FINAL 2025 Annual Monitoring Report

Fullarton Landfill
Township of Fullarton, Ontario

Prepared for:

The Corporation of the Municipality of West Perth

160 Wellington Street, P.P. Box 609
Mitchell, ON N0K 1N0

November 11, 2025

Pinchin File: 333568.002

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November 11, 2025

Mr. Adam Ryan and Mr. Richard Wright
The Corporation of the Municipality of West Perth
160 Wellington Street, P.O. Box 609
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Re: 2025 Annual Monitoring Report
Fullarton Landfill
Pinchin Reference No. 333568.002

Dear Sirs,

Pinchin Ltd. (Pinchin) is pleased to provide this 2025 Annual Monitoring Report for the Fullarton Landfill.

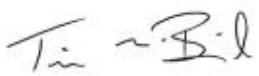
This report provides details of the monitoring program completed in 2025, an interpretation of the 2025 monitoring data, as well as our conclusions and recommendations.

Appended to this report are all the relevant technical data, as well as the Monitoring and Screening Checklist from the Ministry of the Environmental, Conservation and Parks' Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water – Technical Guidance Document (November 2010), which provides certification for the Competent Environmental Practitioner (CEP). The above-noted checklist is provided in Appendix H.

We trust that this report satisfies your requirements. If you have any questions or comments, please contact us.

Yours truly,

Pinchin Ltd.



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EXECUTIVE SUMMARY

The Fullarton Landfill (Site) has a licensed area of 0.81 hectares (ha) and is located in the Municipality of West Perth (Municipality) on Lot 21, Concession XVIII, in the former Township of Fullarton, Ontario. The Site is surrounded by agricultural land to the west, east and south with Road 145 running along the north boundary of the Site, followed by additional agricultural lands and a tributary to the Upper Thames River to the north. According to information provided in previous reports, the Site operated from the early 1970s until the end of March 2008, when the Site was officially closed. The Site operated since 1980 under the Waste Disposal Site Environmental Compliance Approval (ECA) number A151201, issued on September 23, 1980. The ECA was amended on September 18, 2008 (Notice No.1) to incorporate requirements for Site operations, monitoring, reporting and closure.

Upon closure of the Site in March 2008, a Closure Plan was developed in November 2008. Following preliminary Ministry of the Environment, Conservation and Parks (MECP) comments, the Closure Plan was then revised in January 2010. As such, the ECA was amended on July 20, 2009 (Notice No.2), to acknowledge Site closure and outline the post closure care and monitoring requirements. In accordance with the MECP approved Closure Plan, the Municipality ultimately closed the Site between September 3 and October 16, 2009.

The monitoring program for the Site has been conducted since 2008, in accordance with Condition 6.0 of the Waste ECA (Notice No.1). Based on the findings of the 2025 Monitoring Program for the Site, the following conclusions were generated:

- Locally, the groundwater flow regime at the Site is influenced by surficial features such as the nearby tributary of the Upper Thames River. The shallow groundwater elevations measured in 2025 were generally consistent with the historical results. Based on the shallow groundwater elevations at the Site in 2025, as well as historical groundwater elevations, the groundwater in the immediate vicinity of the Site continues to flow in a radial pattern away from the waste fill area. The regional shallow groundwater flow is interpreted to flow north toward the tributary and the deep groundwater flow is interpreted to flow northwest, also toward the tributary;
- In 2025, the analytical results that were greater than their respective Ontario Drinking Water Standards (ODWS) within the groundwater were generally consistent with historical results with a few exceptions:
    - Total Dissolved Solids (TDS) and/or total alkalinity exceeded the ODWS and historical upper concentration limits within MW1S (alkalinity only), MW1D, MW2, MW5S (TDS only) and MW7S (alkalinity only). TDS and alkalinity within these wells have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;

- Arsenic concentration reported within monitoring well MW6D exceeded the ODWS and the historical upper limit concentration during the May 2025 sampling event. Arsenic concentrations within this well have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;
- MW5S had concentrations of nitrate and nitrate (as N) and nitrate (as N) that exceeded the ODWS maximum acceptable concentration in 2022 through 2025 (with a slight decrease in 2025 compared to 2024). Based on the groundwater elevations measured during the 2025 annual monitoring event, monitoring wells MW5S and MW5D represent background groundwater quality conditions within the shallow and deep flow system, respectively, and as such these exceedances may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site. No remedial actions are required at this time;
- The concentration of DOC within monitoring well MW1D exceeded the respective ODWS (5.0 mg/L) during the May 2025 groundwater sampling event. Overall increases of DOC concentration in all monitoring wells, including shallow and deep background groundwater quality monitoring wells MW5S/D and MW6S/D were reported during May 2022 groundwater sampling event and overall decrease in DOC concentrations from 2023 to 2025, indicates that elevated levels of DOC and exceedances of the ODWS may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site. No remedial actions are required at this time;

- Overall, concentrations of select parameters in the remaining shallow and deep groundwater monitoring wells on-Site have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;
- The 2025 and historical concentrations of boron within compliance monitoring well MW3, indicate that there may be also lateral migration of leachate downgradient of the waste fill area on-Site. Concentrations of boron within MW3 have increased since May 2014, with greater increases occurring 2018 and 2025. The concentration of boron during the May 2025 groundwater sampling event remains in compliance with the respective trigger concentration for the Site (1.27 mg/L), as well as the ODWS (5.0 mg/L), as such concentration of boron within MW3 is currently at acceptable levels;

- The 2025 and historical concentrations of chloride within compliance monitoring wells MW7S/D, as well as within MW1S/D, indicate that there may be lateral migration of leachate occurring toward the tributary. Since closure of the Site in 2009, the concentration of chloride within MW7S, and to a lesser extent MW7D, has exhibited an increasing trend over time. With the exception of chloride, there are no increasing trends of note for the remaining indicator parameters within MW7S that would indicate a distinct landfill leachate influence. Chloride concentrations measured within MW7S in May 2025 exceeded the trigger concentrations for the Site (134 mg/L versus the trigger concentration of 133 mg/L). As a result, Pinchin returned to the Site on September 23 and September 29, 2025, to redevelop and resample MW7S, respectively, for confirmatory purposes. The concentration of chloride reported during the September 2025 (134 mg/L) was consistent with the May 2025 sampling event. With the exception of chloride, there are no increasing trends of note for the remaining indicator parameters within MW7S/D that would indicate a distinct landfill leachate influence. Pinchin notes that the concentration of chloride within MW7S is greater than both of the source wells MW4 (located in the southern portion of the waste fill area) and MW1S (located downgradient and closer to the waste fill area). Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. Given that minor exceedance of the chloride trigger concentration, the fact that the concentration of chloride is beneath the ODWS (250 mg/L) and the fact that the landfill is in a closed state, as well as the potential of road salting influences, it is Pinchin's opinion that no remedial action is required at this time;
- The groundwater quality around the landfill property and Contaminant Attenuation Zone (CAZ) boundaries generally satisfied the relevant trigger mechanisms for the 2025 Groundwater Monitoring Event. The 2025 analytical results for select parameters other than chloride that were greater than their respective trigger concentration for groundwater quality at compliance monitoring wells MW2, MW3 and MW7S/D, have been relatively stable, with no distinct increasing or decreasing trend. No remedial actions are required at this time;
- For the 2025 annual monitoring event, concentrations of volatile organic compounds (VOCs) within the groundwater compliance monitoring wells were below their respective Reportable Detection Limits (RDLs). No remedial actions are required at this time;

- The groundwater quality around the landfill property and CAZ boundaries satisfied the relevant trigger mechanisms for the 2025 monitoring event, with the exception of chloride within MW7S (which meets the ODWS), and as such there is no indication that surface water sampling in the tributary or sampling of the drinking water supply well at the Cairns residence should be resumed;
- For the 2025 annual monitoring event, the landfill gas monitoring results were inconsistent with historical results at the Site. Landfill gas was detected at monitoring wells MW1S, MW1D, MW2 and MW3 representing the highest landfill gas detection at these wells since monitoring began. Based on the historical monitoring results, landfill gas has been intermittently detected in leachate monitoring well MW4. Since 2021, no landfill gas has been detected at monitoring well MW4. The 2025 annual monitoring event detected 3.5% by volume at leachate monitoring well MW8. The historical and current results indicate that landfill gas is being generated in the waste at the Site. Based on monitoring findings from the established monitoring network, the historical results indicate that landfill gas is being generated in the waste of the landfill and could be migrating beyond the waste footprint within the subsurface; however, landfill gas has not been detected beyond the waste footprint at the relevant monitoring locations at a level greater than 5% by volume. Based on the monitoring findings from the established monitoring network, continued gas monitoring should be completed to confirm whether landfill gas may be migrating beyond the waste footprint within the subsurface; and
- No deficiencies were identified on-Site during the annual Site inspection conducted by Pinchin, or the monthly Site inspections conducted by the Municipality that would warrant remedial action.

Based on the findings of the 2025 Monitoring Program, the following recommendations are provided for consideration:

- Monitoring at the Site should be continued in 2026, in accordance with the approved monitoring program as summarized in Table 1. No deviations from the approved monitoring program are recommended;
- As the concentration of chloride within MW7S continues to increase and exceeded the trigger concentration (134 mg/L in May and September 2025), expanding the boundary of the CAZ downgradient of the Site may need to be considered by the Municipality. Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. If the concentration of chloride within MW7S continues to exceed the trigger concentration for chloride for a future monitoring

event, an evaluation of the Site specific risks should be completed to assess the need for an action plan that outlines contingency measures (i.e., remedial measures) for improving the groundwater quality at the current CAZ boundary. As recommended in 2024, MW7S was sampled as a duplicate (field duplicate DUP-02) as a quality assurance and control measure on the compliance monitoring location, in order to confirm the accuracy of the results. Reported concentrations confirmed the accuracy of the results. In the short-term, the concentration of chloride within MW7S should continue to be monitored and sampled as a duplicate over subsequent monitoring events to assess the analytical results and evaluate the concentration trend over time. No remedial action is warranted at this time; and

- Ongoing monitoring should be completed to verify that the select constituent concentrations that were greater than their respective trigger concentrations within the downgradient groundwater monitoring wells are not exhibiting an increasing trend of concern over the long term. No remedial action is warranted at this time.

Issued To:	**The Corporation of the Municipality of West Perth**
Contact:	**Adam Ryan, Director of Operations**
	Richard Wright, Manager of Environmental Services
Issued On:	**November 11, 2025**
Pinchin File:	**333568.002**
Issuing Office:	**Waterloo, ON**
Primary Contact:	**Tim McBride, B.Sc., P.Geo., QP$_{ESA}$**
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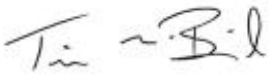
Author: Megan Laporte, BASc.
Project Technologist



Reviewer: Tim McBride, B.Sc., P.Geo., QP$_{ESA}$
Practice Specialist – Hydrogeology
Director, Northern Ontario

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 Background

Pinchin Ltd. (Pinchin) was retained by The Corporation of the Municipality of West Perth (Client) to prepare the 2025 Annual Monitoring Report for the Fullarton Landfill (Site). The Site is located on Lot 21, Concession XVIII, in the former Township of Fullarton, Ontario. The Site is owned and was formerly operated by the Municipality of West Perth (Municipality) as a waste disposal facility. A Site Location Map and Site Plan are provided in Figure 1 and Figure 2, respectively. The Site has a licensed area of 0.81 hectares (ha) and during operation, accepted solid, non-hazardous municipal waste. According to previous reports, the Site operated from the early 1970s until the end of March 2008, when the Site was officially closed.

The Site operated since 1980, under the West Disposal Site Environmental Compliance Approval (ECA) Number A151201, issued on September 23, 1980. This ECA was amended on September 18, 2008 (Notice No. 1), to incorporate requirements for Site operations, monitoring, reporting and Site closure.

As part of the 2025 Annual Monitoring Report, Pinchin reviewed the following documents:

- The 2019-2024 Annual Monitoring Reports, Fullarton Landfill, Township of Fullarton, Ontario prepared by Pinchin for the Municipality of West Perth (2019-2024 Pinchin Annual Monitoring Reports).

As part of the 2019 Annual Monitoring Report, Pinchin reviewed the document entitled "*Municipality of West Perth, Fullarton Landfill, 2018 Annual Monitoring Report"* prepared by RWDI Air Inc. (RWDI) for the Municipality of West Perth and dated November 7, 2018 (2018 RWDI Annual Monitoring Report), as provided by the Client.

As part of the 2018 RWDI Annual Monitoring Report, RWDI reviewed the results of the 2006 hydrogeological study documented in a Burnside report entitled "Hydrogeological Investigation, Fullarton Landfill Site", dated December 2007 (2007 Burnside Report). According to RWDI, the 2007 Burnside Report recommended that additional monitoring wells be installed to better monitor and interpret the environmental impacts of the Site. As a result, seven additional monitoring wells were installed (MW5, MW6, MW7 and MW8) in 2008.

The ECA was amended a second time on July 20, 2009 (Notice No.2) (Waste ECA) to acknowledge Site closure and outline post closure care and monitoring requirements. According to previous reports, the closure of the Site was completed by the Municipality between September 3 and October 16, 2009, in accordance with the Ministry of the Environment, Conservation and Parks (MECP) approved Closure Plan. As a result, the waste fill area was graded, covered with soil material, and seeded to reduce infiltration and promote surface water drainage away from the waste fill area. A copy of the Waste ECA and the amendments issued on September 18, 2008, and July 20, 2009, are provided in Appendix A-1 through A-3, respectively.

According to previous reports, a portion of the Road 145 right-of-way north of the Site was legally surveyed and severed to accommodate a Contaminant Attenuation Zone (CAZ). The CAZ area is shown in Figure 2 and a copy of the legal survey is included in Appendix A-4.

1.2 Key Personnel

The Competent Environmental Practitioner (CEP) for the Site groundwater and methane gas monitoring program was Mr. Tim McBride of Pinchin. Mr. McBride's contact information is provided below:

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The Lead Environmental Technician for the Site groundwater, surface water and methane gas monitoring program was Ms. Deana Bettencourt of Pinchin. Ms. Bettencourt's contact information is provided below:

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The Author for the 2025 Annual Monitoring Program was Ms. Megan Laporte of Pinchin. Ms. Laporte's contact information is provided below:

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1.3 Objectives and Scope

The principal objectives of the 2025 Monitoring Program are as follows:

- To evaluate groundwater and leachate quality at the Site and assess the potential for impacts to nearby water resources, as a result of the former landfill operations and the closed waste deposits;

- To assess the adequacy of the existing monitoring program with respect to evaluating the potential for impacts at nearby water resources;
- To determine whether remedial actions are required in consideration of the findings the monitoring program; and
- To document and report the findings of the monitoring program on an annual basis to the Municipality and provide a report to the MECP on behalf of the Municipality.

The primary aspects of the environmental monitoring program are data collection, analysis and interpretation. This report documents the data collected as part of the 2025 Monitoring Program and were interpreted in consideration of historical data (2006 through 2024). Groundwater quality analytical results from 2025 were compared to the relevant trigger mechanisms and quality objectives per the MECP Guideline B-7 Reasonable Use Concept (Guideline B-7).

The 2025 Annual Monitoring Report has been prepared to meet the reporting requirements outlined in Condition 8.0 of the Waste ECA (Notice No.1). This report has been prepared in consideration of historical reporting frameworks and background technical information to maintain a level of consistency such that historical reports can be easily referenced to this report.

1.4 Assumptions and Limitations

Pinchin has assumed that the information generated from historical investigations is accurate and has been completed in accordance with standard engineering practices and regulations. It should be noted that the historical background information made available to Pinchin by the Client was limited and, as such, previous reports have been relied on for information where required.

The scope of the monitoring activities was limited to the immediate area surrounding the Site. The investigations were limited solely to the groundwater within the monitoring well installations. The investigation does not constitute an exhaustive investigation of the Site property or adjacent properties for potentially unknown contaminants and/or other unknown sources of environmental impact.

Pinchin's limitation of liability and scope of work is as follows:

- The work performed in this report was carried out in accordance with the Terms and Conditions outlined in the Request for Proposal (RFP) Number RFP 05-2023. The conclusions presented herein are based solely upon the scope of services and time and budgetary limitations described in the RFP and associated Purchase Order;
- This report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of the contract and included in this report;

- The services performed and outlined in this report were based, in part, upon a previously installed monitoring network, established by others and approved by the applicable regulatory agencies. Interpretations cannot be extended to portions of the Site which were unavailable for direct observations, reasonably beyond the control of Pinchin;
- The objective of this report was to assess the water quality conditions at the Site, given the context of the contract, with respect to existing environmental regulations within the applicable jurisdiction;
- The Site history interpreted herein relies on information supplied by others, such as local, provincial and federal agencies, as well as Site personnel. No attempt has been made to independently verify the accuracy of such information, unless specifically noted in this report;
- Interpretations relating to the landfill-derived leachate plume at the Site are described in this report. Where testing was performed, it was executed in accordance with the contract for these services. It should be noted that other compounds or materials not tested for may by present in the Site environment;
- The conclusions of this report are based, in part, on the information provided by others. The possibility remains that unexpected environmental conditions may be encountered at the Site in locations not specifically investigated. Should such an event occur, Pinchin must be notified in order that we may determine if modifications to the conclusions are necessary;
- The utilization of Pinchin's services during future monitoring at the Site will allow Pinchin to observe compliance with the conclusions and recommendations contained herein. It will also provide for changes as necessary to suit field conditions as they are encountered; and
- Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Pinchin accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

1.5 MECP Correspondence

At the time of writing this report, correspondence and/or MECP review comments regarding the 2024 Annual Monitoring Report had not been received from the MECP. If MECP correspondence is received after this report is issued, any comments, questions or consent can be addressed in that year's relevant annual monitoring report. If more urgent attention is required, comments can be addressed under separate cover prior to issuing the next relevant annual monitoring report.

2.0 PHYSICAL SETTING

2.1 Site Description

The Site is located in the former Township of Fullarton, Ontario, along Road 145, west of County Road 24 in Perth County. The Site is surrounded by agricultural land to the west, east and south, with Road 145 running along the north boundary of the Site, followed by agricultural land and the tributary of the Upper Thames River approximately 150 metres (m) north of the Site. The tributary flows westerly and is indicated on Figure 1.

The 2018 RWDI Annual Monitoring Report indicated that the agricultural fields surrounding the Site are reported to be tile drained and outlet to the nearby tributary. The nearest structure to the Site is a farmhouse located approximately 330 m west of the Site.

The fill and subsurface conditions at the Site have been interpreted based on subsurface information obtained from previous annual monitoring reports completed by RWDI. Monitoring well construction details are provided in Table 2, while borehole details are provided in Appendix B-1 and test pit logs are located in the 2018 RWDI Annual Monitoring Report Appendix B-2. The monitoring well locations are indicated in Figure 2.

2.2 Geology and Hydrogeology

Based on available mapping, the surficial topography around the Site is relatively flat with surface elevations typically ranging from approximately 388 m above sea level (masl) in the area south of the Site to 315 masl in the area north of the Site, toward the tributary. The landfill base is constructed below ground surface with the top of the waste deposits elevated above the surrounding ground surface. It was noted in the 2018 RWDI Annual Monitoring Report that the Municipality estimated that the waste extends to a maximum depth of approximately 3.7 m below ground surface (mbgs).

According to the Ministry of Northern Development and Mines, the soil geology in the vicinity of the Site is reported to consist of stone (poor), sandy silt to silty sand-textured till on Paleozoic terrain. In addition, the bedrock geology in the vicinity of the Site is reported to consist of limestone, dolostone and shale of the Detroit River Group, part of the Onondaga Formation.

The overburden in the area of the Site is typically not a local source of drinking water; however, according to the 2018 RWDI Annual Monitoring Report, there have been a few shallow dug wells documented by the MECP in the region. No major overburden aquifers were identified. A residential water supply well survey conducted in 2008 indicated that none of the shallow wells near the Site are in use, some of which have been replaced by deeper wells drilled into the underlying bedrock.

The Source Water Protection Study (SGRA, 2010) mapping demonstrates that the Site does not fall within a significant groundwater recharge or aquifer vulnerability area.

Static water levels were recorded by Pinchin in all of the accessible wells for the 2025 annual monitoring event. Water levels were measured prior to purging and developing in preparation for sampling, to ensure the

water levels are representative of static conditions. May 2025 groundwater elevations, as measured by Pinchin personnel, are presented in Table C-1 of Appendix C, and in plan view as inferred groundwater contours for the shallow and deep overburden aquifers as presented in Figures 3 and 4, respectively.

3.0 SUBSURFACE CONDITIONS

According to the 2018 RWDI Annual Monitoring Report, five (5) test pits were excavated at the Site in 2006 to determine the extent and nature of the waste on the Site. The test pit locations, including details of the subsurface conditions, are presented in the 2018 RWDI Annual Monitoring Report.

Based on a review of the 2018 RWDI Annual Monitoring Report, the test pits were excavated to a depth between 1.7 and 3.2 mbgs. Information from the test pit and borehole logs, as well as historical documentation, was used to characterize the extent and nature of the historical waste disposal practices at the Site.

Review of the 2018 RWDI Annual Monitoring Report indicated that the Site operated using the trench and fill method since the early 1970s, until the closure of the Site in 2009. The placement of waste at this Site progressed in a southerly direction with older waste at the northeast end of the waste footprint and more recent waste being placed at the southwest end. The report indicated that the maximum depth of waste at the Site is approximately 3.7 mbgs, which represents the maximum depth of the excavation equipment historically used at the Site.

4.0 2025 LANDFILL OPERATIONS

As described above, the Site was formally closed to the receipt of waste by September 3, 2009. Closure of the Site was completed by the Municipality between September 3 and October 16, 2009, in accordance with the MECP approved Closure Plan. The Site remained in a closed state during the 2025 annual monitoring event, in compliance with the Waste ECA.

4.1 Accepted Waste Types

According to previous reports, the Site historically accepted solid, non-hazardous municipal waste, including food wastes, yard and leaf wastes, textile, paper, metal, glass, plastics, wood products, trees/brush, ash, as well as other solid wastes, as defined by the Environmental Protection Act. The Site also accepted various bulk wastes, tires, and appliances, which, when encountered, were removed from the Site for disposal at licensed recycling facilities. The Site is now closed and no longer receives waste.

Based on the Site inspections completed in 2025, there was no indication of waste being placed at the Site in 2025. An information sign at the front entrance identifies that the Site is closed, and provides the ECA number, contact information, as well as directions to an alternative waste disposal facility. The Site boundary is fenced with a lockable rigid-frame gate that controls access onto the Site.

According to the 2018 Annual Monitoring Report completed by RWDI, the fence along the north boundary was damaged as a result of a vehicle veering off the road and onto the Site. RWDI recommended that the damaged section of the fence be repaired. During the 2021 annual Site inspection completed by Pinchin, it appeared that the fence had been repaired. Additional findings from the 2025 annual Site inspection are discussed in Section 11 of this report.

4.2 Waste Volume and Remaining Capacity

The 2018 RWDI Annual Monitoring Report indicated that at the time of Site closure, the waste-in-place volume was estimated to be approximately 28,930 cubic metres (m^3). The approved capacity of the Site stated in the Waste ECA is 46,697 m^3. Subtracting the waste-in-place volume estimate from the theoretical capacity provides a remaining estimated capacity of approximately 17,767 m^3. It was also reported in the 2018 RWDI Annual Monitoring Report that the Municipality abandoned the remaining unused capacity, due to operational difficulties associated with utilizing the unused capacity, and the Site was formally closed to the receipt of waste by September 3, 2009.

4.3 Cover

According to previous reports, the Municipality began importing soil cover material as it became available beginning in 2008, in preparation for Site closure. The waste fill area was graded, and a temporary cover was placed over the waste. To accommodate the higher surface elevations, the top of monitoring well casings were raised by an MECP licensed well contractor, where necessary. Following formal closure of the Site in 2009, a final cover was applied, and grading was conducted. Appropriate vegetation was seeded, and the Site is now covered in low-lying vegetation.

The Client should continue to maintain the integrity of the landfill cover as per the ECA. Annual monitoring and inspections should continue to be completed to ensure regular maintenance is occurring on an as needed basis. At the time of the monitoring event, no significant damage or concerns related to the landfill cover were noted.

5.0 METHODOLOGY

The 2025 Monitoring Program at the Site included annual leachate, groundwater and landfill gas monitoring. The annual monitoring event was completed on May 6 and 7, 2025. A quality assurance and quality control (QA/QC) program was followed for each of the routine monitoring tasks completed. QA/QC details are presented in Section 6.

The current monitoring program was completed in accordance with the Waste ECA and the Environmental Monitoring Plan (EMP) for the Site, as dated November 2010 and prepared by Burnside (2010 Burnside EMP) and consisted of procedures for the purging and sampling of leachate and groundwater monitoring wells, as well as landfill gas monitoring. Field data for the annual monitoring event are presented in Table 5.

Based on the May 2025 analytical results for monitoring well MW7S, Pinchin collected a confirmatory sample and duplicate sample at this location in September 2025.

5.1 Monitoring Well Details

A total of twelve (12) monitoring wells are installed at the Site. The monitoring network for the Site is summarized below and presented in Table 1, whereas the locations of the monitoring wells are indicated in Figure 2.

Two (2) monitoring wells, one (1) shallow and one (1) deep, were installed at different depths at locations MW1, MW5, MW6 and MW7. The shallow well is designated with the postscript “S” (i.e., MW1S) and the deeper well is designated with the postscript “D” (i.e., MW1D). The remaining single wells (MW2, MW3, MW4 and MW8) are shallow wells. The following is a summary of the monitoring well locations:

- MW1S/D are shallow and deep overburden monitoring wells, respectively, located near the north property line;
- MW2 is a shallow overburden monitoring well along the west property line;
- MW3 is a shallow overburden monitoring well located along the south property line;
- MW4 is a shallow leachate monitoring well located in the southern portion of the waste footprint;
- MW5S/D are shallow and deep overburden monitoring wells, respectively, located 37 m west of the Site in the adjacent field;
- MW6S/D are shallow and deep overburden monitoring wells, respectively, located 32 m east of the Site in the adjacent field;
- MW7S/D are shallow and deep overburden monitoring wells, respectively, located 25 m north of the Site in the adjacent field (the wells are within 10 m of the north boundary of the CAZ); and
- MW8 is a shallow leachate monitoring (i.e., source) well located near the centre of the Site.

Monitoring well construction details are presented in Table 2 and in the borehole logs provided in Appendix B-1. The Global Positioning System (GPS) coordinates of relevant site features and monitoring locations are presented in Table 6.

5.2 Groundwater Level Measurements

Static groundwater levels were manually measured at the Site during the annual monitoring event using an interface probe. The interface probe was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse.

The groundwater levels were measured at the monitoring wells on May 6, 2025. The groundwater levels collected to date are summarized in Table C-1, Appendix C.

5.3 Groundwater and Leachate Sampling

The 2025 Monitoring Program included the collection of groundwater and leachate samples from each of the twelve (12) monitoring wells on May 7, 2025, in accordance with Pinchin's Standard Operation Procedures (SOPs).

One additional development and sampling event was completed at MW7S in September 2025 as part of a limited confirmatory sampling event.

All monitoring well development, purging and sampling activities were conducted using dedicated inertial pumps comprised of Waterra polyethylene tubing and foot valves to draw groundwater to the surface.

Prior to monitoring well purging, the static groundwater level was measured, and the well-casing volume was calculated. The monitoring well was then purged with the dedicated inertial-lift pump until three (3) groundwater volumes were removed, or until a discontinuous flow of water was observed.

Sampling was completed after the removal of three (3) well casing volumes, or the following day if discontinuous flow was observed. Following each casing volume removed, field indicator parameters pH, electrical conductivity (EC), and temperature were recorded into a dedicated field book.

The groundwater and leachate samples were collected directly into bottles provided by the laboratory.

Collected samples were submitted to ALS Environmental Inc. (ALS) in Waterloo, Ontario, a Canadian Association for Laboratory Accreditation (CALA) certified environmental laboratory, under chain of custody documentation, for analysis. Laboratory Certificates of Analysis are provided in Appendix E.

5.4 Landfill Gas Monitoring

Landfill gas (methane) monitoring was completed at the twelve (12) monitoring well locations on May 6, 2025. Landfill gas measurements were obtained immediately after removing the monitoring well's push-on cap and prior to collecting groundwater level measurements and conducting the sampling procedure. Monitoring was completed using a 4-way gas meter calibrated to detect 100% of the lower explosive limit (LEL) for methane (CH_4). For landfill gas measurements calibrated for methane, 100% of the LEL is equivalent to 5% volume of methane in air.

5.5 Historical Surface Water Sampling

According to the previous reports, surface water samples were collected from an unnamed tributary of the Upper Thames River at locations approximately 150 m northeast of the Site (SW1) and approximately 200 m northwest of the Site (SW2) in the spring of 2006, 2007 and 2008.

The 2018 RWDI Annual Monitoring Report indicated that a 2008 Annual Monitoring Report included an assessment of the surface water monitoring data and concluded that there was no evidence of an impact to surface water and no significant potential for a future impact. The report also recommended that surface water monitoring be discontinued. In a letter dated June 5, 2009, the MECP concurred with the recommendation and as such, surface water samples have not been collected for the Site since 2009. The former surface water monitoring stations are indicated in Figure 2 and historical surface water quality data can be found in Table D-5, Appendix D, of the 2018 RWDI Annual Monitoring Report.

5.6 Historical Off-Site Water Supply Well Sampling

The 2018 RWDI Annual Monitoring Report indicated that residents closest to the Site were surveyed regarding their drinking water supply wells and septic systems in 2008. As a result, only one (1) drinking water supply well (Cairns) was within 500 m of the Site and therefore, this was the only supply well incorporated into the annual monitoring program for the Site. The Cairns residence and drinking water supply well are located approximately 330 m west of the Site, as indicated in Figure 1. Although there is both a shallow bored well and a drilled well noted in the MECP database for the Cairns residence, only the drilled well is in service and had been monitored.

Water quality monitoring at the Cairns residence was recommended to cease in the 2011 Annual Monitoring Report for three reasons: 1) the large separation distance between the Site and the well; 2) the well is not positioned downgradient of the Site; and 3) there are monitoring wells (MW5S/D) between the Site and the Cairns well. This recommended change was approved by the MECP in writing on December 22, 2011. As such, samples have not been required to be collected from the Cairns drinking water supply well since 2011.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL EVALUATION

Various quality assurance/quality control (QA/QC) protocols were following during the 2025 annual monitoring event to ensure that representative samples were obtained, and that representative analytical data were reported by the laboratory.

Field QA/QC protocols that were employed by Pinchin included the following:

- Groundwater and leachate samples were placed in laboratory-supplied glass sample containers;
- The monitoring wells were purged to remove stagnant water prior to sample collection so that representative groundwater and leachate samples could be obtained. Dedicated purging and sampling equipment was used for monitoring well purging and sampling to minimize the potential for cross-contamination;

- Groundwater and leachate samples were placed in coolers on ice immediately upon collection, with appropriate sample temperatures maintained prior to submission to the laboratory;
- Dedicated and disposable nitrile gloves were used for sample handling;
- Non-dedicated monitoring and sampling equipment (e.g., interface probe) was cleaned before initial use and between uses to minimize the potential for cross-contamination by washing with an Alconox™/potable water mixture followed by a deionized water rinse; and
- Sample collection and handling procedures were performed in general accordance with the Ontario MECP document entitled *"Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario"* dated December 1996 (*MECP Sampling Guideline*), the Association of Professional Geoscientists of Ontario document entitled *"Guidance for Environmental Site Assessments under Ontario Regulation 153/04 (as amended)"*, dated April 2011 (*APGO Guideline*) and Pinchin's standard operating procedures (SOPs).

ALS's internal laboratory QA/QC consisted of the analysis of laboratory duplicate, method blank, matrix spike and spiked blank samples, an evaluation of relative percent difference (RPD) calculations for laboratory duplicate samples, and an evaluation of surrogate recoveries.

In addition to the QA/QC measures summarized above, laboratory-prepared trip blank and Pinchin collected a total of two field duplicate groundwater samples, taken from groundwater monitoring wells MW5D and MW7S, for analysis to assess the suitability of field sampling methods and laboratory performance. The field duplicate sample was collected immediately following collection of the regular samples. The frequency of groundwater sample analysis complied with the requirement that one duplicate groundwater sample is analyzed for every ten regular groundwater or surface water samples submitted for analysis. The field duplicate pairing and corresponding analytical parameters are summarized as follows:

Media	Sample Date	Original Sample ID	Field-Prepared Duplicate ID
Groundwater	May 7, 2025	MW5D	DUP-01
Groundwater	May 7, 2025	MW7S	DUP-02
Groundwater	September 29, 2025	MW7S	DUP-700

When compared to concentrations reported in the original samples, duplicate water quality data reported that all parameters were within an acceptable range with respect to relative percent difference (i.e., the industry standard of less than 50%).

The quality of the analytical results was evaluated by calculating the RPD for the original and field duplicate samples. The RPDs were calculated using the following equation:

$$RPD = \frac{(\text{Original Concentration} - \text{Duplicate Concentration}) \times 100}{(\text{Original Concentration} + \text{Duplicate Concentration})/2}$$

RPDs were not calculated unless the parameter concentration in both the original and duplicate sample had detectable concentrations above the corresponding practical quantitation limit (PQL) for the parameter, which is equal to five times the lowest laboratory Reporting Detection Limit (RDL).

The calculated RPDs for the original and field duplicate groundwater or surface water samples have been compared to performance standards provided in the MECP document entitled *Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality"* dated March 9, 2004, and revised on July 1, 2011 (*Analytical Protocol*) and as of February 19, 2021. Pinchin notes that although these performance standards only strictly apply to laboratory duplicate samples, they have been considered suitable for comparison to the field duplicate groundwater or surface water sample results as well. If calculated RPD values are greater than the performance standards, further assessment is required of the apparent lack of precision of the analytical results and the effect, if any, on the interpretation of the analytical results. This assessment may include a review of analytical laboratory quality control, reporting errors, and field sampling methods.

6.1 Data Quality Evaluation

Water quality samples collected by Pinchin were generated in accordance with acceptable procedures. No analytical hold times were exceeded for samples submitted for analyses. Sample temperatures upon receipt at the project laboratory were below 10˚ Celsius.

RPD values (the absolute difference between two values divided by the average value and expressed as a per cent) were calculated between the parent sample and the field duplicate as part of the QA/QC program. RPD results of sample and duplicate analyses that are less than 30 percent indicate an acceptable level of analytical uncertainty. RPD values calculated for measured analyte concentrations for sample and duplicate pairs that exceed 30 per cent generally warrant discussion because they may indicate the presence of elevated analytical uncertainty and a potential for making interpretive errors based on the analysis results. Use of calculated RPD values to assess analytical uncertainty when using measured analyte concentrations for sample and sample duplicate pairs is not appropriate when either measured analyte concentration is within a multiple of 5 of the method detection limit (a value designated as the practical quantification limit (PQL)), where analytical uncertainty is typically elevated.

As part of the 2025 annual monitoring event QA/QC evaluation, a QA/QC evaluation was completed for the analytical results of the original sample MW5D its respective duplicate sample DUP-01 and original sample

MW7S and its respective duplicated DUP-02 collected from groundwater monitoring wells MW5D and MW7S, respectively. The results of the sample and duplicate analyses satisfied the criteria of the QA/QC evaluations, with the exception of manganese in the duplicate pairing of MW5D/DUP-01. Pinchin notes that this exceedance of the RPD is likely attributed to sample heterogeneity and both MW5D and DUP-01 met the ODWS for manganese. It is Pinchin's opinion that this exceedance of the RPD does not result in analytical uncertainty and results of the duplicate analysis indicated that the concentrations for the original sample are accurate as presented and acceptable for inclusion into the database for interpretive purposes.

All field instrumentation calibration checks were completed by Pinchin field staff prior to use on-Site. All field operations conducted by Pinchin field staff members were completed using standard equipment decontamination and sampling procedures, and no deviations from the sampling plan were noted.

7.0 TRIGGER MECHANISMS

The trigger mechanisms for groundwater quality provide a guidance tool for the evaluation of waste fill area effects, where relevant, on groundwater at and adjacent to the Site. Findings from the 2025 annual monitoring event were assessed against the relevant trigger mechanisms established for the Site.

7.1 Groundwater Trigger Mechanisms

For the groundwater monitoring wells at the Site, the trigger mechanism was established previously by RWDI in accordance with Condition 6.2 to 6.4 of the Waste ECA (Notice No. 2) and the Environmental Contingency Plan (ECP) for the Site, as dated November 2010 and prepared by Burnside.

The calculation of trigger concentrations for the groundwater monitoring wells at the Site is based on the MECP Guideline B-7 Reasonable Use Concept (Guideline B-7). The Guideline B-7 criteria (trigger concentrations) for the background monitoring wells are calculated based on the geometric mean of the historical analytical concentrations to the end of the previous reporting year. For the purpose of this report, the geometric mean of the historical analytical concentration extends from 2008 to the end of 2024. The trigger concentrations are calculated for analytical parameters which are identified in the Waste ECA and EMP for analysis at the groundwater monitoring wells and have an existing ODWS criterion. The parameters where the trigger concentrations have been calculated are presented in Table 3 (shallow wells) and Table 4 (deep wells).

The groundwater compliance monitoring wells for the Site have been identified as those that are located along, or outside of, the Site property boundary, including: MW2 (shallow); MW3 (shallow); and MW7S/7D. For each relevant parameter, the analytical results from the 2025 annual monitoring event for the compliance monitoring wells were compared to the calculated trigger concentrations for the background monitoring wells. The background monitoring wells for the Site are MW5S and MW6S for the shallow flow system, as well as MW5D and MW6D for the deep flow system.

Although MW1S/D are located along the property boundary, they are not considered compliance monitoring wells given that a portion of the Road 145 right-of-way has been severed to function as a CAZ for the Site. Monitoring wells MW7S/D are located downgradient of MW1S/D and the CAZ for the Site.

The locations of the groundwater monitoring wells at the Site are presented in the following summary table.

Monitoring Well	Location	Position Relative to Waste Fill Area	Property/CAZ Boundary Monitoring Well	Trigger Compliance Monitoring Well
Shallow Wells				
MW1S	North property line	Downgradient/Adjacent	No	No
MW2	West property line	Downgradient/Adjacent	Yes	Yes
MW3	South property line	Downgradient/Adjacent	Yes	Yes
MW4	Waste fill area	Leachate Well	No	No
MW5S	37 m west of the Site	Crossgradient	Yes	Background
MW6S	32 m east of the Site	Crossgradient	Yes	Background
MW7S	25 m north of property line	Downgradient	Yes	Yes
MW8	Waste fill area	Leachate Well	No	No
Deep Wells				
MW1D	North property line	Downgradient/Adjacent	No	No
MW5D	37 m west of the Site	Crossgradient	Yes	Background
MW6D	32 m east of the Site	Crossgradient	Yes	Background
MW7D	25 m north of property line	Downgradient	Yes	Yes

Notes: 1) Position relative to waste fill area is based on the interpreted groundwater flow direction as determined by contouring the May 2025 static water levels.

Based on the regional shallow groundwater flow direction, monitoring well MW3 is positioned upgradient of waste. Consistent with observations made as part of the previous annual monitoring reports, the leachate elevations in MW4 and MW8 are generally higher than the groundwater elevation in the shallow property boundary monitoring wells at the Site. Based on this observation, there appears to be groundwater mounding

present within the waste deposits relative to the shallow groundwater in the vicinity of the waste fill area. As a result, MW3 is interpreted to be downgradient to crossgradient of the localized radial flow away from the waste fill area. The groundwater level elevations at the Site are discussed further in Section 8.

Monitoring wells MW5S/D and MW6S/D are considered to be crossgradient of the Site, however, based on interpreted local shallow groundwater flow at the Site, they may be downgradient of the southern portion of the waste fill area. The use of these monitoring wells as background monitoring wells for the Site may require re-evaluation if the landfill leachate indicator parameters begin to display a distinct increasing trend in one (1) or each of the above-noted monitoring wells that are attributable to a landfill leachate influence.

Consistent with previous annual monitoring and reporting programs, the trigger mechanism for groundwater at the Site is activated if one of the following conditions is met:

- If the analytical result for chloride from the most recent monitoring event is greater than the respective trigger concentration at a compliance monitoring well;
- If the analytical results for at least three (3) parameters, other than chloride, from the most recent monitoring event are greater than their respective trigger concentration at a compliance monitoring well, with the exceptions noted below:
    - In the shallow monitoring wells: manganese, dissolved organic carbon (DOC), total dissolved solids (TDS), fluoride and hardness; and
    - In the deep monitoring wells: manganese, DOC, TDS, fluoride, hardness and iron.

7.1.1 Guideline B-7 Reasonable Use Concept

Guideline B-7, the “reasonable use concept” (RUC) approach, is the MECP’S groundwater management strategy for mitigating the effect of contamination on properties adjacent to its source. It establishes procedures for determining the reasonable use of groundwater on a property adjacent to sources of contaminants and establishes limits on the discharge of contaminants from facilities which dispose of waste into the shallow subsurface.

The application of “reasonable use” is outlined in Procedure B-7-1 “*Determination of Contaminant Limits and Attenuation Zones*”. The procedure determines the maximum concentration (C_m) of a particular contaminant that would be acceptable in the groundwater beneath an adjacent property and is calculated in accordance with the relationship:

$$C_m = C_b + x\ (C_r - C_b)$$

C_b – This is the background concentration of the particular groundwater contaminant in consideration before it has been affected by human activities. From this it is possible to calculate the extent of human activities impact on contaminant levels.

C_r – The maximum concentration of a particular contaminant that should be present in the groundwater. This value is dependent on property's use of the groundwater as outlined in B-7. It also allows for the total amount of contamination. Pinchin conservatively assumes that the reasonable use of the groundwater on-Site is potentially for potable drinking purposes.

x – As determined by the MECP, this constant determines the extent which the contamination has on the groundwater's use. For drinking water x is 0.5 for non-health related parameters or 0.25 for health-related parameters. For other reasonable uses it is 0.5.

Per Guideline B-7, a landfill cannot degrade the water quality on an adjacent property by more than 50% of the difference between background water quality and the water quality required for use of that property for non-health related parameters, and 25% for health-related parameters, as outlined in the ODWS. The Guideline B-7 criteria considers the geometric mean distribution of historical background monitoring well groundwater analytical results. As a result, the calculations are updated annually to include newly obtained data from the ongoing groundwater monitoring and analytical testing.

An example calculation of the 2025 trigger concentration for chloride using the Guideline B-7 formula and available analytical data to 2025 is presented below.

Chloride in the Shallow Flow System:

Guideline B-7 formula: $Cm = Cb + X \times (Cr - Cb)$ where:

- C_b = Background concentration (in this case, a geometric mean concentration from 2008 to 2024).
    - Number of analytical testing data (n) in background monitoring wells BH5S and BH6S = 34 (2008 to 2024).
    - Geometric mean concentration value (C_b) = 16.22 mg/L.
- C_r = Maximum allowable concentration of a parameter in groundwater (ODWS criterion).
    - ODWS criterion for chloride (C_r) = 250 mg/L.
    - X = Reduction constant associated with assessing whether a parameter of concern is non-health related (0.5) or is health related (0.25).

Based on the above definitions, for chloride in the shallow flow system we have the following values:

- C_b = 16.22 mg/L
- C_r = 250 mg/L
- X = 0.50

Thus, Cm = 16.22 + 0.50 × (250 – 16.22)

= 133 mg/L in the Shallow Flow System

To evaluate the shallow groundwater quality in 2025 would require the use of 133 mg/L for the parameter chloride. Therefore, the maximum allowable concentration of chloride at a downgradient boundary of the Site would be approximately 133 mg/L in the monitoring wells for the shallow flow system. The trigger concentrations are calculated separately for the shallow and deep compliance monitoring wells to assess the shallow and deep groundwater quality, respectively. The trigger concentrations for the relevant analytical parameters are tabulated in Tables 3 and 4.

7.2 The Ontario Drinking Water Standards (ODWS)

Through the establishment of the ODWS, the province of Ontario has determined legally enforceable standards on contaminants in drinking water. The standards are designed to protect public health by restricting the quality of specific contaminants in drinking water. Three categories of contaminates are regulated under the Ontario Regulation 169/03 Drinking Water Standards:

- Microbiological – Originating from human and animals waste, coliforms and bacteria are common in the environment. Most are harmless however their presence may be indicative of other harmful bacteria in the water. Under the ODWS, Escherichia coli (“E. Coli”), fecal coliforms and total coliforms must be non-detectable in drinking water;
- Chemical – ODWS regulates maximum quantities of organic and inorganic chemicals allowed in drinking water. Industrial discharges or agricultural runoff are not necessarily removed by drinking water treatment. Consuming water exhibiting a greater concentration of these chemicals than the ODWS may cause serious health problems; and
- Radiation – Natural and artificial radio nuclides are also regulated in the ODWS. Standards are expressed as maximum allowable concentrations in becquerels per litre (“L”). Radiological contaminants include radio nuclides, such as radium 228, which are caused from the erosion of naturally occurring deposits, or artificial radio nuclides, such as tritium, released into the water by nuclear power plants. Radiological contaminants do not naturally occur on the Site or surrounding properties and the disposal of radiological waste was not suspected on the Site and as a result radiation was not monitored.

The ODWS Guideline Document is the MECP technical guidance document which provides guidance on applicability of the ODWS and also provides applicable interim guidelines where legal standards are absent. Both the ODWS and Guideline B-7 were used in assessing the groundwater results obtained during the 2025 Monitoring Program.

7.3 Primary Indicator Parameters

As indicated in the previously completed annual monitoring reports, to provide focus for the presentation of trigger parameter data, chloride and boron are considered to be primary leachate indicator parameters for the assessment of the groundwater quality, as it relates to the evaluation of a trigger mechanism exceedance for the Site. The use of the primary leachate indicator parameters to evaluate possible leachate effects on groundwater quality is beneficial as they represent a larger group of parameters (i.e., boron for metals and chloride for anions).

The parameter chloride has been observed to be notably greater in the leachate compared to groundwater. The elevated concentrations of chloride typically originate from anthropogenic sources, such as road salt or landfill leachate. As chloride is very mobile, it is therefore justifiably utilized as a primary leachate indicator. Boron is also very mobile in groundwater and is representative of a larger group of parameters (i.e., other metal constituents) and therefore, is also justifiably utilized as a primary leachate indicator.

The remaining trigger parameters are considered to be secondary leachate indicator parameters and are presented in Tables 3 and 4.

8.0 GROUNDWATER ELEVATION RESULTS

Groundwater levels have been monitored in the leachate and groundwater monitoring wells at the Site since May 2006 until 2019 by previous consultants and by Pinchin from 2019 to 2025. Monitoring well locations are indicated in Figure 2 and monitoring well construction details are provided in Table 2. The 2025 groundwater level data are tabulated in Table C-1, Appendix C, along with the historical data.

8.1 Leachate Elevation

Groundwater level measurements have been taken in the leachate monitoring wells, MW4 and MW8, at the Site since 2006 and 2008, respectively. Hydrographs of the leachate elevation at MW4 and MW8 are presented in Figure C-1, Appendix C. The leachate elevations at MW4 and MW8 have generally fluctuated over time with no distinctive trends of increasing or decreasing levels. The leachate elevations measured in 2025 were consistent with historical elevations. It is noted that leachate seeps were not observed at the Site during routine inspections in 2025.

8.2 Shallow Groundwater Flow

The shallow groundwater elevations measured for the 2025 annual monitoring event were generally consistent with historical elevations. Groundwater level elevations in the shallow groundwater monitoring wells at the Site have generally fluctuated over time with no long-term trends of increasing or decreasing levels. These fluctuating trends are likely a result of periods of prolonged precipitation or lower than normal precipitation prior to the monitoring events.

Locally, the shallow groundwater flow regime is influenced by surficial features such as the tributary of the Upper Thames River north of the Site. The inferred groundwater flow pattern in the shallow monitoring wells demonstrates a flow direction generally to the north toward the aforementioned tributary. Contour mapping of the shallow groundwater elevations and the interpreted groundwater flow direction in the vicinity of the Site is depicted in Figure 3.

Based on the leachate elevation in MW4 and MW8 relative to the groundwater elevation in the shallow property boundary monitoring wells at the Site, there appears to be a mound of leachate present within the waste relative to the shallow groundwater in the vicinity of the waste fill area. As a result, it is interpreted that the shallow groundwater flow in the immediate vicinity of the Site flows in a radial pattern away from the waste fill area.

It is inferred that a portion of precipitation at the Site infiltrates through the cover material into the waste, while the remainder ultimately runs off into the surface water ditches around the perimeter of the waste fill area. Previous intrusive investigations associated with instrumentation of the Site, indicated that the overburden soil around the Site generally consists of fine-grained sediments, which have a lower hydraulic conductivity than the waste fill. As a result, the water that infiltrates into the waste fill area is not able to readily move into the surrounding subsurface materials, creating a shallow leachate mound in the waste.

As introduced in Section 7.1, it is noted that based on the regional shallow groundwater flow direction, monitoring well MW3 is positioned upgradient of the waste fill area. However, due to the groundwater level elevations generally being higher in the waste mound at leachate well MW4 than at MW3, it is typically located downgradient to crossgradient of the localized radial flow away from the waste fill area. The 2017 and 2018 groundwater elevation measured at MW3 were slightly higher than at MW4, which has occurred historically, however, the groundwater elevation at MW3 is typically lower than at MW4. The May 2025 groundwater elevations measured at MW3 was slightly lower than at MW4. Overall, the regional shallow groundwater flow regime in the area of the Site is still interpreted to be north toward the tributary.

8.3 Deep Groundwater Flow

Each of the monitoring wells at the Site are positioned in the overburden with the deep groundwater monitoring wells at the Site (MW2D, MW5D, MW6D and MW7D) screened from approximately 5.0 to 7.5 m deeper in the overburden than the respective shallow groundwater monitoring wells at the Site.

The deep groundwater elevations measured for the 2025 annual monitoring event were consistent with historical elevations. Groundwater level elevations in the deep groundwater monitoring wells at the Site have generally fluctuated over time with no distinctive trends of increasing or decreasing levels.

The regional groundwater flow in or near the bedrock is interpreted to reflect bedrock topography and flow southwesterly. The deep groundwater flow regime around the Site demonstrates a northwesterly groundwater

flow direction toward the tributary of the Upper Thames River north of the Site, similar to that of the shallow groundwater flow regime.

Contour mapping of the deep groundwater elevations and the interpreted deep groundwater flow direction in the vicinity of the Site is provided in Figure 4.

9.0 GROUNDWATER QUALITY RESULTS

The 2025 groundwater quality analytical results are presented in Tables D-1 to D-4, Appendix D. Historical (2006 to 2024) analytical results are also included for comparison. Laboratory Certificates of Analysis are provided in Appendix E.

9.1 Leachate

Leachate monitoring wells MW4 and MW8 are situated within the waste footprint and, therefore, the groundwater quality at these locations is inferred to represent leachate (i.e., source strength) at the Site. The analytical results for MW4 and MW8 are presented in Table D-1 and Table D-2, Appendix D.

9.1.1 General Chemistry

As indicated in Table D-1, with few exceptions, the 2025 parameter concentrations at MW4 and MW8 were generally consistent with historical results, with some results being slightly above or below their respective historical range. The deviations are reasonable for municipal solid waste leachate in southern Ontario.

As indicated in Table D-1, the reported concentration of aluminum in the groundwater at monitoring well MW4 (0.118 mg/L) exceeded the ODWS (0.1 mg/L) during the 2019 annual sampling event and has not exceeded the ODWS in subsequent annual sampling events. No other exceedances of aluminum were noted in previous years. If the concentration of aluminum continues to rise in future monitoring events, an action plan that outlines contingency measures (i.e., remedial measures) for improving the groundwater quality at the leachate well in the waste fill area may require development and submission to the MECP for approval. In the short-term, the concentration of aluminum within MW4 should continue to be monitored over subsequent monitoring events to assess the analytical results and evaluate the concentration trends over time.

Overall, the leachate at MW4 and MW8 is mildly alkaline with pH levels of 7.53 and 7.57, respectively. The leachate quality from the landfill waste at the Site, as determined from samples obtained from MW4 and MW8, is generally characterized by elevated concentrations of most general parameters, major ions, organic parameters and select metals relative to background groundwater quality. Specifically, the concentrations of total hardness, TDS, alkalinity, chloride, DOC, barium, boron, calcium, iron, magnesium, manganese, potassium and zinc have typically been greater in the leachate at the Site relative to background concentrations. The concentrations of each of these parameters are generally greater at MW8 than at MW4.

9.1.2 Volatile Organic Compounds

The analytical results for VOCs are presented in Table D-2, Appendix D. For the 2025 annual monitoring event, concentrations of VOC constituents within leachate wells MW4 and MW8 were below their respective reporting detection limits (RDLs), with few exceptions reported for MW8.

Within the leachate at MW8, various VOCs were detected above their respective RDLs in 2025. Detected VOCs included benzene, ethylbenzene and xylene, as well as acetone, dibromochloromethane and dichlorodifluoromethane. All VOCs parameters selected for laboratory analysis met the applicable ODWS with the exception of benzene. This parameter was below its respective historical maximum concentrations and is consistent with historical analytical results, with no distinct increasing or decreasing trend. VOCs have been detected at one time or another in the past within MW8. Where minor exceptions occurred, there is not a concern as the parameter concentrations are not negatively affecting groundwater at the Site. Where VOCs have been detected within MW8, the 2025 and historical concentrations have generally fluctuated with no apparent increasing or decreasing trend over time.

In summary, the parameter that exceeded the ODWS in MW8 (benzene) in 2025, as well as concentrations of select VOCs detected in the landfill leachate during 2025, are consistent with historical findings. Detected VOC concentrations noted in the leachate do not quantify concentrations that would warrant remedial action at this point.

9.2 Groundwater

Based on the measured groundwater level elevations and the inferred groundwater flow pattern in the shallow flow system, the groundwater at monitoring wells MW5S and MW6S is interpreted to represent background groundwater quality conditions in the shallow flow system. Monitoring wells MW5D and MW6D represent background groundwater quality conditions within the deep flow system. The remaining shallow and deep monitoring wells, with the exception of leachate monitoring wells MW4 and MW8, represent downgradient groundwater conditions at the Site. The analytical results for the groundwater wells are presented in Table D-3 and Table D-4, Appendix D.

9.2.1 General Chemistry

A summary of the 2025 groundwater results compared to the trigger concentrations for the compliance monitoring wells is presented in Section 9.2.3.

Concentration versus time plots (i.e., trend graphs) for the primary indicator parameters (chloride and boron) for the groundwater compliance monitoring wells are presented in Figures D-1 and D-2 (shallow monitoring wells) and Figures D-3 and D-4 (deep monitoring wells), Appendix D.

The ODWS for the parameters analyzed are provided for comparison in Table D-3, Appendix D. The primary purpose of the ODWS is to provide information for the protection of public health through the provision of safe drinking water and particularly to serve as a reference for the design and operation of water treatment plants to produce water that is safe for consumption.

The groundwater at the Site is not used as drinking water, however, the analytical results are still compared to the relevant ODWS. Although there are established trigger mechanisms in place, where an analytical result is greater than its respective trigger concentration, the ODWS can be used secondary to the trigger mechanisms to evaluate potential leachate influences on groundwater quality. The analytical results that were greater than their respective ODWS in 2025 were generally consistent with historical results with a few exceptions: TDS and/or total alkalinity were above historical upper concentration limit for monitoring wells MW1S/D, MW2, MW5S (TDS only) and MW7S (alkalinity only) and arsenic was above the historical upper concentration limit for MW6D.

It is noted that groundwater analytical results collected from MW5S had reported concentrations of nitrate and nitrite (as nitrogen) and nitrate as nitrogen that were above the ODWS and although Pinchin observed that these parameters had increased in concentrations over the last three years (i.e., 2022 to 2024), the 2025 analytical results were reduced in comparison to 2024. Groundwater analytical results collected from MW5D reported concentrations of nitrate and nitrite (as nitrogen) and nitrate as nitrogen above the ODWS standard in 2020, 2021 and a decrease to below the ODWS since the May 2022 groundwater sampling events. Monitoring wells MW5S and MW5D represent background groundwater quality conditions within the shallow and deep flow system, respectively, and as such these exceedances may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site.

For each monitoring well, the relevant results that were greater than their respective ODWS are presented in Table D-3, Appendix D.

The concentration of chloride at monitoring wells MW2, MW3, MW5S and MW6S has exhibited either a generally consistent or decreasing trend since 2009. Since 2008, the concentration of chloride has increased at MW7S, and exceeded the respective trigger concentration during the 2025 sampling event. As identified in Figure D-1, the concentration of chloride within the shallow groundwater compliance monitoring wells has remained in compliance with the respective trigger concentration for the Site, with the exception of a minor exceedance in MW7S (134 mg/L versus the trigger concentration of 133 mg/L). As a result, Pinchin returned to the Site on September 23 and September 29, 2025, to redevelop and resample MW7S, respectively, for confirmatory purposes. The concentration of chloride reported during the September 2025 was consistent with the May 2025 sampling event. The concentration of chloride in both original sample MW7S and duplicate sample DUP-700, exceeded the trigger concentration for the Site (134 mg/L versus the trigger concentration of 133 mg/L).

As depicted in Figure D-2, the concentration of boron in the shallow groundwater compliance monitoring wells has also remained in compliance with the respective trigger concentration for the Site. Generally, the concentration of boron at these locations has been consistent with no apparent increasing or decreasing trend with the exception of MW3, which has had an overall increasing trend since 2014 and exceeded the historical upper limit concentration in the May 2025 sampling event.

As indicated in Figure D-3, the concentration of chloride within the deep groundwater compliance well (MW7D) has remained in compliance with the respective trigger concentration for the Site. Pinchin notes that the concentration of chloride has shown an increasing trend since May 2015 within MW7D. From 2008 to 2019, the concentration of chloride within the deep monitoring wells has exhibited a generally consistent (MW5D) or decreasing (MW6D) trend. The 2020 annual sampling event indicated an increase in chloride concentrations within MW5D and MW6D and these values have remained relatively consistent in chloride concentration from May 2022 to 2025 at MW5D. Since 2015, the concentration of chloride has generally exhibited an increasing trend at MW7D. As indicated in Figure D-4, the concentration of boron in the deep groundwater compliance monitoring well (MW7D) has also remained in compliance with the respective trigger concentration for the Site. Generally, the concentration of boron at these locations has been consistent with no apparent increasing or decreasing trend with the exception of MW5D, which had reported concentrations of boron that increased during the May 2022 to 2025 annual sampling events.

The 2025 and historical concentrations of chloride within compliance monitoring wells MW7S/D, as well as within MW1S/D, indicate that there may be lateral migration of leachate occurring toward the tributary, which is consistent with the interpreted groundwater flow direction at the Site. Since closure of the Site in 2009, the concentration of chloride within MW7S, and to a lesser extent MW7D, has exhibited an increasing trend over time. With the exception of chloride, there are no increasing trends of note for the remaining indicator parameters within MW7S/D that would indicate a distinct landfill leachate influence. Pinchin notes that the concentration of chloride within MW7S is greater than both source well MW4 (located in the southern portion of the waste fill area) and MW1S (located downgradient and closer to the waste fill area). Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. Given that minor exceedance of the chloride trigger concentration, the fact that the concentration of chloride is beneath the ODWS (250 mg/L), and the potential of road salting influences, it is Pinchin's opinion that no remedial action is required at this time.

Should the concentration of chloride within MW7S continue to increase and exceed the trigger concentration for chloride in future monitoring events, an evaluation of the Site specific risks should be completed to assess the need for an action plan that outlines contingency measures (i.e., remedial measures) for improving the groundwater quality at the current CAZ boundary will require development and submission to the MECP for approval, in accordance with the ECP for the Site. In the short-term, the concentration of chloride within

MW7S/D should continue to be monitored (in duplicate) over subsequent monitoring events to assess the analytical results and evaluate the concentration trends over time.

The January 2019 revision of the ODWS for arsenic from 0.025 mg/L to 0.01 mg/L resulted in the first detection of an ODWS exceedance for arsenic in well nest MW1 (deep aquifer) during the 2019 annual monitoring program. This regulatory revision has also resulted in the first Guideline B-7 exceedance for arsenic at MW7S during the 2019 annual monitoring program. Groundwater samples collected from the well nests MW1 and MW7 during the 2025 annual monitoring program did not exceed the ODWS and/or the Guideline B-7 for arsenic, with the exception of MW7S which exceeded the Guideline B-7 Criteria. The historical exceedances of arsenic and the current MW7S exceedance of arsenic are not inferred to be indicative of a change in performance of the landfill or the CAZ, as the results are within the range of the historic database.

The concentration of DOC within monitoring well MW1D exceeded the respective ODWS (5.0 mg/L) during the May 2025 groundwater sampling event. It is also noted that the May 2025 concentration of DOC within monitoring well MW1D was below its historical upper limit measured in May 2022. Overall increases of DOC concentration in all monitoring wells, including background groundwater quality monitoring well nests MW5S/D and MW6S/D in May 2022 and decreases measured in 2023 to 2025, indicate that elevated levels of DOC and exceedances of the ODWS may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site.

Generally, there have been no distinct increases in concentration over time of the other indicator parameters within the shallow and deep groundwater compliance monitoring wells since 2006. A discussion is provided in Section 9.2.3 for the concentrations of an analytical parameters were greater than applicable 2025 trigger concentrations.

9.2.2 Volatile Organic Compounds

For the 2025 sampling event, concentrations of VOC constituents within the groundwater compliance monitoring wells were below their respective RDLs. It is noted in May 2023, a detectable concentration of bromoform was detected in monitoring well MW5S. This was the first detection of bromoform reported for MW5S since sampling has been initiated. There is no ODWS value for bromoform. It is Pinchin's opinion that the 2023 detection of bromoform was anomalous, however Pinchin recommends that VOC concentrations in groundwater at MW5S should be monitored to assess the repeatability of the bromoform detection and determine if any trends of concern are occurring. No remedial action is required at this time.

9.2.3 Trigger Mechanism Assessment

The groundwater analytical results for the 2025 annual monitoring event and their respective trigger concentrations are presented in Table 3 and Table 4. The results that were greater than their respective trigger concentrations are presented below. It is noted that if a result is greater than its respective trigger

concentration a trigger mechanism for the Site is not necessarily activated, per Condition 8.1(c) of the Waste ECA and the ECP for the Site.

Property Boundary Monitoring Well	Parameter(s)	Trigger Concentration (mg/L)	Analytical Result (mg/L)
Shallow Groundwater Monitoring Wells			
MW2	Total Hardness	342	*354*
	Total Dissolved Solids	462	*553*
	Total Alkalinity	390	7820
	Manganese	0.027	*0.0422*
MW3	Total Hardness	342	*486*
	Total Dissolved Solids	462	*599*
	Alkalinity	390	610
	Aluminum	0.0547	0.0742
MW7S	Total Hardness	342	*429*
	Total Dissolved Solids	462	*619*
	Chloride	133	134
	Arsenic	0.0032	0.00477
Deep Groundwater Monitoring Wells			
MW7D	Total Hardness	200	*319*
	Total Dissolved Solids	377	*444*
	Aluminum	0.055	0.741
	Iron	0.1617	*0.956*
	Manganese	0.028	*0.0670*

Notes: Italics denotes that although the result is greater than its respective trigger concentration, it does not contribute to the activation of a trigger mechanism. As detailed in Section 7.1, the following exceptions in the: i) shallow monitoring wells: manganese, DOC, TDS, fluoride and hardness; and ii) deep monitoring wells: manganese, DOC, TDS, fluoride, hardness and iron do not represent trigger concentration exceedances due to the elevated concentrations of these parameters in the background groundwater at the Site.

For the 2025 annual monitoring event, the trigger concentration for chloride was exceeded at groundwater compliance monitoring well MW7S. MW7S was redeveloped and resampled in September 2025, and confirmatory sample results reported a concentration of chloride within MW7S and corresponding duplicate DUP-700 of 134 mg/L. As a result, the 2025 groundwater quality did not satisfy the relevant trigger mechanisms for the Site. The remaining analytical results for at least three (3) parameters, excluding chloride and the select parameters noted in Section 7.1, were not greater than their respective trigger concentration within the compliance monitoring wells. The analytical results noted in the above summary were generally consistent with historical results at the respective monitoring locations.

Monitoring well MW2 is located along the west boundary of the Site. Based on a review of the 2025 and historical analytical results for MW2, the concentrations of total hardness, total alkalinity and aluminum have exhibited an overall fluctuating trend since the closure of the Site in 2009. Pinchin notes that the measured concentration of alkalinity was above the historical upper concentration limit for MW2. MW2 should continue to be monitored over subsequent monitoring events to assess the analytical results and evaluate the concentration trends over time. No remedial actions are warranted, at this time.

Monitoring well MW3 is located along the south boundary of the Site. Based on a review of the 2025 and historical analytical results for MW3, the concentrations of total hardness, TDS, alkalinity and aluminum have generally exhibited a fluctuating trend. Pinchin notes that the concentration of aluminum was reported above the historical upper concentration limit for MW3. The concentrations of total hardness, TDS, alkalinity and aluminum within MW3 should continue to be monitored over subsequent monitoring events to assess the analytical results and evaluate the concentration trends over time. No remedial actions are warranted, at this time.

Groundwater compliance monitoring wells MW7S and MW7D are located approximately 25 m north of the Site, downgradient of the CAZ and the Site. Based on a review of the 2025 and historical analytical results for MW7S/D, the concentrations of total hardness, TDS, aluminum and/or arsenic at each monitoring well have generally fluctuated over time with no apparent increasing or decreasing trend. The 2025 concentrations of the aforementioned parameters were less than the respective historical upper limit concentration, with the exception of TDS within MW7S. Monitoring wells MW7S/7D should continue to be monitored over subsequent monitoring events to assess the analytical results and evaluate the concentration trend over time. No remedial actions are warranted.

Pinchin notes that the concentration of chloride within MW7S is greater than both of the source wells MW4 (located in the southern portion of the waste fill area) and MW1S (located downgradient and closer to the waste fill area). Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. Given the minor exceedance of the chloride trigger concentration, the fact that the concentration of chloride is

beneath the ODWS (250 mg/L) and the closed and capped status of the Site, as well as the potential of road salting influences, it is Pinchin's opinion that no remedial action is required at this time. Should the concentration of chloride within MW7S continue to increase and exceed the trigger concentration for chloride in future monitoring events, an evaluation of the Site specific risks should be completed to assess the need for an action plan that outlines contingency measures (i.e., remedial measures) for improving the groundwater quality at the current CAZ boundary will require development and submission to the MECP for approval, in accordance with the ECP for the Site. In the short-term, the concentration of chloride within MW7S/D should continue to be monitored (in duplicate) over subsequent monitoring events to assess the analytical results and evaluate the concentration trends over time.

Ongoing monitoring should be completed to verify that the elevated constituent concentrations within the groundwater at MW2, MW3 and MW7S/D are not exhibiting an increasing trend of concern over the long-term. No remedial actions are warranted, at this time, and there is no indication that surface water sampling in the tributary or sampling of the drinking water supply well at the Cairns residence should be resumed.

10.0 LANDFILL GAS MONITORING RESULTS

As part of the annual monitoring program, landfill gas (methane) measurements were completed at each of the leachate and groundwater monitoring well locations on May 6, 2025. The 2025 landfill gas monitoring results are tabulated in Table F-1, Appendix F, along with the historical data.

For the 2025 annual monitoring event, the landfill gas monitoring results were inconsistent with historical results at the Site. Landfill gas was detected at monitoring wells MW1S (3.5 % by volume), MW1D (1.5% by volume), MW2 (4.5% by volume) and MW3 (1.5% by volume), representing the highest landfill gas detection at these wells since monitoring began. Based on the historical monitoring results, landfill gas has been intermittently detected in monitoring well MW4. Since 2021, no landfill gas has been detected at monitoring well MW4. The 2025 annual monitoring event detected 3.5% by volume at leachate monitoring well MW8. Landfill gas has historically been detected in this monitoring well with an historical upper limit of 31% by volume measured in April 2020.

The historical results indicate that landfill gas is being generated in the waste at the Site. Landfill gas has not detected beyond the waste footprint at the relevant monitoring locations at a level greater than 5% by volume. Historically, a few near detection limit levels of landfill gas have been detected, which are not interpreted to reflect a persistence of landfill gas migrating in the vadose zone (unsaturated portion of the shallow subsurface) beyond the waste footprint at this Site. Based on monitoring findings from the established monitoring network, the historical results indicate that landfill gas is being generated in the waste of the landfill and could be migrating beyond the waste footprint within the subsurface; however, this migration was not detected during 2025 annual monitoring event. The concentration of methane gas should continue to be

monitored over subsequent monitoring events to evaluate the concentration trends over time as the current results are in the upper range of the historic record. No remedial actions are warranted, at this time.

As noted in the previous monitoring reports, the screened interval of select monitoring wells used to assess for landfill gas may be below the groundwater table and therefore, do not reliably represent, from a vapour perspective, the concentrations of gases in the vadose (unsaturated portion) of the shallow soil system(s) at the Site. However, as landfill gas was not detected beyond the waste footprint to the west at the Site in 2025, and that the nearest structure to the Site is a farmhouse located approximately 330 m west of the Site, there should be no explosive concerns related to landfill gas migration with the vadose zone for the nearby residence.

11.0 SITE INSPECTION OBSERVATIONS

The Waste ECA and Closure Plan for the Site recommend annual Site inspections. The annual Site inspection was conducted by Pinchin on May 7, 2025. A copy of the annual Site inspection record is provided in Appendix G. Findings from the 2025 annual Site inspection are presented below.

- The front gate at the Site was closed and secured with a padlock;
- A small section of damaged fence was observed on the east portion of the Site;
- An information sign at the front entrance identifies that the Site is closed;
- There were no exposed areas of soil cover material over the waste footprint. The cover material at the Site was completely covered by vegetation;
- There were no exposed areas of soil cover material over the waste footprint. The cover material at the Site was completely covered by vegetation;
- There was no litter observed at the Site;
- There were no observed signs of vermin or vectors at the Site that would warrant remedial action;
- There were no indications of leachate breakouts at the Site;
- There were no reports or indications or a spill occurring at the Site in 2025;
- There were no reports or indications of unacceptable waste being received at the Site in 2025;
- There were no complaints received about the Site in 2025; and
- There were no operational issues reported for the Site in 2025.

The Municipality also conducted monthly inspections during 2025. There were no additional issues identified by the Municipality during the monthly Site inspections in 2025.

12.0 2026 MONITORING PROGRAM

The proposed 2026 Monitoring Program considers the findings of this report, and the approved monitoring plan presented in the Waste ECA and the EMP for the Site. Details of the annual monitoring program for the Site, including analytes, are summarized in Table 1 with assessment locations depicted in Figure 2. Based on the current findings no significant alterations to the monitoring program are recommended for next year. Although it is recommended that MW7S be sampled in duplicate during 2026 to confirm the quantified chloride concentrations.

An annual monitoring report that details the findings of the 2026 monitoring period will be prepared and submitted to the MECP by November 14, 2026. The annual report should be prepared in consideration of historical report submissions while acknowledging the purpose and objectives of the monitoring program, which are summarized in Section 1.3 of this report.

13.0 CONCLUSION

Based on the findings presented in this report, the following conclusions are provided.

- Locally, the groundwater flow regime at the Site is influenced by surficial features such as the nearby tributary of the Upper Thames River. The shallow groundwater elevations measured in 2025 were generally consistent with the historical results. Based on the shallow groundwater elevations at the Site in 2025, as well as historical groundwater elevations, the groundwater in the immediate vicinity of the Site continues to flow in a radial pattern away from the waste fill area. The regional shallow groundwater flow is interpreted to flow north toward the tributary and the deep groundwater flow is interpreted to flow northwest, also toward the tributary;
- In 2025, the analytical results that were greater than their respective Ontario Drinking Water Standards (ODWS) within the groundwater were generally consistent with historical results with a few exceptions:
    - Total Dissolved Solids (TDS) and/or total alkalinity exceeded the ODWS and historical upper concentration limits within MW1S (alkalinity only), MW1D, MW2, MW5S (TDS only) and MW7S (alkalinity only). TDS and alkalinity within these wells have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;
    - Arsenic concentration reported within monitoring well MW6D exceeded the ODWS and the historical upper limit concentration during the May 2025 sampling event. Arsenic concentrations within this well have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;
    - MW5S had concentrations of nitrate and nitrate (as N) and nitrate (as N) that exceeded the ODWS maximum acceptable concentration in 2022 through 2025 (with

a slight decrease in 2025 compared to 2024). Based on the groundwater elevations measured during the 2025 annual monitoring event, monitoring wells MW5S and MW5D represent background groundwater quality conditions within the shallow and deep flow system, respectively, and as such these exceedances may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site. No remedial actions are required at this time;

- The concentration of DOC within monitoring well MW1D exceeded the respective ODWS (5.0 mg/L) during the May 2025 groundwater sampling event. Overall increases of DOC concentration in all monitoring wells, including shallow and deep background groundwater quality monitoring wells MW5S/D and MW6S/D during May 2022 groundwater sampling event and overall decrease in DOC concentration from 2023 to 2025, indicates that elevated levels of DOC and exceedances of the ODWS may not be a result of impacts associated with landfill derived leachate and instead may be a result of other anthropogenic activities in the immediate vicinity of the Site. No remedial actions are required at this time;

- Overall, concentrations of select parameters in the remaining shallow and deep groundwater monitoring wells on-Site have generally fluctuated with no consistent increasing or decreasing trend. No remedial actions are required at this time;
- The 2025 and historical concentrations of boron within compliance monitoring well MW3, indicate that there may be also lateral migration of leachate downgradient of the waste fill area on-Site. Concentrations of boron within MW3 have increased since May 2014, with greater increases occurring 2018 and 2025. The concentration of boron during the May 2025 groundwater sampling event remains in compliance with the respective trigger concentration for the Site (1.27 mg/L), as well as the ODWS (5.0 mg/L), as such concentration of boron within MW3 is currently at acceptable levels;
- The 2025 and historical concentrations of chloride within compliance monitoring wells MW7S/D, as well as within MW1S/D, indicate that there may be lateral migration of leachate occurring toward the tributary. Since closure of the Site in 2009, the concentration of chloride within MW7S, and to a lesser extent MW7D, has exhibited an increasing trend over time. With the exception of chloride, there are no increasing trends of note for the remaining indicator parameters within MW7S that would indicate a distinct landfill leachate influence. Chloride concentrations measured within MW7S in May 2025 exceeded the trigger concentrations for the Site (134 mg/L versus the trigger concentration of 133 mg/L). As a result, Pinchin returned to the Site on September 23 and September 29, 2025, to redevelop and resample MW7S, respectively, for confirmatory purposes. The concentration of chloride reported during the

September 2025 (134 mg/L) was consistent with the May 2025 sampling event. With the exception of chloride, there are no increasing trends of note for the remaining indicator parameters within MW7S/D that would indicate a distinct landfill leachate influence. Pinchin notes that the concentration of chloride within MW7S is greater than both of the source wells MW4 (located in the southern portion of the waste fill area) and MW1S (located downgradient and closer to the waste fill area). Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. Given that minor exceedance of the chloride trigger concentration, the fact that the concentration of chloride is beneath the ODWS (250 mg/L) and the fact that the landfill is in a closed state, as well as the potential of road salting influences, it is Pinchin's opinion that no remedial action is required at this time;

- The groundwater quality around the landfill property and Contaminant Attenuation Zone (CAZ) boundaries generally satisfied the relevant trigger mechanisms for the 2025 Groundwater Monitoring Event. The 2025 analytical results for select parameters other than chloride that were greater than their respective trigger concentration for groundwater quality at compliance monitoring wells MW2, MW3 and MW7S/D, have been relatively stable, with no distinct increasing or decreasing trend. No remedial actions are required at this time;
- For the 2025 annual monitoring event, concentrations of volatile organic compounds (VOCs) within the groundwater compliance monitoring wells were below their respective Reportable Detection Limits (RDLs). No remedial actions are required at this time;
- The groundwater quality around the landfill property and CAZ boundaries satisfied the relevant trigger mechanisms for the 2025 monitoring event, with the exception of chloride within MW7S (which meets the ODWS), and as such there is no indication that surface water sampling in the tributary or sampling of the drinking water supply well at the Cairns residence should be resumed;
- For the 2025 annual monitoring event, the landfill gas monitoring results were inconsistent with historical results at the Site. Landfill gas was detected at monitoring wells MW1S, MW1D, MW2, and MW3 representing the highest landfill gas detection at these wells since monitoring began. Based on the historical monitoring results, landfill gas has been intermittently detected in leachate monitoring well MW4. Since 2021, no landfill gas has been detected at monitoring well MW4. The 2025 annual monitoring event detected 3.5% by volume at leachate monitoring well MW8. The historical and current results indicate that landfill gas is being generated in the waste at the Site. Based on monitoring findings from the established monitoring network, the historical results indicate that landfill gas is being generated in the waste of the landfill and could be migrating beyond the waste footprint within the subsurface; however, landfill gas has

not been detected beyond the waste footprint at the relevant monitoring locations at a level greater than 5% by volume. Based on the monitoring findings from the established monitoring network, continued gas monitoring should be completed to confirm whether landfill gas may be migrating beyond the waste footprint within the subsurface; and

- No deficiencies were identified on-Site during the annual Site inspection conducted by Pinchin, or the monthly Site inspections conducted by the Municipality that would warrant remedial action.

14.0 RECOMMENDATIONS

Based on the findings of the 2025 monitoring program, the following recommendations are provided for consideration:

- Monitoring at the Site should be continued in 2026, in accordance with the approved monitoring program as summarized in Table 1. No deviations from the approved monitoring program are recommended;
- As the concentration of chloride within MW7S continues to increase and exceeded the trigger concentration (134 mg/L in May and September 2025), expanding the boundary of the CAZ downgradient of the Site may need to be considered by the Municipality. Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. If the concentration of chloride within MW7S continues to exceed the trigger concentration for chloride for a future monitoring event, an evaluation of the Site specific risks should be completed to assess the need for an action plan that outlines contingency measures (i.e., remedial measures) for improving the groundwater quality at the current CAZ boundary. As recommended in 2024, MW7S was sampled as a duplicate (field duplicate DUP-02) as a quality assurance and control measure on the compliance monitoring location, in order to confirm the accuracy of the results. Reported concentrations confirmed the accuracy of the results. In the short-term, the concentration of chloride within MW7S should continue to be monitored and sampled as a duplicate over subsequent monitoring events to assess the analytical results and evaluate the concentration trend over time. No remedial action is warranted at this time; and
- Ongoing monitoring should be completed to verify that the select constituent concentrations that were greater than their respective trigger concentrations within the downgradient groundwater monitoring wells are not exhibiting an increasing trend of concern over the long term. No remedial action is warranted at this time.

15.0 STUDY LIMITATIONS AND USE OF REPORT

This Water Quality Monitoring Program was performed for The Corporation of the Municipality of West Perth (Client) in order to investigate the environmental condition of the groundwater and surface water at the Fullarton Landfill (Site). The term recognized environmental condition means the presence or likely presence of any hazardous substance on a property under conditions that indicate an existing release, past release, or a material threat of a release of a hazardous substance into structures on the property or into the ground, groundwater, or surface water of the property. This Water Quality Monitoring Program does not quantify the extent of the current and/or recognized environmental condition or the cost of any remediation.

Conclusions derived are specific to the immediate area of study and cannot be extrapolated extensively away from sample locations. Samples have been analyzed for a limited number of contaminants that are expected to be present at the Site, and the absence of information relating to a specific contaminant does not indicate that it is not present.

No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions on a property. Performance of this Water Quality Monitoring Program to the standards established by Pinchin is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions on the Site and recognizes reasonable limits on time and cost.

This Water Quality Monitoring Program was performed in general compliance with currently acceptable practices for environmental site investigations, and specific Client requests, as applicable to this Site.

This report was prepared for the exclusive use of the Client and the MECP, subject to the conditions and limitations contained within the duly authorized work plan. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. If additional parties require reliance on this report, written authorization from Pinchin will be required. Pinchin disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No other warranties are implied or expressed. Furthermore, this report should not be construed as legal advice.

Pinchin will not be responsible for any consequential or indirect damages. Pinchin will only be held liable for damages resulting from the negligence of Pinchin. Pinchin will not be liable for any losses or damage if the Client has failed, within a period of two years following the date upon which the claim is discovered within the meaning of the Limitations Act, 2002 (Ontario), to commence legal proceedings against Pinchin to recover such losses or damage.

Pinchin makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

16.0 CLOSURE

We trust that this 2025 Annual Monitoring Report, prepared in accordance with Condition 8.0 of the Waste Disposal Site Environmental Compliance Approval Number A151201 for the Fullarton Landfill in the Municipality of West Perth, Ontario, is satisfactory for your requirements.

17.0 REFERENCES

The following documents, persons or organizations provided information used in this report:

1. Pinchin. 2019-2024 Annual Monitoring Reports, Fullarton Landfill, Township of Fullarton, Ontario, Municipality of West Perth. Pinchin File: 333568.001.
2. RWDI AIR Inc. 2016-2018. Annual Monitoring Reports, Fullarton Landfill, Municipality of West Perth.
3. Ministry of Northern Development and Mines – Surficial Materials: https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth/surficial-geology.
4. Ministry of Northern Development and Mines – Bedrock Geology: https://www.mndm.gov.on.ca/en/mines-and-minerals/applications/ogsearth/bedrock-geology.
5. Ministry of the Environment. 2003. Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines. Revised June 2006.
6. Ministry of the Environment. 2010. Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water – Technical Guidance Document, November 2010.
7. Ministry of the Environment. 2012. Landfill Standards – A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfilling Sites. January 2012.
8. R.J. Burnside & Associates Limited. 2007. Hydrogeological Investigation, Fullarton Landfill Site, Municipality of West Perth. File: MSO10830.11. December 2007.
9. SGRA. 2010. Upper Thames River Source Water Protection Area, Tier 2 Water Budget, Significant Groundwater Recharge Area Technical Memorandum, Upper Thames River Conservation Authority, 31 May 2010.

TABLES

TABLE 1
ANNUAL MONITORING PROGRAM
Fullarton Landfill
Road 145, Municipality of West Perth

Monitoring Locations				
Monitoring Group	***Monitoring Location ID***			***Total Number***
Leachate	MW4 and MW8			2
Groundwater (GW)	Shallow: MW1S, MW2, MW3, MW5S, MW6S and MW7S			6
	Deep: MW1D, MW5D, MW6D and MW7D			4
Monitoring Locations				
Task	***Monitoring Locations***	***Field Indicator Parameters***	***Lab Analytical Parameters***	***Monitoring Frequency*** [1]
Liquid Levels	Leachate & GW Wells	N/A	N/A	Annually
Landfill Gas Monitoring	Leachate & GW Wells	Methane (CH_4)	N/A	Annually
Monitoring Well Purging	Leachate & GW Wells	N/A	N/A	Annually
Sample Collection	Leachate and GW Locations	FIP List[2]	LAP-GC List [3] & VOCs	Annually
QA/QC Duplicate Sampling	One (1) GW Well	Equivalent to Original Sample	Equivalent to Original Sample	Annually
QA/QC Trip Blanks	One (1) Set of VOC Trip Blanks per Sample Shipment	N/A	VOCs	Annually
Site Inspection	Site	N/A	N/A	Annually

Notes: 1. Annual monitoring tasks are completed in the Spring, typically in May.
2. Field Indicator Parameters (FIP): Temperature, pH, and Electrical Conductivity.
3. Lab Analytical Parameters - General Chemistry (LAP-GC): Total Hardness, pH, TDS, Alkalinity (Bicarbonate, Carbonate, and Total), Total NH3, Br, Cl, F, NO3, NO2, NO3 + NO2, PO4, SO4, DOC, Al, As, Ba, B, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, K, Se, Si, Na and Zn.
4. VOCs denotes volatile organic compounds.

TABLE 2
MONITORING WELL CONSTRUCTION DETAILS
Fullarton Landfill
Road 145, Municipality of West Perth

Well Number	*Ground Surface (mASL)*	*Measuring Point (mASL)*	*Stick-Up (m)*	*Total Well Depth (mBGS)*	*Screen Length (m)*	*Stratigraphic Unit Screened*	*Hvorslev (m/sec)*	*Bouwer Rice (m/sec)*
MW1S	339.22	340.03	0.81	4.35	3.05	Sandy Silt Silt Till	7.30E-09	
MW1D	339.10	340.09	0.99	11.28	3.05	Silt Till	6.60E-08	
MW2	339.30	340.23	0.93	5.41	4.57	Fill Silt Till	1.40E-08	
MW3	340.28	341.30	1.02	6.28	3.81	Clayey Silt Silt Till	1.90E-08	
MW4	342.25	343.33	1.08	3.88	4.57	Fill Silt Till		
MW5S	339.08	339.78	0.70	5.49	3.05	Sandy Silt	3.50E-07	5.40E-07
MW5D	339.04	339.72	0.68	11.44	1.52	Silty Sand Silt & Clay	4.00E-07	3.20E-07
MW6S	339.34	340.14	0.80	5.93	3.05	Sandy Silt	7.70E-09	9.40E-09
MW6D	339.32	340.13	0.81	10.64	1.52	Silt Gravelly Sand Clayey Silt	2.60E-07	2.80E-07
MW7S	338.13	338.91	0.78	8.72	3.05	Clayey Silt Silt & Clay	9.30E-09	9.90E-09
MW7D	338.12	338.91	0.79	12.11	1.52	Silt & Clay Gravelly Silt & Clay	1.50E-08	1.10E-08
MW8	341.19	342.11	0.92	6.06	3.05	Waste/Silt		

Notes: 1. mASL denotes metres above sea level.
2. mBGS denotes metres below ground level.
3. Benchmark - The local datum used for surveying was related to geodetic elevations presented on Ontario Base Mapping using a factor of +294.155.
4. The elevations were surveyed on July 16, 2008 by others.
5. When the Site was finally graded, the risers and well casing at MW1S, MW1D, MW2, MW3, MW4 and MW8 had to be raised. These wells were resurveyed in November 2009 by others.
6. MW1D was damaged in early 2012. The top riser at MW1D was repaired in August 2012, at which time the stick-up was raised from 0.78 m to 0.97 m. The raised stick-up was used to estimate the current measuring point elevation.
7. Hydraulic conductivity testing was completed by RWDI and included in the table.
8. Blank denotes data not available.

TABLE 3

SUMMARY OF GROUNDWATER COMPLIANCE FOR THE SHALLOW FLOW SYSTEM

Fullarton Landfill

Road 145, Municipality of West Perth

Parameter	*Background Quality (Cb)*	*ODWS (Cr)*	*X*	*Guideline B-7 Criteria (Cm)*	*Background Well*		*Property Boundary Wells*			*Additional Well*
					MW5S	*MW6S*	*MW2*	*MW3*	*MW7S*	*MW1S*
					May-25	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*
General Chemistry										
Total Hardness (as CaCO3)	342	100	0.5	342	374	312	*354*	*486*	*429*	405
Total Dissolved Solids	424	500	0.5	462	535	634	*553*	*599*	*619*	646
Alkalinity, Total (as CaCO3)	281	500	0.5	390	311	365	**7820**	**610**	266	1920
Chloride	16	250	0.5	133	7.85	16.6	9.19	17.2	**134**	32.1
Fluoride	0.58	1.5	0.25	0.81	0.825	0.641	0.262	0.38	0.74	0.230
(Nitrate + Nitrite) as N	2.09	10	0.25	4.07	16.60	3.89	0.0340	1.30	0.0340	<0.0224
Nitrate-N	2.09	10	0.25	4.07	16.60	3.89	0.034	1.30	0.034	<0.020
Nitrite-N	0.022	1.0	0.25	0.266	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulphate	62	500	0.5	281	60.3	51.6	35.1	64.2	20.9	23.1
Dissolved Organic Carbon	1.6	5.0	0.5	3.3	0.88	0.83	2.53	1.63	0.80	2.64
Aluminum	0.0094	0.10	0.5	0.0547	0.0723	0.0116	0.001	**0.0742**	<0.0010	0.0475
Arsenic	0.0009	0.01	0.25	0.0032	0.00045	0.00053	0.0022	0.00057	**0.00477**	0.00099
Barium	0.068	1.0	0.25	0.301	0.0857	0.0789	0.0918	0.106	0.121	0.0903
Boron	0.028	5.0	0.25	1.27	0.060	0.022	0.12	0.204	0.034	0.441
Cadmium	0.00009	0.005	0.25	0.00131	<0.0000050	<0.0000050	0.0000075	<0.0000050	<0.0000050	<0.0000050
Chromium	0.00098	0.05	0.25	0.01323	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	0.00087	1.0	0.5	0.50043	0.00035	0.00077	0.00043	0.00076	<0.00020	0.00033
Iron	0.0169	0.30	0.5	0.158	0.076	0.020	<0.010	0.076	<0.010	0.155
Lead	0.00028	0.01	0.25	0.00271	0.000081	<0.000050	<0.000050	0.000095	<0.000050	0.000058
Manganese	0.0034	0.05	0.5	0.027	0.00765	0.00088	*0.0422*	0.00566	0.00155	0.201
Selenium	0.0009	0.05	0.25	0.0132	0.000738	0.000258	0.00105	0.00147	0.000052	0.000067
Sodium	17.8	200	0.5	108.9	37.4	16.4	12.9	30.0	21.5	24.9
Zinc	0.0029	5.0	0.5	2.50	<0.0010	0.0017	<0.0010	0.0018	<0.0010	<0.0010

Notes:
1. Background quality is based on the geometric mean of the historical results for monitoring wells MW5S ad MW6S.
2. Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).
3. Guideline B-7 Criteria (Cm) = Cb + X(Cr-Cb).
4. Cm = Maximum concentration of a contaminant that may exist beyond the property boundary.
5. Cb = Concentration (geometric mean of historical results) for a given parameter at the background well.
6. Cr = Maximum allowable concentration of a parameter in groundwater (based on the ODWS criteria).
7. X = Reduction constanct associated with assessing whether a parameter of concern is health related (0.25) or non-health related (0.5), based on the ODWS criteria.
8. If Background Quality < Detection Limit (DL), half the DL value is used in the Guideline B-7 calculation.
9. Groundwater compliance is assessed based on the analytical results for the Property Boundary Wells; results for the Additional Wells are provided for reference.
10. Underline denotes where Cb is > ODWS criteria, Cb = Cm.
11. Bold and shaded denotes concentration at a Property Boundary Well exceeds Guideline B-7 Criteria.
12. *Italics* denotes that the Guideline B-7 exceedance does not constitute a trigger concentration exceedance. As detailed in the ECP for the Site, the following exception in the: i) shallow monitorings wells: manganese, DOC, TDS, fluoride and hardness; and ii) deep monitoring wells: manganese, DOC, TDS, fluoride, hardness and iron, do not represent trigger concentration exceedances due to the elevated concentrations of these parameters in the background groundwater at the Site.
13.. Dash (-) denotes data not available.
14.. Unless otherwise stated, all units are reported in mg/L.

TABLE 4

SUMMARY OF GROUNDWATER COMPLIANCE FOR THE DEEP FLOW SYSTEM

Fullarton Landfill

Road 145, Municipality of West Perth

Parameter	*Background Quality (Cb)*	*ODWS (Cr)*	*X*	*Guideline B-7 Criteria (Cm)*	*Background Wells*		*Property Boundary Well*	*Additional Well*
					MW5D	*MW6D*	*MW7D*	*MW1D*
					May-25	*May-25*	*May-25*	*May-25*
General Chemistry								
Total Hardness (as CaCO3)	200	100	0.5	200	188	186	*319*	801
Total Dissolved Solids	252	500	0.5	376	271	275	*444*	1400
Alkalinity, Total (as CaCO3)	219	500	0.5	359	266	223	280	794
Chloride	4.50	250	0.5	127	2.00	6.18	19.4	452
Fluoride	1.12	1.5	0.25	1.21	1.27	1.36	*1.34*	0.812
(Nitrate + Nitrite) as N	0.11	10	0.25	2.58	0.0850	0.0840	0.342	<0.112
Nitrate-N	0.10	10	0.25	2.58	0.085	0.084	0.342	<0.100
Nitrite-N	0.028	1.0	0.25	0.27	<0.010	<0.010	<0.010	<0.050
Sulphate	12	500	0.5	256	6.94	9.66	64.3	21.6
Dissolved Organic Carbon	1.5	5.0	0.5	3.2	0.92	1.08	1.47	6.97
Aluminum	0.0099	0.1	0.5	0.055	0.0023	0.0018	**0.741**	0.0061
Arsenic	0.0067	0.01	0.25	0.007	0.00282	0.0138	0.00113	0.00672
Barium	0.043	1.0	0.25	0.282	0.063	0.0387	0.0671	0.325
Boron	0.072	5.0	0.25	1.30	0.103	0.074	0.127	0.148
Cadmium	0.00009	0.005	0.25	0.00131	0.0000132	<0.0000050	0.0000269	<0.0000050
Chromium	0.0132	0.05	0.25	0.013	<0.00050	<0.00050	0.00168	<0.00050
Copper	0.00106	1.0	0.5	0.50	0.00195	0.00040	0.00201	0.00084
Iron	0.0292	0.30	0.5	0.1646	0.014	<0.010	*0.956*	0.032
Lead	0.00029	0.01	0.25	0.0027	0.000085	<0.000050	0.000800	0.000054
Manganese	0.0004	0.05	0.5	0.025	0.0187	0.00588	*0.0670*	0.0282
Selenium	0.0004	0.05	0.25	0.0128	<0.000050	<0.000050	0.000278	0.000131
Sodium	22.1	200	0.5	111.1	21.5	21.1	60.1	63.7
Zinc	0.0034	5.0	0.5	2.50	0.0040	<0.0010	0.0047	0.0036

Notes: 1. Background quality is based on the geometric mean of the historical results for monitoring wells MW5D and MW6D.

2. Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, as revised June 2006 (ODWS).

3. Guideline B-7 Criteria (Cm) = Cb + X(Cr-Cb).

4. Cm = Maximum concentration of a contaminant that may exist beyond the property boundary.

5. Cb = Concentration (geometric mean of historical results) for a given parameter at the background well.

6. Cr = Maximum allowable concentration of a parameter in groundwater (based on the ODWS criteria).

7. X = Reduction constanct associated with assessing whether a parameter of concern is health related (0.25) or non-health related (0.5), based on the ODWS criteria.

8. If Background Quality < Detection Limit (DL), half the DL value is used in the Guideline B-7 calculation.

9. Groundwater compliance is assessed based on the analytical results for the Property Boundary Wells.

10. Underline denotes where Cb is > ODWS criteria, Cb = Cm.

11. Bold and shaded denotes concentration at a Property Boundary Well exceeds Guideline B-7 Criteria.

12. *Italics* denotes that the Guideline B-7 exceedance does not constitute a trigger concentration exceedance. As detailed in the ECP for the Site, the following exception in the: i) shallow monitoring wells: manganese, DOC, TDS, fluoride and hardness; and ii) deep monitoring wells: manganese, DOC, TDS, fluoride, hardness and iron, do not represent trigger concentration exceedances due to the elevated concentrations of these parameters in the background groundwater at the Site.

13. Dash (-) denotes data not available.

14. Unless otherwise stated, all units are reported in mg/L.

TABLE 5
FIELD DATA SUMMARY
Fullarton Landfill
Road 145, Municipality of West Perth

Monitoring Location	*Gas Measurement*	*Water Measurements*			*Analytical Chemistry*		*Monitoring Well Condition*	*Comments*
	CH_4 (%)	*pH*	*Conductivity (µS/cm)*	*Temperature (°C)*	*General Chemistry*	*VOCs*		
MW1S	3.50	6.71	871	11.7	Yes	Yes	No deficiencies noted.	None
MW1D	1.50	6.87	1920	12.5	Yes	Yes	No deficiencies noted.	None
MW2	4.50	7.00	801	11.8	Yes	Yes	No deficiencies noted.	None
MW3	1.50	6.97	918	10.2	Yes	Yes	No deficiencies noted.	None
MW4	0.00	7.02	1205	11.4	Yes	Yes	No deficiencies noted.	None
MW5S	0.00	7.13	836	11.0	Yes	Yes	No deficiencies noted.	None
MW5D	0.00	7.66	434	12.6	Yes	Yes	No deficiencies noted.	Duplicate: DUP-01
MW6S	0.00	7.33	699	10.9	Yes	Yes	No deficiencies noted.	None
MW6D	0.00	7.53	476	12.7	Yes	Yes	No deficiencies noted.	None
MW7S	0.00	7.22	923	11.0	Yes	Yes	No deficiencies noted.	Duplicate: DUP-02
MW7D	0.00	7.40	676	13.3	Yes	Yes	No deficiencies noted.	None
MW8	3.50	6.89	3714	11.1	Yes	Yes	No deficiencies noted.	None

Notes: 1. CH_4 denotes methane gas.
2. Methane gas reading are expressed as percent volume in air.
3. pH denotes pH units.
4. µS/cm denotes microsiemens per centimetre.
5. VOCs denotes volatile organic compounds.
6. NTU denotes nephelometric turbidity units.

TABLE 6
SITE FEATURE GPS COORDINATES
Fullarton Landfill
Road 145, Municipality of West Perth

Site Feature Name	*UTM Coordinates*	
	Easting	Northing
Front Gate	486228	4801010
MW1S	486213	4800991
MW1D	486216	4800991
MW2	486210	4800901
MW3	486258	4800807
MW4	486236	4800843
MW5S	486170	4800895
MW5D	486171	4800895
MW6S	486280	4800907
MW6D	486280	4800908
MW7S	486196	4801023
MW7D	486197	4801023
MW8	486226	4800941

Notes: 1. Coordinates are referenced to NAD83.

2. All the site features are in Zone 17.

3. The font gate was tied to GPS coordinates using Ontario Base Mapping (OBM).

4. OBM mapping has a relative accuracy of +/- 5m.

5. The features at the Site were surveyed relative to each other (submetre accuracy).

6. The private well locations are based on MECP water well records and the accuracy of the coordinates vary from well to well depending on how the GPS coordinate was established

FIGURES

LEGEND

APPROXIMATE SITE BOUNDARY

TRIBUTARY TO THE UPPER THAMES RIVER

NOTES:

1. AIR PHOTO FROM GOOGLE EARTH 2019

PINCHIN

CLIENT NAME:
THE CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
FULLARTON LANDFILL

FIGURE NAME
SITE LOCATION MAP

SCALE	PROJECT NO.
1:9000	333568.002
DATE	FIGURE NO.
OCT. 2025	1

LEGEND

- ROAD 145 RIGHT-OF-WAY AND CAZ AREA
- APPROXIMATE SITE BOUNDARY
- SW1 HISTORICAL SURFACE WATER SAMPLE LOCATION
- MW1S MONITORING WELL LOCATION AND DESIGNATION

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 FULLARTON LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2019

PINCHIN

CLIENT NAME:
THE CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
FULLARTON LANDFILL

FIGURE NAME
SITE PLAN

SCALE	PROJECT NO.
1:1700	333568.002
DATE	FIGURE NO.
OCT. 2025	2

LEGEND

- ROAD 145 RIGHT-OF-WAY AND CAZ AREA
- APPROXIMATE SITE BOUNDARY
- SW1 — HISTORICAL SURFACE WATER SAMPLE LOCATION
- MW1S — MONITORING WELL LOCATION AND DESIGNATION
- [309.93] — GROUNDWATER ELEVATION (MASL)
- 310 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW
- MASL — METERS ABOVE SEA LEVEL

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 FULLARTON LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2019

PINCHIN

CLIENT NAME:
THE CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
FULLARTON LANDFILL

FIGURE NAME
SHALLOW GROUNDWATER CONTOURS (MAY 06, 2025)

SCALE	PROJECT NO.
1:1700	333568.002
DATE	FIGURE NO.
OCT. 2025	3

LEGEND

- ROAD 145 RIGHT-OF-WAY AND CAZ AREA
- APPROXIMATE SITE BOUNDARY
- SW1 — HISTORICAL SURFACE WATER SAMPLE LOCATION
- MW1S — MONITORING WELL LOCATION AND DESIGNATION
- [309.93] — GROUNDWATER ELEVATION (MASL)
- 310 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW
- MASL METERS ABOVE SEA LEVEL

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 FULLARTON LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2019

PINCHIN

CLIENT NAME:
THE CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
FULLARTON LANDFILL

FIGURE NAME
DEEP GROUNDWATER CONTOURS (MAY 6, 2025)

SCALE	PROJECT NO.
1:1700	230451.002
DATE	FIGURE NO.
OCT. 2025	4

APPENDIX A

Appendix A-1

Ministry of the Environment
Ontario

Provisional Certificate No. A 151201

PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE

Under The Environmental Protection Act, 1971 and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Township of Fullarton
R.R. #1
Fullarton, Ontario
N0K 1H0

for the use and operation of a 0.78 hectare landfilling site

all in accordance with the following plans and specifications:

Located: N.E. part of Lot 21, Concession XVIII
Township of Fullarton
County of Perth, and more particularly described in Schedule "A"

which includes the use of the site only for the disposal of the following categories of waste (NOTE: Use of the site for additional categories of wastes requires a new application and amendments to the Provisional Certificate of Approval) 100% Domestic waste.

and subject to the following conditions:

1. No operation shall be carried out at the site after sixty days from this condition becoming enforceable unless this Certificate including the reasons for this condition has been registered by the applicant as an instrument in the appropriate Land Registry Office against title to the site and a duplicate registered copy thereof has been returned by the applicant to the Director.

THIS IS A TRUE COPY OF THE ORIGINAL CERTIFICATE MAILED
SEP 26 1980
ON .....
WM
(Signed)

Dated this 23rd day of September, 1980.

Director, Section 39,
The Environmental Protection Act, 1971

MOE 1408 (10/79)

ONTARIO

Department of Energy and Resources Management
Waste Management Branch

APPLICATION FOR A CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

TO: THE DEPARTMENT OF ENERGY AND RESOURCES MANAGEMENT
880 Bay Street,
Toronto, Ontario

To be submitted through Regional Waste Management Engineer

(1) Under the Waste Management Act, 1970 and the regulations, this application is made by Township of Fullarton — *Owner of Facility*
R R No 3 Mitchell — *Address*

(2) for the Renewal / Issue of a Certificate of Approval for a ..... Site — *Delete item inapplicable* — *Type of Disposal*

(3) located Pt Lot 21 Con 13 Township of Fullarton — *Full particulars of Location*

(4) A Certificate / Provisional Certificate of Approval No. ..... for this site was issued N/A 19..... — *Delete item inapplicable*

(5) No change in use, operation, or ownership of the site has occurred since the date of the original application.

Dated this ..... day of N/A 19.....

Signature of Applicant

(6) The following changes in use, operation or ownership (have occurred since the date of the original application) (are proposed) — *Delete item inapplicable*

/ — *If necessary, provide additional details on separate sheets and attach to application.*

Continued on Attached Sheets ☐

(7) The site will be operated in accordance with The Waste Management Act, 1970 and the regulations by Township of Fullarton — *Name of Operator*
R.R. No 3 Mitchell Ont. — *Address*

The required supporting information to the application is appended hereto.

(8) Notice of this application has been published in the .....
.....on..... .....and
.....19..... and a copy of the notice is attached.

(9) A certificate that the site does not contravene any of the by-laws of the municipality is attached. — *To be completed if applicant is other than a municipality*

See notes on sections 1 to 9 on back of last copy (pink) which is to be retained by Applicant.

Dated this 16th day of February 19 71

Fred Ratz Clerk Treas
Signature of Applicant

No Carbon Paper Required

SUPPORTING INFORMATION TO AN APPLICATION FOR APPROVAL OF A LANDFILL DISPOSAL SITE

1. Wastes to be Disposed of Comprise

Domestic	.....%
Commercial	.....%
Industrial Waste	.....%
Hauled Liquid Industrial Waste	.....%
Agricultural Waste	.....%
Hazardous Waste	.....%
Hauled Sewage	.....%
*Other	.....%
	100%

*Describe General Garbage, Tree or wood Cuttings not allowed

Total..... Tons/Day

Population Served 1500

2. Origin and Composition of Principal Components of Waste (other than domestic and commercial)

3. Distance to Nearest Watercourse 1200 Ft.
Distance to Source of Potable Water 1200 Ft.
Distance to Dwelling 2000 Ft.
Distance to Public Road 1000 Ft.
Distance to Cemetery 3 mile Ft.

Total Area of Site 1 Acres
Anticipated Life 20 Years

General Description of Site
Pt. Lot 21 Con. 18
Township of Fullarton

4. Maximum Depth of Excavation
Below Surface .....Ft.
Maximum Height of Fill
Above Surface .....Ft.
Type(s) of Material Encountered From Surface
.....
.....Ft.
.....
.....Ft.
.....
.....Ft.
Depth of Watertable Below Surface.....Ft.
on ..... (Date).

5. Proposed Future Land Use

6. Operating Equipment
Delivered by Contractor or Individual
Every Saturday Months of April, May
Hours of Operation October, November
2nd & 4th Saturdays, June to Sept. inclusive
8:30 A.M. to 5:00 P.M.

7. The Following Documents are Attached
by K.A. Childs, P.Eng.,
1. Report - Aug. 7, 1969
2. Topographic Map.

Prepared by

DATED 16th February 1971

SIGNED Fred Hall Clarkson

FOR DEPARTMENTAL USE

8. Authorities Consulted:

Health Unit	☒ Objection	☒ No Objection
O.W.R.C.	☐ Objection	☐ No Objection
A.M.B.	☐ Objection	☐ No Objection
Municipality	☐ Objection	☐ No Objection
Conservation Authority	☐ Objection	☐ No Objection

Other.....

Inspection Record Forms Attached

Regional Engineer's Report Attached ☒

RECOMMENDATION
6 month Provisional.
Site o.k. Operation to be upgraded

DATED April 28th, 1971

SIGNED [signature]

ONTARIO

Department of Energy and Resources Management

PROVISIONAL CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

Certificate No. 151201

Under **The Waste Management Act, 1970** and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to

Township of Fullarton

R R #3

Mitchell Ontario

for the landfill Site

located Part Lot 21, Conc. 18, Township of Fullarton

subject to the following conditions

That within 3 (three) months of the date of issuance of this Certificate the Owner submit a detailed proposal to the Waste Management Regional Engineer indicating a schedule of site improvements and changes in operating procedures to be implemented commensurate with the requirements of the Waste Management Act and Regulation 375/70.

This Provisional Certificate expires on the 15th day of December 19 71.

Dated this 29th day of June 19 71.

ONTARIO

Department of Energy and Resources Management

PROVISIONAL CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

Certificate No. 151201

Under **The Waste Management Act, 1970** and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to

Township of Fullarton,
R.R. #3,
Mitchell,
Ontario

for the Landfill Site

located Part of Lot 21, Concession 18,
Township of Fullarton

subject to the following conditions

This Provisional Certificate expires on the 15th day of August
19 72

Dated this 27th day of January 19 72

J. K. Fleming

Ontario

Ministry of the Environment

PROVISIONAL CERTIFICATE OF APPROVAL FOR A WASTE DISPOSAL SITE

Provisional Certificate No. 151201

Under **The Environmental Protection Act, 1971** and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to

Township of Fullarton,

R. R. #3, Mitchell, Ontario

for the Landfill Site

located Part of Lot 21, Concession 18,

Township of Fullarton

subject to the following conditions

This Provisional Certificate expires on the 31st day of October, 19 73

Dated this 31st day of March, 19 73

Director, Waste Management Branch

Ontario

Ministry of the Environment — Waste Management Branch

Provisional Certificate No. 151201

PROVISIONAL CERTIFICATE OF APPROVAL
FOR A
WASTE DISPOSAL SITE

Under The Environmental Protection Act, 1971 and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Township of Fullarton,
R.R. #3, Mitchell, Ontario

for the Landfill Site.

located Part of Lot 21, Concession 18,
Township of Fullarton

subject to the following conditions:

This Provisional Certificate expires on the 31st day of October, 1974

Dated this 20th day of December, 1973

DIRECTOR, WASTE MANAGEMENT BRANCH

Ontario
Ministry of the Environment

Provisional Certificate No.
A 151201

PROVISIONAL CERTIFICATE OF APPROVAL
FOR A
WASTE DISPOSAL SITE

Under The Environmental Protection Act, 1971 and the regulations and subject to the limitations thereof, this Provisional Certificate of Approval is issued to:

Township of Fullarton,
R. R. #1,
Fullarton, Ontario.

for the landfilling Site
located Lot 21, Concession 18,
Township of Fullarton,
County of Perth.

subject to the following conditions:

This Provisional Certificate expires on the 31st day of October, 19 76

Dated this 24th day of November, 19 75.

DIRECTOR, SECTION 3 (a) E.P.A.

201

APPENDIX A-2

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A151201
Notice No. 1
Issue Date: September 18, 2008

The Corporation of the Municipality of West Perth
169 St. David St P.O. Box 609
Mitchell, Ontario
N0K 1N0

Site Location: Fullarton Landfill
Lot Part 21, Concession 18, (Geographic Township of Fullarton)
Municipality of West Perth, County of Perth

You are hereby notified that I have amended Provisional Certificate of Approval No. A151201 issued on July 8, 1980 for the use and operation of a 0.81 hectare waste disposal site having a maximum capacity of 46,697 cubic meters, being known as the Fullarton Landfill Site , as follows:

The following definitions are hereby added to the Certificate:

I. Definitions

a) "CAZ" means the contaminant attenuation zone;

c) "Certificate" means this Provisional Certificate of Approval including all Notices of Amendment;

d) "Director" means Director, Section 39, Environmental Protection act, R.S.0. 1990, C.E-19 as amended;

e) "District Manager" means the District Manager in the London District Office, Southwestern Region, Ontario Ministry of the Environment;

f) "EPA" means the Environmental Protection Act, R.S.O. 1990, C.E-19 as amended;

g) "FBAL" means Fill Beyond Approved Limits;

h) "Ministry" means the Ontario Ministry of the Environment;

i) "Ontario Regulation 101/94" means Ontario Regulation 101/94 – Recycling and Composting of Municipal Waste, as made under the EPA;

j) "Owner" means the Corporation of the Municipality of West Perth;

k) "OWRA" mean the Ontario Water Resource Act, R.S.O 1990, Chapter O.40, as amended;

l) "Reasonable Use Guideline" means the Ministry Guideline B-7 entitled "Incorporation of the Reasonable Use Concept into MOE Groundwater Management Activities, dated April 1994, as amended

m) "Regulation 347" means Ontario Regulation 347 R.R.O. 1990, as amended; and

n.) "Site" means the Fullarton Landfill Site.

2.0 General

2.1. Except as otherwise provided by these conditions, the *Site* shall be designed, developed, used, maintained and operated, and all facilities, equipment and fixtures shall be built and installed, in accordance with the Conditions in the *Certificate* and the documentation, and plans and specifications listed in Schedule "A".

2.2. The requirements specified in this Provisional Certificate of Approval are the requirements under the **Environmental Protection Act**, R.S.O. 1990. The issuance of this Provisional Certificate of Approval in no way abrogates the *Owner* 's legal obligations to take all reasonable steps to avoid violating other applicable provisions of this legislation and other legislation and regulations.

2.3. The requirements of this Provisional Certificate of Approval are severable. If any requirement of this Provisional Certificate of Approval, or the application of any requirement of this Provisional Certificate of Approval to any circumstance, is held invalid, the application of such requirement to other circumstances and the remainder of this Provisional Certificate of Approval shall not be affected in any way.

2.4. The *Owner* shall ensure compliance with all the terms and conditions of this Provisional Certificate of Approval. Any non-compliance constitutes a violation of the **Environmental Protection Act**, R.S.O. 1990 and is grounds for enforcement.

2.5. (a) The *Owner* shall, forthwith upon request of the *Director* , *District Manager* , or Provincial Officer (as defined in the Act), furnish any information requested by such persons with respect to compliance with this Provisional Certificate of Approval, including but not limited to, any records required to be kept under this Provisional Certificate of Approval; and

(b) In the event the Applicant provides the Ministry with information, records, documentation or notification in accordance with this Provisional Certificate of Approval (for the purposes of this

condition referred to as "Information"),

(i) the receipt of Information by the Ministry;
(ii) the acceptance by the Ministry of the Information's completeness or accuracy; or
(iii) the failure of the Ministry to prosecute the *Owner* , or to require the *Owner* to take any action, under this Provisional Certificate of Approval or any statute or regulation in relation to the Information;

shall not be construed as an approval, excuse or justification by the Ministry of any act or omission of the *Owner* relating to the Information, amounting to non-compliance with this Provisional Certificate of Approval or any statute or regulation.

2.6. The *Owner* shall allow Ministry personnel, or a Ministry authorized representative(s), upon presentation of credentials, to:

(a) carry out any and all inspections authorized by Section 156, 157 or 158 of the **Environmental Protection Act**, R.S.O. 1990, Section 15, 16 or 17 of the **Ontario Water Resources Act**, R.S.O. 1990, or Section 19 or 20 of the **Pesticides Act**, R.S.O. 1990, as amended from time to time, of any place to which this Provisional Certificate of Approval relates; and,

without restricting the generality of the foregoing, to:

(b) (i) enter upon the premises where the records required by the conditions of this Provisional Certificate of Approval are kept;
(ii) have access to and copy, at reasonable times, any records required by the conditions of this Provisional Certificate of Approval;
(iii) inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required by the conditions of this Provisional Certificate of Approval; and
(iv) sample and monitor at reasonable times for the purposes of assuring compliance with the conditions of this Provisional Certificate of Approval.

2.7. (a) Where there is a conflict between a provision of any document referred to in Schedule "A", and the conditions of this Provisional Certificate of Approval, the conditions in this Provisional Certificate of Approval shall take precedence; and

(b) Where there is a conflict between documents listed in Schedule "A", the document bearing the most recent date shall prevail.

2.8. The *Owner* shall ensure that all communications/correspondence made pursuant to this Provisional Certificate of Approval includes reference to the Provisional Certificate of Approval number.

2.9. The *Owner* shall notify the *Director* in writing of any of the following changes within thirty (30) days of

the change occurring:

a) change of *Owner* or operator of the *Site* or both;
b) change of address of current owner or provide address of the new *Owner* ;
c) change of partners where the *Owner* or operator is or at any time becomes a partnership, and a copy of the most recent declaration filed under the **Business Names Act**, 1991 shall be included in the notification to the *Director* ;
d) any change of name of the corporation where the *Owner* or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (form 1 or 2 of O. Reg. 182, Chapter C-39, R.R.O. 1990 as amended from time to time), filed under the **Corporations Information Act** shall be included in the notification to the *Director* ; and
e) change in directors or officers of the corporation where the *Owner* or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" as referred to in 2.9(d).

2.10. In the event of any change in ownership of the *Site* , the *Owner* shall notify, in writing, the succeeding owner of the existence of this Provisional Certificate of Approval, and a copy of such notice shall be forwarded to the *Director* .

2.11. Any information relating to this Provisional Certificate of Approval and contained in Ministry files may be made available to the public in accordance with the provisions of the **Freedom of Information and Protection of Privacy Act**, R.S.O. 1990, C. F-31.

3.0. Site Operations

3.1 The Site is no longer permitted to accept waste for disposal, unless the *Owner* receives approval from the *Director* via an amendment to the *Certificate* .

3.2. The site shall have a maximum theoretical volume capacity of **46,697 cubic meters**.

3.3. (1) By no later than **November 14, 2008**, the *Owner* shall submit to the *District Manager* , a report that identifies areas around the perimeter of the landfill that require fencing to effectively limit unauthorized persons access to the landfill and identifies the type of fencing proposed

(2) The *Owner* shall within **one-hundred and twenty (120) days** of being notified in writing by the *District Manager* that the proposed locations for fencing and type of fencing identified in the report required under Condition No. 3.3(1) is acceptable shall install perimeter fencing and post "No Trespassing" signs at 30 metre intervals in the proposed locations.

3.4. The *Owner* shall ensure that the entrance gate is locked and secured during non-operational hours.

3.5. Intermediate Cover shall be placed in areas where landfilling has been temporarily discontinued for six (6) months or more. A minimum thickness of 300 mm of soil cover or an approved thickness of alternative cover material shall be placed.

3.6. Vermin and vectors shall be adequately controlled at the Site by the *Owner* . In the event that the vermin and the vector population should increase and become a hazard, a licenced exterminator shall be engaged by the *Owner* at the necessary frequency to bring the problem under control.

3.7. (i) The *Owner* shall on a monthly basis conduct and document visual inspections of the landfill site for leachate outbreaks.

(ii) Within one (1) week of a leachate outbreak being identified during the weekly inspections identified in Condition No. 3.7 (i), the *Owner* shall notify the District Office in writing of the occurrence and actions to be taken.

3.8. Burning of waste at the *Site* is not permitted

4.0. Spills

4.1. All spills and upsets shall be immediately reported to the Ministry's Spills Action Centre (SAC) and shall be recorded in a log as to the nature of the spill or upset, and the action taken for clean-up, correction and prevention of future occurrences.

5.0. Record Keeping

5.1. The *Owner* shall establish and maintain a written record of all complaints received about the site and any environmental emergency situations that occur at the *Site* . This record shall be in the form of a log or a dedicated electronic file and it shall include, as a minimum, the following information:

a) Date and time of occurrence
b) type of the environmental emergency situation and the resulting environmental impact;
c) name, address and telephone number of the complainant;
d) actions taken to address the impact;
e) actions taken to prevent the re-occurrence of a similar emergency situation in the future; and
f) method of reporting the incident to the MOE District Office

5.2. The *Owner* shall establish and maintain a written record of the *Site* inspections. This record shall be in the form of a log or a dedicated electronic file and it shall include, as a minimum, the following information:

a) date and time of inspection;

b) name, title and signature of trained personnel conducting the inspection; and
c) a listing of all equipment, fencing, signs, etc. inspected and any deficiencies observed; and
d) recommendations for remedial action and the completion date of such action.

5.3. The *Owner* shall retain at the Municipal Office for a minimum of two (2) years from the date of their creation, or longer if requested in writing by the *District Manager* , all records and information relating to or resulting from the activities approved under this Certificate, and shall make all records and information available at all times for inspection by a Provincial Officer.

6.0. Environmental Monitoring Plan

6.1. (1) By no later than **November 14, 2008**, the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager* , a groundwater and surface water monitoring program for the site. When developing the environmental monitoring plan, the *Owner* shall consult with the *District Office* to discuss the location of the various monitoring stations. The plan shall include but not be limited to the following:

i. a drawing showing the proposed sampling locations;
ii. parameters that shall be analyzed;
iii. the sampling frequency;
iv. the groundwater measurement, flow measurement and sampling protocols;

(2) Once the Monitoring Plan required in Condition No. 6.1 is approved, the *Owner* can make changes to the monitoring program in accordance with the recommendations of the annual report provided that the *District Manager* agrees, in writing, to such changes to the program.

7.0. Waste Volume Determination

7.1. (i) By no later than **November 14, 2008**, the *Owner* shall complete a survey or retain a land surveyor to survey the contours of the landfill site for the purposes of determining the volume of material (waste, daily cover, etc) landfilled at the *Site* .

(ii) The *Owner* , in conjunction with the Annual Report required under Condition No. (8.1), shall submit to the *District Manager* , with copies to the *Director* , a brief report that summarizes the survey. The information in the report shall include but not be limited to the following:

i. whom performed the survey (ie. Municipality or the name of the survey company);
ii. a drawing(s) showing the existing contours and the base contours of the landfill;
iii. the calculated volume of waste at the *Site* ; and

iv. a description of how the calculated volume was derived.

8.0. Annual Reporting

8.1. By no later than **November 14, 2008**, and by November 14th of every year thereafter, the *Owner* shall submit, to the *District Manager* , an annual *Site* , ground and surface water monitoring report prepared by a Professional Engineer or Professional Geoscientest. The report shall contain, but is not limited to, the following information:

a) a discussion and/or illustration on any changes that may have occurred in the current reporting period with regards to the landfill's hydrogeologic setting, potentially sensitive groundwater and/or surface water features or changes to the landfill. If no changes occur, then author shall reference appropriate Section(s) in previous reports to direct the reviewer to the existing information.

b) Sampling protocols, and a description of any problems encountered during the sampling events which may have impacted the reliability of analytical results;

c) The data shall be interpreted by the author(s) and presented in a manner that is acceptable to the Director. All analytical results for all parameters shall be presented in tabular form. All analytical results for the critical contaminants must be compared to the trigger levels in accordance with the environmental contingency plan;

d) The report shall identify the "Reasonable Use Criteria" (Guideline B-7) of the ground water at the site. The report should also identify expected and worst-case impacts;

e) The report should include a comparison of the results of surface water sampling to the PWQOs or Interim PWQOs described in Water Management, MOEE, July 1994, as amended from time to time;

f.) A discussion on the contaminant attenuation zone and buffer zone requirements;

h.) QA/QC protocol must be described; and

i.) The report shall have the conclusions and recommendations of the author(s), especially as they concern future sampling parameters, frequency and protocol.

9.0. Closure Plan

9.1. By no later than **November 14, 2008**, the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager* , a detailed site closure plan pertaining to the termination of landfilling operations at this *Site* , post-closure inspection, maintenance and monitoring, and end use, based on the Landfill Closure Section of the Design and Operations Report. The plan shall include the following:

a. a plan showing the *Site* appearance after closure;

b. a description of the proposed end use of the *Site* ;

c. a descriptions of the procedures for closure of the *Site,* including:

i. advance notification of the public of the landfill closure;

ii. posting of a sign at the Site entrance indicating the landfill is

closed and identifying any alternative waste disposal arrangements;

iii. completion, inspection and maintenance of the final cover and landscaping;

iv. site security;

v. removal of unnecessary landfill-related structures, buildings and facilities;

vi. final construction of any control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas; and

vii. a schedule indicating the time-period for implementing sub-conditions i) to vi) above.

d. descriptions of the procedures for post-closure care of the Site, including:

i. operation, inspection and maintenance of the control, treatment, disposal and monitoring facilities for leachate, groundwater, surface water and landfill gas;

ii. record keeping and reporting; and

iii. complaint contact and response procedures;

e. an assessment of the adequacy of and need to implement the contingency plans for leachate and methane gas; and

f. an updated estimate of the contaminating life span of the *Site* , based on the results of the monitoring programs to date.

9.2. The *Site* shall be closed in accordance with the closure plan as approved by the *Director*.

Schedule "A"

1. Letter report dated September 10, 2007 addressed to Mr. Bob Slivar, Ministry of the Environment from Mr. Lyle Parsons, R.J. Burnside and Associates. The letter report was entitled "Municipality of West Perth - Capacity Assessment of the Municipality's Landfill Sites".

2. Letter dated March 14, 2008 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Lyle Parsons, RJ Burnside and Associates providing a legal description plan (Plan 44R-4577).

3. Letter dated March 14, 2008 addressed to Mr. Dale Gable, Ministry of the Environment from Mr. Lyle Parsons, RJ Burnside and Associates and provided additional information on the theoretical capacity calculation.

The reason(s) for this amendment to the Certificate of Approval is (are) as follows:

1. *The reason for Conditions (2.1), (2.2), (2.3), (2.4), (2.5), (2.6), (2.7), (2.8), (2.9), (2.10), and (2.11)) is to clarify the legal rights and responsibilities of the Owner.*

2. *The reason for Condition (3.1) is the Owner has informed the Ministry the Site will be closed and no longer will accept waste.*

3. *The reason for Condition (3.2) is to identify the maximum capacity of the Site.*

4. *The reason for Condition (3.3) is to ensure that areas where the public can access the site is fenced. This is to ensure that unauthorized access to the site does not occur.*

5. *The reasons for Condition (3.4), (3.6), (3.8) and (4.1) are to ensure the landfill is operated in accordance with Ministry standards, and to ensure the long-term protection of the health and safety of the public and the environment.*

6. *The reasons for Condition (3.7) are to ensure the Owner conducts and documents inspections for leachate seepages around the landfill and to notify the District Office of potential tasks to be taken to address the seepages. This is to ensure seepages are addressed around the Site in order to protect the long term health and safety of the public and the environment.*

7. *The reasons for Condition (5.1), (5.2) and (5.3) are to ensure monitoring and reporting are completed in accordance with Ministry standards, and to ensure the long-term health and safety protection of the public and the environment.*

8. *The reason for Condition (6.1) is to ensure the Owner has an established environmental monitoring plan for the Site for the long term health and safety of the public and the environment.*

9. *The reason for Condition (7.1) is to ensure the Owner completes a survey to determine the volume of waste at the Site and can accurately determine the remaining life expectancy.*

10. *The reasons for Condition (8.1) are to ensure the Owner submits an annual summary report to the Ministry so that the landfilling operation can be evaluated to ensure compliance with the Ministry's requirements on annual operations and monitoring. This is to ensure the long-term protection of the health and safety of the public and the environment.*

11. *The reason for Conditions (9.1) and (9.2) is to ensure the Owner has an established approved plan for the closure and post-closure maintenance of the landfill site. This is to ensure the long-term health and safety of the public and the environment.*

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A151201 dated July 8, 1980

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as

amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to eachportion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

DATED AT TORONTO this 18th day of September, 2008

THIS NOTICE WAS MAILED
ON Sept. 24, 2008
gc
(Signed)

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

DG/
c: District Manager, MOE London - District
Lyle Parsons, RJ Burnside and Associates ✓

APPENDIX A-3

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A151201
Notice No. 2
Issue Date: July 20, 2009

The Corporation of the Municipality of West Perth
169 St. David St P.O. Box 609
Mitchell, Ontario
N0K 1N0

Site Location: Fullarton Landfill
Lot Part 21, Concession 18, Fullarton Ward
West Perth Municipality, County of Perth

You are hereby notified that I have amended Provisional Certificate of Approval No. A151201 issued on July 8, 1980 for the use and operation of a 0.81 hectare waste disposal site, being known as teh Fullarton Landfill Site , as follows:

The following conditions are hereby added to the Certificate:

I. Environmental Monitoring Plan

6.2 By **April 30, 2010**, the *Owner* shall submit to the *District Manager* for acceptance, details of an updated trigger mechanisms plan and a contingency plan for surface water and groundwater quality monitoring.

6.3 In the event of a confirmed exceedance of a site-specific trigger level relating to groundwater or surface water impacts, the *Owner* shall immediately notify the *District Manager* , and an investigation into the cause and the need for implementation of remedial or contingency actions shall be carried out by the *Owner* in accordance with the approved trigger mechanisms and associated contingency plans.

6.4 If monitoring results, investigative activities and/or trigger mechanisms indicate the need to implement contingency measures, the *Owner* shall ensure that the following steps are taken:
a. The *Owner* shall notify the *District Manager* , in writing of the need to implement contingency measures, no later than 30 days after confirmation that remedial action or implementation of the contingency plan(s) is required;

b. Detailed plans, specifications and descriptions for the design, operation and maintenance of the contingency measures shall be prepared and submitted by the *Owner* to the *District Manager* for approval; and
c. The contingency measures shall be implemented by the *Owner* upon approval by the *District Manager*

II. Closure Plan

9.3 Approval is hereby granted for the closure plan of the Site in accordance with Items 4 and 5 in Schedule "A".

9.4 No later than fourteen (14) days prior to commencement of construction, the owner shall submit to the *District Manager* , a construction schedule for the landfill closure.

9.5 No later than ninety (90) days after completion of the construction for the closure of the landfill, the *Owner* shall submit to the *District Manager* a construction report detailing the work completed. This report shall include but not be limited to the following topics:

i) "as-built" drawing(s) for the closure;
ii) a description of the various construction stages;
iii) quality assurance/quality control plan for the construction; and
iv) any changes to the design of the site closure.

The following items are hereby added to Schedule "A"

4. Report entitled "Municipality of West Perth Fullarton Landfill Site Closure Plan" dated November 2008, prepared by R.J.Burnside & Associated Limited.

5. Letter dated February 19, 2009 addressed to Mr. Rick Li, Ministry of the Environment from Mr. Debanjan Mookerjea, R.J.Burnside & Associates Limited in response to the comments on the closure plan from the Ministry.

The reasons for this amendment to the Certificate of Approval are as follows:

1. The reasons for conditions 6.2 through 6.4 are to ensure that the Owner follows a plan with an organized set of procedures for identifying and responding to unexpected but possible problems at the Site.

2. The reasons for conditions 9.3 to 9.5 are to approve the closure plan of the Site.

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A151201 dated July 8, 1980

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection

Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the waste disposal site is located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 39, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted waste disposal site is approved under Section 39 of the Environmental Protection Act.

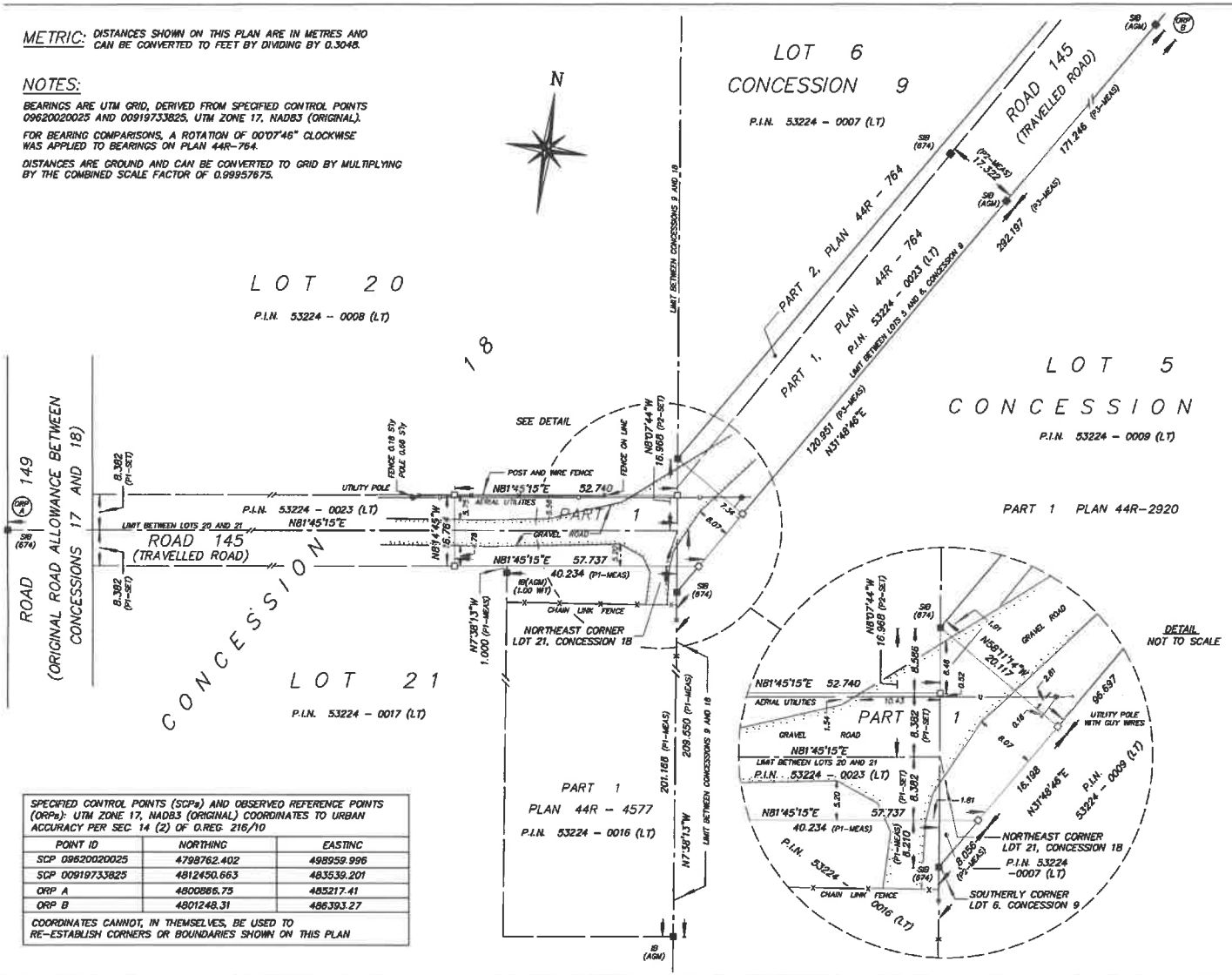
DATED AT TORONTO this 20th day of July, 2009

THIS CERTIFICATE WAS MAILED
ON July 21, 2009
D.R.
(Signed)

Tesfaye Gebrezghi, P.Eng.
Director
Section 39, *Environmental Protection Act*

RL/
c: District Manager, MOE London - District
Kent Hunter, P. Eng., R.J. Burnside & Associates Limited ✓

APPENDIX A-4



SPECIFIED CONTROL POINTS (SCPs) AND OBSERVED REFERENCE POINTS (ORPs): UTM ZONE 17, NAD83 (ORIGINAL) COORDINATES TO URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10		
POINT ID	NORTHING	EASTING
SCP 09620020025	4798762.402	498959.996
SCP 00919733825	4812450.663	483539.201
ORP A	4800866.75	485217.41
ORP B	4801248.31	486393.27
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE-ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN		

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT

DATE _____

TREVOR D.A. McNEIL, O.L.S.

PLAN 44R-

RECEIVED AND DEPOSITED

DATE _____

REPRESENTATIVE FOR LAND REGISTRAR FOR THE LAND TITLES DIVISION OF PERTH (No. 44)

PART SCHEDULE

PART	LOT	CONCESSION	P.I.N.	AREA (m²)
1	Pt. of 6	9	Pt. of 53224-0023(LT)	1110.3
	Pt. of 20 and 21	18		

PART 1 - COMPRISES PART OF P.I.N. 53224-0023 (LT)

PLAN OF SURVEY
OF PART OF
LOT 6
CONCESSION 9
AND PART OF
LOTS 20 and 21
CONCESSION 18
(GEOGRAPHIC TOWNSHIP OF FULLARTON)
NOW IN THE
MUNICIPALITY OF WEST PERTH
COUNTY OF PERTH

SCALE 1:750
0 3 6 9 12 15 30 45 METRES

MTE OLS LTD.
ONTARIO LAND SURVEYORS

LEGEND:

□	DENOTES PLANTED MONUMENT
■	DENOTES FOUND MONUMENT
SIB	DENOTES STANDARD IRON BAR
IB	DENOTES IRON BAR
WIT	DENOTES WITNESS
MEAS	DENOTES MEASURED
674	DENOTES F.J.S. PEARCE, O.L.S.
AGM	DENOTES ARCHIBALD, GRAY & McKAY, O.L.S.'s
P1	DENOTES PLAN 44R-4577
P2	DENOTES PLAN 44R-764
P3	DENOTES PLAN 44R-2920
—u—	DENOTES AERIAL UTILITY WIRES

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.
2) THE SURVEY WAS COMPLETED ON THE X

_____ _____ O.L.S.
DATE TREVOR D.A. McNEIL
ONTARIO LAND SURVEYOR

MTE | OLS Ltd.
ONTARIO LAND SURVEYORS
365 HOME STREET
STRATFORD, ONTARIO, N5A 2A5
TEL: (519) 271-7952 FAX: (519) 271-3545

Cad File: P:\P\36978\100\36978-100-R1.dwg	COGO: 36978plmground.csv
Drawn By: J. LEYSER	Checked By: T. McNEIL, O.L.S.
	File No. 36978-100-R1 (ML

APPENDIX B

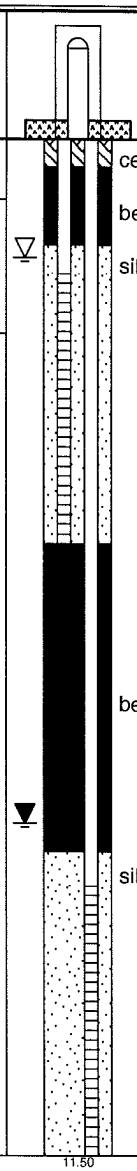
R.J. Burnside & Associates Limited
15 Townline, Orangeville, Ontario L9W 3R4
telephone (519) 941-5331 fax (519) 941-8120

LOG OF DRILLING OPERATIONS

MW1S&D

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.5**	Location: **3137 Road 145, West Perth**	Ground (m amsl): **45.03 (ALD)**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description (Surface Elevation (m): 45.03 (ALD))	Strat. Plot	Depth (m)	Num.	Type	Int.	N.Val.
		FILL: Silt, dark brown, trace sand, gravel, and organics, moist				SS		7
	1.0	SANDY SILT: Brown and grey, trace to some gravel, moist to wet		0.68		SS		22
5.0	2.0					SS		18
		SILT TILL: Brown, some sand and gravel, occasional cobble, moist		2.20		SS		35
10.0	3.0				@ 100 mm	SS		50
	4.0	-becoming grey at approximately 3.75 m in depth				SS		77
15.0	5.0					SS		78
20.0	6.0				@ 150 mm	SS		50
	7.0							
25.0	8.0				@ 100 mm	SS		50
30.0	9.0				@ 125 mm	SS		75
	10.0							
35.0	11.0	-occasional wet medium-grained sand seams from 10.6 to 11.5 m in depth			@ 50 mm	SS		50
		BOREHOLE TERMINATED		11.50				



Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **6/1/2006**

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LEGEND
▼ Water found @ time of drilling
▽ Static Water Level -

MONITORING WELL DATA
Pipe: **51 mm dia. PVC**
Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE AC Auger Cutting; CS Continuous; RC Rock Core; SS Split Spoon; AR Air Rotary; WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW2

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.5**	Location: **3137 Road 145, West Perth**	Ground (m amsl): **45.79 (ALD)**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description Surface Elevation (m): **45.79 (ALD)**	Strat. Plot	Depth (m)	Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		FILL: Silt, brown to grey, trace to some sand and gravel, trace organics and rootlets, moist				SS		16		
5.0	1.0					SS		16	5.0	1.0
	2.0	-becoming wet at approximately 2.2 m in depth				SS		5		2.0
10.0	3.0					SS		4	10.0	3.0
		SILT TILL: Greyish brown, trace sand and gravel, moist		3.50		SS		6		
	4.0	-becoming grey at approximately 3.8 m in depth				SS		60		4.0
15.0	5.0				@ 100 mm	SS		50	15.0	5.0
20.0	6.0				@ 250 mm	SS		92	20.0	6.0
		BOREHOLE TERMINATED		6.71						

cement
bentonite seal
silica sand pack
6.10

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **6/1/2006**

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LEGEND
Water found @ time of drilling
Static Water Level -

MONITORING WELL DATA
Pipe: **51 mm dia. PVC**
Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE AC Auger Cutting; CS Continuous; RC Rock Core; SS Split Spoon; AR Air Rotary; WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW3

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.5**	Location: **3137 Road 145, West Perth**	Ground (m amsl): **45.94 (ALD)**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description Surface Elevation (m): **45.94 (ALD)**	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		TOPSOIL: ~300 mm thick		0.30	cement		SS		11		
		SILT: Brown, some sand, very moist					SS		13		
5.0	1.0 / 2.0				bentonite seal		SS		11	5.0	1.0 / 2.0
		CLAYEY SILT: Brownish grey, very moist		2.20	silica sand pack		SS		12		
10.0	3.0						SS		8	10.0	3.0
	4.0	SILT TILL: Grey, some sand and gravel, moist		3.75			SS		27		4.0
15.0	5.0						SS		41	15.0	5.0
20.0	6.0	BOREHOLE TERMINATED		6.10	6.10					20.0	6.0

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **6/1/2006**

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LEGEND
- Water found @ time of drilling
- Static Water Level -

MONITORING WELL DATA
- Pipe: **51 mm dia. PVC**
- Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE
- AC Auger Cutting
- CS Continuous
- RC Rock Core
- SS Split Spoon
- AR Air Rotary
- WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW4

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.5**	Location: **3137 Road 145, West Perth**	Ground (m amsl): **47.77 (ALD)**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description Surface Elevation (m): **47.77 (ALD)**	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.
		FILL: Silt, dark brown to grey, trace to some sand and gravel, trace organics, moist			cement				
					bentonite seal				
					silica sand pack				
5.0	1.0						SS		54
	2.0	-occasional wood and metal pieces from approximately 2.3 to 3.0 m in depth							
10.0	3.0	SILT TILL: Brown, some sand and gravel, very moist		3.05			SS		17
	4.0								
15.0	5.0	-becoming wet at approximately 4.5 m in depth					SS		72
							SS		75
20.0	6.0	BOREHOLE TERMINATED		6.10	6.10				

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **6/1/2006**

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LEGEND
▼ Water found @ time of drilling
▽ Static Water Level -

MONITORING WELL DATA
Pipe: **51 mm dia. PVC**
Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE AC Auger Cutting; CS Continuous; RC Rock Core; SS Split Spoon; AR Air Rotary; WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW5s

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **J. Rutherford**
Project No.: **MSO14314.8c**	Location: **3137 Perth Road 145**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Elev. / Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown SILT; partly organic; moist		0.31	native backfill	1	SS		9		
	1.0	Medium brown sandy SILT, some gravel, some clay, trace cobbles; gravel angular; stiff to very stiff; moist (till)			concrete						
5.0					bentonite seal	2	SS		26		
	2.0	Cobbles or boulders at 1.52 to 1.78 m, 3.35 to 3.51 m, and 4.88 to 5.18 m.				3	SS		28	5.0	
						4	SS		39		2.0
10.0	3.0	Wet seams at 2.13 to 2.29 m, 3.66 to 4.27 m, and 4.88 to 5.18 m.				5	SS		>92	10.0	3.0
	4.0	Becoming medium grey-brown at 3.05 m.			silica sand pack	6	SS		54		4.0
15.0	5.0			5.46	5.46	7	SS		>50	15.0	5.0

Prepared By: **J. Rutherford** Checked By: **K. Hawkes** Date Prepared: **5/9/2008**

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LEGEND
▼ Water found @ time of drilling
▽ Static Water Level - 4/30/2008

MONITORING WELL DATA
Pipe: **51 mm dia. PVC**
Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE AC Auger Cutting; SS Split Spoon; CS Continuous; AR Air Rotary; RC Rock Core; WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW5d

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **J. Rutherford**
Project No.: **MSO14314.8c**	Location: **3137 Perth Road 145**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/23/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/23/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Elev. Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown SILT; partly organic; moist			native backfill						
		Medium brown sandy SILT, some gravel, some clay, trace cobbles; gravel angular; stiff to very stiff; moist (till)		0.31	concrete	1	SS		9		
						2	SS		26		
5.0		Cobbles or boulders at 1.52 to 1.78 m, 3.35 to 3.51 m, and 4.88 to 5.18 m.				3	SS		28	5.0	
						4	SS		39		
10.0		Wet seams at 2.13 to 2.29 m, 3.66 to 4.27 m, and 4.88 to 5.18 m.				5	SS		>92	10.0	
		Becoming medium grey-brown at 3.05 m.				6	SS		54		
15.0					bentonite seal	7	SS		>50	15.0	
						8	SS		85		
20.0		Medium grey-brown SILT and CLAY, trace to some sand, trace gravel, trace cobbles; gravel angular to subangular; thin horizontal fracturing; very stiff to hard; moist (till)		6.10		9	SS		82	20.0	
						10	SS		>90		
25.0		2 cm thick silt seam at 7.92 m.				11	SS		57	25.0	
						12	SS		58		
30.0		Medium grey-brown SILT and CLAY; varved; firm to stiff; wet		8.99		13	SS		28	30.0	
		Light grey-brown silty SAND, some gravel; gravel subangular; becoming silty fine sand, trace gravel with depth; dense becoming compact; saturated		9.75	silica sand pack	14	SS		72		
35.0				10.97		15	SS		31	35.0	
		Medium grey-brown SILT and CLAY, trace sand, trace gravel; gravel subangular to subrounded; stiff; moist (till)		11.41	11.41						

Prepared By: **J. Rutherford** Checked By: **K. Hawkes** Date Prepared: **5/9/2008**

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LEGEND
- Water found @ time of drilling
- Static Water Level - 4/30/2008

MONITORING WELL DATA
- Pipe: **51 mm dia. PVC**
- Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE
- AC Auger Cutting
- CS Continuous
- RC Rock Core
- SS Split Spoon
- AR Air Rotary
- WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW6s

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **J. Rutherford**
Project No.: **MSO14314.8c**	Location: **3137 Perth Road 145**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/25/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Elev. Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown SILT; partly organic; moist (topsoil)		0.30	concrete	1	SS		4		
	1.0	Medium brown sandy SILT, some clay, some gravel, trace cobbles; gravel angular to subangular; firm; moist (till)				2	SS		16		1.0
5.0	2.0	Wet seams 0.8 to 1.4 m, 4.6 to 5.2 m 3 cm saturated sand seam 2.0 m			bentonite seal	3	SS		17	5.0	2.0
						4	SS		60		
10.0	3.0	Becoming very stiff to hard below 2.1 m				5	SS		50	10.0	3.0
	4.0	Becoming grey-brown below 2.9 m				6	SS		>60		4.0
15.0	5.0	Thin horizontal fracture structure below 5.6 m			silica sand pack	7	SS		85	15.0	5.0
	6.0			6.02	6.02	8	SS		>118		6.0

Prepared By: **J. Rutherford** Checked By: **K. Hawkes** Date Prepared: **5/9/2008**

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LEGEND
- Water found @ time of drilling
- Static Water Level - 4/30/2008

MONITORING WELL DATA
- Pipe: **51 mm dia. PVC**
- Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE
- AC Auger Cutting
- CS Continuous
- RC Rock Core
- SS Split Spoon
- AR Air Rotary
- WC Wash Cuttings

LOG OF DRILLING OPERATIONS

MW6d

R.J. Burnside & Associates Limited
15 Townline, Orangeville, Ontario L9W 3R4
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BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **J. Rutherford**
Project No.: **MSO14314.8c**	Location: **3137 Perth Road 145**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/24/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/24/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Elev. / Depth (m)
		Dark brown SILT; partly organic; moist (topsoil)		0.30
		Medium brown sandy SILT, some clay, some gravel, trace cobbles; gravel angular to subangular; firm; moist (till)		
5.0	1.0			
	2.0	Wet seams 0.8 to 1.4 m, 4.6 to 5.2 m 3 cm saturated sand seam 2.0 m		
10.0	3.0	Becoming very stiff to hard below 2.1 m		
		Becoming grey-brown below 2.9 m		
	4.0	Becoming some sand below 6.1 m		
15.0	5.0	Thin horizontal fracture structure below 5.6 m		
20.0	6.0			
	7.0			
25.0	8.0	Light grey-brown silty SAND, some gravel; gravel angular; very dense; moist		7.47
		Medium grey-brown SILT, some clay, some sand, some gravel, trace cobbles; gravel subangular to subrounded; thin horizontal fracturing 8.23 to 8.99 m; hard; moist (till)		8.23
30.0	9.0			
	10.0	Medium grey-brown gravelly SAND, some silt; gravel subrounded; compact to dense; saturated		10.06 10.21
35.0	11.0	Medium grey-brown clayey SILT, some sand , some gravel, trace cobbles; gravel subangular to subrounded; very stiff; wet (till)		11.28

native backfill
concrete
bentonite seal
silica sand pack
10.77

SAMPLE Num.	Type	Int.	N.Val.
1	SS		4
2	SS		16
3	SS		17
4	SS		60
5	SS		50
6	SS		>60
7	SS		85
8	SS		>118
9	SS		81
10	SS		>129
11	SS		>120
12	SS		>78
13	SS		72
14	SS		54
15	SS		82

Prepared By: **J. Rutherford** Checked By: **K. Hawkes** Date Prepared: **5/9/2008**

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LEGEND
- Water found @ time of drilling
- Static Water Level - 4/30/2008

MONITORING WELL DATA
- Pipe: **51 mm dia. PVC**
- Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE
- AC Auger Cutting
- CS Continuous
- RC Rock Core
- SS Split Spoon
- AR Air Rotary
- WC Wash Cuttings

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LOG OF DRILLING OPERATIONS

MW7d

Client: **Municipality of West Perth**	Project Name: **Fullarton Landfill**	Logged by: **J. Rutherford**
Project No.: **MSO14314.8c**	Location: **3137 Perth Road 145**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/25/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/28/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Elev. / Depth (m)		SAMPLE Num.	Type	Int.	N.Val.
		Dark brown SILT; partly organic; wet (topsoil)		0.30	native backfill	1	SS		10
	1.0	Medium brown silty CLAY, trace sand; some organic matter; firm; wet		0.76	concrete	2	SS		25
5.0	2.0	Medium brown sandy SILT, some clay, some gravel, trace cobbles; gravel angular to subangular; firm; moist (till)				3	SS		34
		Becoming very stiff below 1.5 m				4	SS		56
10.0	3.0	Becoming grey-brown below 2.7 m				5	SS		63
	4.0	Medium grey-brown clayey SILT, some sand, some gravel, some cobbles; gravel angular to subangular; stiff to hard; moist (till)		3.73		6	SS		>100
15.0	5.0					7	SS		56
					bentonite seal				
20.0	6.0	Light grey-brown clayey SILT, some sand, some gravel, some cobbles; gravel angular to subangular; thin horizontal fracturing; hard; moist to dry (till)		5.79		8	SS		68
	7.0					9	SS		114
25.0	8.0	Medium grey-brown SILT and CLAY, some sand, some gravel, trace cobbles; gravel subangular to subrounded; stiff to very stiff (till?)		7.54		10	SS		125
		2 cm seam of fine sand at 10.2 m				11	SS		48
30.0	9.0	3 cn seam of fine gravel at 10.9 m				12	SS		38
	10.0					13	SS		41
						14	SS		67
35.0	11.0					15	SS		84
					silica sand pack				
	12.0					16	SS		63
40.0		Medium to dark brown gravelly SILT and CLAY, some sand; gravel subrounded to round; stiff to very stiff; moist (till?)		12.04	12.21	17	SS		63
				12.80					

Prepared By: **J. Rutherford** Checked By: **K. Hawkes** Date Prepared: **5/9/2008**

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LEGEND
- Water found @ time of drilling
- Static Water Level - 4/30/2008

MONITORING WELL DATA
- Pipe: **51 mm dia. PVC**
- Screen: **51 mm dia. PVC #10 slot**

SAMPLE TYPE
- AC Auger Cutting
- CS Continuous
- RC Rock Core
- SS Split Spoon
- AR Air Rotary
- WC Wash Cuttings

APPENDIX C

TABLE C-1
GROUNDWATER LEVEL ELEVATIONS
Fullarton Landfill
Road 145, Municipality of West Perth

Monitoring Well	MW1S	MW1D	MW2	MW3	MW4	MW5S	MW5D	MW6S	MW6D	MW7S	MW7D	MW8
Measuring Point Elevation[1] (mASL)	339.93	339.86	340.74	340.68	342.82	339.79	339.78	340.1	340.05	338.91	338.94	341.25
Measure Point Elevation[2] (mASL)	340.01	339.87	340.22	341.28	343.3	339.79	339.78	340.1	340.05	338.91	338.94	342.05
Measuring Point Elevation[3] (mASL)	340.01	340.07	340.22	341.28	343.3	339.79	339.78	340.1	340.05	338.91	338.94	342.05
Liquid Levels (mbtop)												
09-May-06	2.02	8.47	1.77	1.87	3.18							
06-Jun-06	2.07	8.47	1.93	1.91	3.20							
22-May-07	1.96	8.53	1.92	1.66	3.35							
24-Apr-08							9.80					
28-Apr-08						5.52	9.67	1.57	6.51			
30-Apr-08						5.28	9.76	1.66	6.48	6.02	6.67	2.43
23-May-08	1.93	8.72	2.06	1.56	3.58	4.42	9.83	1.79	6.4	2.80	12.59	2.45
20-May-09	1.86	8.56	1.93	1.40	3.38	2.91	9.81	1.68	6.51	2.82	10.83	2.44
17-May-10	1.94	8.57	1.59	1.89		2.85	9.88	1.71	6.56	2.54	10.41	
13-Sep-10	2.52	8.86	2.10	3.99	4.65	3.21	9.73	2.89	6.87	3.68	11.49	6.88
24-May-11	1.90	8.52	0.98	1.90	3.85	2.73	9.76	1.73	6.57	2.70	10.37	2.95
10-May-12	2.81		1.560	2.18	4.15	2.85	9.64	2.06	6.77	3.03	10.24	3.24
25-Apr-13	1.75	8.72	0.86	1.61	3.67	2.78	9.86	1.49	6.47	2.60	10.91	2.77
20-May-14	1.40	9.04	1.23	1.77	3.62	2.71	9.62	2.01	6.71	2.53	10.26	2.96
21-May-15	2.18	8.81	1.59	2.19	4.09	2.98	9.71	1.92	6.89	2.82	10.19	3.25
18-May-16	2.09	8.75	1.45	1.98	3.95	2.84	9.62	1.99	6.78	2.72	10.04	3.11
04-May-17	1.60	8.74	1.00	1.67	3.80	2.50	9.85	1.35	6.50	2.50	10.39	2.63
04-May-18	1.56	8.50	0.90	1.50	3.58	2.21	9.50	1.48	6.50	2.52	10.20	2.70
02-May-19	1.50	8.55	0.86	1.50	3.52	2.64	9.59	1.40	6.55	2.40	10.22	2.67
27-Apr-20	2.06	8.67	1.42	1.94	3.80	2.88	9.73	1.84	6.65	2.88	10.08	3.01
03-May-21	2.06	8.66	1.40	1.97	3.90	2.72	9.67	1.93	6.62	2.78	10.12	2.98
03-May-22	1.91	8.62	1.20	1.77	3.76	2.67	9.69	1.92	6.63	2.74	9.95	2.80
02-May-23	1.70	8.45	0.96	1.64	3.60	2.47	9.46	1.88	6.5	2.67	9.94	2.68
14-May-24	1.95	8.88	1.32	1.86	3.59	2.51	9.72	1.94	6.65	2.71	9.93	2.85
06-May-25	1.84	8.66	1.16	1.73	3.47	2.55	9.73	1.93	6.70	2.65	10.07	2.87
Liquid Level Elevations (mASL)												
09-May-06	337.91	331.39	338.97	338.81	339.64							
06-Jun-06	337.86	331.39	338.81	338.77	339.62							
22-May-07	337.97	331.33	338.82	339.02	339.47							
24-Apr-08							329.98					
28-Apr-08						334.27	330.11	338.53	333.54			
30-Apr-08						334.51	330.02	338.44	333.57	332.89	332.27	338.82
23-May-08	338.00	331.14	338.68	339.12	339.24	335.37	329.95	338.31	333.65	336.11	326.35	338.80
20-May-09	338.15	331.31	338.29	339.88	339.92	336.88	329.97	338.42	333.54	336.09	328.11	339.61
17-May-10	338.07	331.30	338.63	339.39		336.94	329.90	338.39	333.49	336.37	328.53	
13-Sep-10	337.49	331.01	338.12	337.29	338.65	336.58	330.05	337.21	333.18	335.23	327.45	335.17
24-May-11	338.11	331.35	339.24	339.38	339.45	337.06	330.02	338.37	333.48	336.21	328.57	339.10
10-May-12	337.20		338.66	339.10	339.15	336.94	330.14	338.04	333.28	335.88	328.70	338.81
25-Apr-13	338.26	331.35	339.36	339.67	339.63	337.01	329.92	338.61	333.58	336.31	328.03	339.28
20-May-14	338.61	331.03	338.99	339.51	339.68	337.08	330.16	338.09	333.34	336.38	328.68	339.09
21-May-15	337.83	331.26	338.63	339.09	339.21	336.81	330.07	338.18	333.16	336.09	328.75	338.80
18-May-16	337.92	331.32	338.77	339.30	339.35	336.95	330.16	338.11	333.27	336.19	328.90	338.94
04-May-17	338.41	331.33	339.22	339.61	339.50	337.29	329.93	338.75	333.55	336.41	328.55	339.42
04-May-18	338.45	331.57	339.32	339.78	339.72	337.58	330.28	338.62	333.55	336.39	328.74	339.35
02-May-19	338.51	331.52	339.36	339.78	339.78	337.15	330.19	338.70	333.50	336.51	328.72	339.38
27-Apr-20	337.95	331.40	338.80	339.34	339.50	336.91	330.05	338.26	333.40	336.03	328.86	339.04
03-May-21	337.95	331.41	338.82	339.31	339.40	337.07	330.11	338.17	333.43	336.13	328.82	339.07
03-May-22	338.10	331.45	339.02	339.51	339.54	337.12	330.09	338.18	333.42	336.17	328.99	339.25
02-May-23	338.31	331.62	339.26	339.64	339.70	337.32	330.32	338.22	333.55	336.24	329.00	339.37
14-May-24	338.06	331.19	338.90	339.42	339.71	337.28	330.06	338.16	333.40	336.20	329.01	339.20
06-May-25	338.17	331.41	339.06	339.55	339.83	337.24	330.05	338.17	333.35	336.26	328.87	339.18

Notes: 1. The elevations were first surveyed in July 2008.

2. When the Site was final graded, the risers and well casings at MW1S, MW1D, MW2, MW3, MW4, and MW8 had to be raised. These wells were resurveyed In November 2009.

3. MW1D was damaged in early 2012. The top riser at MW1D was repaired in August 2012, at which time the stick-up was raised from 0.78 m from 0.97 m. The raised stick-up was used to estimate the current measuring point elevation and the change is reflected in the water level elevations after 2012.

4. The local datum used for surveying was related to geodetic elevations presented on Ontario Base Mapping using a factor of +294.155.

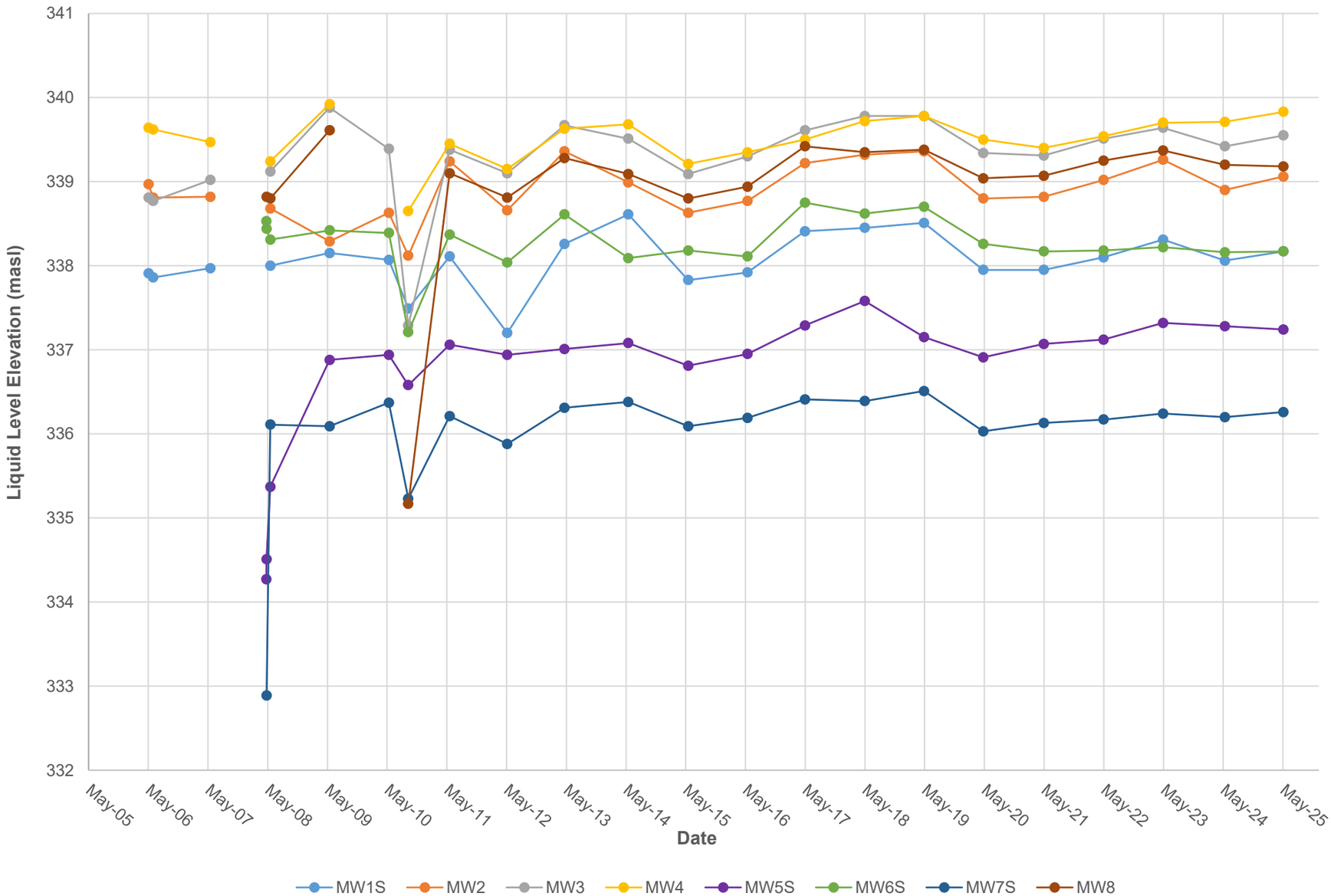
5. The liquid levels recorded in April 2008 were collected prior to well development and are included herein only for completeness. These levels are not expected to reflect static conditions.

6. mASL denotes metres above sea level.

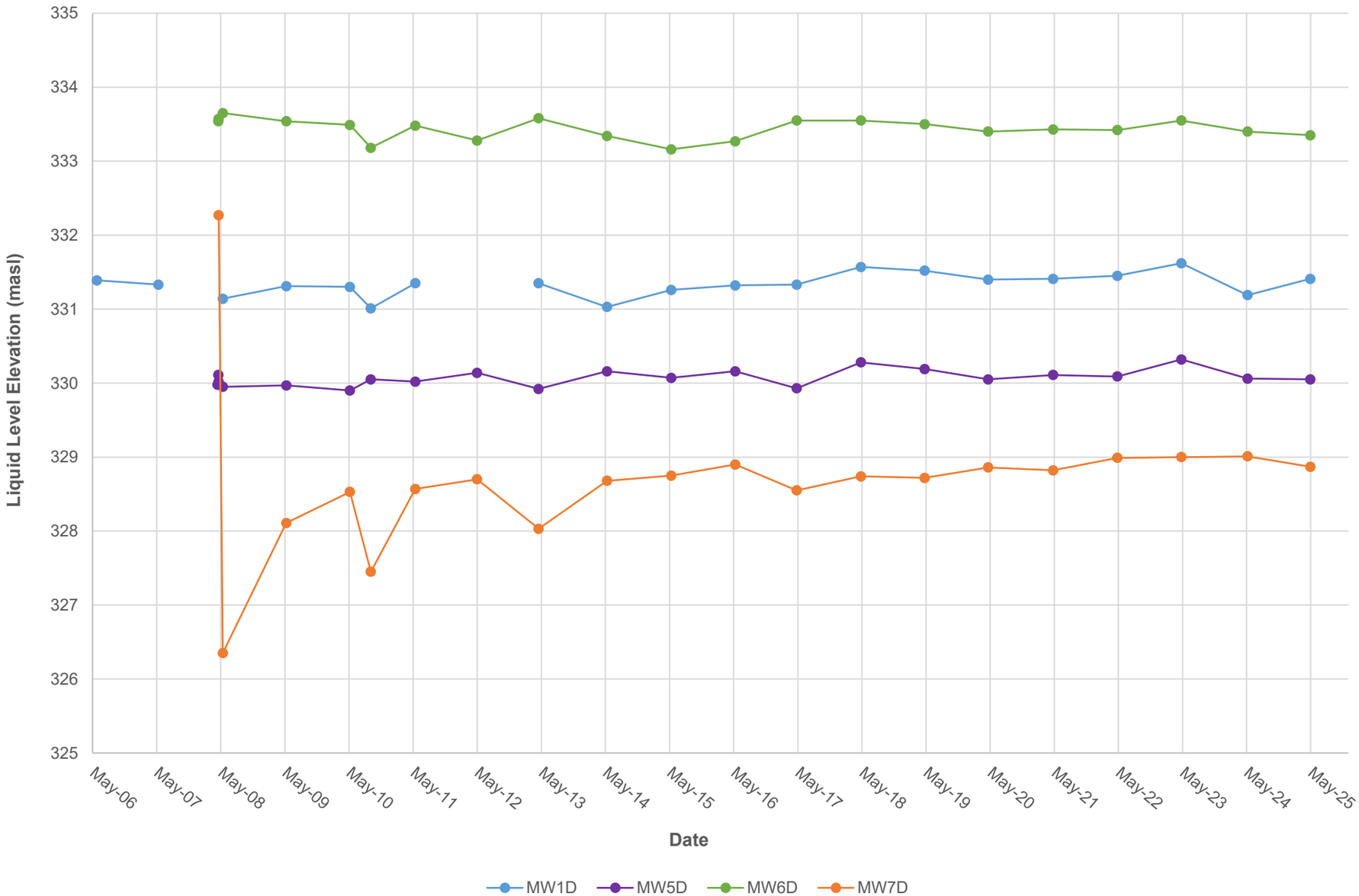
7. mbtop denotes metres below top of pipe.

8.Blank denotes data not available.

GROUNDWATER ELEVATION HYDROGRAPH
SHALLOW FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



GROUNDWATER ELEVATION HYDROGRAPH
DEEP FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



APPENDIX D

TABLE D-1
LEACHATE ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW4 May-06	MW4 May-07	MW4 May-08	MW4 May-09	MW4 May-10	MW4 May-11	MW4 May-12	MW4 Apr-13	MW4 May-14	MW4 May-15	MW4 May-16	MW4 May-17	MW4 May-18	MW4 May-19	MW4 Apr-20	MW4 May-21	MW4 May-22	MW4 May-23	MW4 May-24	MW4 May-25
Field Electrical Conductivity	uS/cm	NV	981	803	861	932	1000	115	1330	1760	1740	1606	1750	4480	2000	1539	1312	1556	1320	1271	1418	1205
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**449**	**368**	**491**	**450**	**549**	**597**	**636**	**821**	**450**	**809**	**802**	**1060**	**999**	**873**	**911**	**971**	**680**	**691**	**802**	**754**
pH	N/A	6.5-8.5 (OG)	7.69	8.02	8.3	8.1	7.6	7.99	8.04	7.89	7.85	7.47	7.73	7.20	7.68	7.42	7.29	7.22	7.56	7.17	7.38	7.53
Total Dissolved Solids	mg/L	500 (AO)	**770**	474	**586**	**548**	**618**	**734**	**760**		**702**	**863**	**1150**	**1410**	**1260**	**1120**	**1000**	**1150**	**765**	**800**	**854**	**766**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	329	277	358	366	507	530	569	631	459	622	558	675	601	591	630	644	575	624	653	499
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	8	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	329	277	366	366	**507**	**530**	**569**	**631**	462	**622**	**558**	**675**	**601**	**591**	**630**	**644**	**575**	**624**	**653**	499
Ammonia, Total (as N)	mg/L	NV	1.070	0.37	0.38	0.15	0.13	0.07	0.3	0.11	0.995	0.36	0.38	0.457	0.865	0.272	0.193	0.205	0.0077	0.012	0.012	<0.0050
Bromide	mg/L	NV	0.810	0.71	0.8	<0.05	0.66	0.7	0.55	<0.25	0.2	0.33	<0.50	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	58.9	57.9	56.7	55.3	53.1	54	51.7	29.6	210	29.6	26	5.2	16.6	15	3.6	<2.50	<2.50	<2.50	<2.50	<2.50
Fluoride	mg/L	1.5 (MAC)	<0.05	0.4	0.3	0.3	0.29	<0.05	<0.05	<0.25	0.2	0.197	0.2	0.11	0.13	0.142	<0.10	<0.10	<0.100	0.11	<0.100	0.114
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	1.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.2	<0.03	<0.11	<0.11	<0.11	0.023	<0.11	1.97	1.44	1.97	0.129	0.646
Nitrate as N	mg/L	10.0 (MAC)	<0.05	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.020	<0.10	<0.10	<0.10	0.023	<0.10	1.97	1.44	1.97	0.129	0.646
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0034	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	0.0027
Sulphate	mg/L	500 (AO)	125	71.8	65.3	62	33.3	107	143	371	16.6	220	329	477	466	331	273	338	125	164.0000	158	113
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**13.9**	**8.5**	**8.2**	**5.7**	**6.5**	**6.7**	**7.6**	**6.6**	**7.3**	**6.9**	**7.3**	**6.3**	**10.2**	**6.12**	**8.93**	**5.87**	**9.32**	4.27	4.07	3.51
Aluminum	mg/L	0.1 (OG)	0.008	0.013	0.008	0.005	<0.004	<0.004	0.006	0.006	0.025	<0.010	<0.0050	<0.0050	<0.0050	**0.118**	<0.0050	<0.0050	0.0022	0.0027	0.0329	<0.0010
Arsenic	mg/L	0.01 (IMAC)	<0.003	0.005	0.004	0.005	<0.003	<0.003	<0.003	<0.003	**0.0147**	<0.0010	0.00052	0.00	0.00065	0.00156	0.0017	0.00056	0.00027	0.00024	0.00030	0.00025
Barium	mg/L	1.0 (MAC)	0.084	0.055	0.06	0.048	0.063	0.083	0.068	0.07	0.404	0.0767	0.0603	0.05	0.0495	0.0537	0.0453	0.0504	0.0474	0.0452	0.0571	0.0624
Boron	mg/L	5.0 (MAC)	0.266	0.197	0.201	0.155	0.157	0.19	0.148	0.163	0.201	0.127	0.115	0.331	0.224	0.208	0.188	0.265	0.162	0.2000	0.224	0.193
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000015	<0.000010	0.0000180	0.0000291	0.00001	0.0000120	0.0000100
Calcium	mg/L	NV	119	90	122	106	134.1	137	152	216	117	192	191	301	270	237	258	284	195	195	226	221
Chromium	mg/L	0.05 (MAC)	<0.003	0.005	<0.003	0.004	0.004	<0.003	0.005	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.035	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	<0.00020	0.00082	<0.00020	0.00091	0.00172	0.00235	0.00311	0.00203
Iron	mg/L	0.3 (AO)	**0.513**	**2.44**	**0.631**	**1.94**	**7.04**	**9.79**	**2.5**	**3.21**	**18.1**	<0.050	0.046	0.062	<0.010	**2.31**	<0.010	<0.010	<0.010	<0.010	0.065	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00126	<0.000050	<0.000050	<0.000050	0.000092	0.000176	<0.000050
Magnesium	mg/L	NV	36.8	34.9	45.2	45.1	52.1	61.9	62.2	68.3	38.2	80.2	79.2	75.9	78.8	68.2	65	63.7	47	49.6	57.7	49.2
Manganese	mg/L	0.05 (AO)	**0.235**	**0.187**	**0.201**	**0.166**	**0.375**	**0.418**	**0.559**	**0.554**	**0.34**	**0.402**	**0.479**	**1.05**	**1.2**	**1.05**	**0.333**	**0.0704**	0.00532	0.0008	0.00595	0.00086
Potassium	mg/L	NV	6.32	2.88	1.9	1.58	1.5	3.49	1.26	3.4	16.4	1.8	1.77	8.01	3.95	4.01	5.9	6.91	7.42	6.43	6.15	7.19
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.005		<0.00040	<0.00040	0.000108	0.000197	0.000126	0.000088	0.000129	0.000257	0.000602	0.000397	0.000273	0.000360
Silicon	mg/L	NV	5.8	5.87	6.92	7.13	6.95	7.7	6.53	8.01	4.1	7.6	7.17	6.95	6.76	7.85	6.2	5.07	5.64	4.39	5.22	4.92
Sodium	mg/L	200 (AO)	27.8	27.2	27.8	26.9	27.4	67.2	59.9	78.8	**239**	67.6	57	31.7	34.2	30.6	16.1	9.4	5.75	4.36	6.18	4.25
Zinc	mg/L	5.0 (AO)	0.008	0.015	0.021	<0.004	0.007	0.011	0.004	0.006	<0.0030	0.0047	<0.0010	0.001	0.002	0.0064	0.0019	0.0095	0.007	0.0034	0.0040	0.0027

Notes:
1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-1
LEACHATE ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW8 May-08	MW8 May-09	MW8 May-10	MW8 May-11	MW8 May-12	MW8 Apr-13	MW8 May-14	MW8 May-15	MW8 May-16	MW8 May-17	MW8 May-18	MW8 May-19	MW8 Apr-20	MW8 May-21	MW8 May-22	MW8 May-23	MW8 May-24	MW8 May-25
Field Electrical Conductivity	uS/cm	NV	626	7640	6380	5970	6770	6550	4750	6830	6470	7420	5750	3999	3999	3999	>4000	>3999	3719	3714
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**1640**	**1310**	**1370**	**1200**	**1270**	**1110**	**1190**	**1190**	**1050**	**1200**	**1220**	**1080**	**1020**	**920**	**848**	**747**	**1090**	**950**
pH	N/A	6.5-8.5 (OG)	7.92	7.87	7.73	7.85	8.24	8.31	7.48	7.69	7.95	7.59	7.64	7.27	7.34	7.81	7.66	7.63	7.70	7.57
Total Dissolved Solids	mg/L	500 (AO)	**3780**	**4440**	**3746**	**3540**	**3750**		**3570**	**3160**	**3910**	**3440**	**3700**	**3290**	**2920**	**3790**	**2170**	**2710**	**3280**	**1900**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	2330	1300	2140	1960	1990	2080	2090	1380	1350	1850	1330	1530	1410	1260	316	1110	1030	1100
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	27	<10	<10	<10	<10	<10	<50	<10	<10	<1.0	<1.0	<1.0	<5.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**2330**	**1300**	**2140**	**1960**	**1990**	**2110**	**2090**	**1380**	**1350**	**1850**	**1330**	**1530**	**1410**	**1260**	**316**	**1110**	**1030**	**1100**
Ammonia, Total (as N)	mg/L	NV	160.000	162	131	118	148	138	182	143	151	145	121	135	377	126	120	130	132	115
Bromide	mg/L	NV	2.890	<5	3.9	<0.5	<0.05	<2.5	2.9	4.5	3	<2.0	3.3	2.62	1.9	2.3	1.83	2.00	3.19	1.62
Chloride	mg/L	250 (AO)	**1070.0**	**1410**	**1190**	**1100**	**1170**	**1090**	**1010**	**1190**	**1480**	**888**	**981**	**799**	**737**	**949**	**567**	**626**	**681**	**312**
Fluoride	mg/L	1.5 (MAC)	<0.05	**<5**	<0.05	<0.5	<0.05	**<2.5**	<1.0	0.23	0.5	<0.40	<0.40	<0.020	<0.20	<0.20	0.104	0.184	<0.200	0.168
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	<5	<0.05	<0.05	<0.05	<0.07	<2	<0.3	<0.45	<0.45	<0.45	<0.022	<0.22	<0.22	<0.112	<0.100	<0.224	<0.112
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<5	<0.05	<0.5	<0.05	<2.5	<1.0	<0.20	<0.40	<0.40	<0.40	<0.020	<0.20	<0.20	<0.100	<0.112	<0.200	<0.100
Nitrite as N	mg/L	1.0 (MAC)	<0.05	**<5**	<0.05	<0.5	<0.05	**<2.5**	<1.0	<0.10	<0.20	<0.20	<0.20	<0.010	<0.10	<0.10	<0.050	<0.050	<0.100	<0.050
Orthophosphate as P	mg/L	NV	<0.1	<10	<0.1	<1	3.48	<5	0.0368	0.256	0.6	0.029	0.0072	0.0438	<0.0030	0.0247	0.0056	0.04	0.0057	0.0015
Sulphate	mg/L	500 (AO)	168	278	33.9	27.6	129	54.7	125	**895**	**1010**	390	**918**	**501**	**547**	**1220**	**514**	**697**	**1030**	312
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**316.0**	**118**	**136**	**121**	**104**	**120**	3.9	**90.6**	**129**	**93**	**92**	**82.6**	**83.9**	**64.5**	**51.6**	**56.3**	**62.0**	**33.9**
Aluminum	mg/L	0.1 (OG)	0.031	0.019	0.04	0.034	0.041	0.034	<0.10	<0.10	<0.050	<0.050	<0.050	0.0403	<0.050	<0.050	0.0148	0.0390	0.0304	0.0254
Arsenic	mg/L	0.01 (IMAC)	0.01	**0.017**	**0.013**	0.007	**0.014**	0.006	<0.010	<0.010	0.0086	0.0073	0.0029	0.00484	0.0027	0.0058	0.00293	0.00568	0.00547	0.00539
Barium	mg/L	1.0 (MAC)	0.326	0.183	0.271	0.236	0.276	0.244	0.283	0.252	0.173	0.207	0.172	0.171	0.126	0.164	0.11	0.177	0.125	0.113
Boron	mg/L	5.0 (MAC)	3.68	4.69	4.92	**5.37**	4.96	**5.02**	4.6	**5.32**	4.83	**5.06**	4.82	**5.12**	4.68	4.62	3.54	3.03	**5.09**	4.28
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00090	<0.00090	<0.00010	<0.00010	<0.000050	<0.000010	<0.000050	<0.000050	<0.0000500	<0.0000500	<0.0000500	<0.0000500
Calcium	mg/L	NV	349	250	203	173	173	147	177	180	171	181	248	175	183	175	155	142	224	191
Chromium	mg/L	0.05 (MAC)	0.012	0.007	0.025	0.015	0.044	0.016	0.0127	0.0096	0.0096	0.0084	<0.0050	0.00965	<0.0050	0.0073	<0.00500	0.00562	0.00535	0.00511
Copper	mg/L	1.0 (AO)	0.003	0.004	<0.003	0.004	<0.003	<0.003	<0.010	<0.010	<0.0020	<0.0020	<0.0020	<0.00020	<0.0020	<0.0020	<0.00200	0.0036	<0.00200	<0.00200
Iron	mg/L	0.3 (AO)	**22.8**	**1**	**4.72**	**0.808**	**0.683**	**4.18**	**2.78**	<0.50	**1.37**	**1.17**	0.3	0.084	0.25	0.15	0.224	**9.58**	0.191	0.142
Lead	mg/L	0.01 (MAC)	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	<0.000050	<0.00050	<0.00050	<0.000500	<0.000500	<0.000500	<0.000500
Magnesium	mg/L	NV	186	167	209	187	204	181	182	180	153	180	145	156	137	118	112	95.2	128	115
Manganese	mg/L	0.05 (AO)	**1.47**	**0.419**	**0.347**	**0.322**	**0.359**	**0.343**	**0.323**	**0.294**	**0.253**	**0.315**	**0.391**	**0.326**	**0.327**	**0.27**	**0.336**	**0.402**	**0.224**	**0.243**
Potassium	mg/L	NV	314	308	327	287	329	265	281	292	284	263	234	246	232	226	188	153	256	230
Selenium	mg/L	0.05 (MAC)	<0.004	0.014	0.014	<0.004	0.035		<0.0040	<0.0040	<0.00050	<0.00050	<0.00050	0.0022	<0.00050	0.00296	<0.000500	<0.000500	**0.0782**	0.0340
Silicon	mg/L	NV	10.8	4.56	11.1	10.5	10.9	12.1	11	<10	9.24	10.5	8.42	10.2	10.1	8.74	9.76	10.10	7.31	7.55
Sodium	mg/L	200 (AO)	**766**	**754**	**813**	**646**	**847**	**668**	**688**	**783**	**727**	**685**	**631**	**632**	**556**	**531**	**453**	**353**	**620**	**535**
Zinc	mg/L	5.0 (AO)	0.01	0.011	<0.004	0.032	0.004	<0.005	<0.030	<0.030	<0.010	<0.010	<0.010	0.0031	<0.010	<0.010	<0.0100	<0.0100	<0.0100	<0.0100

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-2
LEACHATE ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW4 May-06	MW4 May-07	MW4 May-08	MW4 May-09	MW4 May-10	MW4 May-11	MW4 May-12	MW4 Apr-13	MW4 May-14	MW4 May-15	MW4 May-16	MW4 May-17	MW4 May-18	MW4 May-19	MW4 Apr-20	MW4 May-21	MW4 May-22	MW4 May-23	MW4 May-24	MW4 May-25
Acetone		NV	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	**27**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	**0.58**	**0.29**	**0.21**	<0.2	<0.2	**0.3**	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20			<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0	<1.0	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	**0.26**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV					<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	**0.19**	**0.32**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	**0.39**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	**0.71**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0							<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in mg/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-2
LEACHATE ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW8 May-08	MW8 May-09	MW8 May-10	MW8 May-11	MW8 May-12	MW8 Apr-13	MW8 May-14	MW8 May-15	MW8 May-16	MW8 May-17	MW8 May-18	MW8 May-19	MW8 Apr-20	MW8 May-21	MW8 May-22	MW8 May-23	MW8 May-24	MW8 May-25
Acetone		NV	**130**	<4	<10	<4	<10	<4	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	**22**
Benzene	µg/L	1 (MAC)	**8.2**	**3.5**	<2	**1.3**	**4.8**	**4.8**	**6.5**	**5.89**	**6.16**	**5.37**	**5.54**	**6.54**	**6.14**	**6.96**	**6.01**	**6.13**	**4.66**	**2.56**
Bromodichloromethane	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.2	<0.4	<1	<0.4	<1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.2	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.2	<0.4	<1	<0.4	<1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	**3.08**
Chloroethane	µg/L	NV	**68**	**18**	**6.9**	**15**	**180**	**36**	**68.5**	**66.8**	**152**	**101**	**13**	**70.2**	**42.4**	**111**	**66.8**	**141**	**157**	<0.50
Chloroform	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<2.0
Chloromethane	µg/L	NV	<0.8	<1.6	<4	<1.6	<4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<0.50
Ethylene Dibromide	µg/L	NV	<0.4	<0.8	<2	<0.8	<1	<0.4	<0.50	<0.50	<0.20	<0.20	<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.2	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.2	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.2	<0.4	<1	<0.4	<1	<0.4	**1.63**	**2.6**	**5.79**	**4.44**	<0.50	**4.30**	**2.45**	**5.72**	**4.63**	**4.48**	**5.22**	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.5	**1.03**	**1.26**	**0.93**
1,1-Dichloroethane	µg/L	NV	**15**	**8**	<3	**5.9**	**99**	**20**	**43.3**	**36.4**	**79.3**	**52.4**	**2.49**	**18.4**	**11.9**	**12.6**	**11.2**	**19.5**	**14.5**	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<1.1	<0.50	<0.50	<0.50	**0.86**	<1.4	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.6	<1.2	<3	<1.2	<3	<1.2	<0.50	<0.50	**0.52**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.6	<1.2	<3	<1.2	<3	<1.2	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.4	<0.8	<2		<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.6	<1.2	<3	<1.2	<3	<1.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	**15**	**2.4**	<1	<0.4	**13**	**7.4**	**10.9**	**13**	**11.2**	**10.4**	**10.3**	**16.9**	**12.4**	**11.1**	**9.03**	**6.61**	**4.43**	**0.76**
n-Hexane	µg/L	NV			<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.6	<1.2	<3	<1.2	<3	<1.2	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	**170**	<4	<10	<4	<10	<4	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.6	<4	<10	<4	<10	<4	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	**0.58**	**0.55**	<0.50	<0.50	**0.56**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	**3.9**	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.2	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.2	<0.4	<1	<0.4	<1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.70	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.2	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**17.00**	**2.20**	<2	<0.8	**5.90**	**1.50**	**2.21**	**2.40**	**2.09**	**1.58**	<0.50	**1.98**	**1.44**	**1.34**	**1.10**	**0.72**	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.6	<1.2	<3	<1.2	<3	<1.2		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.6	<1.2	<3	<1.2	<3	<1.2	**1.69**	**1.97**	**3.73**	**1.98**	<0.50	**0.55**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.4	<0.8	<2	<0.8	<2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.8	<1.6	<4	<1.6	<4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.34	<0.68	<1.7	<0.68	<1.7	<0.68	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	**20.00**	**2.30**	<1	**0.71**	**6.30**	**2.00**	**2.97**	**4.67**	**3.01**	**2.40**	<0.50	**6.36**	**5.20**	**3.78**	**10.1**	**1.61**	**0.58**	**1.25**
m & p-Xylene	µg/L	NV	**39.00**	**9.50**	<2	<0.8	**22.00**	**11.00**	**7.50**	**15.30**	**9.20**	**6.70**	**3.00**	**16.70**	**11.90**	**11.10**	**3.31**	**5.40**	**2.73**	**0.46**
Xylenes (Total)	µg/L	90 (AO)	**59**	**12**	<2	<0.8	**28**	**13**	**10.47**	**19.97**	**12.21**	**9.1**	**3**	**23.06**	**17.1**	**14.88**	**13.41**	**7.01**	**3.31**	**1.71**

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in mg/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW1S May-06	MW1S May-07	MW1S May-08	MW1S May-09	MW1S May-10	MW1S May-11	MW1S May-12	MW1S Apr-13	MW1S May-14	MW1S May-15	MW1S May-16	MW1S May-17	MW1S May-18	MW1S May-19	MW1S Apr-20	MW1S May-21	MW1S May-22	MW1S May-23	MW1S May-24	MW1S May-25
Field Electrical Conductivity	uS/cm	NV	987	1060	1110	954	1100	976	1160	1320	552	1040	1160	889	750	970	902	911	915	1077	10000	871
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**397**	**411**	**514**	**418**	**521**	**425**	**512**	**576**	**534**	**498**	**482**	**452**	**480**	**895**	**476**	**407**	**434**	**431**	**473**	**405**
pH	N/A	6.5-8.5 (OG)	7.82	7.91	8.33	8.01	7.96	7.94	8.14	8.07	7.55	7.63	7.88	7.53	7.83	7.66	7.39	7.54	7.51	7.55	7.70	7.70
Total Dissolved Solids	mg/L	500 (AO)	**624**	**604**	**712**	**512**	**698**	**512**	**626**		**681**	**658**	**685**	**670**	**819**	**638**	**529**	**513**	459	**536**	466	**646**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	347	416	386	386	394	380	426	445	445	483	429	457	438	681	463	414	473	706	475	1920
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	12	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	347	416	398	386	394	380	426	445	447	483	429	457	438	**681**	463	414	473	**706**	475	**1920**
Ammonia, Total (as N)	mg/L	NV	0.100	<0.02	<0.02	<0.02	<0.02	<0.02	0.06	0.06	0.281	<0.050	0.05	0.027	0.238	0.05	0.077	0.19	0.148	0.0329	0.134	0.127
Bromide	mg/L	NV	0.280	0.5	0.87	<0.05	0.93	<0.05	<0.05	<0.25	0.46	0.38	0.27	<0.50	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	40.4	66.5	118	52.3	123	78.6	105	136	103	74	73.7	80.2	95.9	29.5	34.3	28.6	11.4	47.7	9.59	32.1
Fluoride	mg/L	1.5 (MAC)	0.150	0.3	0.31	0.21	0.27	<0.05	<0.05	<0.25	0.31	0.264	0.2	0.16	0.27	0.213	0.172	0.159	0.126	0.225	0.123	0.230
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	0.27	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.2	<0.03	<0.022	<0.11	<0.11	<0.022	<0.022	<0.022	<0.0224	<0.020	<0.0224	<0.0224
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.020	<0.020	<0.10	<0.10	<0.020	<0.020	<0.020	<0.020	<0.0224	<0.020	<0.020
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	0.23	<0.1	<0.1	<0.5	0.0035	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	0.0011
Sulphate	mg/L	500 (AO)	145	101	82.6	60.1	79.7	67.6	64.2	63.6	64.9	49.9	43.1	54.8	68.4	42.1	40.4	37.9	13.1	30.9	7.42	23.1
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**8.4**	3	4.4	2.1	2.7	2.5	3.000	3.9	2.1	2.4	3.7	3.2	**5.2**	2.83	2.52	3.3	**13.0**	2.20	2.41	2.64
Aluminum	mg/L	0.1 (OG)	0.011	0.007	0.004	0.004	0.076	<0.004	0.005	0.006	<0.010	<0.010	<0.0050	<0.0050	<0.0050	**0.783**	<0.0050	<0.0050	0.0012	0.0051	0.0033	0.0475
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	0.004	<0.003	0.003	<0.003	<0.003	<0.003	0.0018	<0.0010	0.00091	0.001	0.0007	0.00204	0.00063	0.00037	0.00036	0.00059	0.00092	0.00099
Barium	mg/L	1.0 (MAC)	0.046	0.065	0.085	0.05	0.082	0.062	0.081	0.085	0.0995	0.112	0.0814	0.08	0.11	0.156	0.0994	0.0845	0.0788	0.0839	0.0943	0.0903
Boron	mg/L	5.0 (MAC)	0.463	0.434	0.528	0.433	0.423	0.486	0.473	0.695	0.42	0.413	0.376	0.69	0.664	0.482	0.424	0.445	0.269	0.316	0.337	0.441
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000081	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	109	103	131	111	131	111	132	150	141	127	126	123	126	271	128	113	119	113	128	114
Chromium	mg/L	0.05 (MAC)	<0.003	0.004	<0.003	<0.003	0.004	<0.003	0.005	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00278	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.004	<0.003	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	0.00031	0.00039	<0.00020	0.00027	0.0003	0.00041	0.00070	0.00033
Iron	mg/L	0.3 (AO)	0.232	**0.961**	**1.2**	**0.315**	**0.968**	**0.706**	**0.839**	**0.825**	**1.1**	<0.050	<0.010	<0.010	<0.010	**1.87**	<0.010	<0.010	<0.010	0.019	0.049	0.155
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00348	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000058
Magnesium	mg/L	NV	30.4	37.3	45.5	34.2	47.2	35.8	44.2	49	44.1	44	40.5	35.2	39.9	53	38.1	29.9	33.2	36.1	37.2	29.3
Manganese	mg/L	0.05 (AO)	**0.166**	**0.112**	**0.111**	**0.135**	**0.095**	**0.201**	**0.156**	**0.156**	**0.118**	**0.0611**	**0.132**	**0.157**	**0.0972**	**0.508**	**0.193**	**0.17**	**0.14**	**0.296**	**0.238**	**0.201**
Potassium	mg/L	NV	7.84	4.76	4.61	2.53	3.48	2.52	2.93	2.91	2.6	2.5	2.35	2.28	2.58	3.53	4.04	4.83	4.17	2.86	4.03	4.37
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.000084	0.00009	0.000055	<0.000050	0.000070	<0.000050	0.000076	0.000054	0.000074	0.000067
Silicon	mg/L	NV	6.11	7.37	7.65	5.83	7.18	6.02	5.83	6.94	7.5	7.6	6.57	6.14	6.82	7.44	7.11	6.54	6.19	6.49	7.18	7.11
Sodium	mg/L	200 (AO)	67.8	80.7	80.8	57	59	51.1	53.6	68.5	54.6	45	38.3	54.1	52.1	38.8	33.8	25.8	16.1	29.3	20.6	24.9
Zinc	mg/L	5.0 (AO)	0.015	0.015	0.01	<0.004	0.007	0.015	<0.004	<0.005	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	0.0091	<0.0010	<0.0010	<0.0010	0.001	0.0011	<0.0010

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Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW1D May-06	MW1D May-07	MW1D May-08	MW1D May-09	MW1D May-10	MW1D May-11	MW1D Apr-13	MW1D May-14	MW1D May-15	MW1D May-16	MW1D May-17	MW1D May-18	MW1D May-19	MW1D Apr-20	MW1D May-21	MW1D May-22	MW1D May-23	MW1D May-24	MW1D May-25
Field Electrical Conductivity	uS/cm	NV	574	955	977	1190	1200	1320	1480	873	1385	1600	1238	1610	1724	1817	1894	1805	1087	1862	1920
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**248**	**380**	**445**	**431**	**474**	**546**	**503**	**643**	**564**	**551**	**571**	**597**	**897**	**812**	**735**	**760**	**743**	**792**	**801**
pH	N/A	6.5-8.5 (OG)	8.14	8.14	8.49	8.23	8.09	8.12	8.22	7.66	7.91	8.11	7.84	8.01	7.78	7.71	7.79	7.81	7.96	7.82	8.02
Total Dissolved Solids	mg/L	500 (AO)	**548**	**588**	**682**	**708**	**906**	**896**		**521**	**939**	**1010**	**861**	**989**	**939**	**1250**	**1200**	**991**	**1100**	**1040**	**1400**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	262	228	213	235	234	245	249	376	254	246	252	236	293	262	240	238	254	258	794
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	19	<5	<5	<5	<5	<10	<10	<10	<10	<10	<50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	262	228	232	235	234	245	249	378	254	246	252	236	293	262	240	238	254	258	**794**
Ammonia, Total (as N)	mg/L	NV	0.330	0.09	0.31	0.19	0.11	0.06	0.18	0.196	0.302	0.33	0.312	0.371	0.296	0.307	0.299	0.31	0.339	0.277	0.326
Bromide	mg/L	NV	0.150	1.11	1.46	<0.05	2.43	2.54	2.56	0.48	2.25	2	1.68	2.46	2.49	3.05	2.91	2.7	2.2	2.17	2.47
Chloride	mg/L	250 (AO)	18.5	168	193	234	**273**	**316**	**309**	93.8	**312**	**340**	**333**	**372**	**375**	**533**	**508**	**484**	**455**	**437**	**452**
Fluoride	mg/L	1.5 (MAC)	0.870	1.18	0.85	<0.05	0.64	0.62	0.62	0.38	0.945	0.9	0.82	0.99	0.871	0.77	0.79	0.873	0.786	0.650	0.812
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	0.59	<0.05	<0.05	<0.05	<0.05	<0.07	<0.2	<0.03	<0.11	<0.11	<0.11	<0.022	<0.11	<0.11	<0.112	<0.100	<0.112	<0.112
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.020	<0.10	<0.10	<0.10	<0.020	<0.10	<0.10	<0.100	<0.112	<0.100	<0.100
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0045	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010
Sulphate	mg/L	500 (AO)	34	30.5	25.2	22.8	27.5	27.8	27.3	39	24.3	23.4	20	19.9	17.9	19.1	18.6	16.7	14.4	14.9	21.6
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	4.0	3.9	**8.2**	**5.1**	**5.5**	**5.2**	**5.4**	3.4	4.7	**5.1**	4.4	**5.4**	**5.24**	**7.11**	**7.74**	**9.51**	**7.34**	**8.02**	**6.97**
Aluminum	mg/L	0.1 (OG)	0.007	<0.004	0.015	0.021	<0.004	0.005	0.007	0.064	<0.010	<0.0050	<0.0050	<0.0050	**0.669**	0.0068	<0.0050	<0.0100	<0.0100	<0.0100	0.0061
Arsenic	mg/L	0.01 (IMAC)	0.004	**0.011**	**0.013**	**0.02**	**0.016**	**0.015**	**0.016**	0.0094	0.0068	**0.0102**	0.00803	0.0056	**0.0134**	0.0043	0.00571	0.00496	0.00448	0.00605	0.00672
Barium	mg/L	1.0 (MAC)	0.07	0.139	0.14	0.141	0.146	0.191	0.174	0.213	0.22	0.2	0.21	0.228	0.206	0.289	0.276	0.283	0.262	0.299	0.325
Boron	mg/L	5.0 (MAC)	0.114	0.109	0.119	0.149	0.138	0.186	0.174	0.169	0.193	0.165	0.178	0.18	0.21	0.169	0.172	0.156	0.152	0.194	0.148
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000050	<0.000010	<0.000010	<0.0000500	<0.0000500	<0.0000500	<0.0000050
Calcium	mg/L	NV	49.9	62.5	75.5	78.1	87.7	87.6	81.2	136	88.6	91.3	92.9	102	186	140	128	128	121	136	146
Chromium	mg/L	0.05 (MAC)	<0.003	0.008	<0.003	0.006	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050	<0.00050	<0.00050	<0.00500	<0.00500	<0.00500	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	<0.00020	0.0021	<0.00020	0.00053	<0.00200	0.00248	<0.00200	0.00084
Iron	mg/L	0.3 (AO)	0.116	0.251	0.081	**0.316**	**0.308**	0.244	0.25	**1**	<0.050	<0.010	<0.010	<0.010	**1.68**	<0.010	<0.010	<0.100	<0.100	<0.100	0.032
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.0032	<0.000050	<0.000050	<0.000500	<0.000500	<0.000500	0.000054
Magnesium	mg/L	NV	29.9	54.4	62.4	57.3	62	79.5	72.9	73.6	83.2	78.5	82.3	83.1	105	112	101	107	107	110	106
Manganese	mg/L	0.05 (AO)	0.027	0.019	0.022	0.024	0.022	0.046	0.028	0.0356	0.0172	0.0338	0.0313	0.0302	**0.214**	0.0408	0.0482	0.0313	**0.0504**	0.0392	0.0282
Potassium	mg/L	NV	5.71	3.09	2.9	2.53	77.2	2.54	2.44	2.4	2.4	2.3	2.33	2.31	2.2	3.04	2.79	2.84	2.44	2.75	3.13
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.00050	0.000117	<0.000050	<0.000500	<0.000500	<0.000500	0.000131
Silicon	mg/L	NV	5.88	7.12	6.81	7.3	7.38	7.01	7.57	8.2	8.7	7.56	7.83	8.35	8.63	8.95	8.25	8.26	8.11	8.49	9.04
Sodium	mg/L	200 (AO)	20.5	40.9	50.1	55.9	3.01	61.7	64	65.3	72.8	65.6	67.4	67.1	84.6	79.4	72.6	64	60.7	63.8	63.7
Zinc	mg/L	5.0 (AO)	0.006	0.007	0.018	0.058	<0.004	<0.004	0.007	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	0.01	<0.0010	0.0052	<0.0100	<0.0100	<0.0100	0.0036

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW2 May-06	MW2 May-07	MW2 May-08	MW2 May-09	MW2 May-10	MW2 May-11	MW2 May-12	MW2 Apr-13	MW2 May-14	MW2 May-15	MW2 May-16	MW2 May-17	MW2 May-18	MW2 May-19	MW2 Apr-20	MW2 May-21	MW2 May-22	MW2 May-23	MW2 May-24	MW2 May-25
Field Electrical Conductivity	uS/cm	NV	1610	1360	1150	1300	999	556	862	517	724	649	790	538	640	620	739	760	706	627	790	801
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**138**	**606**	**610**	**632**	**539**	**264**	**409**	**232**	**293**	**335**	**320**	**315**	**283**	**291**	**376**	**364**	**357**	**360**	**387**	**354**
pH	N/A	6.5-8.5 (OG)	7.56	7.75	8.13	7.85	7.78	7.96	8.11	8.12	7.82	7.81	8.07	7.6	7.96	7.96	7.61	7.76	7.85	7.85	7.70	7.91
Total Dissolved Solids	mg/L	500 (AO)	**1130**	**894**	**858**	**814**	**740**	340	**506**		325	376	**518**	405	397	343	456	480	410	375	387	**553**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	509	455	446	480	424	254	313	209	291	288	285	313	268	297	456	359	364	340	415	7210
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	611
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**509**	455	446	480	424	254	313	209	293	288	285	313	268	297	456	359	364	340	415	**7820**
Ammonia, Total (as N)	mg/L	NV	0.640	0.31	0.63	0.29	0.37	0.18	0.39	0.09	1.45	0.489	0.24	0.231	0.264	0.111	0.14	0.251	0.176	0.0737	0.201	0.369
Bromide	mg/L	NV	0.950	0.55	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	152.0	81.3	46.8	52	55.6	13.4	30.4	9.91	8.1	10.8	8.8	11.5	9.9	6.12	13.9	13.8	7.57	4.63	8.57	9.19
Fluoride	mg/L	1.5 (MAC)	<0.05	0.31	0.14	0.17	<0.05	<0.05	<0.05	0.14	0.2	0.186	0.2	0.175	0.2	0.157	0.192	0.22	0.174	0.17	0.166	0.262
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	1.07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.2	<0.03	<0.022	<0.022	<0.022	0.034	<0.022	<0.022	<0.0224	<0.020	<0.0224	0.0340
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.020	<0.020	<0.020	<0.020	0.034	<0.020	<0.020	<0.020	<0.0224	<0.020	0.034
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.0051	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010
Sulphate	mg/L	500 (AO)	199	214	219	182	196	41.4	127	45.7	22.2	80.2	53.9	44.4	36.3	21.5	59.7	67.1	44.5	31.5	25.1	35.1
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**9.3**	4.3	**7.7**	**5.2**	4.8	**6.9**	4.8	3.1	4.4	2.5	3.8	3.0	4.1	**5.24**	4.19	3.74	**7.81**	2.90	3.83	2.53
Aluminum	mg/L	0.1 (OG)	0.007	<0.004	0.005	0.005	0.01	<0.004	0.005	0.007	0.052	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0015	0.0012	0.0046	0.0010
Arsenic	mg/L	0.01 (IMAC)	<0.003	0.004	0.004	0.005	<0.003	0.005	<0.003	<0.003	0.0026	0.0014	0.00117	0.001	0.00053	0.00119	0.00064	0.00084	0.00049	0.00088	0.00062	0.00220
Barium	mg/L	1.0 (MAC)	0.116	0.068	0.049	0.046	0.051	0.042	0.067	0.03	0.0438	0.0834	0.0502	0.05	0.0511	0.0635	0.0805	0.0834	0.0706	0.0707	0.0867	0.0918
Boron	mg/L	5.0 (MAC)	0.174	0.175	0.197	0.208	0.209	0.104	0.17	0.128	0.106	0.102	0.087	0.111	0.111	0.154	0.12	0.125	0.115	0.101	0.164	0.120
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	0.00002	0.0000176	<0.0000050	0.0000065	0.0000075
Calcium	mg/L	NV	34.1	156	168	173	143	75.2	117	68.3	91.2	96.4	93.6	92.7	83.2	86.6	107	102	95.1	95.4	103	97.1
Chromium	mg/L	0.05 (MAC)	<0.003	0.007	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.033	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	0.00031	0.00138	0.00039	<0.00020	0.00035	0.00021	0.00098	0.00043
Iron	mg/L	0.3 (AO)	**1.04**	**4.21**	**3.61**	**4.14**	**0.336**	**1.78**	**1.92**	**0.465**	**2.00**	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.434**	0.247	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	12.9	52.5	46.2	48.5	44.2	18.4	28.3	14.9	15.9	22.9	20.9	20.2	18.2	18.2	26.4	26.6	29	29.5	31.6	27.0
Manganese	mg/L	0.05 (AO)	**0.286**	**0.458**	**0.463**	**0.492**	**0.373**	**0.282**	**0.315**	**0.104**	**0.14**	**0.184**	**0.195**	**0.181**	**0.102**	0.0196	**0.154**	**0.0806**	**0.0637**	**0.157**	**0.0985**	**0.0422**
Potassium	mg/L	NV	2.02	6.53	3.11	3.28	4.3	3.08	3.42	2.1	2.8	2.6	2.53	2.31	2.65	4.12	3.03	3.18	3.28	2.84	3.78	3.56
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.000091	0.000129	0.000084	0.00022	0.000115	0.000767	0.000479	0.000222	0.000455	0.00105
Silicon	mg/L	NV	1.6	7.48	8.01	8.02	6.31	5	4.17	3.23	4.2	4.5	4.37	4.35	3.98	3.38	5.46	5.05	5.02	5.07	5.52	4.86
Sodium	mg/L	200 (AO)	19.1	72.5	70.2	66.1	63.6	19.3	34.9	13	12.8	22	16.1	15.8	14.7	10.2	17.4	17.7	12.8	14.6	13.0	12.9
Zinc	mg/L	5.0 (AO)	0.013	0.006	<0.004	0.006	0.015	<0.004	<0.004	<0.005	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	0.0010	<0.0010

Notes:
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TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW3 May-06	MW3 May-07	MW3 May-08	MW3 May-09	MW3 May-10	MW3 May-11	MW3 May-12	MW3 Apr-13	MW3 May-14	MW3 May-15	MW3 May-16	MW3 May-17	MW3 May-18	MW3 May-19	MW3 Apr-20	MW3 May-21	MW3 May-22	MW3 May-23	MW3 May-24	MW3 May-25
Field Electrical Conductivity	uS/cm	NV	920	874	817	980	904	867	1060	1130	841	1070	1200	799	1050	972	1641	850	916	1058	964	918
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**457**	**445**	**486**	**481**	**529**	**491**	**516**	**457**	**515**	**509**	**497**	**478**	**454**	**489**	**492**	**437**	**477**	**458**	**474**	**486**
pH	N/A	6.5-8.5 (OG)	7.87	7.95	8.38	8.06	7.84	8.12	8.18	8.17	7.7	7.59	7.98	7.47	7.93	7.74	7.41	7.82	7.62	7.56	7.65	7.79
Total Dissolved Solids	mg/L	500 (AO)	**674**	**566**	**546**	**574**	**646**	**588**	**606**		**671**	**618**	**775**	**659**	**729**	**600**	**593**	**580**	**543**	**541**	**506**	**599**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	283	336	335	412	427	361	431	411	468	484	453	439	399	425	478	415	435	443	632	610
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	15	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	283	336	350	412	427	361	431	411	470	484	453	439	399	425	478	415	435	443	**632**	**610**
Ammonia, Total (as N)	mg/L	NV	0.560	<0.02	<0.02	0.12	<0.02	<0.02	<0.02	<0.02	0.05	<0.050	0.02	<0.020	<0.020	<0.010	<0.010	<0.010	0.0093	0.0092	0.009	<0.0050
Bromide	mg/L	NV	0.070	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	0.17	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	13.9	11.6	13.9	21.2	43.5	39.4	41.8	47.9	42.5	33.1	35.3	36.4	35.1	36.9	33.1	28.6	27.6	23.2	14.7	17.2
Fluoride	mg/L	1.5 (MAC)	0.290	0.52	0.34	0.62	0.29	<0.05	<0.05	<0.25	0.33	0.369	0.4	0.399	0.477	0.316	0.304	0.37	0.322	0.351	0.265	0.380
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.510	0.11	0.23	0.14	<0.05	0.12	0.05	<0.07	<0.2	<0.03	0.718	0.557	1.37	2.3	1.8	2.64	2.09	1.80	0.153	1.30
Nitrate as N	mg/L	10.0 (MAC)	0.510	0.32	0.23	<0.05	<0.05	0.12	0.05	<0.25	0.15	0.027	0.718	0.557	1.37	2.3	1.8	2.64	2.09	1.80	0.153	1.30
Nitrite as N	mg/L	1.0 (MAC)	0.160	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0039	0.0048	0.0035	0.0031	<0.0030	0.004	<0.0030	0.0085	0.0044	0.0031	0.0036	0.0026
Sulphate	mg/L	500 (AO)	211	146	137	103	113	114	116	141	124	96.4	103	105	104	78.5	80.1	80.4	74.8	69.2	50.2	64.2
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**9.3**	2.1	2	2.2	**7.7**	2	2.1	2.3	<1.0	1.8	3.5	1.3	1.6	2.07	2.20	2.66	**6.72**	1.54	2.08	1.63
Aluminum	mg/L	0.1 (OG)	0.008	<0.004	0.004	0.004	<0.004	<0.004	0.005	0.005	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0013	0.0116	0.0029	0.0742
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.00051	0.0004	0.00043	0.0005	0.00038	0.00054	0.00052	0.00035	0.00054	0.00057
Barium	mg/L	1.0 (MAC)	0.111	0.105	0.079	0.076	0.089	0.095	0.108	0.086	0.0949	0.119	0.104	0.09	0.0988	0.0982	0.108	0.0988	0.102	0.107	0.104	0.106
Boron	mg/L	5.0 (MAC)	0.065	0.035	0.035	0.04	0.041	0.046	0.051	0.044	0.037	0.064	0.061	0.061	0.063	0.093	0.095	0.142	0.184	0.168	0.122	0.204
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	115	101	115	109	122	113	118	105	128	113	115	111	106	117	113	104	108	97.5	111	112
Chromium	mg/L	0.05 (MAC)	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0007	0.00043	0.00064	0.00055	0.00058	0.00058	0.00057	0.00066	0.00064	0.00076
Iron	mg/L	0.3 (AO)	0.225	**0.319**	<0.005	<0.01	0.058	<0.01	<0.01	<0.01	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01	<0.010	0.076
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000095
Magnesium	mg/L	NV	41.3	46.8	48.4	50.6	54.5	50.8	53.8	47.2	47.1	54.9	51.1	49	46.2	47.9	51.1	42.8	50.4	52.2	47.8	50.2
Manganese	mg/L	0.05 (AO)	**0.118**	0.031	0.019	0.035	**0.056**	0.008	0.011	0.003	0.0046	0.0167	0.0048	0.00252	0.00261	0.00346	0.00059	0.00099	0.00037	0.00067	0.00028	0.00566
Potassium	mg/L	NV	7.28	4.24	3.35	2.95	2.76	2.39	2.91	2.44	2.2	2.4	2.45	2.2	2.27	2.03	2.52	2.09	2.05	2.18	1.92	2.22
Selenium	mg/L	0.05 (MAC)	**0.02**	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.00053	0.00045	0.0005	0.00207	0.000737	0.00118	0.000828	0.00093	0.00107	0.001000	0.000806	0.00147
Silicon	mg/L	NV	5.95	7.22	7.48	7.81	6.97	6.99	6.5	6.11	7.6	8.3	7.14	7.12	6.48	7.64	7.66	7.18	7.60	7.09	7.83	8.18
Sodium	mg/L	200 (AO)	15.7	21.1	23.4	23.6	36	34.8	51.2	60.7	60.9	70.2	52.8	36.1	35.3	34.6	39.1	32.1	29	28.2	40.5	30.0
Zinc	mg/L	5.0 (AO)	0.008	0.009	0.006	<0.004	<0.004	<0.004	<0.004	<0.005	<0.0030	<0.0030	<0.0010	0.001	<0.0010	<0.0010	<0.0010	0.0012	0.001	<0.0010	0.0010	0.0018

Notes:
1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW5S May-08	MW5S May-09	MW5S May-10	MW5S May-11	MW5S May-12	MW5S Apr-13	MW5S May-14	MW5S May-15	MW5S May-16	MW5S May-17	MW5S May-18	MW5S May-19	MW5S Apr-20	MW5S May-21	MW5S May-22	MW5S May-23	MW5S May-24	MW5S May-25
Field Electrical Conductivity	uS/cm	NV	637	796	653	742	756	814	713	738	950	654	700	737	757	730	725	818	801	836
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**360**	**360**	**387**	**379**	**350**	**363**	**377**	**383**	**342**	**312**	**244**	**497**	**336**	**321**	**333**	**368**	**387**	**374**
pH	N/A	6.5-8.5 (OG)	8.49	8.27	8.19	8.19	8.25	8.21	7.97	7.92	8.18	7.83	8.08	7.97	7.81	8.14	7.77	7.75	8.10	7.94
Total Dissolved Solids	mg/L	500 (AO)	424	452	466	460	416		447	475	461	**527**	435	**503**	**448**	**456**	**512**	468	487	**535**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	257	293	301	308	318	311	271	317	316	316	256	334	316	316	314	404	308	311
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	21	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	278	293	301	308	318	311	273	317	316	316	256	334	316	316	314	404	308	311
Ammonia, Total (as N)	mg/L	NV	0.24	0.08	0.03	<0.02	<0.02	0.03	0.188	<0.050	<0.020	<0.020	0.194	<0.010	<0.010	0.01	<0.0050	0.0061	<0.0050	0.0155
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	10.7	20.8	23.7	18.7	16	14	13.4	16.3	18.5	15	7.94	14.2	12.8	13.2	11.9	10.5	8.58	7.85
Fluoride	mg/L	1.5 (MAC)	0.78	0.81	0.66	0.47	0.74	0.54	0.79	0.833	0.8	0.9	0.867	0.875	0.793	0.866	0.807	0.816	0.757	0.825
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	1.44	2	2.75	2.27	3.14	4.81	4.78	5.65	7.83	10.4	3.11	5.24	5.17	**13.6**	**15.9**	**22**	**16.6**
Nitrate as N	mg/L	10.0 (MAC)	<0.05	1.44	2	2.75	2.27	3.14	4.81	4.78	5.65	7.83	10.4	3.11	5.24	5.17	**13.6**	**15.9**	**22**	**16.6**
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0034	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0035	<0.0030	0.0020	0.0018	0.0016
Sulphate	mg/L	500 (AO)	84.8	100	92.7	89.2	77.7	94.1	76.4	73.8	71.1	89.6	47.9	78.5	67.9	67.6	66.1	56.7	55.8	60.3
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	4.7	2.1	1.5	1	1.3	1.2	<1.0	<1.0	2.3	<1.0	1.3	0.85	1.53	1.70	4.17	1.36	1.70	0.88
Aluminum	mg/L	0.1 (OG)	0.006	0.008	0.01	0.005	0.011	0.006	0.077	<0.010	<0.0050	<0.0050	<0.0050	**0.561**	<0.0050	<0.0050	0.0018	**0.14**	0.0037	0.0723
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.00035	0.0003	0.00032	0.00111	0.00032	0.00034	0.00032	0.00034	0.00028	0.00045
Barium	mg/L	1.0 (MAC)	0.059	0.039	0.054	0.064	0.062	0.061	0.0677	0.0785	0.0755	0.07	0.052	0.0933	0.0809	0.081	0.0753	0.0876	0.0936	0.0857
Boron	mg/L	5.0 (MAC)	0.083	0.077	0.061	0.046	0.042	0.042	0.036	0.04	0.032	0.031	0.027	0.029	0.031	0.031	0.026	0.028	0.027	0.060
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000052	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	74.4	73.7	81.2	80.9	74.7	78.5	88.1	81.9	76.2	70.5	59.3	129	77.3	73.3	73.4	79.3	84.0	85.3
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00191	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0002	0.00048	0.00045	0.00296	0.00022	0.00095	0.00024	0.00054	0.00027	0.00035
Iron	mg/L	0.3 (AO)	<0.005	<0.01	<0.01	<0.01	<0.01	<0.01	0.097	<0.050	<0.010	<0.010	<0.010	**0.848**	<0.010	<0.010	<0.010	0.161	<0.010	0.076
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00189	<0.000050	<0.000050	<0.000050	0.000161	<0.000050	0.000081
Magnesium	mg/L	NV	42.2	42.7	44.7	42.9	39.7	40.6	38	43.4	36.9	32.9	23.3	42.3	34.8	33.6	36.4	41.4	43.1	39.1
Manganese	mg/L	0.05 (AO)	**0.052**	0.017	0.015	0.009	0.01	0.007	0.0079	0.0029	0.0036	0.00313	0.00085	**0.156**	0.00054	<0.00050	0.00010	0.0095	0.00026	0.00765
Potassium	mg/L	NV	8.74	2.67	4.77	3.97	3.48	3.27	3.4	3.3	2.96	2.74	2.24	2.85	2.86	2.67	2.71	2.68	2.86	2.9
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.00049	0.0007	0.0007	0.00171	0.00104	0.000685	0.000738	0.000767	0.000760	0.000741	0.000705	0.000682
Silicon	mg/L	NV	6.5	6.86	6.18	6.27	4.91	5.3	5.9	6	5.54	4.95	4.63	5.44	5.49	5.17	5.28	5.54	5.75	5.91
Sodium	mg/L	200 (AO)	16.5	24.8	24.7	22.1	21.7	25.7	25.2	27.7	39.5	50.9	43.4	43.4	37.4	29.8	34.9	29.6	31.5	28.8
Zinc	mg/L	5.0 (AO)	<0.004	<0.004	0.02	0.025	0.009	<0.005	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	0.0057	<0.0010	0.0018	<0.0010	0.0012	<0.0010	<0.0010

Notes:
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TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW5D May-08	MW5D May-09	MW5D May-10	MW5D May-11	MW5D May-12	MW5D Apr-13	MW5D May-14	MW5D May-15	MW5D May-16	MW5D May-17	MW5D May-18	MW5D May-19	MW5D Apr-20	MW5D May-21	MW5D May-22	MW5D May-23	MW5D May-24	MW5D May-25
Field Electrical Conductivity	uS/cm	NV	390	408	337	376	390	405	712	366	470	372	430	388	565	652	539	448	403	434
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**188**	**178**	**179**	**165**	**166**	**172**	**206**	**171**	**169**	**165**	**168**	**313**	**296**	**288**	**192**	**182**	**186**	**188**
pH	N/A	6.5-8.5 (OG)	**8.58**	8.32	8.17	8.19	8.22	8.33	8.2	8.18	8.34	8.11	8.24	8.30	7.83	8.08	8.29	8.19	8.44	8.20
Total Dissolved Solids	mg/L	500 (AO)	230	198	226	186	218		188	210	248	247	300	272	369	443	307	219	206	271
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	191	206	208	207	213	206	208	221	201	224	212	212	260	214	234	275	238	266
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	18	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	209	209	208	207	213	210	211	221	209	224	212	212	260	214	234	275	238	266
Ammonia, Total (as N)	mg/L	NV	0.31	0.11	0.1	<0.02	0.16	0.07	0.089	0.162	0.13	0.158	0.237	0.151	0.048	0.024	0.0288	0.0501	0.108	0.0393
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	2.83	1.89	1.35	1.22	1.26	1.21	<2.0	0.93	1.0	0.99	1.19	1.44	8.18	5.89	2.25	2.12	1.70	2.00
Fluoride	mg/L	1.5 (MAC)	1.23	1.06	1.06	1.04	1.13	1.13	1.27	1.28	1.2	1.06	1.22	1.3	0.501	0.583	1.05	1.25	1.25	1.27
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	0.05	0.1	0.13	0.09	<0.07	<0.2	<0.03	0.055	0.03	<0.022	<0.022	**11.426**	**30.2**	3.54	0.273	0.0340	0.0850
Nitrate as N	mg/L	10.0 (MAC)	<0.05	0.05	0.1	0.13	0.09	0.06	<0.10	0.026	0.026	0.03	<0.020	<0.020	**11.4**	**30.2**	3.54	0.273	0.034	0.085
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.010	0.029	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.0049	0.006	0.0064	0.0073	0.0048	0.0115	<0.0030	0.0137	0.0069	0.0080	0.0057	0.0058
Sulphate	mg/L	500 (AO)	11.3	12.1	10.7	5.01	5.71	5.45	4.4	5.33	3.2	3.6	4.32	4.18	24.9	23.4	11.9	9.41	3.31	6.94
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	1.8	1.2	**5.1**	1	1	1.2	<1.0	<1.0	1.7	<1.0	2.3	1.13	1.5	1.98	4.25	2.50	1.08	0.92
Aluminum	mg/L	0.1 (OG)	0.011	0.014	0.006	<0.004	0.037	0.01	0.032	<0.010	<0.0050	<0.0050	<0.0050	**1.19**	<0.0050	<0.0050	0.0022	0.023	0.0417	0.0023
Arsenic	mg/L	0.01 (IMAC)	0.009	0.008	0.005	0.01	0.009	0.01	0.0032	0.0059	0.00831	0.01	0.00753	**0.0101**	0.00144	0.00122	0.00199	0.00241	0.00486	0.00282
Barium	mg/L	1.0 (MAC)	0.025	0.032	0.039	0.04	0.043	0.04	0.0438	0.0466	0.0433	0.05	0.0492	0.0728	0.108	0.116	0.0705	0.0662	0.0643	0.0630
Boron	mg/L	5.0 (MAC)	0.09	0.103	0.106	0.1	0.094	0.103	0.088	0.103	0.093	0.102	0.107	0.098	0.028	0.031	0.069	0.080	0.101	0.103
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000065	0.000012	0.000014	<0.0000050	<0.0000050	<0.0000050	0.0000132
Calcium	mg/L	NV	32.9	29	29	26.2	26.7	27.6	45.2	27.2	27.6	26.6	28.7	74.5	70.7	69.6	37.1	30.1	31.5	33.0
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00188	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	0.00099	0.00036	0.00361	0.00065	0.0036	0.00048	0.00044	0.00055	0.00195
Iron	mg/L	0.3 (AO)	<0.005	0.073	0.129	<0.01	0.04	0.013	<0.050	<0.050	<0.010	<0.010	<0.010	**1.35**	<0.010	<0.010	<0.010	0.015	0.03	0.014
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00284	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000085
Magnesium	mg/L	NV	25.6	25.7	25.8	24.3	24.2	25	22.7	25	24.2	24	23.3	30.7	29	27.6	24.2	26	26.1	25.6
Manganese	mg/L	0.05 (AO)	0.019	0.01	0.011	0.007	0.032	0.013	0.0129	0.0091	0.0081	0.0128	0.0101	**0.177**	<0.00050	0.00078	0.00016	0.00297	0.00345	0.0187
Potassium	mg/L	NV	2.25	2.35	2.19	1.5	1.63	1.82	1.6	1.4	1.37	1.38	1.31	1.46	5.56	4.87	2.92	2.19	1.58	1.86
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.000050	<0.000050	<0.000050	<0.000050	0.000574	0.000281	0.000176	0.000085	<0.000050	<0.000050
Silicon	mg/L	NV	5.54	6.08	5.6	5.77	5.05	6.14	6	6.1	5.94	5.96	6.32	7.5	5.32	4.38	4.86	4.86	6.07	5.65
Sodium	mg/L	200 (AO)	23.1	23	21.6	18.9	21.7	21.4	20.4	22.8	20.9	20.8	20.8	21.1	12.6	12.9	18.3	20.8	22.7	21.5
Zinc	mg/L	5.0 (AO)	<0.004	0.028	<0.004	<0.004	0.03	<0.005	0.0086	<0.0030	<0.0010	<0.0010	<0.0010	0.0178	<0.0010	0.0063	<0.0010	<0.0010	<0.0010	0.0040

Notes:
1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW6S May-08	MW6S May-09	MW6S May-10	MW6S May-11	MW6S May-12	MW6S Apr-13	MW6S May-14	MW6S May-15	MW6S May-16	MW6S May-17	MW6S May-18	MW6S May-19	MW6S Apr-20	MW6S May-21	MW6S May-22	MW6S May-23	MW6S May-24	MW6S May-25
Field Electrical Conductivity	uS/cm	NV	581	566	497	560	596	624	748	565	750	547	680	624	574	606	578	331	630	699
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**328**	**300**	**303**	**295**	**294**	**315**	**296**	**302**	**304**	**302**	**291**	**1330**	**311**	**277**	**291**	**297**	**322**	**312**
pH	N/A	6.5-8.5 (OG)	**8.55**	8.25	8.15	8.19	8.18	8.25	8.04	8.02	8.21	7.93	8.12	8.21	7.94	8.13	8.05	8.02	8.25	8.07
Total Dissolved Solids	mg/L	500 (AO)	404	316	356	330	346		316	345	454	399	**666**	490	360	391	438	361	354	**634**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	219	246	250	244	244	236	233	242	251	254	249	219	296	269	294	325	262	365
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	19	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	238	246	250	244	244	236	235	242	251	254	249	219	296	269	294	325	262	365
Ammonia, Total (as N)	mg/L	NV	0.78	0.48	0.05	<0.02	<0.02	0.04	<0.050	<0.050	0.04	<0.020	0.212	0.012	0.011	<0.010	<0.0050	<0.0050	<0.0050	0.0170
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	17.2	12.8	21	22.6	24.2	26	24.4	23.6	22.1	20.4	18.4	17.1	15.6	14.3	15.8	16.6	16.2	16.6
Fluoride	mg/L	1.5 (MAC)	0.43	0.4	0.38	<0.05	0.37	0.39	0.58	0.548	0.5	0.583	0.552	0.62	0.573	0.575	0.547	0.57	0.552	0.641
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.51	0.14	0.76	1.04	0.8	1.18	0.77	0.767	1.03	0.924	0.753	0.747	1.14	1.89	5.14	6.26	5.93	3.89
Nitrate as N	mg/L	10.0 (MAC)	0.51	0.14	0.76	1.04	0.8	1.18	0.77	0.767	1.03	0.924	0.753	0.747	1.14	1.89	5.14	6.26	5.93	3.89
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.0030	0.0035	0.0031	0.005	0.0033	0.0039	<0.0030	0.0047	0.0045	0.0029	0.0016	0.003
Sulphate	mg/L	500 (AO)	77.9	41.4	46.7	45.3	48.1	50	49.2	49.4	51.6	50.9	56.6	56.8	55.7	51.1	49.4	48.7	46.6	51.6
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**5.2**	2	**6.2**	2	1.1	1.6	<1.0	<1.0	2	<1.0	1.4	1.01	1.13	1.68	4.03	0.94	1.20	0.83
Aluminum	mg/L	0.1 (OG)	0.01	0.06	0.009	<0.004	0.007	0.006	0.039	<0.010	<0.0050	<0.0050	<0.0050	**0.445**	<0.0050	<0.0050	0.0021	0.003	0.0022	0.0116
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0005	0.0005	0.00051	0.00134	0.00043	0.00048	0.00039	0.00041	0.00042	0.00053
Barium	mg/L	1.0 (MAC)	0.04	0.05	0.047	0.055	0.056	0.047	0.0617	0.0658	0.0669	0.07	0.0656	0.243	0.0753	0.0783	0.071	0.0752	0.0825	0.0789
Boron	mg/L	5.0 (MAC)	0.048	0.032	0.022	0.021	0.023	0.02	0.015	0.022	0.018	0.02	0.021	0.021	0.019	0.018	0.017	0.019	0.021	0.022
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000305	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	78.7	67.5	69.1	65.6	66	70.9	70.3	66.8	67.2	67.8	67.6	447	71.2	62.1	63.5	63.4	69.9	69.3
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0002	<0.00020	0.00022	0.00048	<0.00020	0.00038	<0.00020	0.00139	0.00030	0.00077
Iron	mg/L	0.3 (AO)	<0.005	0.045	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.010	<0.010	<0.010	0.275	<0.010	<0.010	<0.010	<0.010	<0.010	0.020
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00007	<0.000050	<0.000050	<0.000050	0.000056	<0.000050	<0.000050
Magnesium	mg/L	NV	31.9	32	31.8	31.9	31.3	33.6	29.2	32.8	33	32.3	29.7	51.6	32.3	29.7	32.2	33.8	35.7	33.8
Manganese	mg/L	0.05 (AO)	**0.051**	**0.097**	0.012	0.005	0.008	<0.002	0.0039	0.0014	0.0016	0.00057	<0.00050	**0.905**	<0.00050	0.00082	0.00067	0.00029	<0.00010	0.00088
Potassium	mg/L	NV	7.92	2.84	1.98	2.13	2.17	2.18	1.8	1.9	1.98	1.9	1.75	2.21	1.89	1.82	1.79	1.78	1.82	1.89
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.0002	0.000163	0.000168	0.000209	0.000179	0.000197	0.000215	0.000113	0.000142	0.000258
Silicon	mg/L	NV	6.21	7.61	6.61	6.47	5.28	5.55	6.3	6.3	6.32	6.21	6.05	7.31	6.41	5.97	6.21	5.95	6.38	6.44
Sodium	mg/L	200 (AO)	11.4	7.74	6.63	6.85	8.14	9.33	9.12	10.7	10.9	10.8	11	13.5	12.8	13.2	14.6	14.2	16.5	16.4
Zinc	mg/L	5.0 (AO)	<0.004	0.01	0.011	<0.004	0.008	0.006	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	0.0113	<0.0010	0.0015	<0.0010	0.0062	<0.0010	0.0017

Notes:
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5. Blank denotes data not available.
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7. NV denotes No Value.

Pinchin File: 333568.002

GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW6D May-08	MW6D May-09	MW6D May-10	MW6D May-11	MW6D May-12	MW6D Apr-13	MW6D May-14	MW6D May-15	MW6D May-16	MW6D May-17	MW6D May-18	MW6D May-19	MW6D Apr-20	MW6D May-21	MW6D May-22	MW6D May-23	MW6D May-24	MW6D May-25
Field Electrical Conductivity	uS/cm	NV	457	493	394	501	479	512	788	471	580	385	480	465	414	424	490	525	463	476
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**236**	**227**	**213**	**216**	**201**	**205**	**251**	**189**	**190**	**193**	**188**	**219**	**203**	**179**	**194**	**197**	**196**	**186**
pH	N/A	6.5-8.5 (OG)	**8.57**	8.28	8.17	8.25	8.25	8.3	8.09	8.16	8.31	8.03	8.13	8.32	8.12	8.29	8.19	8.26	8.48	8.24
Total Dissolved Solids	mg/L	500 (AO)	272	268	266	270	254		241	218	297	257	313	228	268	261	270	237	208	275
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	200	218	211	217	218	221	211	207	198	226	213	210	218	219	231	232	209	223
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	19	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	219	218	211	217	218	221	214	207	206	226	213	210	218	220	231	232	209	223
Ammonia, Total (as N)	mg/L	NV	0.19	<0.02	0.05	<0.02	0.09	0.04	0.058	0.095	0.1	0.065	0.162	0.16	0.020	0.015	0.0065	0.0238	0.0271	0.0329
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	4.32	13.6	14.6	19.4	16.2	20.2	20.1	12.3	12.9	11.9	9.65	5.53	10.8	10.8	11.7	10.3	6.34	6.18
Fluoride	mg/L	1.5 (MAC)	0.99	1.02	1	1.08	0.83	1.11	1.23	1.33	1.2	1.33	1.26	1.4	1.29	1.3	1.28	1.27	1.25	1.36
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	0.13	0.06	0.17	<0.05	0.15	<0.2	0.045	0.058	0.063	0.053	<0.022	0.105	0.154	0.164	0.129	0.0560	0.0840
Nitrate as N	mg/L	10.0 (MAC)	<0.05	0.13	0.06	0.17	<0.05	0.15	<0.10	0.045	0.058	0.063	0.053	<0.020	0.105	0.154	0.164	0.129	0.056	0.084
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.0051	0.0047	<0.0030	<0.0030	0.145	0.0147	0.0068	0.0216	0.0219	0.0158	0.0104	0.0111
Sulphate	mg/L	500 (AO)	36.4	35	24	35.4	16.1	21.6	23.6	16.7	16.7	16.4	14.9	8.11	17.2	20.3	22.5	17.8	9.19	9.66
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	2.8	2.2	2.3	1	1.2	1.3	<1.0	<1.0	1.8	<1.0	1.8	1.07	1.17	1.44	3.90	0.79	1.12	1.08
Aluminum	mg/L	0.1 (OG)	0.013	0.008	0.004	0.006	0.012	0.007	0.025	<0.010	0.0091	0.0065	<0.0050	**0.137**	<0.0050	<0.0050	0.0023	0.003	0.0059	0.0018
Arsenic	mg/L	0.01 (IMAC)	0.006	0.006	0.006	0.008	**0.011**	0.01	0.008	0.0095	0.00832	0.00998	0.00976	**0.0115**	0.00946	**0.0102**	0.00736	0.00936	**0.0122**	**0.0138**
Barium	mg/L	1.0 (MAC)	0.022	0.019	0.03	0.039	0.04	0.036	0.042	0.04	0.0389	0.04	0.0397	0.0411	0.0414	0.0424	0.0415	0.0422	0.0394	0.0387
Boron	mg/L	5.0 (MAC)	0.064	0.069	0.066	0.061	0.06	0.058	0.053	0.071	0.063	0.07	0.072	0.067	0.064	0.063	0.058	0.059	0.072	0.074
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000021	0.000023	0.000018	<0.0000050	<0.0000050	0.0000054	<0.0000050
Calcium	mg/L	NV	48.8	41.3	38.5	38.6	36.3	37.2	56.7	33.2	34.6	35.4	36.4	43.3	37.5	33.6	34.7	34.9	33.8	33.5
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00071	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.004	0.004	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	0.00023	0.00052	0.00038	0.00037	<0.00020	0.00055	0.00120	0.00040
Iron	mg/L	0.3 (AO)	<0.005	**0.309**	0.054	<0.01	0.08	<0.01	<0.050	<0.050	<0.010	<0.010	<0.010	**0.308**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.000528	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	27.7	30.2	28.3	29.1	26.8	27.2	26.7	25.9	25.1	25.3	23.6	26.9	26.5	23.1	26.2	26.6	27.2	24.9
Manganese	mg/L	0.05 (AO)	0.033	0.014	0.014	0.014	0.018	0.013	0.0097	0.0077	0.0058	0.00732	0.0052	0.0389	0.00122	0.00159	0.00058	0.00251	0.00581	0.00588
Potassium	mg/L	NV	2.97	2.19	1.55	1.65	1.41	1.43	1.3	1.2	1.26	1.23	1.12	1.18	1.29	1.19	1.26	1.16	1.2	1.17
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.000084	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	NV	5.57	6.34	5.84	5.91	5.46	6.03	6.5	6.3	6.1	6.23	6.3	6.55	6.76	6.19	6.5	6.43	6.76	6.59
Sodium	mg/L	200 (AO)	18.9	21.1	21.6	26.4	25.9	27	26.3	25.6	24.8	26.5	23.6	22.4	26.8	26	28.3	24.7	24.2	21.1
Zinc	mg/L	5.0 (AO)	0.007	0.015	<0.004	0.017	0.017	<0.005	0.0413	<0.0030	<0.0010	<0.0010	<0.0010	0.0033	0.0014	<0.0010	<0.0010	0.0026	0.0021	<0.0010

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW7S May-08	MW7S May-09	MW7S May-10	MW7S May-11	MW7S May-12	MW7S Apr-13	MW7S May-14	MW7S May-15	MW7S May-16	MW7S May-17	MW7S May-18	MW7S May-19	MW7S Apr-20	MW7S May-21	MW7S May-22	MW7S May-23	MW7S May-24	MW7S May-25	MW7S Sep-25
Field Electrical Conductivity	uS/cm	NV	602	610	600	684	748	792	507	747	940	749	910	837	757	767	815	926	993	923	954
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**332**	**304**	**333**	**343**	**355**	**356**	**380**	**375**	**370**	**377**	**369**	**443**	**406**	**363**	**381**	**393**	**425**	**429**	**412**
pH	N/A	6.5-8.5 (OG)	**8.53**	8.27	8.15	8.2	8.24	8.22	7.93	8.04	8.2	7.82	8.13	7.87	7.85	8.14	8	8.05	8.27	8.05	7.65
Total Dissolved Solids	mg/L	500 (AO)	446	314	450	376	400		431	475	**562**	484	326	**518**	**521**	**515**	476	468	478	**619**	248
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	244	265	259	257	263	256	248	258	248	266	258	285	258	244	255	259	244	266	<1.0
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	22	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<50	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	248
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	266	265	259	257	263	256	250	258	248	266	258	285	258	244	255	259	244	266	**604**
Ammonia, Total (as N)	mg/L	NV	0.09	<0.02	0.04	<0.02	<0.02	0.05	<0.050	<0.050	0.05	0.023	0.023	0.015	0.020	<0.010	0.0061	<0.0050	<0.0050	<0.0050	0.0078
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.10	<0.10	<0.10	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.14	<0.20
Chloride	mg/L	250 (AO)	30	37.8	73.7	77.4	82.1	91	92.1	96.6	97.5	103	109	114	117	122	127	127.0	129	134	134
Fluoride	mg/L	1.5 (MAC)	0.63	0.69	0.61	0.6	0.48	0.48	0.72	0.731	0.8	0.757	0.689	0.788	0.748	0.756	0.737	0.742	0.629	0.740	0.714
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.2	<0.03	<0.022	<0.022	0.035	0.031	0.043	0.062	0.053	0.051	<0.0224	0.0340	0.146
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	0.023	<0.020	<0.020	0.035	0.031	0.043	0.062	0.053	0.051	<0.020	0.034	0.146
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0039	0.0041	0.0043	<0.0030	0.0047	0.0038	<0.0030	0.0047	0.0046	0.0034	0.0038	0.0033	0.0043
Sulphate	mg/L	500 (AO)	36.9	11.3	15.6	15.9	17	18.3	16	17.4	19.4	19.1	20	20.6	21.2	19.4	20.2	19.6	18.4	20.9	22.4
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	4.0	0.9	4.7	1.0	0.9	2.1	<1.0	<1.0	1.7	<1.0	<1.0	1.08	1.01	1.23	4.39	0.76	1.02	0.80	<0.50
Aluminum	mg/L	0.1 (OG)	0.012	0.007	0.005	<0.004	0.011	0.006	0.015	<0.010	<0.0050	<0.0050	<0.0050	**0.255**	<0.0050	<0.0050	0.0014	0.0017	0.0052	<0.0010	0.0015
Arsenic	mg/L	0.01 (IMAC)	<0.003	0.005	0.003	0.004	0.004	0.004	0.0049	0.0034	0.00196	0.003	0.00336	0.00471	0.00350	0.00479	0.00434	0.00324	0.00413	0.00477	0.00388
Barium	mg/L	1.0 (MAC)	0.029	0.041	0.073	0.078	0.081	0.071	0.0883	0.103	0.0983	0.10	0.102	0.124	0.112	0.107	0.113	0.114	0.124	0.121	0.130
Boron	mg/L	5.0 (MAC)	0.045	0.038	0.036	0.031	0.032	0.029	0.026	0.033	0.031	0.034	0.034	0.035	0.0350	0.0330	0.0300	0.030	0.035	0.034	0.034
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000021	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000051
Calcium	mg/L	NV	69	62.4	67	70.6	73.5	74.6	85.8	75.6	73.8	76.8	78.5	97.3	85.5	76.6	74.8	77.2	85.3	88.2	84.3
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	0.005	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00066	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.00020	<0.00020	<0.00020	0.00148	0.00023	<0.00020	<0.00020	0.00172	0.00043	<0.00020	0.00033
Iron	mg/L	0.3 (AO)	<0.005	0.083	0.153	<0.01	<0.01	0.013	<0.050	<0.050	<0.010	<0.010	<0.010	**0.45**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.000731	<0.000050	<0.000050	<0.000050	0.000075	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	38.7	36	40.2	40.6	41.7	41.3	40.4	45.3	45	45	42.1	48.5	46.6	41.7	47.1	48.6	51.4	50.8	49.0
Manganese	mg/L	0.05 (AO)	**0.051**	0.026	0.031	0.019	0.026	0.014	0.0205	0.0157	0.0168	0.0119	0.00827	**0.0747**	0.00209	0.00355	0.0033	0.00081	0.00140	0.00155	0.00170
Potassium	mg/L	NV	7.39	2.71	2.6	2.21	2.26	1.93	1.9	2	2.16	2	1.87	2.17	2.10	1.86	1.96	1.88	1.96	2.02	2.01
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.0002	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000052	<0.000050
Silicon	mg/L	NV	6.87	7.83	6.98	7.41	6.06	6.94	8.1	8.2	7.31	7.67	8.24	8.47	8.22	7.49	8.2	7.56	8.05	8.57	8.56
Sodium	mg/L	200 (AO)	12.5	10.8	2.6	11.2	13.7	14.2	14.4	16.8	16.2	16.6	16.4	18.7	19.0	17.1	19.1	19.4	21.4	21.5	21.2
Zinc	mg/L	5.0 (AO)	<0.004	<0.004	0.006	<0.004	0.015	<0.005	0.0262	<0.0030	<0.0010	<0.0010	<0.0010	0.0037	<0.0010	<0.0010	<0.0010	0.0062	0.0010	<0.0010	0.0019

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
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4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW7D May-08	MW7D May-09	MW7D May-10	MW7D May-11	MW7D May-12	MW7D May-13	MW7D May-14	MW7D May-15	MW7D May-16	MW7D May-17	MW7D May-18	MW7D May-19	MW7D Apr-20	MW7D May-21	MW7D May-22	MW7D May-23	MW7D May-24	MW7D May-25
Field Electrical Conductivity	uS/cm	NV	880	972	683	689	718	766	637	614	810	609	710	686	618	600	614	653	665	676
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**374**	**510**	**312**	**280**	**277**	**283**	**319**	**242**	**238**	**228**	**258**	**984**	**231**	**200**	**207**	**208**	**228**	**319**
pH	N/A	6.5-8.5 (OG)	8.28	8.1	8.18	8.25	8.31	8.29	8.05	8.12	8.38	8.18	8.16	7.95	8.15	8.37	8.26	8.30	8.19	8.25
Total Dissolved Solids	mg/L	500 (AO)	**546**	**760**	488	426	410		408	376	**904**	472	**681**	**558**	403	391	386	339	336	444
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	255	245	256	264	258	262	258	275	241	269	250	469	286	261	272	278	276	280
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	7	<5	<10	<10	<10	<10	<10	<50	<2.0	5.7	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	256	245	256	264	264	262	261	275	245	269	250	469	286	267	272	280	276	280
Ammonia, Total (as N)	mg/L	NV	<0.02	0.23	0.05	0.02	0.11	0.04	<0.050	<0.050	0.04	0.055	0.121	0.032	0.016	<0.010	0.0063	<0.0050	0.0316	<0.0050
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	250 (AO)	5.71	12.4	4.49	4.16	4.2	4.4	47.2	5.68	6.8	9.13	10.1	10.9	16.3	15.9	17.4	17.2	17.4	19.4
Fluoride	mg/L	1.5 (MAC)	0.82	0.65	0.67	0.88	0.78	0.73	0.95	1.23	1.3	1.21	1.22	1.17	1.32	1.35	1.35	1.36	1.21	1.34
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.41	0.28	0.32	0.16	<0.05	0.27	0.26	0.157	0.117	0.095	0.257	0.249	0.644	0.311	0.154	0.188	0.101	0.342
Nitrate as N	mg/L	10.0 (MAC)	0.41	0.28	0.32	0.16	<0.05	0.27	0.26	0.157	0.117	0.095	0.257	0.249	0.644	0.311	0.154	0.188	0.101	0.342
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	0.0033	<0.0030	0.0037	<0.0030	<0.0030	0.0039	<0.0030	0.127	0.013	0.0012	<0.0010	0.0066
Sulphate	mg/L	500 (AO)	224	309	185	137	125	139	64.9	88.2	74.5	81.2	90.7	96.1	73.2	65.9	56.8	50.0	49.8	64.3
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	2.5	**8.6**	2	1.4	**13.4**	1.3	<1.0	<1.0	1.3	<1.0	2.3	0.94	1.17	1.79	2.97	0.82	4.66	1.47
Aluminum	mg/L	0.1 (OG)	0.004	<0.004	0.012	0.004	0.007	0.006	<0.010	<0.010	0.0057	<0.0050	<0.0050	**1.07**	<0.0050	0.006	0.0049	0.0062	0.0039	**0.741**
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.00043	0.001	0.00059	0.00215	0.00047	0.00065	0.00062	0.00057	0.00042	0.00113
Barium	mg/L	1.0 (MAC)	0.035	0.069	0.035	0.037	0.039	0.041	0.0444	0.0477	0.0477	0.04	0.0445	0.124	0.0497	0.0479	0.0487	0.0498	0.0518	0.0671
Boron	mg/L	5.0 (MAC)	0.128	0.126	0.125	0.122	0.116	0.123	0.106	0.125	0.113	0.122	0.134	0.134	0.133	0.123	0.109	0.113	0.124	0.127
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	0.00001	0.000011	<0.000020	0.00018	<0.000020	<0.000040	<0.0000200	<0.0000080	<0.0000100	0.0000269
Calcium	mg/L	NV	69.6	108	56.1	49.7	49.7	51	73.8	42.6	43.2	43.3	48.6	278	42.7	37.4	36	35.8	39.6	67.6
Chromium	mg/L	0.05 (MAC)	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00257	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00168
Copper	mg/L	1.0 (AO)	0.007	0.004	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0005	0.0006	0.00071	0.00625	0.00031	0.00079	0.00052	0.0013	0.00045	0.00201
Iron	mg/L	0.3 (AO)	<0.01	0.25	0.011	<0.01	<0.01	<0.01	<0.050	<0.050	<0.010	<0.010	<0.010	**1.46**	<0.010	<0.010	<0.010	<0.010	<0.010	**0.956**
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	0.00267	<0.000050	0.000059	<0.000050	0.00011	<0.000050	0.000800
Magnesium	mg/L	NV	48.7	58.3	41.8	37.9	37.2	37.9	32.7	32.8	31.6	29.1	33.3	70.3	30.2	25.9	28.5	28.8	31.5	36.5
Manganese	mg/L	0.05 (AO)	0.025	**0.107**	0.013	0.009	0.008	0.005	0.0072	0.012	<0.00050	<0.00050	<0.00050	**0.67**	<0.00050	0.00052	0.00016	0.00086	0.00088	**0.0670**
Potassium	mg/L	NV	3.47	6.12	2.96	2.42	2.24	2.21	2.1	1.9	1.83	1.86	1.9	2.26	1.81	1.7	1.74	1.56	1.62	1.90
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	0.0002	0.000248	0.000301	0.000226	0.000435	0.000181	0.000126	0.000163	0.000144	0.000278
Silicon	mg/L	NV	6	6.59	5.04	5.01	4.37	5.19	4.9	5.2	5	5.09	5.13	6.41	5.61	4.84	4.92	4.84	5.3	7.22
Sodium	mg/L	200 (AO)	56.7	40.9	45.5	48.9	52.4	52.8	57.3	57	53.1	48.1	56.1	58.5	63.9	56.4	58.4	58.4	57.8	60.1
Zinc	mg/L	5.0 (AO)	0.027	0.01	0.025	0.01	0.005	0.009	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	0.0108	<0.0010	0.0041	0.0015	0.0055	0.0024	0.0047

Notes:
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3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold and Shaded denotes exceedances of the ODWS.
5. Blank denotes data not available.
6. Unless otherwise states, units are reported in mg/L.
7. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW1S May-06	MW1S May-07	MW1S May-08	MW1S May-09	MW1S May-10	MW1S May-11	MW1S May-12	MW1S Apr-13	MW1S May-14	MW1S May-15	MW1S May-16	MW1S May-17	MW1S May-18	MW1S May-19	MW1S Apr-20	MW1S May-21	MW1S May-22	MW1S May-23	MW1S May-24	MW1S May-25
Acetone	µg/L	NV	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	**0.24**	<0.2	<0.2	**0.22**	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV														<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	0.68	<0.2	**0.53**	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV					<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	**1.1**	<0.2	<0.2	**0.24**	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.5						<0.50	

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	*MW1D* *May-06*	*MW1D* *May-08*	*MW1D* *May-09*	*MW1D* *May-10*	*MW1D* *May-11*	*MW1D* *Apr-13*	*MW1D* *May-14*	*MW1D* *May-15*	*MW1D* *May-16*	*MW1D* *May-17*	*MW1D* *May-18*	*MW1D* *May-19*	*MW1D* *Apr-20*	*MW1D* *May-21*	*MW1D* *May-22*	*MW1D* *May-23*	*MW1D* *May-24*	*MW1D* *May-25*
Acetone	µg/L	NV	<0.5	<0.5	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	**0.28**	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV				<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	**0.27**	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW2 May-06	MW2 May-08	MW2 May-09	MW2 May-10	MW2 May-11	MW2 May-12	MW2 Apr-13	MW2 May-14	MW2 May-15	MW2 May-16	MW2 May-17	MW2 May-18	MW2 May-19	MW2 Apr-20	MW2 May-21	MW2 May-22	MW2 May-23	MW2 May-24	MW2 May-25
Acetone	µg/L	NV	<0.5	<0.5	<1	**7.2**	<1	<1	<1	**28**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV													<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	**0.11**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV				<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	**0.29**	<0.2	**0.2**	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	**0.12**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5						<0.50

Notes:
1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*	*MW3*
			May-06	*May-07*	*May-08*	*May-09*	*May-10*	*May-11*	*May-12*	*Apr-13*	*May-14*	*May-15*	*May-16*	*May-17*	*May-18*	*May-19*	*Apr-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*
Acetone	µg/L	NV	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV														<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV					<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**0.21**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.5						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	*MW5S* *May-08*	*MW5S* *May-09*	*MW5S* *May-10*	*MW5S* *May-11*	*MW5S* *May-12*	*MW5S* *Apr-13*	*MW5S* *May-14*	*MW5S* *May-15*	*MW5S* *May-16*	*MW5S* *May-17*	*MW5S* *May-18*	*MW5S* *May-19*	*MW5S* *Apr-20*	*MW5S* *May-21*	*MW5S* *May-22*	*MW5S* *May-23*	*MW5S* *May-24*	*MW5S* *May-25*
Acetone	µg/L	NV	<0.5	<1	<1	<1	<1	<1	**29**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	**0.25**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	**0.56**	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	**0.11**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**0.69**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.050

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW5D May-08	MW5D May-09	MW5D May-10	MW5D May-11	MW5D May-12	MW5D Apr-13	MW5D May-14	MW5D May-15	MW5D May-16	MW5D May-17	MW5D May-18	MW5D May-19	MW5D Apr-20	MW5D May-21	MW5D May-22	MW5D May-23	MW5D May-24	MW5D May-25
Acetone	µg/L	NV	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.1	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2		<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**0.26**	<0.2	**0.23**	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*	*MW6S*
			May-08	*May-09*	*May-10*	*May-11*	*May-12*	*Apr-13*	*May-14*	*May-15*	*May-16*	*May-17*	*May-18*	*May-19*	*Apr-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*
Acetone	µg/L	NV	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.4	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.52**
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.50

Notes:
1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	*MW6D* *May-08*	*MW6D* *May-09*	*MW6D* *May-10*	*MW6D* *May-11*	*MW6D* *May-12*	*MW6D* *Apr-13*	*MW6D* *May-14*	*MW6D* *May-15*	*MW6D* *May-16*	*MW6D* *May-17*	*MW6D* *May-18*	*MW6D* *May-19*	*MW6D* *Apr-20*	*MW6D* *May-21*	*MW6D* *May-22*	*MW6D* *May-23*	*MW6D* *May-24*	*MW6D* *May-25*
Acetone	µg/L	NV	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.5	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**0.37**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW7S May-08	MW7S May-09	MW7S May-10	MW7S May-11	MW7S May-12	MW7S Apr-13	MW7S May-14	MW7S May-15	MW7S May-16	MW7S May-17	MW7S May-18	MW7S May-19	MW7S Apr-20	MW7S May-21	MW7S May-22	MW7S May-23	MW7S May-24	MW7S May-25
Acetone	µg/L	NV	<0.5	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV												<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.7	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	**1.1**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

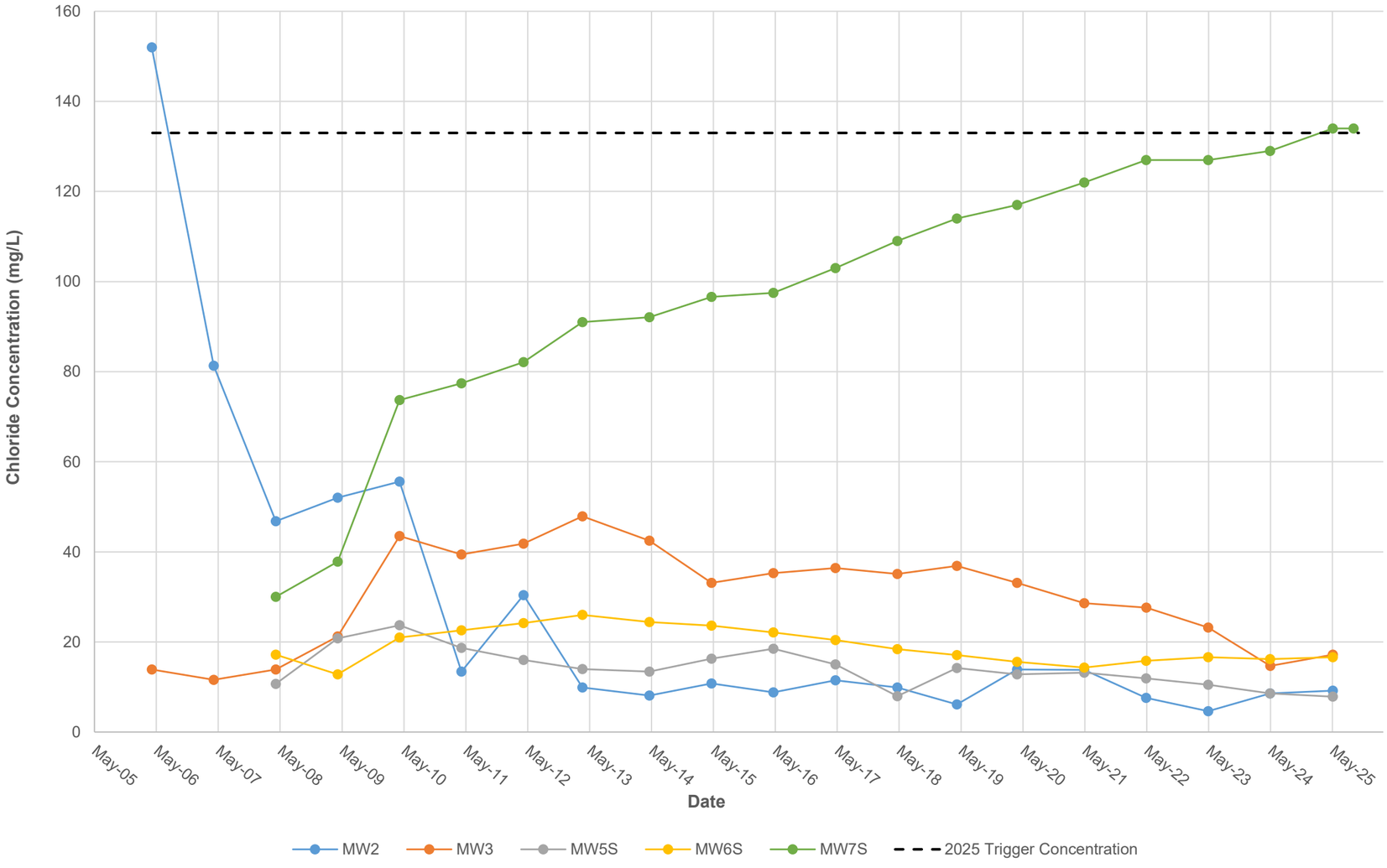
TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Fullarton Landfill
Road 145, Municipality of West Perth

Parameter	Unit	ODWS	MW7D May-09	MW7D Sep-09	MW7D May-10	MW7D May-11	MW7D May-12	MW7D Apr-13	MW7D May-14	MW7D May-15	MW7D May-16	MW7D Jun-16	MW7D May-17	MW7D May-18	MW7D May-19	MW7D Apr-20	MW7D May-21	MW7D May-22	MW7D May-23	MW7D May-24	MW7D May-25
Acetone	µg/L	NV	<1	<0.5	<1	<1	<1	<1	<20	<20	<20	<21	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.51	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon Tetrachloride	µg/L	2 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromochloromethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,2-Dichlorobenzene	µg/L	200 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,3-Dichlorobenzene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,4-Dichlorobenzene	µg/L	5 (MAC)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV													<1.0		<1.0	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<1.0	<1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1 Dichloroethene	µg/L	14 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.1	<2.1	<2.0	<2.0	<2.0	<2.0	<1.0	<1.8	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
cis-1,3-Dichloropropene	µg/L	NV	<0.2	<0.2	<0.2		<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
n-Hexane	µg/L	NV			<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<0.9	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<0.3	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	**0.25**	**0.21**	<0.2	<0.2	<0.2	<0.50	<0.50	**1.4**	**2.4**	<0.50	<0.50	<0.50	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<11	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0						<0.50

Notes: 1. ODWS denotes Ontario Drinking Water Standards, Objectives and Guidelines, Ontario Ministry of the Environment, Conservation and Parks, as updated 2018.
2. OG = Operational Guideline; AO = Aesthetic Objective; MAC = Maximum Acceptable Concentration; and IMAC = Interim Maximum Acceptable Concentration.
3. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
4. Bold denotes parameter detected above laboratory detection limit.
5. Shaded denotes exceedances of the ODWS.
6. Blank denotes data not available.
7. Unless otherwise states, units are reported in ug/L.
8. NV denotes No Value.

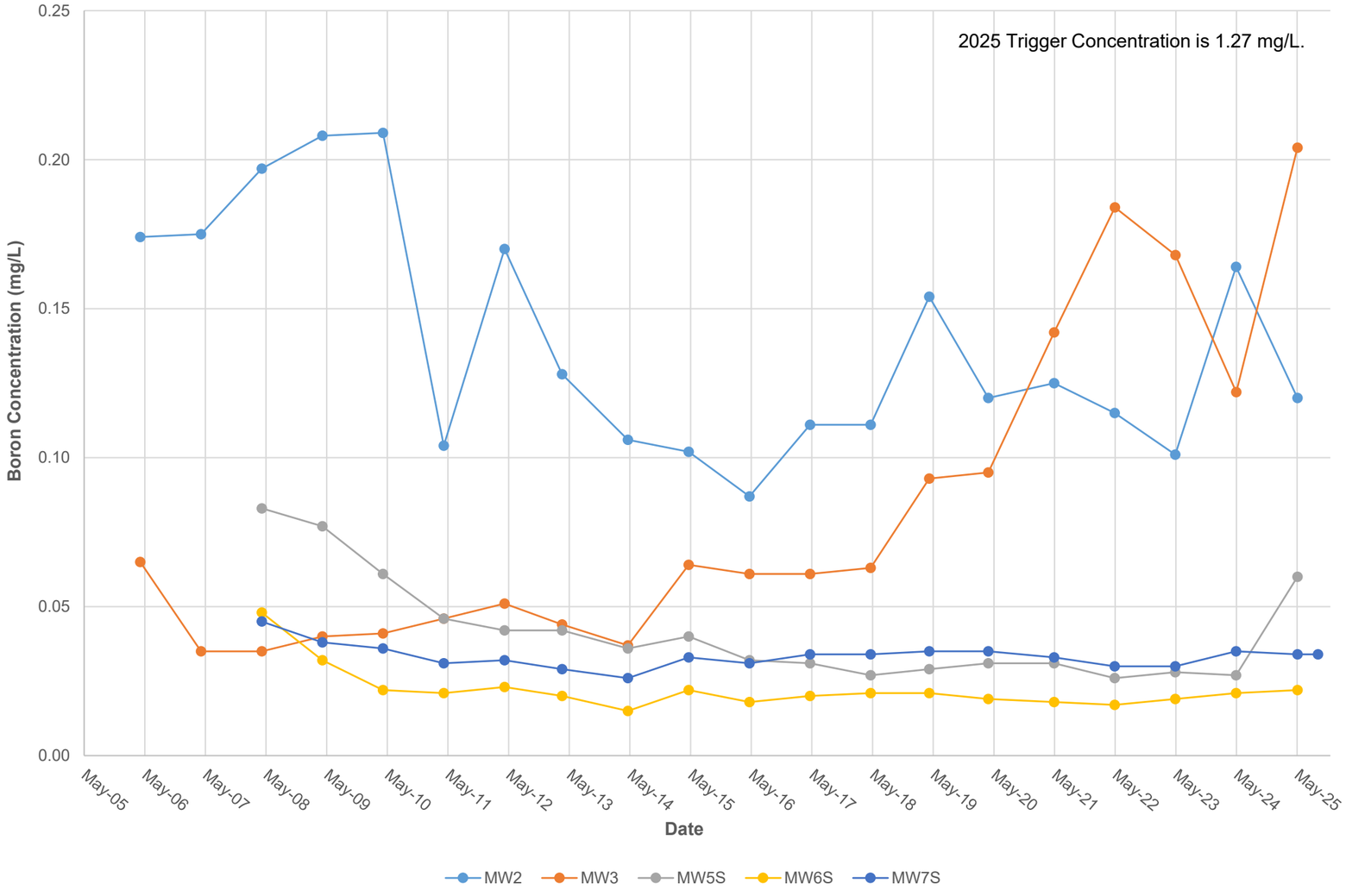
Pinchin File: 333568.002

FIGURE D-1: CONCENTRATION VS. TIME PLOT
CHLORIDE - SHALLOW FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



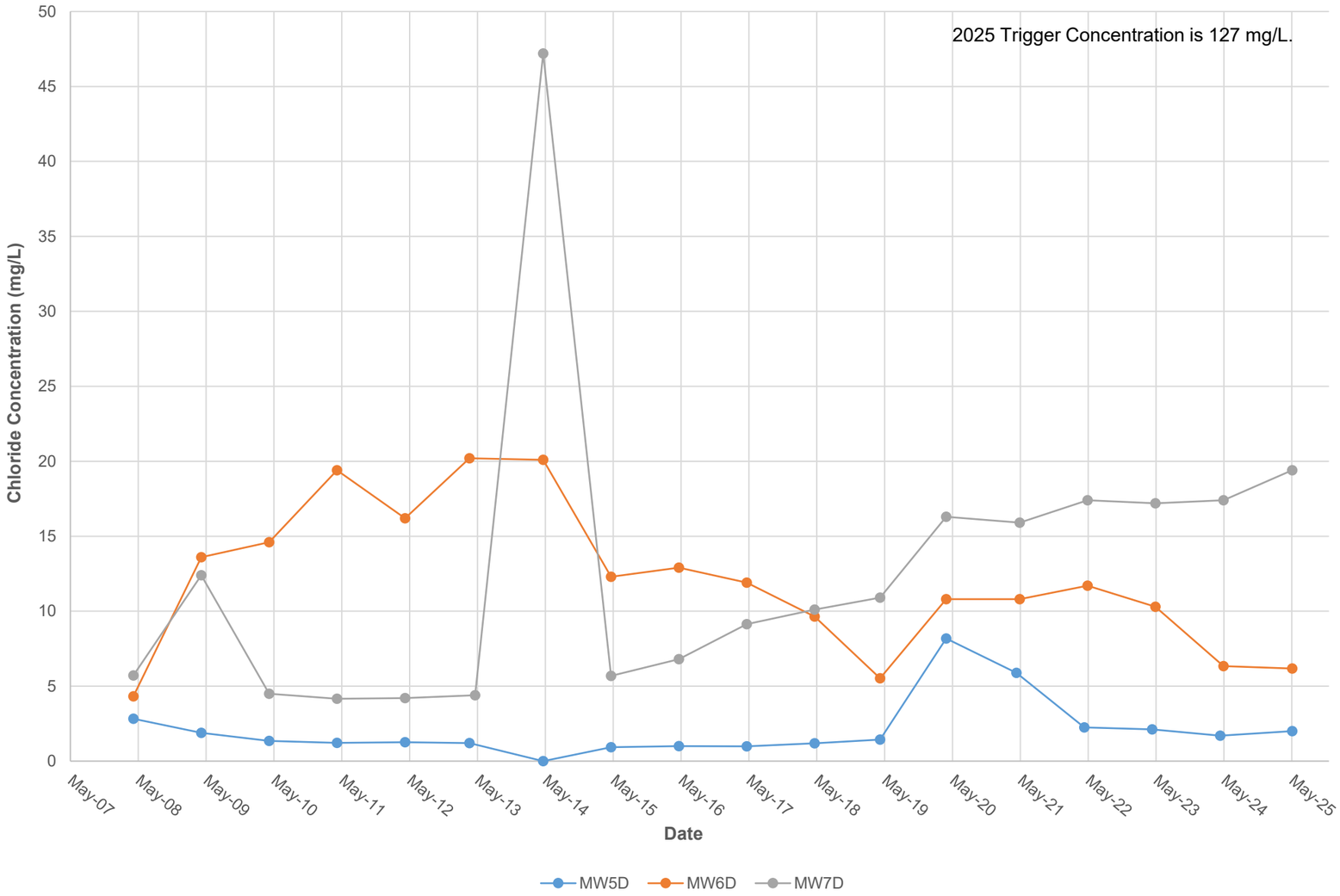
Pinchin File: 333568.002

FIGURE D-2: CONCENTRATION VS. TIME PLOT
BORON - SHALLOW FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



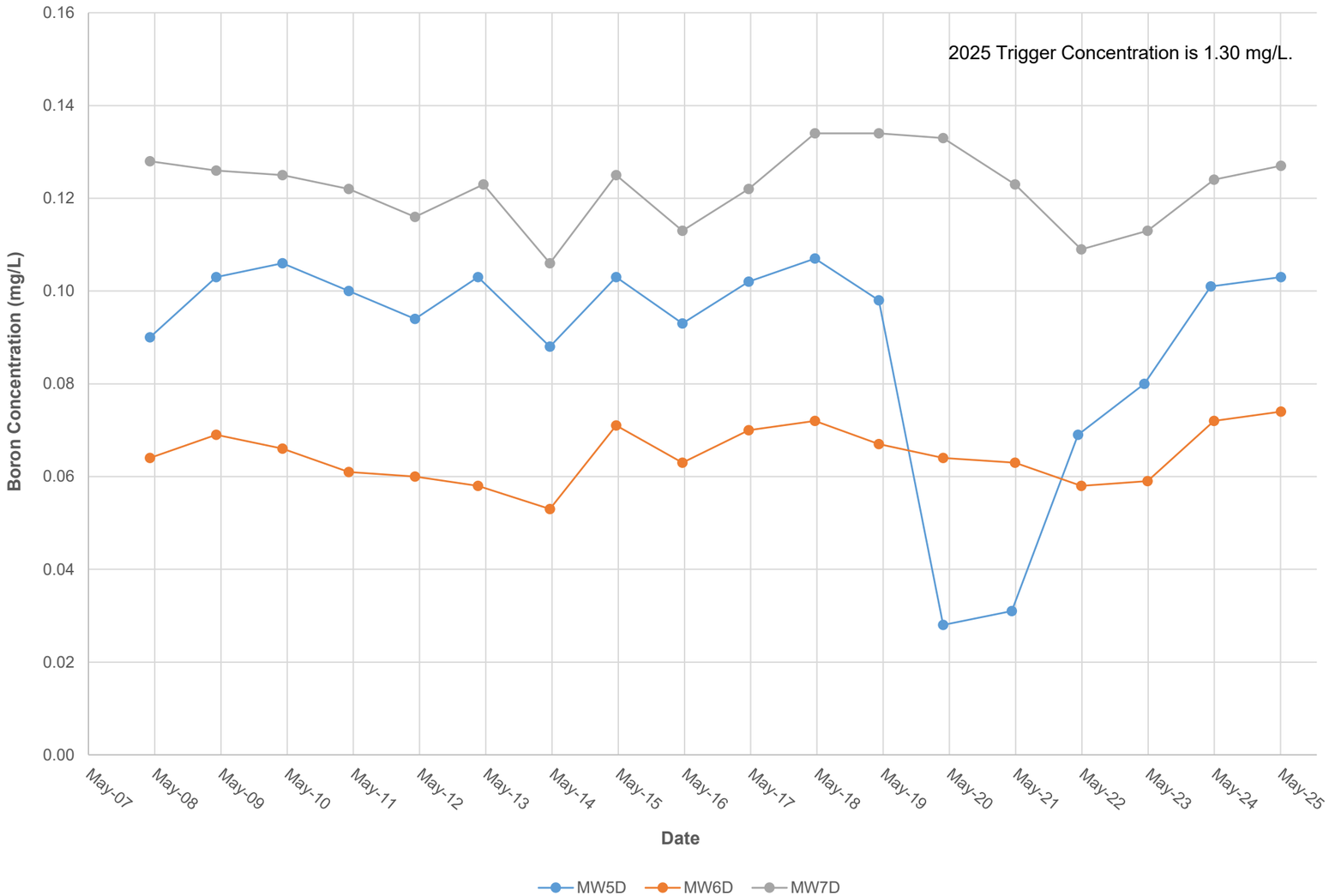
Pinchin File: 333568.002

FIGURE D-3: CONCENTRATION VS. TIME PLOT
CHLORIDE - DEEP FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



Pinchin File: 333568.002

FIGURE D-4: CONCENTRATION VS. TIME PLOT
BORON - DEEP FLOW SYSTEM
Fullarton Landfill
Road 145, Municipality of West Perth



Pinchin File: 333568.002

APPENDIX E

CERTIFICATE OF ANALYSIS

Work Order	:	**WT2510765**		
Amendment	:	**1**		
Client	:	**Pinchin Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	:	Deana Bettencourt	Account Manager	: Amanda Overholster
Address	:	225 Labrador Drive Unit #1 Waterloo Ontario Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	----	E-mail	: Amanda.Overholster@ALSGlobal.com
Project	:	WEST PERTH FULLARTON GW	Telephone	: 1 416 817 2944
PO	:	333568.002	Date Samples Received	: 07-May-2025 16:30
C-O-C number	:	----	Date Analysis Commenced	: 09-May-2025
Sampler	:	ML/DH	Issue Date	: 10-Jul-2025 09:45
Site	:	West Perth		
Quote number	:	West Perth Landfill		
No. of samples received	:	14		
No. of samples analysed	:	14		

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
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
David Tremblett		VOC, Waterloo, Ontario
Greg Pokocky		Inorganics, Waterloo, Ontario
Greg Pokocky		Metals, Waterloo, Ontario
Greg Pokocky		Centralized Prep, 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.

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

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

Unit	*Description*
-	no units
mg/L	milligrams per litre
pH units	pH units
µg/L	micrograms per litre

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment (09/07/2025): This report has been amended following changes to the analytical data reported. The quality system is being utilised to resolve this issue. The specific data affected includes Alkalinity.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.
DLHC	Detection Limit Raised: Dilution required due to high concentration of test analyte(s).
DLM	Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1S ----	MW1D ----	MW2 ----	MW3 ----	MW4 ----
					Client sampling date / time	07-May-2025 10:00	07-May-2025 10:10	07-May-2025 10:20	07-May-2025 10:30	07-May-2025 10:40
						WT2510765-001	WT2510765-002	WT2510765-003	WT2510765-004	WT2510765-005
						Result	Result	Result	Result	Result
Sample Preparation										
Dissolved carbon filtration location	----	EP358/WT	-	-		field	field	field	field	field
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/WT	1.0	mg/L		1920	794	7210	610	499
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	611	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<25.0 DLM	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	306	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		1920	794	7820	610	499
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		405	801	354	486	754
pH	----	E108/WT	0.10	pH units		7.70	8.02	7.91	7.79	7.53
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		646 DLDS	1400 DLDS	553 DLDS	599 DLDS	766 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.127	0.326	0.369	<0.0050	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	2.47 DLDS	<0.10	<0.10	<0.50 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		32.1	452 DLDS	9.19	17.2	<2.50 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.230	0.812 DLDS	0.262	0.380	0.114 DLDS
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.050 DLDS	<0.010	<0.010	<0.050 DLDS
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0011	<0.0010	<0.0010	0.0026	0.0027
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		23.1	21.6 DLDS	35.1	64.2	113 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020	<0.100 DLDS	0.034	1.30	0.646 DLDS
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		<0.0224	<0.112	0.0340	1.30	0.646

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1S ----	MW1D ----	MW2 ----	MW3 ----	MW4 ----
					Client sampling date / time	07-May-2025 10:00	07-May-2025 10:10	07-May-2025 10:20	07-May-2025 10:30	07-May-2025 10:40
						WT2510765-001	WT2510765-002	WT2510765-003	WT2510765-004	WT2510765-005
						Result	Result	Result	Result	Result
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.64	6.97	2.53	1.63	3.51
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0475	0.0061	0.0010	0.0742	<0.0010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00099	0.00672	0.00220	0.00057	0.00025
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0903	0.325	0.0918	0.106	0.0624
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.441	0.148	0.120	0.204	0.193
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000075	<0.0000050	0.0000100
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		114	146	97.1	112	221
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00033	0.00084	0.00043	0.00076	0.00203
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.155	0.032	<0.010	0.076	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		0.000058	0.000054	<0.000050	0.000095	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		29.3	106 DLHC	27.0	50.2	49.2
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.201	0.0282	0.0422	0.00566	0.00086
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		4.37	3.13	3.56	2.22	7.19
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000067	0.000131	0.00105	0.00147	0.000360
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		7.11	9.04	4.86	8.18	4.92
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		24.9	63.7	12.9	30.0	4.25
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	0.0036	<0.0010	0.0018	0.0027
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW1S ----	MW1D ----	MW2 ----	MW3 ----	MW4 ----
Client sampling date / time					07-May-2025 10:00	07-May-2025 10:10	07-May-2025 10:20	07-May-2025 10:30	07-May-2025 10:40
					WT2510765-001	WT2510765-002	WT2510765-003	WT2510765-004	WT2510765-005
					Result	Result	Result	Result	Result
Volatile Organic Compounds									
Acetone	67-64-1	E611D/WT	20	µg/L	<20	<20	<20	<20	<20
Benzene	71-43-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	75-27-4	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	75-25-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	74-83-9	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon disulfide	75-15-0	E611D/WT	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon tetrachloride	56-23-5	E611D/WT	0.20	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	108-90-7	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	75-00-3	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	67-66-3	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	74-87-3	E611D/WT	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	124-48-1	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dibromoethane, 1,2-	106-93-4	E611D/WT	0.20	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorobenzene, 1,2-	95-50-1	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,3-	541-73-1	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	75-71-8	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethane, 1,1-	75-34-3	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethane, 1,2-	107-06-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, 1,1-	75-35-4	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1S ----	MW1D ----	MW2 ----	MW3 ----	MW4 ----
					Client sampling date / time	07-May-2025 10:00	07-May-2025 10:10	07-May-2025 10:20	07-May-2025 10:30	07-May-2025 10:40
						WT2510765-001	WT2510765-002	WT2510765-003	WT2510765-004	WT2510765-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dichloropropane, 1,2-	78-87-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloropropylene, cis-1,3-	10061-01-5	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Dichloropropylene, trans-1,3-	10061-02-6	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	100-41-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		0.55	<0.50	<0.50	<0.50	<0.50
Hexanone, 2-	591-78-6	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl ethyl ketone [MEK]	78-93-3	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl isobutyl ketone [MIBK]	108-10-1	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	100-42-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	127-18-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorobenzene, 1,2,4-	120-82-1	E611E/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethane, 1,1,1-	71-55-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethane, 1,1,2-	79-00-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW1S ----	MW1D ----	MW2 ----	MW3 ----	MW4 ----
Client sampling date / time					07-May-2025 10:00	07-May-2025 10:10	07-May-2025 10:20	07-May-2025 10:30	07-May-2025 10:40
					WT2510765-001	WT2510765-002	WT2510765-003	WT2510765-004	WT2510765-005
					Result	Result	Result	Result	Result
Volatile Organic Compounds									
Vinyl chloride	75-01-4	E611D/WT	0.20	µg/L	<0.20	<0.20	<0.20	<0.20	<0.20
Xylene, m+p-	179601-23-1	E611D/WT	0.40	µg/L	<0.40	<0.40	<0.40	<0.40	<0.40
Xylene, o-	95-47-6	E611D/WT	0.30	µg/L	<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes, total	1330-20-7	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%	88.7	88.3	98.4	99.9	101
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%	88.7	88.3	98.4	99.9	101
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%	96.4	96.3	99.1	98.7	98.8
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%	96.4	96.3	99.1	98.7	98.8

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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
Client sampling date / time					07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
					WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
					Result	Result	Result	Result	Result
Sample Preparation									
Dissolved carbon filtration location	----	EP358/WT	-	-	field	field	field	field	field
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/WT	1.0	mg/L	311	266	365	223	266
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
						WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
						Result	Result	Result	Result	Result
Physical Tests										
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		311	266	365	223	266
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		374	188	312	186	429
pH	----	E108/WT	0.10	pH units		7.94	8.20	8.07	8.24	8.05
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		535 DLDS	271 DLDS	634 DLDS	275 DLDS	619 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0155	0.0393	0.0170	0.0329	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.10	<0.10	<0.10	0.14
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		7.85	2.00	16.6	6.18	134
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.825	1.27	0.641	1.36	0.740
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.010	<0.010	<0.010
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0016	0.0058	0.0030	0.0111	0.0033
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		60.3	6.94	51.6	9.66	20.9
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		16.6	0.085	3.89	0.084	0.034
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		16.6	0.0850	3.89	0.0840	0.0340
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		0.88	0.92	0.83	1.08	0.80
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0723	0.0023	0.0116	0.0018	<0.0010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00045	0.00282	0.00053	0.0138	0.00477
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0857	0.0630	0.0789	0.0387	0.121
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.060	0.103	0.022	0.074	0.034

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
Client sample ID									
Client sampling date / time					07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
					WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
					Result	Result	Result	Result	Result
Dissolved Metals									
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L	<0.0000050	0.0000132	<0.0000050	<0.0000050	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L	85.3	33.0	69.3	33.5	88.2
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L	0.00035	0.00195	0.00077	0.00040	<0.00020
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L	0.076	0.014	0.020	<0.010	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L	0.000081	0.000085	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L	39.1	25.6	33.8	24.9	50.8
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L	0.00765	0.0187	0.00088	0.00588	0.00155
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L	2.90	1.86	1.89	1.17	2.02
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L	0.000682	<0.000050	0.000258	<0.000050	0.000052
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L	5.91	5.65	6.44	6.59	8.57
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L	28.8	21.5	16.4	21.1	21.5
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L	<0.0010	0.0040	0.0017	<0.0010	<0.0010
Dissolved metals filtration location	----	EP421/WT	-	-	Field	Field	Field	Field	Field
Volatile Organic Compounds									
Acetone	67-64-1	E611D/WT	20	µg/L	<20	<20	<20	<20	<20
Benzene	71-43-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	75-27-4	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	75-25-2	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	74-83-9	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50
Carbon disulfide	75-15-0	E611D/WT	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
						WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
Carbon tetrachloride	56-23-5	E611D/WT	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	108-90-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	75-00-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	67-66-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	74-87-3	E611D/WT	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
Dibromochloromethane	124-48-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dibromoethane, 1,2-	106-93-4	E611D/WT	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Dichlorobenzene, 1,2-	95-50-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,3-	541-73-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	75-71-8	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethane, 1,1-	75-34-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethane, 1,2-	107-06-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, 1,1-	75-35-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dichloropropane, 1,2-	78-87-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Dichloropropylene, cis-1,3-	10061-01-5	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Dichloropropylene, trans-1,3-	10061-02-6	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	100-41-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
						WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<0.50	0.52	<0.50	<0.50
Hexanone, 2-	591-78-6	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl ethyl ketone [MEK]	78-93-3	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl isobutyl ketone [MIBK]	108-10-1	E611D/WT	20	µg/L		<20	<20	<20	<20	<20
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Styrene	100-42-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Tetrachloroethylene	127-18-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorobenzene, 1,2,4-	120-82-1	E611E/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethane, 1,1,1-	71-55-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethane, 1,1,2-	79-00-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl chloride	75-01-4	E611D/WT	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	<0.20
Xylene, m+p-	179601-23-1	E611D/WT	0.40	µg/L		<0.40	<0.40	<0.40	<0.40	<0.40
Xylene, o-	95-47-6	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	<0.30
Xylenes, total	1330-20-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	<0.50
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%		100	101	101	101	98.7

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	07-May-2025 10:50	07-May-2025 11:00	07-May-2025 11:10	07-May-2025 11:20	07-May-2025 11:30
						WT2510765-006	WT2510765-007	WT2510765-008	WT2510765-009	WT2510765-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		100	101	101	101	98.7
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		98.8	98.8	98.5	98.9	98.4
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		98.8	98.8	98.5	98.9	98.4

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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	DUP-01 ----	MW8 ----	DUP-02 ----	----
					Client sampling date / time	07-May-2025 11:40	07-May-2025 11:00	07-May-2025 11:50	07-May-2025 11:30	----
						WT2510765-011	WT2510765-012	WT2510765-013	WT2510765-014	----
						Result	Result	Result	Result	----
Sample Preparation										
Dissolved carbon filtration location	----	EP358/WT	-	-		field	field	lab	field	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/WT	1.0	mg/L		280	253	1100	244	----
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<5.0 DLM	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<5.0 DLM	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<5.0 DLM	<1.0	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		280	253	1100	244	----
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		319	183	950	428	----
pH	----	E108/WT	0.10	pH units		8.25	8.22	7.57	8.10	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		444 DLDS	258 DLDS	1900 DLDS	618 DLDS	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		<0.0050	0.0602	115	0.0117	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW7D ----	DUP-01 ----	MW8 ----	DUP-02 ----	----
					Client sampling date / time: 07-May-2025 11:40	07-May-2025 11:00	07-May-2025 11:50	07-May-2025 11:30	----
					WT2510765-011	WT2510765-012	WT2510765-013	WT2510765-014	----
					Result	Result	Result	Result	----
Anions and Nutrients									
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L	<0.10	<0.10	1.62 DLDS	0.15	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	19.4	2.00	312 DLDS	133	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	1.34	1.26	0.168 DLDS	0.731	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.010	<0.010	<0.050 DLDS	<0.010	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0066	0.0059	0.0015	0.0035	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	64.3	6.79	312 DLDS	20.9	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.342	0.073	<0.100 DLDS	0.038	----
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L	0.342	0.0730	<0.112	0.0380	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	1.47	0.94	33.9	0.97	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L	0.741	0.0023	0.0254 DLHC	0.0011	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L	0.00113	0.00295	0.00539 DLHC	0.00455	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L	0.0671	0.0638	0.113 DLHC	0.122	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L	0.127	0.097	4.28 DLHC	0.033	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L	0.0000269	0.0000077	<0.0000500 DLHC	<0.0000050	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L	67.6	31.2	191 DLHC	88.3	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L	0.00168	<0.00050	0.00511 DLHC	<0.00050	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L	0.00201	0.00051	<0.00200 DLHC	0.00021	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L	0.956	<0.010	0.142 DLHC	<0.010	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L	0.000800	<0.000050	<0.000500 DLHC	<0.000050	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	DUP-01 ----	MW8 ----	DUP-02 ----	----
					Client sampling date / time	07-May-2025 11:40	07-May-2025 11:00	07-May-2025 11:50	07-May-2025 11:30	----
						WT2510765-011	WT2510765-012	WT2510765-013	WT2510765-014	----
						Result	Result	Result	Result	----
Dissolved Metals										
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		36.5	25.6	115 DLHC	50.3	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0670	0.0106	0.243 DLHC	0.00141	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		1.90	1.84	230 DLHC	2.02	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000278	<0.000050	0.0340 DLHC	0.000064	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		7.22	5.44	7.55 DLHC	8.53	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		60.1	21.5	535 DLHC	21.3	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0047	<0.0010	<0.0100 DLHC	<0.0010	----
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	----
Volatile Organic Compounds										
Acetone	67-64-1	E611D/WT	20	µg/L		<20	<20	22	<20	----
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	<0.50	2.56	<0.50	----
Bromodichloromethane	75-27-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Bromoform	75-25-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Bromomethane	74-83-9	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Carbon disulfide	75-15-0	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Carbon tetrachloride	56-23-5	E611D/WT	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	----
Chlorobenzene	108-90-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Chloroethane	75-00-3	E611D/WT	0.50	µg/L		<0.50	<0.50	3.08	<0.50	----
Chloroform	67-66-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Chloromethane	74-87-3	E611D/WT	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	----
Dibromochloromethane	124-48-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	DUP-01 ----	MW8 ----	DUP-02 ----	----
					Client sampling date / time	07-May-2025 11:40	07-May-2025 11:00	07-May-2025 11:50	07-May-2025 11:30	----
						WT2510765-011	WT2510765-012	WT2510765-013	WT2510765-014	----
						Result	Result	Result	Result	----
Volatile Organic Compounds										
Dibromoethane, 1,2-	106-93-4	E611D/WT	0.20	µg/L		<0.20	<0.20	<0.20	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D/WT	0.50	µg/L		<0.50	<0.50	0.93	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D/WT	0.30	µg/L		<0.30	<0.30	<0.30	<0.30	----
Ethylbenzene	100-41-4	E611D/WT	0.50	µg/L		<0.50	<0.50	0.76	<0.50	----
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Hexanone, 2-	591-78-6	E611D/WT	20	µg/L		<20	<20	<20	<20	----
Methyl ethyl ketone [MEK]	78-93-3	E611D/WT	20	µg/L		<20	<20	<20	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D/WT	20	µg/L		<20	<20	<20	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----
Styrene	100-42-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	MW7D ----	DUP-01 ----	MW8 ----	DUP-02 ----	----
Client sampling date / time					07-May-2025 11:40	07-May-2025 11:00	07-May-2025 11:50	07-May-2025 11:30	----
					WT2510765-011	WT2510765-012	WT2510765-013	WT2510765-014	----
					Result	Result	Result	Result	----
Volatile Organic Compounds									
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Tetrachloroethylene	127-18-4	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Toluene	108-88-3	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Trichlorobenzene, 1,2,4-	120-82-1	E611E/WT	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Trichloroethane, 1,1,1-	71-55-6	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L	<0.50	<0.50	<0.50	<0.50	----
Vinyl chloride	75-01-4	E611D/WT	0.20	µg/L	<0.20	<0.20	<0.20	<0.20	----
Xylene, m+p-	179601-23-1	E611D/WT	0.40	µg/L	<0.40	<0.40	1.25	<0.40	----
Xylene, o-	95-47-6	E611D/WT	0.30	µg/L	<0.30	<0.30	0.46	<0.30	----
Xylenes, total	1330-20-7	E611D/WT	0.50	µg/L	<0.50	<0.50	1.71	<0.50	----
Volatile Organic Compounds Surrogates									
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%	99.8	100	99.7	101	----
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%	99.8	100	99.7	101	----
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%	98.9	98.4	98.2	98.4	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%	98.9	98.4	98.2	98.4	----

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

ALS Canada Ltd.

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QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2510765**	Page	: 1 of 32
Amendment	: 1		
Client	: **Pinchin Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo ON Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 07-May-2025 16:30
PO	: 333568.002	Issue Date	: 10-Jul-2025 09:43
C-O-C number	: ----		
Sampler	: ML/DH		
Site	: West Perth		
Quote number	: West Perth Landfill		
No. of samples received	: 14		
No. of samples analysed	: 14		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Volatile Organic Compounds	QC-MRG2-1991105 002	----	Acetone	67-64-1	E611D	132 % MES	70.0-130%	Recovery greater than upper control limit

Result Qualifiers

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

Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-01	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-02	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW1D	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW1S	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW2	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW3	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW4	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW5D	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW5S	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW6D	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW6S	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW7D	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW7S	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW8	E298	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] DUP-01	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] DUP-02	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW1D	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW1S	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW2	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW3	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW4	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW5D	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW5S	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW6D	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW6S	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW7D	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW7S	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW8	E235.Br	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP-01	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP-02	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1D	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1S	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW2	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW3	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW4	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW5D	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW5S	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW6D	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW6S	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW7D	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW7S	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW8	E235.Cl	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] DUP-01	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] DUP-02	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW1D	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW1S	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW2	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW3	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW4	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW5D	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW5S	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW6D	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW6S	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW7D	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW7S	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW8	E378-U	07-May-2025	09-May-2025	7 days	2 days	✓	10-May-2025	7 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-01	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-02	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW1D	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW1S	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW2	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW3	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW4	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW5D	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW5S	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW6D	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW6S	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW7D	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW7S	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW8	E235.F	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] DUP-01	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] DUP-02	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1D	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW1S	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW2	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW4	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5D	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5S	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6D	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6S	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW7D	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW7S	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW8	E235.NO3	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP-01	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP-02	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW1D	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW1S	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW2	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW3	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW4	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW5D	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW5S	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW6D	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW6S	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW7D	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW7S	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW8	E235.NO2	07-May-2025	09-May-2025	7 days	2 days	✓	12-May-2025	7 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-01	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-02	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW1D	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW1S	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW2	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW3	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW4	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW5D	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW5S	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW6D	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW6S	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW7D	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW7S	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW8	E235.SO4	07-May-2025	09-May-2025	28 days	2 days	✓	12-May-2025	28 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-01	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-02	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW1D	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW1S	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW2	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW3	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW4	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW5D	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW5S	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW6D	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW6S	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW7D	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW7S	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid) MW8	E421	07-May-2025	09-May-2025	180 days	2 days	✓	09-May-2025	180 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW1D	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW1S	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW2	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW3	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW4	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW5D	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP] MW5S	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW6D	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW6S	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW7S	E358-L	07-May-2025	09-May-2025	28 days	2 days	✓	09-May-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
DUP-01	E358-L	07-May-2025	10-May-2025	28 days	3 days	✓	12-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
DUP-02	E358-L	07-May-2025	10-May-2025	28 days	3 days	✓	12-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW7D	E358-L	07-May-2025	10-May-2025	28 days	3 days	✓	12-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW8	E358-L	07-May-2025	10-May-2025	28 days	3 days	✓	12-May-2025	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP-01	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP-02	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW1D	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW1S	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW2	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW4	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5D	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5S	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6D	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6S	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW7D	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW7S	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW8	E290	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-01	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-02	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1D	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1S	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW2	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓

Matrix: **Water**

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Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MW4	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5D	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5S	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6D	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6S	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7D	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7S	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW8	E108	07-May-2025	09-May-2025	14 days	2 days	✓	10-May-2025	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-01	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓

Matrix: **Water**

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			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-02	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1D	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1S	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW2	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW4	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5D	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5S	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6D	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6S	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW7D	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW7S	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW8	E162	07-May-2025	----	----	----		12-May-2025	7 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1D	E611D	07-May-2025	09-May-2025	14 days	2 days	✓	09-May-2025	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1S	E611D	07-May-2025	09-May-2025	14 days	2 days	✓	09-May-2025	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-02	E611D	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7D	E611D	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611D	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8	E611D	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-01	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW4	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5S	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6D	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1D	E611E	07-May-2025	09-May-2025	14 days	2 days	✓	09-May-2025	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1S	E611E	07-May-2025	09-May-2025	14 days	2 days	✓	09-May-2025	14 days	2 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-02	E611E	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7D	E611E	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611E	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8	E611E	07-May-2025	11-May-2025	14 days	4 days	✓	11-May-2025	14 days	4 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-01	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW4	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5S	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6D	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
pH by Meter	E108	1987965	2	34	5.8	5.0	✓
TDS by Gravimetry	E162	1991648	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1987962	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1987961	2	28	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1987960	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1987964	2	30	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	1987963	2	31	6.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1987959	2	33	6.0	5.0	✓
Alkalinity Species by Titration	E290	1987966	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	1987765	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1988131	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1987958	2	35	5.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1987371	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1987992	3	37	8.1	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1987991	2	24	8.3	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter	E108	1987965	2	34	5.8	5.0	✓
TDS by Gravimetry	E162	1991648	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1987962	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1987961	2	28	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1987960	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1987964	2	30	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	1987963	2	31	6.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1987959	2	33	6.0	5.0	✓
Alkalinity Species by Titration	E290	1987966	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	1987765	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1988131	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1987958	2	35	5.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1987371	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1987992	3	37	8.1	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1987991	2	24	8.3	5.0	✓
Method Blanks (MB)							
TDS by Gravimetry	E162	1991648	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	1987962	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1987961	2	28	7.1	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Fluoride in Water by IC	E235.F	1987960	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1987964	2	30	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	1987963	2	31	6.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1987959	2	33	6.0	5.0	✓
Alkalinity Species by Titration	E290	1987966	2	29	6.9	5.0	✓
Ammonia by Fluorescence	E298	1987765	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1988131	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1987958	2	35	5.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1987371	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1987992	3	37	8.1	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1987991	2	24	8.3	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC	E235.Br	1987962	2	26	7.6	5.0	✓
Chloride in Water by IC	E235.Cl	1987961	2	28	7.1	5.0	✓
Fluoride in Water by IC	E235.F	1987960	2	34	5.8	5.0	✓
Nitrite in Water by IC	E235.NO2	1987964	2	30	6.6	5.0	✓
Nitrate in Water by IC	E235.NO3	1987963	2	31	6.4	5.0	✓
Sulfate in Water by IC	E235.SO4	1987959	2	33	6.0	5.0	✓
Ammonia by Fluorescence	E298	1987765	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	1988131	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1987958	2	35	5.7	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1987371	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1987992	3	37	8.1	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1987991	2	24	8.3	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter	E108 ALS Environmental - Waterloo	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.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	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)

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Waterloo	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 CO2. 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 ALS Environmental - Waterloo	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.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	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.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
VOCs (Prairies List) by Headspace GC-MS	E611E ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO3), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Waterloo	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2510765**	Page	: 1 of 25
Amendment	: **1**		
Client	: Pinchin Ltd.	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo ON Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 07-May-2025 16:30
PO	: 333568.002	Date Analysis Commenced	: 09-May-2025
C-O-C number	: ----	Issue Date	: 10-Jul-2025 09:43
Sampler	: ML/DH		
Site	: West Perth		
Quote number	: West Perth Landfill		
No. of samples received	: 14		
No. of samples analysed	: 14		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
David Tremblett	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario
Greg Pokocky	Manager - Inorganics	Waterloo Centralized Prep, Waterloo, Ontario
Greg Pokocky	Manager - Inorganics	Waterloo Inorganics, Waterloo, Ontario
Greg Pokocky	Manager - Inorganics	Waterloo Metals, Waterloo, Ontario

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: 1987965)											
WT2510738-001	Anonymous	pH	----	E108	0.10	pH units	8.41	8.43	0.238%	4%	----
Physical Tests (QC Lot: 1987966)											
WT2510738-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	194	194	0.0103%	20%	----
Physical Tests (QC Lot: 1988347)											
WT2510705-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	25.0	mg/L	5820	5590	3.94%	20%	----
Physical Tests (QC Lot: 1988349)											
WT2510705-001	Anonymous	pH	----	E108	0.10	pH units	7.69	7.73	0.519%	4%	----
Physical Tests (QC Lot: 1991648)											
HA2501350-007	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	187	191	4	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987765)											
WT2510746-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987958)											
WT2510691-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0017	0.0017	0.00004	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987959)											
WT2510691-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	<1.50	<1.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987960)											
WT2510691-001	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.332	0.332	0.0006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987961)											
WT2510691-001	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	43.9	43.7	0.541%	20%	----
Anions and Nutrients (QC Lot: 1987962)											
WT2510691-001	Anonymous	Bromide	24959-67-9	E235.Br	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987963)											
WT2510691-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1987964)											
WT2510691-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1988341)											
HA2501325-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.049	0.049	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1988342)											
HA2501325-001	Anonymous	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1988343)											

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 1988343) - continued											
HA2501325-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.022	0.022	0.00001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 1988344)											
HA2501325-001	Anonymous	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: 1988345)											
HA2501325-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	6.43	6.42	0.206%	20%	----
Anions and Nutrients (QC Lot: 1988346)											
HA2501325-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	7.26	7.27	0.132%	20%	----
Anions and Nutrients (QC Lot: 1988350)											
HA2501273-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0026	0.0025	0.00008	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 1988131)											
WT2510741-004	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	8.63	8.38	2.87%	20%	----
Organic / Inorganic Carbon (QC Lot: 1990476)											
HA2501325-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.70	3.74	0.03	Diff <2x LOR	----
Dissolved Metals (QC Lot: 1987371)											
WT2510765-001	MW1S	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0475	0.0403	16.4%	20%	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00099	0.00092	0.00007	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0903	0.0893	1.07%	20%	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.441	0.442	0.174%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	114	114	0.126%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00033	0.00032	0.00001	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.155	0.154	0.646%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000058	0.000057	0.0000005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	29.3	29.1	0.722%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.201	0.198	1.46%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	4.37	4.38	0.0568%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000067	0.000057	0.000010	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	7.11	7.37	3.56%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	24.9	24.8	0.579%	20%	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1987991)											
WT2510508-001	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1987992)											

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*
Volatile Organic Compounds (QC Lot: 1987992) - continued											
WT2510508-001	Anonymous	Acetone	67-64-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611D	2.0	µg/L	<2.0	<2.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1987992) - continued											
WT2510508-001	Anonymous	Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1991105)											
WT2510765-004	MW3	Acetone	67-64-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611D	2.0	µg/L	<2.0	<2.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1991105) - continued											
WT2510765-004	MW3	Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1991106)											
WT2510765-004	MW3	Trichlorobenzene, 1,2,4-	120-82-1	E611E	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1994207)											
WT2511206-001	Anonymous	Acetone	67-64-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1994207) - continued											
WT2511206-001	Anonymous	Chloromethane	74-87-3	E611D	2.0	µg/L	<2.0	<2.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	<0.30	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: 1987966)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 1988347)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	1.0	----
Physical Tests (QCLot: 1991648)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 1987765)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 1987958)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 1987959)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1987960)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1987961)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1987962)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1987963)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1987964)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1988341)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 1988342)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 1988343)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 1988344)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 1988345)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 1988346)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 1988350)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 1988131)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 1990476)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 1987371)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
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	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
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	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1987991)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1987992)						
Acetone	67-64-1	E611D	20	µg/L	<20	----
Benzene	71-43-2	E611D	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611D	0.5	µg/L	<0.50	----
Bromomethane	74-83-9	E611D	0.5	µg/L	<0.50	----
Carbon disulfide	75-15-0	E611D	1	µg/L	<1.0	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611D	2	µg/L	<2.0	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	<0.30	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	<0.50	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1987992) - continued						
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	<0.20	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	<0.30	----
Volatile Organic Compounds (QCLot: 1991105)						
Acetone	67-64-1	E611D	20	µg/L	<20	----
Benzene	71-43-2	E611D	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611D	0.5	µg/L	<0.50	----
Bromomethane	74-83-9	E611D	0.5	µg/L	<0.50	----
Carbon disulfide	75-15-0	E611D	1	µg/L	<1.0	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611D	2	µg/L	<2.0	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	<0.30	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1991105) - continued						
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	<0.30	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	<0.50	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	<0.20	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	<0.30	----
Volatile Organic Compounds (QCLot: 1991106)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 1994207)						
Acetone	67-64-1	E611D	20	µg/L	<20	----
Benzene	71-43-2	E611D	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611D	0.5	µg/L	<0.50	----
Bromomethane	74-83-9	E611D	0.5	µg/L	<0.50	----
Carbon disulfide	75-15-0	E611D	1	µg/L	<1.0	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611D	2	µg/L	<2.0	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	<0.20	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1994207) - continued						
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	<0.30	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	<0.50	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	----
Styrene	100-42-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	<0.20	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	<0.30	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 1987965)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1987966)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1988347)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 1988349)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 1991648)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	100	85.0	115	----
Anions and Nutrients (QCLot: 1987765)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 1987958)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Anions and Nutrients (QCLot: 1987959)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1987960)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1987961)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1987962)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1987963)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1987964)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 1988341)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 1988342)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	103	85.0	115	----
Anions and Nutrients (QCLot: 1988343)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	103	90.0	110	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Anions and Nutrients (QCLot: 1988344)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1988345)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1988346)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 1988350)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1988131)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 1990476)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	96.0	80.0	120	----
Dissolved Metals (QCLot: 1987371)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	105	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	110	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	109	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	98.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	105	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	106	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	103	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	105	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	111	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	104	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	101	60.0	140	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	104	80.0	120	----
Volatile Organic Compounds (QCLot: 1987991)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	99.7	70.0	130	----
Volatile Organic Compounds (QCLot: 1987992)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	114	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1987992) - continued									
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	90.7	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	109	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	109	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	113	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	122	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	96.2	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	124	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	114	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	104	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	96.7	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	94.4	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	122	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	71.1	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	101	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	77.4	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	99.2	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	97.7	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1987992) - continued									
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	99.6	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	97.5	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	112	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	120	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	103	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	106	70.0	130	----
Volatile Organic Compounds (QCLot: 1991105)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	# 132	70.0	130	MES
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	81.6	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	95.3	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	91.7	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	99.8	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	99.5	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	99.5	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	112	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	106	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	95.0	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	96.7	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	117	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	98.3	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	101	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	99.4	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	97.8	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1991105) - continued									
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	115	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	126	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	124	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	99.7	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	97.5	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	90.5	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	98.6	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	92.5	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	96.3	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	94.1	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	103	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	101	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	98.5	70.0	130	----
Volatile Organic Compounds (QCLot: 1991106)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	97.2	70.0	130	----
Volatile Organic Compounds (QCLot: 1994207)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	129	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	114	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	114	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	83.2	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	107	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	112	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	111	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	118	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	119	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	103	60.0	140	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1994207) - continued									
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	113	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	115	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	116	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	111	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	94.4	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	93.8	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	116	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	118	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	99.4	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	106	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	108	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	120	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	116	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	116	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	96.5	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	112	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	112	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	117	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	116	70.0	130	----

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: 1987765)										
WT2510746-003	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.104 mg/L	0.1 mg/L	104	75.0	125	----
Anions and Nutrients (QCLot: 1987958)										
WT2510691-002	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0189 mg/L	0.02 mg/L	96.3	70.0	130	----
Anions and Nutrients (QCLot: 1987959)										
WT2510691-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	500 mg/L	500 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1987960)										
WT2510691-001	Anonymous	Fluoride	16984-48-8	E235.F	5.23 mg/L	5 mg/L	105	75.0	125	----
Anions and Nutrients (QCLot: 1987961)										
WT2510691-001	Anonymous	Chloride	16887-00-6	E235.Cl	499 mg/L	500 mg/L	99.8	75.0	125	----
Anions and Nutrients (QCLot: 1987962)										
WT2510691-001	Anonymous	Bromide	24959-67-9	E235.Br	2.39 mg/L	2.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 1987963)										
WT2510691-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	12.4 mg/L	12.5 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 1987964)										
WT2510691-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	2.53 mg/L	2.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1988341)										
HA2501325-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.51 mg/L	2.5 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1988342)										
HA2501325-001	Anonymous	Bromide	24959-67-9	E235.Br	0.51 mg/L	0.5 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1988343)										
HA2501325-001	Anonymous	Fluoride	16984-48-8	E235.F	1.03 mg/L	1 mg/L	103	75.0	125	----
Anions and Nutrients (QCLot: 1988344)										
HA2501325-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.508 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 1988345)										
HA2501325-001	Anonymous	Chloride	16887-00-6	E235.Cl	100 mg/L	100 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 1988346)										
HA2501325-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	101 mg/L	100 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 1988350)										
HA2501273-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0199 mg/L	0.02 mg/L	102	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1988131)										

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Organic / Inorganic Carbon (QCLot: 1988131) - continued										
WT2510741-004	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 1990476)										
HA2501325-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	5.06 mg/L	5 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 1987371)										
WT2510765-002	MW1D	Aluminum, dissolved	7429-90-5	E421	0.116 mg/L	0.1 mg/L	116	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0637 mg/L	0.05 mg/L	127	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00551 mg/L	0.005 mg/L	110	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0139 mg/L	0.012 mg/L	111	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0126 mg/L	0.012 mg/L	101	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.052 mg/L	0.05 mg/L	105	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0249 mg/L	0.025 mg/L	99.6	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	ND mg/L	----	ND	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0652 mg/L	0.05 mg/L	130	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0257 mg/L	0.025 mg/L	103	70.0	130	----
Volatile Organic Compounds (QCLot: 1987991)										
WT2510508-001	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	98.4 µg/L	100 µg/L	98.4	60.0	140	----
Volatile Organic Compounds (QCLot: 1987992)										
WT2510508-001	Anonymous	Acetone	67-64-1	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Benzene	71-43-2	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Bromoform	75-25-2	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Bromomethane	74-83-9	E611D	79.1 µg/L	100 µg/L	79.1	60.0	140	----
		Carbon disulfide	75-15-0	E611D	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	98.4 µg/L	100 µg/L	98.4	60.0	140	----
		Chlorobenzene	108-90-7	E611D	96.1 µg/L	100 µg/L	96.1	60.0	140	----
		Chloroethane	75-00-3	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Chloroform	67-66-3	E611D	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Chloromethane	74-87-3	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	85.0 µg/L	100 µg/L	85.0	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	99.5 µg/L	100 µg/L	99.5	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	99.3 µg/L	100 µg/L	99.3	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	96.8 µg/L	100 µg/L	96.8	60.0	140	----

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
Volatile Organic Compounds (QCLot: 1987992) - continued										
WT2510508-001	Anonymous	Dichloroethane, 1,2-	107-06-2	E611D	89.1 µg/L	100 µg/L	89.1	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	96.7 µg/L	100 µg/L	96.7	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloromethane	75-09-2	E611D	92.8 µg/L	100 µg/L	92.8	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	91.8 µg/L	100 µg/L	91.8	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	89.6 µg/L	100 µg/L	89.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	82.3 µg/L	100 µg/L	82.3	60.0	140	----
		Ethylbenzene	100-41-4	E611D	98.7 µg/L	100 µg/L	98.7	60.0	140	----
		Hexane, n-	110-54-3	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	62 µg/L	100 µg/L	61.8	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	92 µg/L	100 µg/L	92.2	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	72 µg/L	100 µg/L	72.3	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	95.6 µg/L	100 µg/L	95.6	60.0	140	----
		Styrene	100-42-5	E611D	91.1 µg/L	100 µg/L	91.1	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	96.3 µg/L	100 µg/L	96.3	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	97.3 µg/L	100 µg/L	97.3	60.0	140	----
		Toluene	108-88-3	E611D	92.7 µg/L	100 µg/L	92.7	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	91.3 µg/L	100 µg/L	91.3	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	84.6 µg/L	100 µg/L	84.6	60.0	140	----
		Trichloroethylene	79-01-6	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Vinyl chloride	75-01-4	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	192 µg/L	200 µg/L	96.2	60.0	140	----
		Xylene, o-	95-47-6	E611D	99.0 µg/L	100 µg/L	99.0	60.0	140	----
Volatile Organic Compounds (QCLot: 1991105)										
WT2510765-004	MW3	Acetone	67-64-1	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Benzene	71-43-2	E611D	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	99.0 µg/L	100 µg/L	99.0	60.0	140	----
		Bromoform	75-25-2	E611D	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		Bromomethane	74-83-9	E611D	78.9 µg/L	100 µg/L	78.9	60.0	140	----
		Carbon disulfide	75-15-0	E611D	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	90.9 µg/L	100 µg/L	90.9	60.0	140	----
		Chlorobenzene	108-90-7	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Chloroethane	75-00-3	E611D	96.2 µg/L	100 µg/L	96.2	60.0	140	----
		Chloroform	67-66-3	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Chloromethane	74-87-3	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	97.9 µg/L	100 µg/L	97.9	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	93.9 µg/L	100 µg/L	93.9	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	109 µg/L	100 µg/L	109	60.0	140	----

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
Volatile Organic Compounds (QCLot: 1991105) - continued										
WT2510765-004	MW3	Dichloroethane, 1,1-	75-34-3	E611D	96.8 µg/L	100 µg/L	96.8	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	95.2 µg/L	100 µg/L	95.2	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Dichloromethane	75-09-2	E611D	98.3 µg/L	100 µg/L	98.3	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	94.6 µg/L	100 µg/L	94.6	60.0	140	----
		Ethylbenzene	100-41-4	E611D	95.7 µg/L	100 µg/L	95.7	60.0	140	----
		Hexane, n-	110-54-3	E611D	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	119 µg/L	100 µg/L	119	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	116 µg/L	100 µg/L	116	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	97.7 µg/L	100 µg/L	97.7	60.0	140	----
		Styrene	100-42-5	E611D	93.6 µg/L	100 µg/L	93.6	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	94.3 µg/L	100 µg/L	94.3	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	88.4 µg/L	100 µg/L	88.4	60.0	140	----
		Toluene	108-88-3	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	91.1 µg/L	100 µg/L	91.1	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Trichloroethylene	79-01-6	E611D	94.4 µg/L	100 µg/L	94.4	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	92.6 µg/L	100 µg/L	92.6	60.0	140	----
		Vinyl chloride	75-01-4	E611D	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	197 µg/L	200 µg/L	98.7	60.0	140	----
		Xylene, o-	95-47-6	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
Volatile Organic Compounds (QCLot: 1991106)										
WT2510765-004	MW3	Trichlorobenzene, 1,2,4-	120-82-1	E611E	93.5 µg/L	100 µg/L	93.5	60.0	140	----
Volatile Organic Compounds (QCLot: 1994207)										
WT2511206-001	Anonymous	Acetone	67-64-1	E611D	130 µg/L	100 µg/L	130	60.0	140	----
		Benzene	71-43-2	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	112 µg/L	100 µg/L	112	60.0	140	----
		Bromoform	75-25-2	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Bromomethane	74-83-9	E611D	77.5 µg/L	100 µg/L	77.5	60.0	140	----
		Carbon disulfide	75-15-0	E611D	98.3 µg/L	100 µg/L	98.3	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Chlorobenzene	108-90-7	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Chloroethane	75-00-3	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Chloroform	67-66-3	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Chloromethane	74-87-3	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	117 µg/L	100 µg/L	117	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----

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
Volatile Organic Compounds (QCLot: 1994207) - continued										
WT2511206-001	Anonymous	Dichlorobenzene, 1,2-	95-50-1	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	84.4 µg/L	100 µg/L	84.4	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	112 µg/L	100 µg/L	112	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	113 µg/L	100 µg/L	113	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dichloromethane	75-09-2	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	92.6 µg/L	100 µg/L	92.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	91.8 µg/L	100 µg/L	91.8	60.0	140	----
		Ethylbenzene	100-41-4	E611D	113 µg/L	100 µg/L	113	60.0	140	----
		Hexane, n-	110-54-3	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	98 µg/L	100 µg/L	97.5	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Styrene	100-42-5	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	120 µg/L	100 µg/L	120	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	112 µg/L	100 µg/L	112	60.0	140	----
		Toluene	108-88-3	E611D	112 µg/L	100 µg/L	112	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	93.2 µg/L	100 µg/L	93.2	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	107 µg/L	100 µg/L	107	60.0	140	----
		Trichloroethylene	79-01-6	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Vinyl chloride	75-01-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	228 µg/L	200 µg/L	114	60.0	140	----
		Xylene, o-	95-47-6	E611D	114 µg/L	100 µg/L	114	60.0	140	----

GC- 957
MM- 8600
N- 775/776
VN- 152

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Pr

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo
Work Order Reference
WT2510765

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report
Company:	Pinchin Ltd.
Contact:	Deana Bettencourt
Phone:	226-338-0989
	Company address below will appear on the final report
Street:	225 Labrador Drive, Unit #1
City/Province:	Waterloo, Ontario
Postal Code:	N2K 4M8
Invoice To	Same as Report To — YES ☐ NO ☑
	Copy of Invoice with Report — YES ☑ NO ☐
Company:	Pinchin Ltd.
Contact:	Deana Bettencourt

Project Information

ALS Account # / Quote #:	PINC100 / West Perth
Job #:	West Perth Fullarton GW
PO / AFE:	333568.002
LSD:	

ALS Lab Work Order # (ALS use only): WT2510765

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☐ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL MAIL ☐ FAX
Email 1 or Fax: dbettencourt@Pinchin.com
Email 2:
Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL MAIL ☐ FAX
Email 1 or Fax: dbettencourt@Pinchin.com
Email 2: ap@pinchin.com

Oil and Gas Required Fields (client use)

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

ALS Contact: Amanda Overholster **Sampler:** ML/DH

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Addit fees may apply to rush requests on weekends, statutory holidays and no routine tests

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please c

Analysis Re

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

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P	West Perth Fullarton Groundwater (includes Dissolved Metals & DOC)	SAMPLES ON HOLD	EXTENDED STORAGE REQUI	SUSPECTED HAZARD (see not
	MW1S	07/05/25	10:00	GW	6	R				
	MW1D		10:10			R				
	MW2		10:20			R				
	MW3		10:30			R				
	MW4		10:40			R				
	MW5S		10:50			R				
	MW5D		11:00			R				
	MW6S		11:10			R				
	MW6D		11:20			R				
	MW7S		11:30			R				
	MW7D		11:40			R				
	DUP-01		11:00			R				

MW8

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? YES | NO

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO
Cooler Custody Seals Intact: ☑ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				10.8			

SHIPMENT RELEASE (client use)

Released by: ML/DH Date: 07/05/25 Time: 4:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: NTB Date: 05/07/25 Time: 9:30

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 FRONT

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Report To	Contact and company name below will appear on the final report
Company:	Pinchin Ltd.
Contact:	Deana Bettencourt
Phone:	226-338-0989
	Company address below will appear on the final report
Street:	225 Labrador Drive, Unit #1
City/Province:	Waterloo, Ontario
Postal Code:	N2K 4M8
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	Pinchin Ltd.
Contact:	Deana Bettencourt

Reports / Recipients

Select Report Format: ☐ PDF ☑ EXCEL ☐ EDD (DIGITAL)

Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A

☐ Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: ☑ EMAIL MAIL ☐ FAX

Email 1 or Fax: dbettencourt@Pinchin.com

Email 2:

Email 3:

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL MAIL ☐ FAX

Email 1 or Fax: dbettencourt@Pinchin.com

Email 2: ap@pinchin.com

Turnaround Time (TAT) Requested

☐ Routine [R] if received by 3pm M-F - no surcharges apply

☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum

☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum

☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum

☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum

☐ Same day [E2] if received by 10am M-S - 200% rush surcharge. Additional fees may apply to rush requests on weekends, statutory holidays and non-routine tests

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Account # / Quote #:	PINC100 / West Perth
Job #:	West Perth Fullarton GW
PO / AFE:	333568.002
LSD:	

Oil and Gas Required Fields (client use)

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

ALS Lab Work Order # (ALS use only):

ALS Contact: Amanda Overholster

Sampler: ML / DH

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	F/P: West Perth Fullarton Groundwater (includes Dissolved Metals & DOC)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MW8	07/05/25	11:50	GW	6	R			
	DUP-02	↓	11:30	↓	↓	R			
						R			
						R			
						R			
						R			
						R			
						R			
						R			
						R			
						R			
						R			
						R			

MW8

Are samples taken from a Regulated DW System? ☐ YES ☐ NO

Are samples for human consumption/ use? YES | NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Planned Event

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED

Submission Comments identified on Sample Receipt Notification: ☐ YES ☐ NO

Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
ML / DH	07/05/25	

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
NTB	05/07/25	4:30

AUG 2020 FRONT

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

CERTIFICATE OF ANALYSIS

Work Order	: **WT2527565**		
Amendment	: **1**		
Client	: **Pinchin Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo Ontario Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	: ----	E-mail	: Amanda.Overholster@ALSGlobal.com
Project	: WEST PERTH FULLARTON GW	Telephone	: 1 416 817 2944
PO	: 333568.002	Date Samples Received	: 29-Sep-2025 15:30
C-O-C number	: ----	Date Analysis Commenced	: 30-Sep-2025
Sampler	: DB	Issue Date	: 22-Oct-2025 10:32
Site	: ----		
Quote number	: West Perth Landfill		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Nik Perkio	Senior Analyst	Centralized Prep, 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.

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

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

Unit	*Description*
-	no units
mg/L	milligrams per litre
pH units	pH units

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Amendment (22/10/2025): This report has been amended as a result of a request to change sample identification numbers (IDs) received by ALS from Deana Bettencourt on Oct. 22. All analysis results are as per the previous report.

Qualifiers

Qualifier	Description
DLDS	Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW7S ----	Client sample ID: DUP-700 ----	----	----	----
					Client sampling date / time: 29-Sep-2025 13:00	29-Sep-2025 13:00	----	----	----
					WT2527565-001	WT2527565-002	----	----	----
					Result	Result	----	----	----
Sample Preparation									
Dissolved carbon filtration location	----	EP358/WT	-	-	field	lab	----	----	----
Physical Tests									
Alkalinity, bicarbonate (as CaCO3)	----	E290/WT	1.0	mg/L	248	245	----	----	----
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L	<1.0	<1.0	----	----	----
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L	248	245	----	----	----
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L	412	413	----	----	----
pH	----	E108/WT	0.10	pH units	7.65	7.61	----	----	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L	604 DLDS	591 DLDS	----	----	----
Anions and Nutrients									
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L	0.0078	0.0082	----	----	----
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L	<0.20 DLDS	<0.10	----	----	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L	134 DLDS	134	----	----	----
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L	0.714 DLDS	0.675	----	----	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L	<0.020 DLDS	<0.010	----	----	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L	0.0043	0.0040	----	----	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L	22.4 DLDS	22.5	----	----	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L	0.146 DLDS	0.139	----	----	----
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L	0.146	0.139	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID: MW7S ----	Client sample ID: DUP-700 ----	----	----	----
					Client sampling date / time: 29-Sep-2025 13:00	29-Sep-2025 13:00	----	----	----
					WT2527565-001	WT2527565-002	----	----	----
					Result	Result	----	----	----
Organic / Inorganic Carbon									
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L	<0.50	<0.50	----	----	----
Dissolved Metals									
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L	0.0015	0.0011	----	----	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L	0.00388	0.00384	----	----	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L	0.130	0.134	----	----	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L	0.034	0.034	----	----	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L	0.0000051	<0.0000050	----	----	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L	84.3	83.6	----	----	----
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L	<0.00050	<0.00050	----	----	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L	0.00033	<0.00020	----	----	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L	<0.010	<0.010	----	----	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L	<0.000050	<0.000050	----	----	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L	49.0	49.7	----	----	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L	0.00170	0.00170	----	----	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L	2.01	2.05	----	----	----
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L	<0.000050	0.000061	----	----	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L	8.56	8.49	----	----	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L	21.2	21.5	----	----	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L	0.0019	<0.0010	----	----	----
Dissolved metals filtration location	----	EP421/WT	-	-	Field	Field	----	----	----

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

ALS Canada Ltd.

right solutions. right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2527565**	Page	: 1 of 10
Amendment	: 1		
Client	: **Pinchin Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo ON Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 29-Sep-2025 15:30
PO	: 333568.002	Issue Date	: 22-Oct-2025 10:32
C-O-C number	: ----		
Sampler	: DB		
Site	:		
Quote number	: West Perth Landfill		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] DUP-700	E298	29-Sep-2025	30-Sep-2025	28 days	1 days	✓	02-Oct-2025	28 days	1 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP] MW7S	E298	29-Sep-2025	30-Sep-2025	28 days	1 days	✓	02-Oct-2025	28 days	1 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] DUP-700	E235.Br	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW7S	E235.Br	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP-700	E235.Cl	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW7S	E235.Cl	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] DUP-700	E378-U	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] MW7S	E378-U	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] DUP-700	E235.F	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW7S	E235.F	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] DUP-700	E235.NO3	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW7S	E235.NO3	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP-700	E235.NO2	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW7S	E235.NO2	29-Sep-2025	01-Oct-2025	7 days	2 days	✓	02-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] DUP-700	E235.SO4	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW7S	E235.SO4	29-Sep-2025	01-Oct-2025	28 days	2 days	✓	02-Oct-2025	28 days	2 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-700	E421	29-Sep-2025	30-Sep-2025	180 days	1 days	✓	30-Sep-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW7S	E421	29-Sep-2025	30-Sep-2025	180 days	1 days	✓	30-Sep-2025	180 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
DUP-700	E358-L	29-Sep-2025	30-Sep-2025	28 days	1 days	✓	01-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW7S	E358-L	29-Sep-2025	30-Sep-2025	28 days	1 days	✓	01-Oct-2025	28 days	1 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP-700	E290	29-Sep-2025	01-Oct-2025	14 days	2 days	✓	02-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW7S	E290	29-Sep-2025	01-Oct-2025	14 days	2 days	✓	02-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP]										
DUP-700	E108	29-Sep-2025	01-Oct-2025	14 days	2 days	✓	02-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP]										
MW7S	E108	29-Sep-2025	01-Oct-2025	14 days	2 days	✓	02-Oct-2025	14 days	2 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP]										
DUP-700	E162	29-Sep-2025	----	----	----		03-Oct-2025	7 days	4 days	✓

Matrix: **Water**

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

Analyte Group : Analytical Method / Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP]										
MW7S	E162	29-Sep-2025	----	----	----		03-Oct-2025	7 days	4 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
pH by Meter	E108	2251804	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	2256936	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2251806	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	2251809	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2251807	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2251808	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2251805	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2251810	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	2251802	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	2250053	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2250120	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2251811	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2248962	1	18	5.5	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter	E108	2251804	1	16	6.2	5.0	✓
TDS by Gravimetry	E162	2256936	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2251806	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	2251809	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2251807	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2251808	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2251805	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2251810	1	19	5.2	5.0	✓
Alkalinity Species by Titration	E290	2251802	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	2250053	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2250120	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2251811	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2248962	1	18	5.5	5.0	✓
Method Blanks (MB)							
TDS by Gravimetry	E162	2256936	1	20	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2251806	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	2251809	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2251807	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2251808	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2251805	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2251810	1	19	5.2	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Method Blanks (MB) - Continued							
Alkalinity Species by Titration	E290	2251802	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	2250053	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2250120	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2251811	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2248962	1	18	5.5	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC	E235.Br	2251806	1	8	12.5	5.0	✓
Chloride in Water by IC	E235.Cl	2251809	1	19	5.2	5.0	✓
Fluoride in Water by IC	E235.F	2251807	1	19	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	2251808	1	19	5.2	5.0	✓
Nitrate in Water by IC	E235.NO3	2251805	1	20	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2251810	1	19	5.2	5.0	✓
Ammonia by Fluorescence	E298	2250053	1	20	5.0	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2250120	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2251811	1	20	5.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2248962	1	18	5.5	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter	E108 ALS Environmental - Waterloo	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.
TDS by Gravimetry	E162 ALS Environmental - Waterloo	Water	APHA 2540 C (mod)	Total Dissolved Solids (TDS) are determined by filtering a sample through a glass fibre filter, with evaporation of the filtrate at 180 ± 2°C for 16 hours or to constant weight, with gravimetric measurement of the residue.
Bromide in Water by IC	E235.Br ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Chloride in Water by IC	E235.Cl ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Fluoride in Water by IC	E235.F ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	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 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Sulfate in Water by IC	E235.SO4 ALS Environmental - Waterloo	Water	EPA 300.1 (mod)	Inorganic anions are analyzed by Ion Chromatography with conductivity and/or UV detection.
Alkalinity Species by Titration	E290 ALS Environmental - Waterloo	Water	APHA 2320 B (mod)	Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.
Ammonia by Fluorescence	E298 ALS Environmental - Waterloo	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)

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Dissolved Organic Carbon by Combustion (Low Level)	E358-L ALS Environmental - Waterloo	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 CO2. 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 ALS Environmental - Waterloo	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.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS. Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	“Hardness (as CaCO3), dissolved” is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. “Total Hardness” refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.
Nitrate and Nitrite (as N) (Calculation)	EC235.N+N ALS Environmental - Waterloo	Water	EPA 300.0	Nitrate and Nitrite (as N) is a calculated parameter. Nitrate and Nitrite (as N) = Nitrite (as N) + Nitrate (as N).

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Preparation for Ammonia	EP298 ALS Environmental - Waterloo	Water		Sample preparation for Preserved Nutrients Water Quality Analysis.
Preparation for Dissolved Organic Carbon for Combustion	EP358 ALS Environmental - Waterloo	Water	APHA 5310 B (mod)	Preparation for Dissolved Organic Carbon
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO3.

ALS Canada Ltd.

QUALITY CONTROL REPORT

Work Order	: **WT2527565**	Page	: 1 of 10
Amendment	: **1**		
Client	: Pinchin Ltd.	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo ON Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 29-Sep-2025 15:30
PO	: 333568.002	Date Analysis Commenced	: 30-Sep-2025
C-O-C number	: ----	Issue Date	: 22-Oct-2025 10:32
Sampler	: DB		
Site	:		
Quote number	: West Perth Landfill		
No. of samples received	: 2		
No. of samples analysed	: 2		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
Nik Perkio	Senior Analyst	Waterloo Centralized Prep, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Metals, Waterloo, Ontario

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: 2251802)											
WT2527670-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	22.7	25.8	12.8%	20%	----
Physical Tests (QC Lot: 2251804)											
WT2527670-001	Anonymous	pH	----	E108	0.10	pH units	7.36	7.14	3.03%	4%	----
Physical Tests (QC Lot: 2256936)											
WT2527390-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	306	310	1.30%	20%	----
Anions and Nutrients (QC Lot: 2250053)											
WT2527385-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0136	0.0137	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2251805)											
WT2527454-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.100	mg/L	0.770	0.785	0.015	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2251806)											
WT2527454-001	Anonymous	Bromide	24959-67-9	E235.Br	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2251807)											
WT2527454-001	Anonymous	Fluoride	16984-48-8	E235.F	0.100	mg/L	0.580	0.574	0.006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2251808)											
WT2527454-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2251809)											
WT2527454-001	Anonymous	Chloride	16887-00-6	E235.Cl	2.50	mg/L	328	329	0.215%	20%	----
Anions and Nutrients (QC Lot: 2251810)											
WT2527454-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	120	120	0.0319%	20%	----
Anions and Nutrients (QC Lot: 2251811)											
HA2503840-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0054	0.0054	0.00004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 2250120)											
HA2504060-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	16.4	16.2	1.04%	20%	----
Dissolved Metals (QC Lot: 2248962)											
WT2527351-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0500	mg/L	<0.0500	<0.0500	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00500	mg/L	<0.00500	<0.00500	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00500	mg/L	0.0393	0.0396	0.00032	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.500	mg/L	40.9	40.2	1.66%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.000250	mg/L	<0.000250	<0.000250	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	2.50	mg/L	405	397	1.91%	20%	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 2248962) - continued											
WT2527351-001	Anonymous	Chromium, dissolved	7440-47-3	E421	0.0250	mg/L	0.722	0.728	0.833%	20%	----
		Copper, dissolved	7440-50-8	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.500	mg/L	<0.500	<0.500	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.250	mg/L	128	133	3.88%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00500	mg/L	0.0957	0.0989	3.28%	20%	----
		Potassium, dissolved	7440-09-7	E421	2.50	mg/L	30.5	30.8	1.00%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.00250	mg/L	<0.00250	<0.00250	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	2.50	mg/L	5.74	5.81	0.069	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	2.50	mg/L	397	401	1.04%	20%	----
		Zinc, dissolved	7440-66-6	E421	0.0500	mg/L	0.0586	0.0629	0.0044	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: 2251802)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, carbonate (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, hydroxide (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, phenolphthalein (as CaCO3)	----	E290	1	mg/L	<1.0	----
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	<1.0	----
Physical Tests (QCLot: 2256936)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 2250053)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 2251805)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2251806)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2251807)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2251808)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2251809)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2251810)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2251811)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 2250120)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 2248962)						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 2248962) - continued						
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
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	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 2251802)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	96.1	85.0	115	----
Physical Tests (QCLot: 2251804)									
pH	----	E108	----	pH units	7 pH units	99.0	98.0	102	----
Physical Tests (QCLot: 2256936)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 2250053)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 2251805)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2251806)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	96.5	85.0	115	----
Anions and Nutrients (QCLot: 2251807)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2251808)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 2251809)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2251810)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 2251811)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.5	80.0	120	----
Organic / Inorganic Carbon (QCLot: 2250120)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.3	80.0	120	----
Dissolved Metals (QCLot: 2248962)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	105	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	104	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	105	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	99.5	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	101	80.0	120	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 2248962) - continued									
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	100.0	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	103	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	99.2	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	102	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	104	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	114	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	101	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	99.7	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	102	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	100	60.0	140	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	105	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	102	80.0	120	----

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Anions and Nutrients (QCLot: 2250053)										
WT2527385-004	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.102 mg/L	0.1 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2251805)										
WT2527454-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	12.3 mg/L	12.5 mg/L	98.3	75.0	125	----
Anions and Nutrients (QCLot: 2251806)										
WT2527454-001	Anonymous	Bromide	24959-67-9	E235.Br	2.32 mg/L	2.5 mg/L	92.7	75.0	125	----
Anions and Nutrients (QCLot: 2251807)										
WT2527454-001	Anonymous	Fluoride	16984-48-8	E235.F	5.09 mg/L	5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2251808)										
WT2527454-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	2.40 mg/L	2.5 mg/L	95.9	75.0	125	----
Anions and Nutrients (QCLot: 2251809)										
WT2527454-001	Anonymous	Chloride	16887-00-6	E235.Cl	491 mg/L	500 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 2251810)										
WT2527454-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	491 mg/L	500 mg/L	98.2	75.0	125	----
Anions and Nutrients (QCLot: 2251811)										
HA2503840-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0186 mg/L	0.02 mg/L	94.9	70.0	130	----
Organic / Inorganic Carbon (QCLot: 2250120)										
HA2504060-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 2248962)										
WT2527351-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0780 mg/L	0.1 mg/L	78.0	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0476 mg/L	0.05 mg/L	95.2	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00427 mg/L	0.005 mg/L	85.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	ND mg/L	----	ND	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0102 mg/L	0.012 mg/L	81.2	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.036 mg/L	0.05 mg/L	72.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0208 mg/L	0.025 mg/L	83.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.00923 mg/L	0.012 mg/L	73.8	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	ND mg/L	----	ND	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0493 mg/L	0.05 mg/L	98.6	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	ND mg/L	----	ND	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	ND mg/L	----	ND	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: 2248962) - continued										
WT2527351-002	Anonymous	Zinc, dissolved	7440-66-6	E421	0.0224 mg/L	0.025 mg/L	89.5	70.0	130	----

AC-10
N-273
MM-520

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 111[illegible]

Page 1 of 1

Environmental Division Waterloo

Work Order Reference WT2527565

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	Pinchin Ltd	Select Report Format: ☐ PDF ☑ EXCEL ☐ EDD (DIGITAL)	☐ Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	Joana Bettencourt	Merge QC/QCI Reports with COA ☐ YES ☐ NO ☐ N/A	☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
Phone:	226 338 0489	☐ Compare Results to Criteria on Report - provide details below if box checked	☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
	Company address below will appear on the final report	Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
Street:	235 Laboratory Dr.	Email 1 or Fax	☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
City/Province:	Waterloo Ontario	Email 2	☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.
Postal Code:	N2K 4N8	Email 3	Additional fees may apply to rush requests on weekends, st
Invoice To	Same as Report To ☐ YES ☑ NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX	For all tests with rush TATs requested, please contact your AM to confirm availability.
Company:	Pinchin	Email 1 or Fax	
Contact:		Email 2	

Project Information		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:	PINC100 / West Perth	AFE/Cost Center:	PO#
Job / Project #:	West Perth Fullarton Gw	Major/Minor Code:	Routing Code:
PO / AFE:	733568-002	Requisitioner:	
LSD:		Location:	Fullarton

ALS Lab Work Order # (ALS use only): WT2527565 FH.

ALS Contact: A.Ormsbee Sampler: D.B

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Analysis Request: Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MW55	29-Sep-25	13:00	GW	R	West Fullarton Groundwater Including dissolved metals + DOC			
	DUP-700	11	11	GW					

Drinking Water (DW) Samples[1] (client use)	Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)	SAMPLE RECEIPT DETAILS (ALS use only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	No VOC analysis	Cooling Method: ☐ NONE ☑ ICE ☐ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Are samples for human consumption/ use? ☐ YES ☐ NO		Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A
		INITIAL COOLER TEMPERATURES °C: 8.5 / FINAL COOLER TEMPERATURES °C:

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by:	Date: Sep 29 2025	Time: 17:a	Received by:	Date:	Time:	Received by: CS	Date: 09/29	Time: 15:30

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 FRONT

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

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

CERTIFICATE OF ANALYSIS

Work Order	:	**WT2510773**			
Client	:	**Pinchin Ltd.**	Laboratory	:	ALS Environmental - Waterloo
Contact	:	Deana Bettencourt	Account Manager	:	Amanda Overholster
Address	:	225 Labrador Drive Unit #1 Waterloo Ontario Canada N2K 4M8	Address	:	60 Northland Road, Unit 1 Waterloo ON Canada N2V 2B8
Telephone	:	----	E-mail	:	Amanda.Overholster@ALSGlobal.com
Project	:	WEST PERTH FULLARTON GW	Telephone	:	1 416 817 2944
PO	:	333568.002	Date Samples Received	:	07-May-2025 16:30
C-O-C number	:	----	Date Analysis Commenced	:	11-May-2025
Sampler	:	DH/ML	Issue Date	:	13-May-2025 12:16
Site	:	----			
Quote number	:	West Perth Landfill			
No. of samples received	:	1			
No. of samples analysed	:	1			

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
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
David Tremblett	VOC Section Supervisor	VOC, 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.

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

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

Unit	*Description*
µg/L	micrograms per litre

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

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	----	----	----	----
					Client sampling date / time	07-May-2025 00:00	----	----	----	----
						WT2510773-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
Acetone	67-64-1	E611D/WT	20	µg/L		<20	----	----	----	----
Benzene	71-43-2	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Bromodichloromethane	75-27-4	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Bromoform	75-25-2	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Bromomethane	74-83-9	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Carbon disulfide	75-15-0	E611D/WT	1.0	µg/L		<1.0	----	----	----	----
Carbon tetrachloride	56-23-5	E611D/WT	0.20	µg/L		<0.20	----	----	----	----
Chlorobenzene	108-90-7	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Chloroethane	75-00-3	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Chloroform	67-66-3	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Chloromethane	74-87-3	E611D/WT	2.0	µg/L		<2.0	----	----	----	----
Dibromochloromethane	124-48-1	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dibromoethane, 1,2-	106-93-4	E611D/WT	0.20	µg/L		<0.20	----	----	----	----
Dichlorobenzene, 1,2-	95-50-1	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,3-	541-73-1	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichlorobenzene, 1,4-	106-46-7	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichlorodifluoromethane	75-71-8	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,1-	75-34-3	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichloroethane, 1,2-	107-06-2	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, 1,1-	75-35-4	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	----	----	----	----
					Client sampling date / time	07-May-2025 00:00	----	----	----	----
					WT2510773-001	----	----	----	----	----
					Result	----	----	----	----	----
Volatile Organic Compounds										
Dichloroethylene, cis+trans-1,2-	540-59-0	E611D/WT	0.71	µg/L	<0.71	----	----	----	----
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Dichloromethane	75-09-2	E611D/WT	1.0	µg/L	<1.0	----	----	----	----
Dichloropropane, 1,2-	78-87-5	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D/WT	0.30	µg/L	<0.30	----	----	----	----
Dichloropropylene, cis+trans-1,3-	542-75-6	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D/WT	0.30	µg/L	<0.30	----	----	----	----
Ethylbenzene	100-41-4	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Hexanone, 2-	591-78-6	E611D/WT	20	µg/L	<20	----	----	----	----
Methyl ethyl ketone [MEK]	78-93-3	E611D/WT	20	µg/L	<20	----	----	----	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D/WT	20	µg/L	<20	----	----	----	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Styrene	100-42-5	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Tetrachloroethylene	127-18-4	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Toluene	108-88-3	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Trichlorobenzene, 1,2,4-	120-82-1	E611E/WT	1.0	µg/L	<1.0	----	----	----	----
Trichloroethane, 1,1,1-	71-55-6	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Trichloroethane, 1,1,2-	79-00-5	E611D/WT	0.50	µg/L	<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	TRIP BLANK	----	----	----	----
					Client sampling date / time	07-May-2025 00:00	----	----	----	----
					WT2510773-001	----	----	----	----	----
					Result	----	----	----	----	----
Volatile Organic Compounds										
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
Vinyl chloride	75-01-4	E611D/WT	0.20	µg/L	<0.20	----	----	----	----
Xylene, m+p-	179601-23-1	E611D/WT	0.40	µg/L	<0.40	----	----	----	----
Xylene, o-	95-47-6	E611D/WT	0.30	µg/L	<0.30	----	----	----	----
Xylenes, total	1330-20-7	E611D/WT	0.50	µg/L	<0.50	----	----	----	----
BTEX, total	----	E611D/WT	1.0	µg/L	<1.0	----	----	----	----
Trihalomethanes [THMs], total	----	E611D/WT	1.0	µg/L	<1.0	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%	100	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%	98.4	----	----	----	----

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

ALS Canada Ltd.

right solutions. right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2510773**	Page	: 1 of 5
Client	: **Pinchin Ltd.**	Laboratory	: ALS Environmental - Waterloo
Contact	: Deana Bettencourt	Account Manager	: Amanda Overholster
Address	: 225 Labrador Drive Unit #1 Waterloo ON Canada N2K 4M8	Address	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
Telephone	: ----	Telephone	: 1 416 817 2944
Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 07-May-2025 16:30
PO	: 333568.002	Issue Date	: 13-May-2025 12:14
C-O-C number	: ----		
Sampler	: DH/ML		
Site	: ----		
Quote number	: West Perth Landfill		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Water**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Laboratory Control Sample (LCS) Recoveries								
Volatile Organic Compounds	QC-MRG2-1991105 002	----	Acetone	67-64-1	E611D	132 % MES	70.0-130%	Recovery greater than upper control limit

Result Qualifiers

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : Analytical Method / **Container / Client Sample ID(s)**	*Method*	*Sampling Date*	*Extraction / Preparation*				*Analysis*			
			Preparation Date	*Holding Times*		*Eval*	*Analysis Date*	*Holding Times*		*Eval*
				Rec	*Actual*			*Rec*	*Actual*	
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIP BLANK	E611D	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIP BLANK	E611E	07-May-2025	11-May-2025	14 days	5 days	✓	11-May-2025	14 days	5 days	✓

Legend & Qualifier Definitions

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

Quality Control Parameter Frequency Compliance

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

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Duplicates (DUP)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1991105	1	15	6.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1991106	1	13	7.6	5.0	✓
Laboratory Control Samples (LCS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1991105	1	15	6.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1991106	1	13	7.6	5.0	✓
Method Blanks (MB)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1991105	1	15	6.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1991106	1	13	7.6	5.0	✓
Matrix Spikes (MS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1991105	1	15	6.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1991106	1	13	7.6	5.0	✓

Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
VOCs (Prairies List) by Headspace GC-MS	E611E ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
VOCs Preparation for Headspace Analysis	EP581 ALS Environmental - Waterloo	Water	EPA 5021A (mod)	Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler. An aliquot of the headspace is then injected into a GC-MS-FID.

QUALITY CONTROL REPORT

Work Order	: **WT2510773**	Page	: 1 of 10
Client	: Pinchin Ltd.	Laboratory	: ALS Environmental - Waterloo
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Project	: WEST PERTH FULLARTON GW	Date Samples Received	: 07-May-2025 16:30
PO	: 333568.002	Date Analysis Commenced	: 11-May-2025
C-O-C number	: ----	Issue Date	: 13-May-2025 12:14
Sampler	: DH/ML		
Site	: ----		
Quote number	: West Perth Landfill		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Laboratory Department*
David Tremblett	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario

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*
Volatile Organic Compounds (QC Lot: 1991105)											
WT2510765-004	Anonymous	Acetone	67-64-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromodichloromethane	75-27-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromoform	75-25-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Carbon disulfide	75-15-0	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Carbon tetrachloride	56-23-5	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Chlorobenzene	108-90-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroethane	75-00-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloroform	67-66-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Chloromethane	74-87-3	E611D	2.0	µg/L	<2.0	<2.0	0	Diff <2x LOR	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichlorodifluoromethane	75-71-8	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,1-	75-34-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethane, 1,2-	107-06-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, 1,1-	75-35-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloromethane	75-09-2	E611D	1.0	µg/L	<1.0	<1.0	0	Diff <2x LOR	----
		Dichloropropane, 1,2-	78-87-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexane, n-	110-54-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Volatile Organic Compounds (QC Lot: 1991105) - continued											
WT2510765-004	Anonymous	Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	<20	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Styrene	100-42-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tetrachloroethylene	127-18-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Toluene	108-88-3	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichloroethylene	79-01-6	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Trichlorofluoromethane	75-69-4	E611D	0.50	µg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611D	0.40	µg/L	<0.40	<0.40	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	<0.30	<0.30	0	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1991106)											
WT2510765-004	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	1.0	µg/L	<1.0	<1.0	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
Volatile Organic Compounds (QCLot: 1991105)						
Acetone	67-64-1	E611D	20	µg/L	<20	----
Benzene	71-43-2	E611D	0.5	µg/L	<0.50	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	<0.50	----
Bromoform	75-25-2	E611D	0.5	µg/L	<0.50	----
Bromomethane	74-83-9	E611D	0.5	µg/L	<0.50	----
Carbon disulfide	75-15-0	E611D	1	µg/L	<1.0	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroethane	75-00-3	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
Chloromethane	74-87-3	E611D	2	µg/L	<2.0	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	<0.50	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	<0.20	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	<0.50	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	<0.50	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	<0.50	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	<0.50	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	<0.50	----
Dichloromethane	75-09-2	E611D	1	µg/L	<1.0	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	<0.50	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	<0.30	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	<0.30	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	<0.50	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	<0.50	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	<20	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	<20	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	<20	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	<0.50	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1991105) - continued						
Styrene	100-42-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	<0.50	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	<0.50	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	<0.50	----
Toluene	108-88-3	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	<0.50	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	<0.50	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	<0.50	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	<0.50	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	<0.20	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	<0.40	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	<0.30	----
Volatile Organic Compounds (QCLot: 1991106)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1991105)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	# 132	70.0	130	MES
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	81.6	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	95.3	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	91.7	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	99.8	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	99.5	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	99.5	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	112	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	106	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	95.0	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	96.7	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	117	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	98.3	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	102	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	101	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	99.4	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	97.8	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	115	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	126	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	124	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	99.7	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	97.5	70.0	130	----

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1991105) - continued									
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	90.5	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	98.6	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	92.5	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	96.3	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	94.1	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	103	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	101	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	98.5	70.0	130	----
Volatile Organic Compounds (QCLot: 1991106)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	97.2	70.0	130	----

Qualifiers

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

Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1991105)										
WT2510765-004	Anonymous	Acetone	67-64-1	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Benzene	71-43-2	E611D	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	99.0 µg/L	100 µg/L	99.0	60.0	140	----
		Bromoform	75-25-2	E611D	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		Bromomethane	74-83-9	E611D	78.9 µg/L	100 µg/L	78.9	60.0	140	----
		Carbon disulfide	75-15-0	E611D	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	90.9 µg/L	100 µg/L	90.9	60.0	140	----
		Chlorobenzene	108-90-7	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Chloroethane	75-00-3	E611D	96.2 µg/L	100 µg/L	96.2	60.0	140	----
		Chloroform	67-66-3	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Chloromethane	74-87-3	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	99.6 µg/L	100 µg/L	99.6	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	97.9 µg/L	100 µg/L	97.9	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	93.9 µg/L	100 µg/L	93.9	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	96.8 µg/L	100 µg/L	96.8	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	95.2 µg/L	100 µg/L	95.2	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Dichloromethane	75-09-2	E611D	98.3 µg/L	100 µg/L	98.3	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	94.6 µg/L	100 µg/L	94.6	60.0	140	----
		Ethylbenzene	100-41-4	E611D	95.7 µg/L	100 µg/L	95.7	60.0	140	----
		Hexane, n-	110-54-3	E611D	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	119 µg/L	100 µg/L	119	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	116 µg/L	100 µg/L	116	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	97.7 µg/L	100 µg/L	97.7	60.0	140	----
		Styrene	100-42-5	E611D	93.6 µg/L	100 µg/L	93.6	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	94.3 µg/L	100 µg/L	94.3	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	88.4 µg/L	100 µg/L	88.4	60.0	140	----
		Toluene	108-88-3	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	91.1 µg/L	100 µg/L	91.1	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Trichloroethylene	79-01-6	E611D	94.4 µg/L	100 µg/L	94.4	60.0	140	----

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
Volatile Organic Compounds (QCLot: 1991105) - continued										
WT2510765-004	Anonymous	Trichlorofluoromethane	75-69-4	E611D	92.6 µg/L	100 µg/L	92.6	60.0	140	----
		Vinyl chloride	75-01-4	E611D	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	197 µg/L	200 µg/L	98.7	60.0	140	----
		Xylene, o-	95-47-6	E611D	96.6 µg/L	100 µg/L	96.6	60.0	140	----
Volatile Organic Compounds (QCLot: 1991106)										
WT2510765-004	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	93.5 µg/L	100 µg/L	93.5	60.0	140	----

VW-151

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1119737

Page 1 of 1

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Waterloo
Work Order Reference
WT2510773

Telephone : +1 519 886 6910

Report To	Contact and company name below will appear on the final report	Reports / Recipients	Turnaround Time (TAT) Requested
Company:	Pinchin Ltd.	Select Report Format: PDF EXCEL EDD (DIGITAL)	Routine [R] if received by 3pm M-F - no surcharges apply
Contact:	Deana Bettencourt	Merge QC/QCI Reports with COA YES NO N/A	4 day [P4] if received by 3pm M-F - 20% rush surcharge minim
Phone:	226 338 0989	Compare Results to Criteria on Report - provide details below if box checked	3 day [P3] if received by 3pm M-F - 25% rush surcharge minim
	Company address below will appear on the final report	Select Distribution: EMAIL MAIL FAX	2 day [P2] if received by 3pm M-F - 50% rush surcharge minim
Street:	225 Labrador Drive Unit #1	Email 1 or Fax dbettencourt@Pinchin.com	1 day [E] if received by 3pm M-F - 100% rush surcharge minim
City/Province:	Waterloo, ON	Email 2	Same day [E2] if received by 10am M-S - 200% rush surcharge.
Postal Code:	N2K 4M8	Email 3	Additional fees may apply to rush requests on weeker
Invoice To	Same as Report To YES NO	Invoice Recipients	Date and Time Required for all E&P TATs:
	Copy of Invoice with Report YES NO	Select Invoice Distribution: EMAIL MAIL FAX	For all tests with rush TATs requested, please
Company:	Pinchin Ltd.	Email 1 or Fax dbettencourt@Pinchin.com	Analysis R
Contact:	Deana Bettencourt	Email 2 aP@Pinchin.Ca	Indicate Filtered (F), Preserved (P) or Filtered ar

Project Information

		Oil and Gas Required Fields (client use)	
ALS Client Code / QUOTE #:	PINCHW / West Perth	AFE/Cost Center:	PO#:
Job / Project #:	West Perth Fullarton GW	Major/Minor Code:	Routing Code:
PO / AFE:	353568.002	Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (ALS use only):	WT2510773	ALS Contact: Amanda Overholster	Sampler: DF/ML

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS		SAMPLES ON HOLD	EXTENDED STORAGE REQUIR	SUSPECTED HAZARD (see not
	TRIP BLANK			GW	2	2 VOCs			

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

Are samples taken from a Regulated DW System? YES NO

Are samples for human consumption/ use? YES NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: NONE ICE ICE PACKS FROZEN COOLING INITIATED

Cooler Custody Seals Intact: YES N/A Sample Custody Seals Intact: YES N/A

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
				10.8			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
DF	07/05/25	4:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
NTB	05/07/025	4:30

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JAN 2023 FRONT

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

APPENDIX F

TABLE F-1
LANDFILL GAS MONITORING RESULTS
Fullarton Landfill
Road 145, Municipality of West Perth

Well	Top of Screen (masl)	Parameter	Monitoring Date																		
			May-07	*May-08*	*May-09*	*May-09*	*May-10*	*May-11*	*May-12*	*May-13*	*May-14*	*May-15*	*May-16*	*May-17*	*May-18*	*May-19*	*Apr-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*
MW1S	337.71	Liquid Elevation	337.97	338	337.91	338.07	338.07	338.11	**337.2**	338.26	338.61	337.83	337.92	338.41	338.45	338.51	337.95	337.95	338.1	338.31	338.06	338.17
		CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
MW1D	330.63	Liquid Elevation	331.33	331.14	331.39	331.3	331.3	331.35	Well Damaged	331.35	331.03	331.26	331.32	331.33	331.57	331.52	331.40	331.41	331.45	331.62	331.19	331.41
		CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0	0	0	0	0	0	0.5	0	0	0	1.5
MW2	338.51	Liquid Elevation	338.82	338.68	338.97	338.81	338.63	339.24	338.66	339.36	338.99	338.63	338.77	339.22	339.32	339.36	338.80	338.82	339.02	339.26	338.90	339.06
		CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	4.5
MW3	337.73	Liquid Elevation	339.02	339.12	338.81	339.28	339.39	339.38	339.1	339.67	339.51	339.09	339.3	339.61	339.78	339.78	339.34	339.31	339.51	339.64	339.42	339.55
		CH4 (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
MW4	340.00	Liquid Elevation	**339.47**	**339.24**	**339.64**	**339.44**		**339.45**	**339.15**	**339.63**	**339.68**	**339.21**	**339.35**	**339.5**	**339.72**	**339.78**	**339.50**	**339.40**	340.54	**339.70**	**339.71**	**339.83**
		CH4 (%)	**2.0**	**23.0**	**19.0**	**19.8**	0.5	**2.8**	**2.8**	**0.1**	**0.0**	**0.6**	**0.0**	**0.0**	**> 5.0**	**19.0**	**31.0**	**0.0**	0.0	**0.0**	**0.0**	**0.0**
MW5S	336.67	Liquid Elevation		**335.57**		336.88	336.94	**336.35**	**336.23**	**336.3**	**336.37**	336.81	336.95	337.29	337.58	337.15	336.91	337.07	337.12	337.32	337.28	337.24
		CH4 (%)		**0.0**		0.0	0.0	**0.0**	**0.0**	**0.1**	**0.0**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW5D	329.15	Liquid Elevation		329.95		329.97	329.9	329.28	329.4	329.18	329.42	330.07	330.16	329.93	330.28	330.19	330.05	330.11	330.09	330.32	330.06	330.05
		CH4 (%)		0.0		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
MW6S	336.37	Liquid Elevation		338.31		338.41	338.39	337.61	337.28	337.85	337.33	338.18	338.11	338.75	338.62	338.70	338.26	338.17	338.18	338.22	338.16	338.17
		CH4 (%)		0.0		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	21.5	1.5	0.0	0.0	0.0	0.0	0.0
MW6D	330.07	Liquid Elevation		333.65		333.54	333.49	332.75	332.55	332.85	332.61	333.16	333.27	333.55	333.55	333.50	333.40	333.43	340.05	333.55	333.40	333.35
		CH4 (%)		0.0		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MW7S	332.39	Liquid Elevation		336.11		336.09	336.37	335.43	335.1	335.53	335.6	336.09	336.19	336.41	336.39	336.51	336.03	336.13	335.17	336.24	336.20	336.26
		CH4 (%)		0.1		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
MW7D	327.47	Liquid Elevation		**326.35**		328.11	328.53	327.75	327.88	**327.21**	327.86	328.75	328.9	328.55	328.74	328.72	328.86	328.82	328.99	329.00	329.01	328.87
		CH4 (%)		**0.1**		0.0	0.0	0.0	0.0	**0.1**	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
MW8	338.18	Liquid Elevation		338.8		338.81		339.1	338.81	339.28	339.28	338.8	338.94	339.42	339.35	339.35	339.04	339.07	339.25	339.37	339.20	339.18
		CH4 (%)		1.4		1.8	2.7	0	0.1	0.2	0.1	0.1	0	0	0	0.0	0.0	0.5	0.5	2.0	0.0	3.5

Notes: 1. mASL denotes metres above sea level.
2. CH_4 denotes methane gas.
3. Methane gas readings are expressed as percent volume in air.
4. Gas readings are more representative of subsurface conditions when liquid level is within the screened interval.
5. **Bold** and shaded denotes that the liquid level is within the screened interval.
6. Blank denotes data not available.
7. Methane values were 0.1% volume in ambient air in 2013. Methane detections of 0.1% in 2013 are interpreted to be erroneous.

APPENDIX G

PINCHIN

Landfill Site Inspection Form

Site: Fullarton

Client: West Perth

Type of Inspection: Annual

Weather Conditions: Sunny, 14°C

Project Number: 333568.002

Date: May 7, 2025

Time: 9:00 AM.

Inspector(s): ML/DH

Inspection Item	Y	N	Comments:
Signage at the Site entrance is present, in good condition, and visible from the roadway in front of the Site.	☒	☐	
Entrance gate for the Site is functional, and, when appropriate, closed and locked.	☒	☐	
Fencing and other control measures, where appropriate, are competent.	☒	☒	Fence down along east boundary.
Cover material on the waste mound, where applicable, is adequate.	☒	☐	
No general settlement areas or depressions on or adjacent to the waste mound.	☒	☐	
No presence of ponded water on or adjacent to the waste mount.	☒	☐	
No evidence of erosion, shear and tension cracks, or other compromises in the waste mound cover.	☒	☐	
No evidence of leachate seepage on or adjacent to the waste mound.	☒	☐	
No evidence of vegetative stress on or adjacent to the waste mound.	☒	☐	
No vermin, rodents, or scavenging animals observed at the Site.	☒	☐	
No evidence of vermin, etc. (e.g., burrows, tracks) observed on or adjacent to the waste mound.	☒	☐	
Surface water drainage works and SWM Ponds, where applicable, are competent.	☒	☐	
Monitoring installations for the Site are competent and, where applicable, locked.	☒	☐	
Site is generally clear of litter.	☒	☐	

Additional Comments

PG THE PINCHIN GROUP

APPENDIX H

Appendix D-Monitoring and Screening Checklist
General Information and Instructions

General Information: The checklist is to be completed, and submitted with the Monitoring Report.
Instructions: A complete checklist consists of:
(a) a completed and signed checklist, including any additional pages of information which can be attached as needed to provide further details where indicated.
(b) completed contact information for the Competent Environmental Practitioner (CEP)
(c) self-declaration that CEP(s) meet(s) the qualifications as set out below and in Section 1.2 of the Technical Guidance Document.

Definition of Groundwater CEP:
For groundwater, the CEP must have expertise in hydrogeology and meet one of the following:
(a) the person holds a licence, limited licence or temporary licence under the *Professional Engineers Act*; or
(b) the person holds a certificate of registration under the *Professional Geoscientists Act, 2000* and is a practicing member, temporary, member or limited member of the Association of Professional Geoscientists of Ontario. O. Reg. 66/08, s. 2..
Definition of Surface water CEP:
A CEP for surface water assessments is a scientist, professional engineer or professional geoscientist as described in (a) and (b) above with demonstrated experience and post-secondary education, either a diploma or degree, in hydrology, aquatic ecology, limnology, aquatic biology, physical geography with specialization in surface water, and/or water resource management.

The type of scientific work that a CEP performs must be consistent with that person's education and experience. If an individual has appropriate training and credentials in both groundwater and surface water and is responsible for both areas of expertise, the CEP may then complete and validate both sections of the checklist.

Monitoring Report and Site Information	
Waste Disposal Site Name	Fullarton Landfill
Location (e.g. street address, lot, concession)	3137 Road 145, Lot 21, Concession XVIII, in the former Township of Fullarton, Ontario
GPS Location (taken within the property boundary at front gate/ front entry)	NAD83: Zone 17, 486228 m E, 4801010 m N
Municipality	Municipality of West Perth
Client and/or Site Owner	Corporation of the Municipality of West Perth
Monitoring Period (Year)	2025
This Monitoring Report is being submitted under the following:	
Certificate of Approval No.:	A151201
Director's Order No.:	
Provincial Officer's Order No.:	
Other:	

Report Submission Frequency	◉ **Annual** ○ **Other**	Specify (Type Here):
The site is:	○ **Active** ○ **Inactive** ◉ **Closed**	
If closed, specify C of A, control or authorizing document closure date:		March 31, 2008 (Refer to ECA No. A151201, Notice No. 2)
Has the nature of the operations at the site changed during this monitoring period?	○ **Yes** ◉ **No**	
If yes, provide details:		
Have any measurements been taken since the last reporting period that indicate landfill gas volumes have exceeded the MOE limits for subsurface or adjacent buildings? (i. e. exceeded the LEL for methane)	○ Yes ◉ No	

Groundwater WDS Verification:

Based on all available information about the site and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

1) The monitoring program continues to effectively characterize site conditions and any groundwater discharges from the site. All monitoring wells are confirmed to be in good condition and are secure:	◉ **Yes** ○ **No**	
2) All groundwater, leachate and WDS gas sampling and monitoring for the monitoring period being reported on was successfully completed as required by Certificate(s) of Approval or other relevant authorizing/control document(s):	◉ **Yes** ○ **No** ○ **Not Applicable**	If no, list exceptions below or attach information.

Groundwater Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**

3) a) Some or all groundwater, leachate and WDS gas sampling and monitoring requirements have been established or defined outside of a ministry C of A, authorizing, or control document.	◉ **Yes** ○ **No** ○ **Not Applicable**	
b) If yes, the sampling and monitoring identified under 3(a) for the monitoring period being reported on was successfully completed in accordance with established protocols, frequencies, locations, and parameters developed as per the Technical Guidance Document:	○ **Yes** ◉ **No** ○ **Not Applicable**	If no, list exceptions below or attach additional information.

Groundwater Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**
MW7S	MW7S was redeveloped and resampled (including duplicate sampling) September 2025 to provide confirmatory analytical results regarding the May 2025 chloride exceedance.	29-Sep-2025

4) All field work for groundwater investigations was done in accordance with standard operating procedures as established/outlined per the Technical Guidance Document (including internal/external QA/QC requirements) (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):	◉ **Yes** ○ **No**	

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The site has an adequate buffer, Contaminant Attenuation Zone (CAZ) and/or contingency plan in place. Design and operational measures, including the size and configuration of any CAZ, are adequate to prevent potential human health impacts and impairment of the environment.	◉ **Yes** ○ **No**		
6) The site meets compliance and assessment criteria.	○ **Yes** ◉ **No**	MW7S exceeded the trigger concentration for chloride (134 mg/L in both May and September 2025 versus the trigger concentration of 133 mg/L).	
7) The site continues to perform as anticipated. There have been no unusual trends/ changes in measured leachate and groundwater levels or concentrations.	◉ **Yes** ○ **No**		
1) Is one or more of the following risk reduction practices in place at the site: ***(a)*** **There is minimal reliance on natural attenuation of leachate due to the presence of an effective waste liner and active leachate collection/treatment; or** ***(b)*** **There is a predictive monitoring program in-place (modeled indicator concentrations projected over time for key locations); or** ***(c)*** **The site meets the following two conditions (typically achieved after 15 years or longer of site operation):** ***i.*** **The site has developed stable leachate mound(s) and stable leachate plume geometry/concentrations; and** ***ii.*** **Seasonal and annual water levels and water quality fluctuations are well understood.**	◉ **Yes** ○ **No**	**Note which practice(s):**	☐ **(a)** ☐ **(b)** ☒ **(c)**
9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):	○ **Yes** ◉ **No** ○ **Not Applicable**	The 2025 results for select parameters were greater than their respective trigger concentration at compliance wells MW2, MW3 and MW7S/D (Refer to section 9.2.3 of the 2025 Annual Monitoring Report). These results are generally consistent with historical analytical results. No remedial actions are required at this time.	

Groundwater CEP Declaration:

I am a licensed professional Engineer or a registered professional geoscientist in Ontario with expertise in hydrogeology, as defined in Appendix D under Instructions. Where additional expertise was needed to evaluate the site monitoring data, I have relied on individuals who I believe to be experts in the relevant discipline, who have co-signed the compliance monitoring report or monitoring program status report, and who have provided evidence to me of their credentials.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended), and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories,* or as amended from time to time by the ministry.

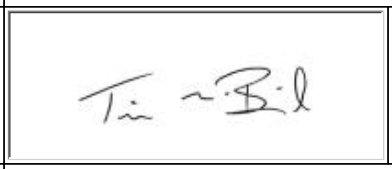
If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

28-Oct-2025

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

◉ **No changes to the monitoring program are recommended** ○ **The following change(s) to the monitoring program is/are recommended:**	
◉ **No Changes to site design and operation are recommended** ○ **The following change(s) to the site design and operation is/ are recommended:**	It is noted that the 2025 concentration of chloride within MW7S exceeded respective trigger concentration for the Site (134 mg/L versus 133 mg/L in both May and September 2025), however meets the applicable ODWS (250 mg/L). Based on the closed status of the Site and the chloride concentrations observed at other monitoring wells closer to the former waste deposits, the quantified chloride concentrations at the MW7 monitoring well nest may in part be due to a confounding influence associated with road de-icing activities. Should the concentration of chloride within MW7S continue to increase and exceed the trigger concentration (134 mg/L in May and September 2025), expanding the boundary of the CAZ downgradient of the Site may need to be considered by the Municipality. Based on the relatively minor exceedance and the fact that chloride within MW7S meets the ODWS, as well as possible confounding impacts of road salting, it is Pinchin's opinion that no remedial action is required at this time.

Name:	Tim McBride		
Seal:	Add Image		
Signature:		**Date:**	29-Oct-2025
CEP Contact Information:	Tim McBride		
Company:	Pinchin Ltd.		
Address:	662 Falconbridge Road, Unit 3 Sudbury, ON P3A 4S4		
Telephone No.:	705.690.5387	Fax No. :	705.521.1309
E-mail Address:	tmcbride@Pinchin.com		
Co-signers for additional expertise provided:			
Signature:		**Date:**	Select Date
Signature:		**Date:**	Select Date

Surface Water WDS Verification:

Provide the name of surface water body/bodies potentially receiving the WDS effluent and the approximate distance to the waterbody (including the nearest surface water body/bodies to the site):

Name (s)	Unnamed tributary of the Upper Thames River.
Distance(s)	Approximately 150 m North of the Site.

Based on all available information and site knowledge, it is my opinion that:

Sampling and Monitoring Program Status:

1) The current surface water monitoring program continues to effectively characterize the surface water conditions, and includes data that relates upstream/background and downstream receiving water conditions:	◉ Yes ○ No	
2) All surface water sampling for the monitoring period being reported was successfully completed in accordance with the Certificate(s) of Approval or relevant authorizing/control document(s) (if applicable):	○ Yes ○ No ◉ **Not applicable (No C of A, authorizing / control document applies)**	If no, specify below or provide details in an attachment.

Surface Water Sampling Location	Description/Explanation for change (change in name or location, additions, deletions)	Date
SW1	MECP (formerly the Ministry of the Environment) letter dated June 5, 2009, concurred with a recommendation in the 2008 Annual Monitoring Report to stop the annual sample collection from the tributary. No surface water samples were collected in 2024.	5-Jun-2009
SW2	MECP (formerly the Ministry of the Environment) letter dated June 5, 2009, concurred with a recommendation in the 2008 Annual Monitoring Report to stop the annual sample collection from the tributary. No surface water samples were collected in 2024.	5-Jun-2009

3) a) Some or all surface water sampling and monitoring program requirements for the monitoring period have been established outside of a ministry C of A or authorizing/control document.	◯ **Yes** ◯ **No** ◉ **Not Applicable**	
b) If yes, all surface water sampling and monitoring identified under 3 (a) was successfully completed in accordance with the established program from the site, including sampling protocols, frequencies, locations and parameters) as developed per the Technical Guidance Document:	◯ **Yes** ◯ **No** ◉ **Not Applicable**	If no, specify below or provide details in an attachment.

Surface Water Sampling Location	**Description/Explanation for change (change in name or location, additions, deletions)**	**Date**

4) All field work for surface water investigations was done in accordance with standard operating procedures, including internal/external QA/QC requirements, as established/ outlined as per the Technical Guidance Document, MOE 2010, or as amended. (Note: A SOP can be from a published source, developed internally by the site owner's consultant, or adopted by the consultant from another organization):	◉ **Yes** ◯ **No**	MECP letter dated June 5, 2009, concurred with a recommendation in the 2008 Annual Monitoring Report to stop the annual sample collection from the tributary. No surface water samples were collected.

Sampling and Monitoring Program Results/WDS Conditions and Assessment:

5) The receiving water body meets surface water-related compliance criteria and assessment criteria: i.e., there are no exceedances of criteria, based on MOE legislation, regulations, Water Management Policies, Guidelines and Provincial Water Quality Objectives and other assessment criteria (e.g., CWQGs, APVs), as noted in Table A or Table B in the Technical Guidance Document (Section 4.6):	(●) **Yes** ( ) **No**

If no, list parameters that exceed criteria outlined above and the amount/percentage of the exceedance as per the table below or provide details in an attachment:

Parameter	Compliance or Assessment Criteria or Background	Amount by which Compliance or Assessment Criteria or Background Exceeded
e.g. Nickel	e.g. C of A limit, PWQO, background	e.g. X% above PWQO
6) In my opinion, any exceedances listed in Question 5 are the result of non-WDS related influences (such as background, road salting, sampling site conditions)?	( ) **Yes** ( ) **No**	Not applicable, no surface water samples were collected in 2025.

7) All monitoring program surface water parameter concentrations fall within a stable or decreasing trend. The site is not characterized by historical ranges of concentrations above assessment and compliance criteria.	◉ **Yes** ◯ **No**	Not applicable, no surface water samples were collected in 2025.
8) For the monitoring program parameters, does the water quality in the groundwater zones adjacent to surface water receivers exceed assessment or compliance criteria (e.g. , PWQOs, CWQGs, or toxicity values for aquatic biota (APVs)):	◯ Yes ◯ No ◯ Not Known ◉ Not Applicable	
9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):	◯ **Yes** ◯ **No** ◉ **Not Applicable**	

Surface Water CEP Declaration:

I, the undersigned hereby declare that I am a Competent Environmental Practitioner as defined in Appendix D under Instructions, holding the necessary level of experience and education to design surface water monitoring and sampling programs, conduct appropriate surface water investigations and interpret the related data as it pertains to the site for this monitoring period.

I have examined the applicable Certificate of Approval and any other environmental authorizing or control documents that apply to the site. I have read and followed the Monitoring and Reporting for Waste Disposal Sites Groundwater and Surface Water Technical Guidance Document (MOE, 2010, or as amended) and associated monitoring and sampling guidance documents, as amended from time to time. I have reviewed all of the data collected for the above-referenced site for the monitoring period(s) identified in this checklist. Except as otherwise agreed with the ministry for certain parameters, all of the analytical work has been undertaken by a laboratory which is accredited for the parameters analysed to *ISO/IEC 17025:2005 (E)- General requirements for the competence of testing and calibration laboratories,* or as amended from time to time by the ministry.

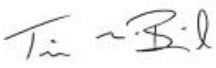
If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the exception or potential concern and my client's proposed action have been documented in writing to the Ministry of the Environment District Manager in a letter from me dated:

29-Oct-2025

Recommendations:

Based on my technical review of the monitoring results for the waste disposal site:

◉ **No Changes to the monitoring program are recommended** ○ **The following change(s) to the monitoring program is/are recommended:**	
◉ **No changes to the site design and operation are recommended** ○ **The following change(s) to the site design and operation is/are recommended:**	

CEP Signature	
Relevant Discipline	Hydrogeologist
Date:	29-Oct-2025
CEP Contact Information:	Tim McBride
Company:	Pinchin Ltd.
Address:	662 Falconbridge Road, Unit 3 Sudbury, Ontario P3A 454
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Fax No. :	
E-mail Address:	tmcbride@pinchin.com

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