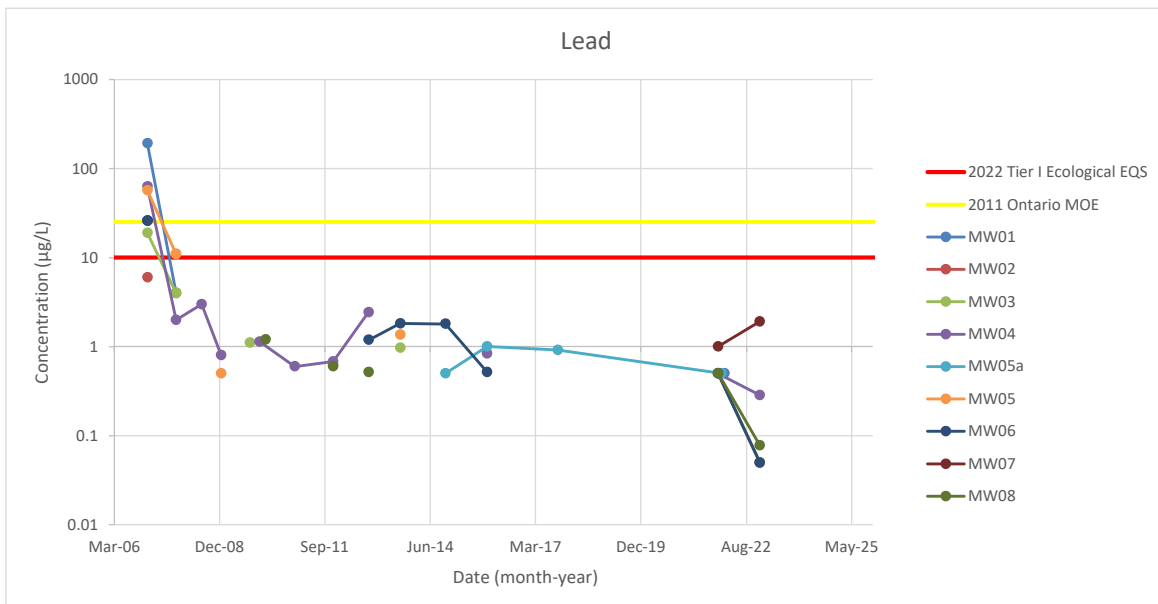
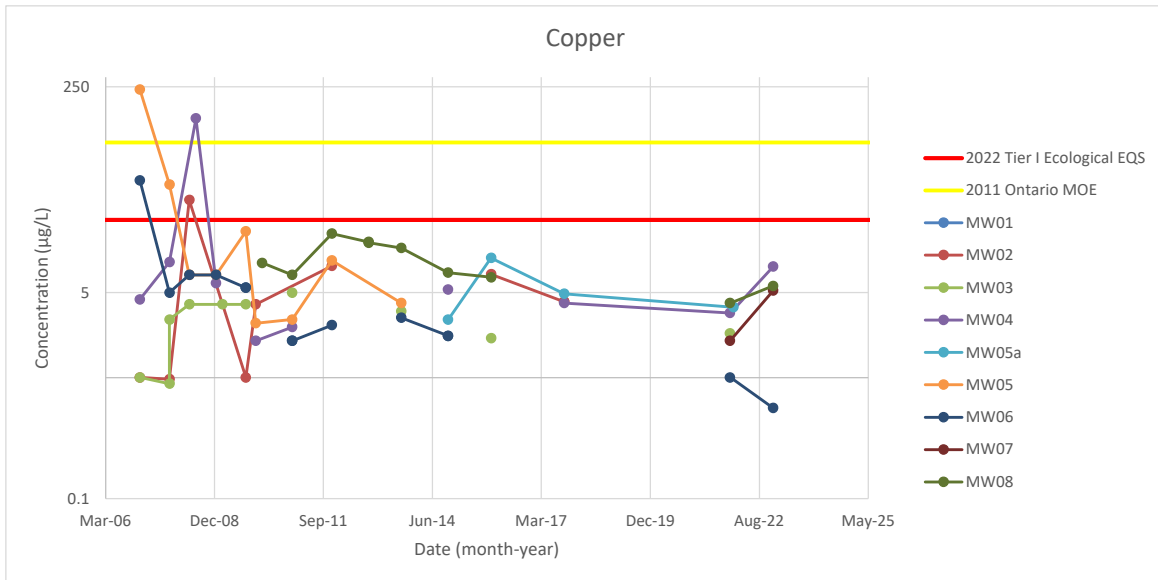
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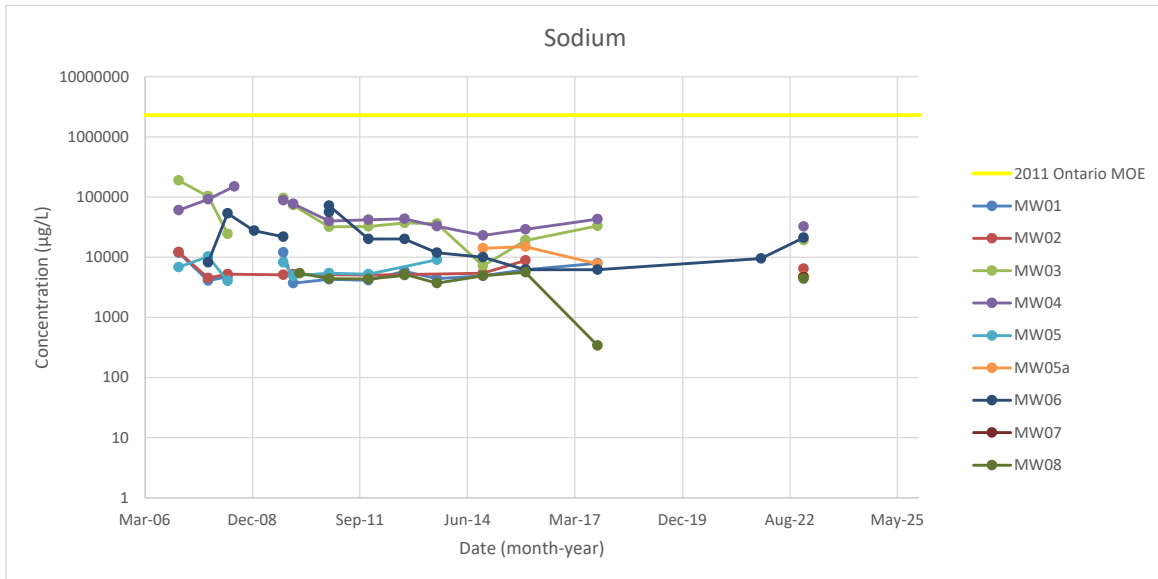
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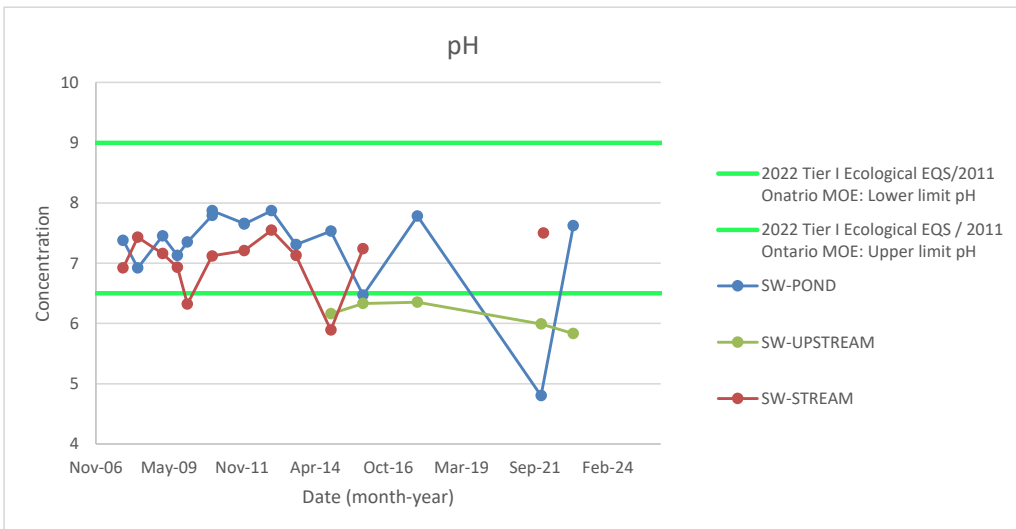
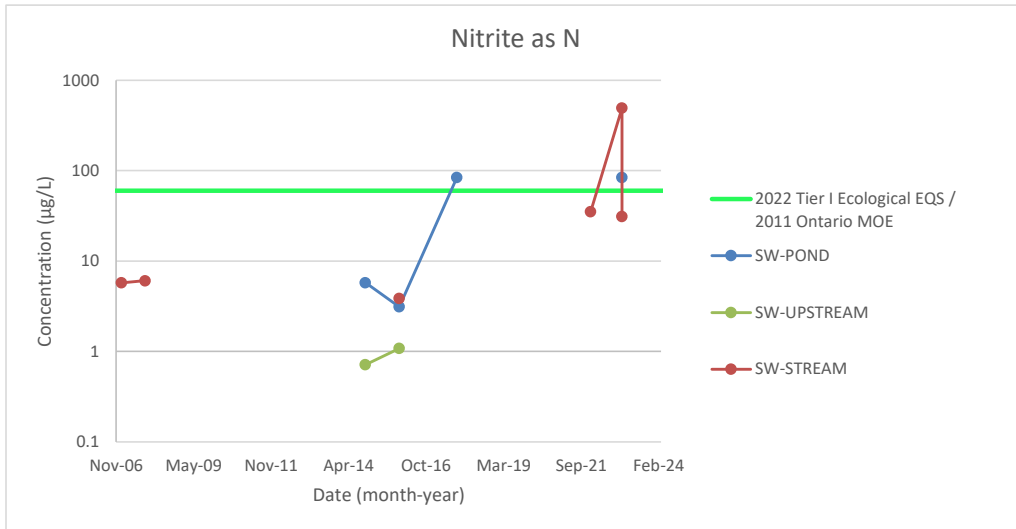
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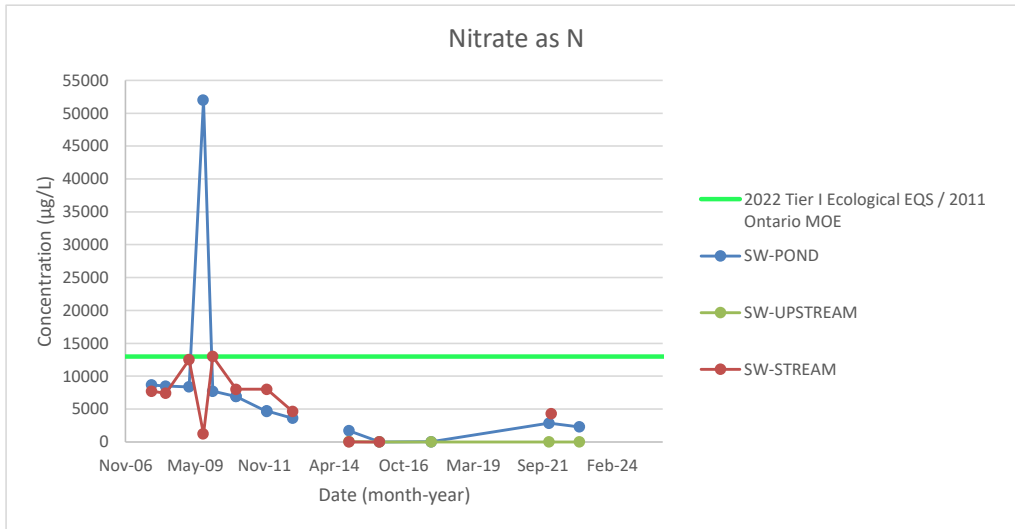
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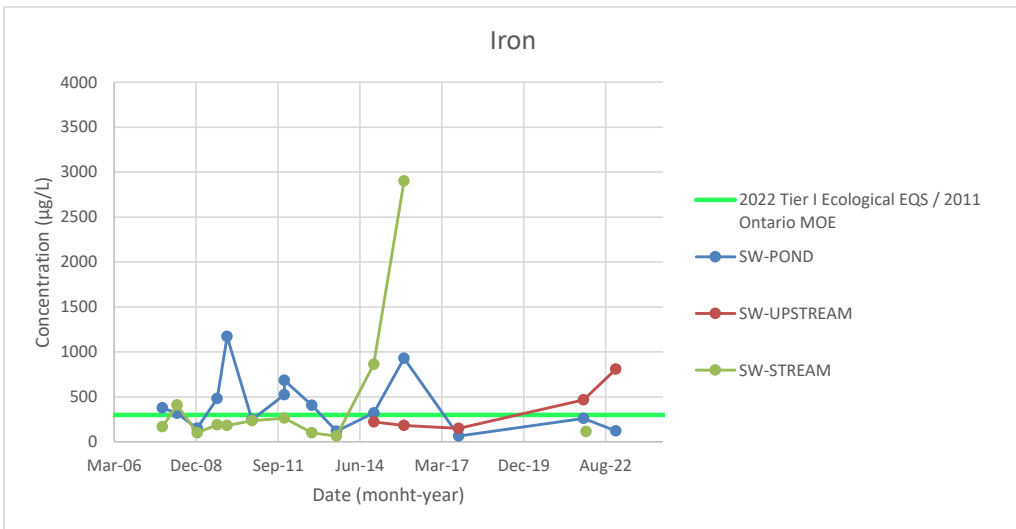
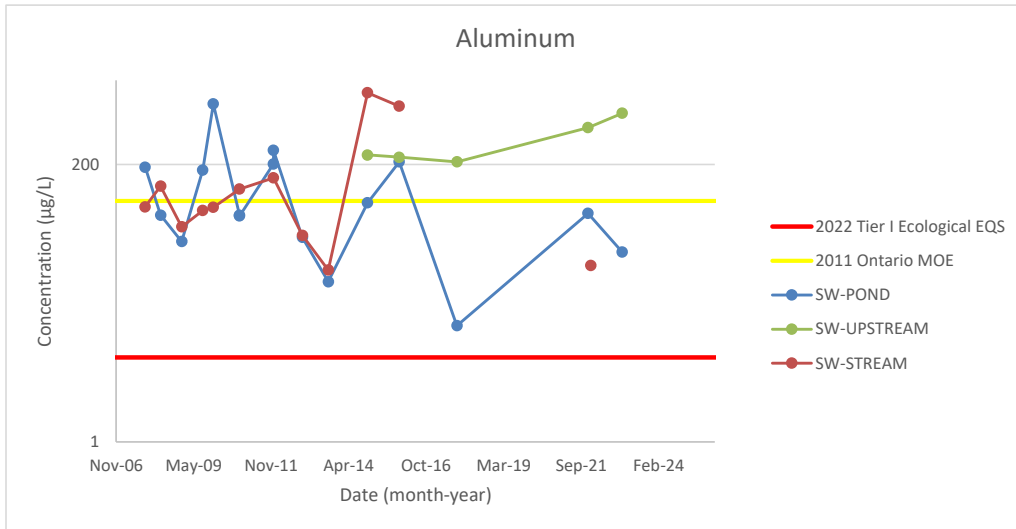
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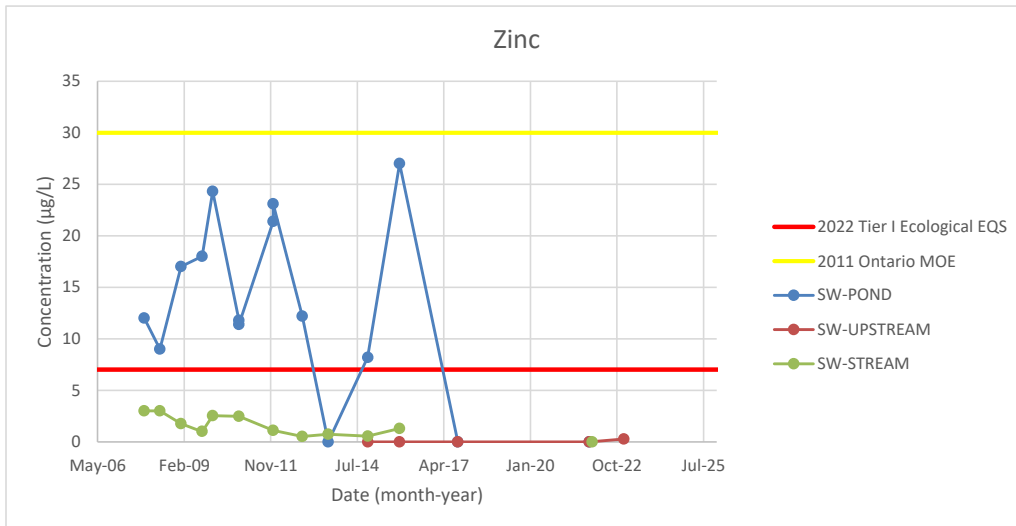
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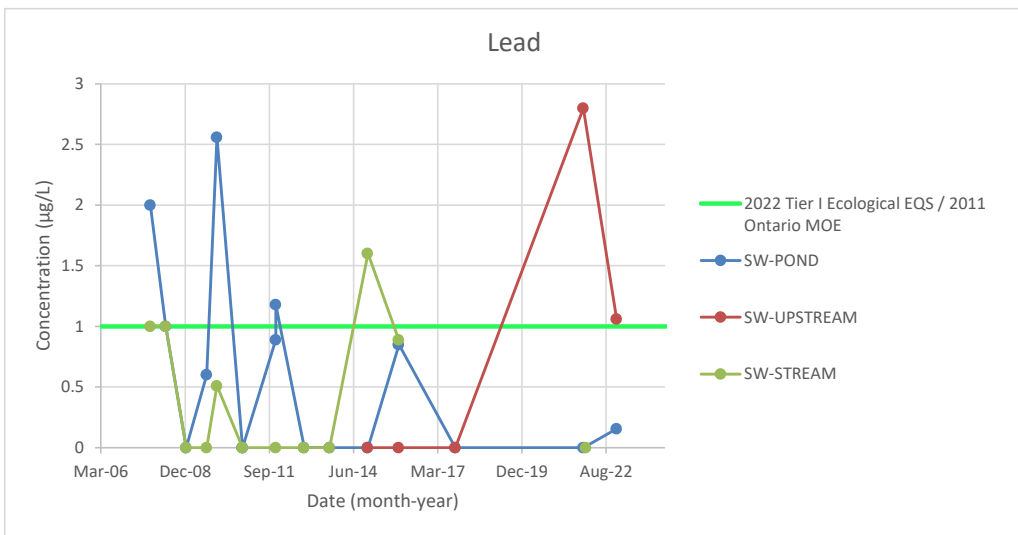
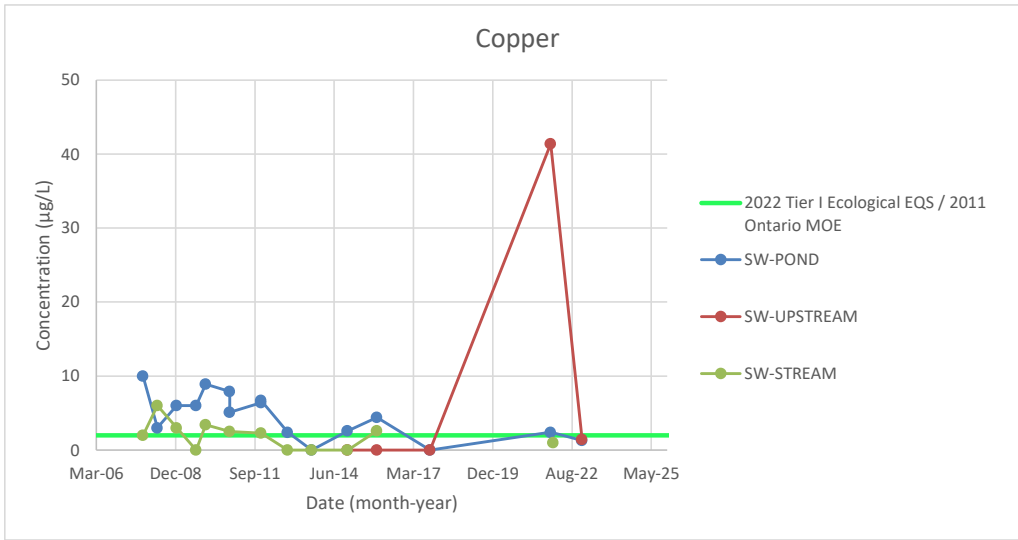
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