FINAL 2025 Annual Monitoring Report

Mitchell Industrial Landfill
Township of Mitchell, Ontario

Prepared for:

Corporation of the Municipality of West Perth

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

December 11, 2025

Pinchin File: 333568.002

SUBMITTED TO
Adam Ryan
Director of Operations
aryan@westperth.com

Richard Wright
Manager of Environmental Services
rwright@westperth.com

Municipality of West Perth
160 Wellington Street, P.O. Box 609
Mitchell, ON N0K 1N0

T: 519.348.8429
F: 519.349.8935

SUBMITTED BY
Deana Bettencourt
Project Manager
dbettencourt@pinchin.com

Tim McBride
Director, Northern Ontario
tmcbride@pinchin.com

PINCHIN Ltd.
225 Labrador Drive
Waterloo, ON N2K 4M8

T: 519.746.4210
F: 519.746.7108

© 2025 Pinchin Ltd.

December 11, 2025
Mr. Adam Ryan and Mr. Richard Wright
Municipality of West Perth
160 Wellington Street, P.O. Box 609
Mitchell, ON N0K 1N0

Re: 2025 Annual Monitoring Report
Mitchell Industrial Landfill
Pinchin Reference No. 333568.002

Dear Sirs,

Pinchin Ltd. (Pinchin) is pleased to provide this 2025 Annual Monitoring Report for the Mitchell Industrial 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 I.

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

Yours truly,

Pinchin Ltd.



Tim McBride, B.Sc., P.Geo., QP_{ESA}
Practice Specialist – Hydrogeology
Director, Northern Ontario

© 2025 Pinchin Ltd.

EXECUTIVE SUMMARY

The Mitchell Industrial Landfill (Site) has an approved waste disposal area of approximately 4.0 hectares (ha) within the total Site area of 16.1 ha and is located in the Municipality of West Perth (Municipality) on Lot 24, Concession 2, in the former Township of Fullarton, Ontario, near the south boundary of the former Town of Mitchell, Ontario. The Site is surrounded by the North Thames River to the west, agricultural land to the south, a wetland (former lagoons), commercial property, and Municipality-owned recreational park to the east, and commercial/industrial properties to the north and northeast.

According to information provided in previous reports, the Site has operated since 1980 under the Waste Disposal Site Environmental Compliance Approval (ECA) Number A151202, issued on March 10, 1980. The ECA was amended on September 18, 2008 (Notice No.1), and February 1, 2011 (Notice No. 2) (Waste ECA) to incorporate requirements for Site operations, monitoring, reporting and closure.

The monitoring program for the Site has been conducted since 2008, in accordance with Condition 7.0 of the Waste ECA. 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 ground surface topography and overburden soils, as well as the North Thames River, which flows southerly along the west boundary of the Site. In 2025, the groundwater flow pattern in the shallow monitoring wells demonstrated flow generally toward the North Thames River. It is interpreted that localized shallow groundwater flow in the immediate vicinity of the Site flows in a radial pattern away from the waste footprint, with a predominantly western component towards the North Thames River. Regionally, groundwater flow in or near the bedrock is inferred to reflect bedrock topography and flow southwest. Locally, the deep groundwater flow around the Site is influenced by the North Thames River and is interpreted to flow from east to west across the Site with some degree of mounding, possibly related to the waste deposits resulting in an inferred groundwater divide;
- The leachate and groundwater elevations measured at the Site in 2025 were generally consistent with historical elevations. Groundwater level elevations in the deep groundwater monitoring wells, the have generally fluctuated over time with no distinctive trends in increasing or decreasing levels;
- In 2025, the Ontario Drinking Water Standard (ODWS) exceedances within the groundwater background and compliance monitoring wells were generally consistent with historical results with some exceptions. Concentrations of total hardness, total alkalinity, total dissolved solids (TDS), chloride, nitrate and nitrite as nitrogen, nitrate as nitrogen and/or organic nitrogen were detected above their respective historical upper

© 2025 Pinchin Ltd.

concentration limits in MW6D, MW7S/7D, MW9S/D, MW10S/D and/or MW12D. Furthermore, concentrations of chloride above the ODWS were detected above historical upper concentration limits within MW9S/D. Based on nitrogen cycle parameters and increased concentrations of select parameters identified in MW8S, it is Pinchin's opinion that water quality may be affected by historical sewage lagoons located east of the Site and situated hydraulically upgradient of MW8S. Overall, since the start of groundwater monitoring in 2008, concentrations of most parameters in the shallow and deep groundwater compliance monitoring wells have generally fluctuated or been consistent with no apparent increasing or decreasing trend;

- The concentrations of primary leachate indicator parameters chloride and boron within the shallow and deep groundwater compliance monitoring wells that are downgradient of the waste footprint (MW11S/D and12S/D) were in compliance with their respective trigger concentration for the Site. For the remainder of the leachate indicator parameters, there have also been no increasing concentration trends of note at the groundwater compliance monitoring wells downgradient of the waste footprint that would indicate an impending exceedance of a trigger mechanism for the Site as a result of a landfill leachate influence. No remedial action is warranted at this time;
- There was insufficient volume of groundwater for sample collection at compliance monitoring wells MW9D, MW10S, MW11S and MW12S in September 2025. Monitoring well MW10D had limited groundwater available for sampling in September 2025, resulting in limited parameter analyses;
- In 2025, the analytical results for at least three (3) parameters were greater than their respective trigger concentration within compliance monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D:
    - MW6S is located northwest of the waste footprint and situated crossgradient relative to the waste footprint. Based on groundwater flow direction and elevated concentrations measured in MW6S relative to monitoring wells situated closer to the waste footprint, it is inferred that elevated parameter concentrations are not attributed to the landfill and may indicate contribution of a separate source;
    - Monitoring well nest MW7S/D is located in the northeast corner of the Site, south of Frank St. and based on measured groundwater elevations, are upgradient of the landfill waste footprint. The concentrations that were greater than their respective trigger concentration are inferred to be not landfill related as they were detected at locations that based on the measured groundwater elevations, are upgradient of the waste footprint. Therefore, no remedial actions are warranted at this time to address the 2025 groundwater quality at these monitoring locations;

© 2025 Pinchin Ltd.

- Monitoring well nest MW9S/D is located along the east boundary of the Site and based on measured groundwater elevations, are also upgradient of the landfill. The analytical results for parameters that were greater than their respective trigger concentrations at MW9S/D were less than their respective historical upper limit concentrations with the exception chloride, total alkalinity, TDS and sodium in MW9S, and chloride, total hardness and TDS within MW9D. At MW9S, the concentration of chloride exhibited a generally increasing trend from May 2015 to May 2017 and has since exhibited a fluctuating gradually increasing trend. The concentration of chloride at MW9D has been gradually increasing since 2015, however the concentration is typically less than its concentration at monitoring well MW9S. As monitoring wells MW9S and MW9D were inferred to be upgradient of the landfill, the elevated analytical results for chloride may be attributed to the radial groundwater influence associated with the waste deposits of the landfill or another source. The chloride concentrations quantified at MW9S/D in 2025 are significantly higher than those observed at the source well MW4 (with the exception of measured chloride concentration within MW4 reported in September 2023). Historical chloride concentrations reported at MW9S/D suggest the contribution of another source;
- Monitoring well nest MW10S/D is located along the east boundary of the waste footprint and based on measured groundwater elevations, is located upgradient of the landfill. As such, the historical analytical results that were greater than their respective trigger concentration may not be solely attributed to landfill derived leachate effects. Historical and/or analytical results measured at MW10S/D, similar to MW9S/D analytical results, indicate that elevated concentrations of these parameters may be the result of another source of impacts, other than the landfill;
- The concentration of chloride within MW11S/D has exhibited a slightly increasing and fluctuating trend since May 2014, however, the concentration of chloride has remained in compliance with the respective trigger concentration for the Site. The concentration of chloride at MW11S/D is similar to that detected at internal assessment location MW5S/D, which is situated between the limit of waste and MW11S/D. Based on the chloride concentrations at MW5S/D and MW11S/D, the groundwater quality downgradient of the landfill may be influenced by the landfill, however, the noted chloride concentrations are at acceptable concentrations and have not unacceptably impacted the groundwater quality. Thus, no remedial action is warranted, at this time, to address the noted concentrations. The

© 2025 Pinchin Ltd.

concentrations of chloride at MW11S/D will continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring;

- Monitoring well nest MW12S/D is situated along the west boundary of the Site and downgradient of the landfill relative to inferred groundwater flow direction. Monitoring wells MW12S/D met the trigger mechanism for the Site in May 2025. Monitoring well MW12D exceeded the applicable trigger mechanism for the Site for TDS, nitrate and organic nitrogen in September 2025. Based on the location of MW12S/D, situated downgradient of the landfill, the groundwater quality downgradient of the landfill may be influence by the landfill; however, the elevated nitrogen cycle parameters reported within these wells, indicates that the MW12S/D well nest may be influenced by historical sewage lagoons. The concentrations exceeding the applicable standards at MW12S/D will continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring; and
- Based on the chloride and sodium concentrations noted at compliance monitoring wells MW11S/D and MW12S/D, as well as at internal assessment monitoring wells MW5S/D and MW13S/D, the groundwater quality downgradient of the landfill may be influenced by the landfill. However, the noted concentrations are at acceptable concentrations and have not unacceptably impacted the groundwater quality. At this time, no remedial action is warranted to address the noted concentrations.

- Upgradient monitoring well nest MW9S/D and cross-gradient monitoring well nest MW6S/D have quantified elevated analytical concentrations and are interpreted to be influenced by the radial groundwater flow associated with the waste deposits of the landfill or another source. To further investigate these potential impacts, the geochemical data for these groundwater monitoring wells were analysed for the major ion composition using tri-linear Piper Plots:
  - Background well nests MW8S/D and MW10S/D, source well MW4 and downgradient well nests MW11S/D and MW12S/D have also been analyzed for comparison. It is noted however that MW4, MW9D, MW10S, MW11S and MW12S did not have sufficient volume to collect a sample during the September 2025 event. It should also be noted that only a partial sample was collected at MW10D during the fall sampling event due to an insufficient volume of water and therefore, could not be included in the tri-linear piper plot for this monitoring event;

© 2025 Pinchin Ltd.

- For each well nest, the shallow and deep monitoring wells plotted in similar positions, indicating no significant differences in water types between the shallow and deep systems with the exception of well nest MW10, in which the shallow and deep monitoring wells plotted differently;
- In comparing the May 2025 and the September 2025 monitoring events, the positions on the piper plot diagrams did not demonstrate significant seasonal changes at each of the monitoring locations;
- In May 2025, all wells were projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW10S which is projected as a sodium bicarbonate type water;
- In September 2025, all wells were projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW9S which is projected as a calcium chloride type water;
- The plot of major ion chemistry for upgradient well nest of concern, MW9S and to a lesser extent MW9D, plot further away from the rest of the wells. Well nest MW9S/D is located directly downgradient of the lagoons. Given the piper plot positions, as well as the observed elevated concentrations of nitrogen cycle parameters currently and historically within these wells, it appears that wells MW9S/D is impacted by the upgradient historical sewage lagoons. It is noted that a sample could not be collected from MW9D during the fall sample event due to an insufficient volume of water. The other upgradient well nest of concern, MW10S/D, located directly within the historical sewage lagoons, indicated similar results to the MW9S/D nest suggesting that this location is also experiencing impacts. It is noted that complete samples could not be collected from MW10S and MW10D during the fall sampling event due to an insufficient volume of water;
- The plot of major ion chemistry for cross-gradient well nest of concern MW6S/D previously plotted towards the impacted wells (MW9S/D), demonstrating that impacts are also occurring at these wells. The impact was interpreted to potentially be related to the sewage lagoons as these wells are located downgradient from the lagoons and the other impacted wells; however, as the wells are located near the road, the impacts may also be related to road salt application and runoff. It is noted that the 2025 spring and fall piper plot results indicate that MW6S/D is plotted closer to the non-impacted wells. The position of MW6S/D should continue to be monitored to determine if impacts related to the sewage lagoons are occurring at this location;

© 2025 Pinchin Ltd.

- Based on the plot of major ion chemistry for background nest MW8S/D and downgradient nests MW11S/D and MW12S/D, these wells do not initially appear to be impacted. Based on the observed B-7 exceedances and nitrogen cycle parameters for monitoring wells MW8S/8D, MW11D and MW12D, it appears that these wells may be impacted by the sewage lagoons. It is therefore interpreted that the plume from the sewage lagoon may be sinking with distance and is not discharging to the adjacent downgradient surface water ditch system associated with the stormwater management system; and
- Based on the results and the observed B-7 exceedances, it is Pinchin's recommendation that trigger mechanism assessment at the Site incorporate the potential impacts related to historical sewage lagoons at monitoring wells MW6S/D, MW8S/8D, MW9S/9D, MW10S/D, MW11S/D and MW12S/12D. As certain impacts are inferred to be a result of co-mingled groundwater plumes, as opposed to being solely that of landfill derived leachate, no remedial actions are warranted at this time.

- For the 2025 semi-annual monitoring events, concentrations of VOC within the groundwater compliance monitoring wells were below their respective laboratory reportable detection limit (RDL) with the exception of toluene at MW9D in September 2025 and n-hexane within MW12D in May 2025. VOCs within compliance monitoring wells have not exhibited an apparent increasing or decreasing trend. Quantifiable concentrations were reported at monitoring wells positioned within the immediate vicinity of the landfill waste footprint (MW1, MW2, MW3D, MW5D and MW13S/D). No remedial action is warranted to address the 2025 VOC concentrations detected at the groundwater compliance monitoring wells;
- As noted in previous annual monitoring reports, the stormwater management pond (SWM Pond) was sampled during the spring of 2014, and there were two (2) trigger concentrations that were exceeded (phenols and total phosphorus). During the May and September 2025 semi-annual monitoring events, the outlet structure for the SWM Pond was being operated in a closed position due to the water quality results reported for the May 2014 monitoring event. In 2025, no discharge was observed from the outlet in the May or September, and as such no sample was collected. The Municipality provided Pinchin with monthly analytical results for October 2024 through October 2025 for the SWM Pond. Of the analyzed parameters one or more trigger parameters (total un-ionized ammonia, total ammonia and/or phenols and/or boron) exceeded the applicable trigger limits for sampling event for each sampling event. Confirmation samples collected to date have not had all trigger parameters satisfied for three (3) consecutive sampling events

© 2025 Pinchin Ltd.

and thus, the SWM Pond remains in a non-discharging state. Pending acceptable chemical results for three (3) consecutive events, the outlet valve can be re-opened. It is the understanding of Pinchin that, as needed, the stormwater in the SWM Pond is pumped out by the Municipality and treated at the Mitchell Wastewater Treatment Facility;

- The 2018 RWDI Annual Monitoring Report indicated that a letter report (Stormwater Quality Monitoring and Evaluation Modifications, prepared by RWDI and dated March 4, 2016), which summarized proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site, was submitted to the MECP on March 23, 2016, for MECP review and approval of the proposed modifications. Within a Solid Non- Hazardous Waste Disposal Site Inspection Report for the Municipality's Mitchell Domestic Landfill, dated July 19, 2018, the MECP proposed that a meeting be held with the MECP and Municipality to discuss the surface water and stormwater quality at the Mitchell Domestic Landfill. The Municipality also wishes to discuss the stormwater quality at the Site during the proposed meeting. As of the date of this report the proposed meeting with the MECP is still pending; and
- The landfill gas monitoring results for 2025 are generally consistent with historical results at the Site. Landfill gas was not detected during the May or September 2025 semi-annual monitoring events. Historical results have indicated that landfill gas is being generated in the waste at the Site. Based on monitoring findings from the established monitoring network, landfill gas may be seasonally migrating beyond the waste footprint within the subsurface. The concentration of methane gas should continue to be monitored over subsequent monitoring events to evaluate the concentration trends over time. No remedial actions are warranted, at this time.

© 2025 Pinchin Ltd.

Based on the findings of the 2025 Monitoring Program, the following recommendations are provided for your 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. The analyte list should include the required parameters to facilitate the utilization of hydrochemical facies diagrams for inclusion in future reports to assist in the evaluation of landfill derived impacts versus those originating from other influences;
- Ongoing monitoring should be completed to verify that the constituent concentrations that were greater than their respective trigger concentrations in 2025 and historically at compliance monitoring wells MW6S/D, MW7S/D, MW9S/D, MW10S/D, MW11S/D and MW12S/D are not exhibiting an increasing trend of concern in the long-term. Within MW6S/D and MW9S/D, the concentrations of chloride should be evaluated over subsequent monitoring events to assess the trends over time;
- Ongoing monitoring of compliance monitoring wells MW11S/D and MW12S/D, as well as internal assessment monitoring wells MW5S/D and MW13S/D, should be completed to evaluate these locations for trends of concern;
- Based on the results of the additional investigation using Piper Plots and observed B-7 exceedances, it is Pinchin's recommendation that trigger mechanism assessment at the Site incorporate the potential impacts related to historical sewage lagoons at monitoring wells MW6S/D, MW8S/8D, MW9S/9D, MW10S/D, MW11S/D and MW12S/12D;
- Ongoing monitoring of VOC constituents in the leachate at the Site should be completed to verify that the VOCs detected in the source and near-field wells are not exhibiting an increasing trend of concern over time. At this time, no remedial actions are warranted;
- As indicated in previous annual monitoring reports, if the outlet valve of the SWM Pond is to be re-opened, re-opening should not occur until sampling of the stormwater within the SWM Pond, for three (3) consecutive sampling events have confirmed acceptable water quality, pending approval of the aforementioned proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site. If required, to prevent off-Site discharge of water from the South SWM Pond, the stormwater in the South SWM Pond should be pumped out for treatment at the Mitchell Wastewater Treatment Facility;

© 2025 Pinchin Ltd.

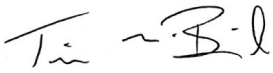
- As indicated in previous annual monitoring reports, to prevent bypass of unacceptable water quality, with respect to the PWQO and/or Site-specific trigger concentrations, to the natural environment, it is recommended that the Municipality develop alternative means for pumping out the stormwater from the SWM Pond during wet conditions when access with a liquid hauler truck is limited. When the SWM Pond is being operated in a closed position due to unacceptable stormwater quality results and discharge over the sidewall of the SWM Pond is observed, the Municipality should report the discharge to the MECP's Spills Action Centre, per Condition 5.1 of the Waste ECA;
- Due to the minor limitations to the monitoring network to evaluate landfill gas migration in the vadose zone at the Site, if new structures are built on or nearby (< 100 m) to the Site in the future, the landfill gas monitoring program should be re-evaluated for its assessment effectiveness. Landfill gas should continue to be monitored at the Site as part of the annual monitoring program to assess for the presence and, if detected, concentrations of landfill gas over time. If the landfill gas concentrations beyond the waste footprint are confirmed during the next regularly scheduled monitoring event, then consideration should be given to the implementation of winter monitoring events (when the risk for gas migration is greatest); and
- To prevent unauthorized access, it is recommended that the front gate remain closed and locked when Municipality staff are not present at the Site, as well as during non-operational hours.

© 2025 Pinchin Ltd.

Issued To:	**Corporation of the Municipality of West Perth**
Contact:	**Adam Ryan, Director of Operations**
	Richard Wright, Manager of Environmental Services
Issued On:	**December 11, 2025**
Pinchin File:	**333568.002**
Issuing Office:	**Sudbury, ON**
Primary Contact:	**Tim McBride, B.Sc., P.Geo., QP_{ESA}**



Author: Deana Bettencourt, B.Sc.
Project Manager



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

© 2025 Pinchin Ltd.

TABLE OF CONTENTS

1.0 INTRODUCTION ... 1
1.1 Background ... 1
1.2 Key Personnel ... 2
1.3 Objectives and Scope ... 2
1.4 Assumptions and Limitations ... 3
1.5 MECP Correspondence ... 4
2.0 PHYSICAL SETTING ... 5
2.1 Site Description ... 5
2.2 Geology and Hydrogeology ... 5
3.0 SUBSURFACE CONDITIONS ... 6
4.0 2025 LANDFILL OPERATIONS ... 6
4.1 Accepted Waste Types ... 6
4.2 Waste Volume and Remaining Capacity ... 7
4.3 Complaint Summary ... 8
4.4 Site Operation Upgrades ... 8
5.0 METHODOLOGY ... 8
5.1 Monitoring Well Details ... 8
5.2 Groundwater Level Measurements ... 9
5.3 Groundwater and Leachate Sampling ... 9
5.4 Stormwater Sampling ... 10
5.5 Landfill Gas Monitoring ... 10
5.6 Historical Surface Water Sampling ... 11
6.0 QUALITY ASSURANCE AND QUALITY CONTROL EVALUATION ... 11
6.1 Data Quality Evaluation ... 13
7.0 TRIGGER MECHANISMS ... 14
7.1 Groundwater Trigger Mechanisms ... 14
7.1.1 Guideline B-7 Reasonable Use Concept ... 16
7.2 The Ontario Drinking Water Standards (ODWS) ... 18
7.3 Stormwater Trigger Mechanism ... 19
7.4 Primary Indicator Parameters ... 19
8.0 GROUNDWATER ELEVATION RESULTS ... 20
8.1 Leachate Elevation ... 20
8.2 Shallow Groundwater Flow ... 20
8.3 Deep Groundwater Flow ... 21
9.0 GROUNDWATER QUALITY RESULTS ... 22
9.1 Leachate ... 22
9.1.1 General Chemistry ... 22
9.1.2 Volatile Organic Compounds ... 23
9.2 Groundwater ... 24
9.2.1 General Chemistry ... 24
9.2.2 Volatile Organic Compounds ... 29
9.2.3 Trigger Mechanism Assessment ... 30
9.2.4 Groundwater Ionic Balance and Piper Plot Data ... 35

© 2025 Pinchin Ltd.

9.3 Stormwater Quality 37
9.3.1 General Chemistry 37
9.3.2 Trigger Mechanism Assessment 38
10.0 LANDFILL GAS MONITORING RESULTS 38
11.0 SITE INSPECTION OBSERVATIONS 39
12.0 2026 MONITORING PROGRAM 40
13.0 CONCLUSION 40
14.0 RECOMMENDATIONS 46
15.0 STUDY LIMITATIONS AND USE OF REPORT 48
16.0 CLOSURE 49
17.0 REFERENCES 49

TABLES

TABLE 1 Annual Monitoring Program
TABLE 2 Monitoring Well Construction Details
TABLE 3 Groundwater Compliance for the Shallow Flow System - Spring 2025
TABLE 4 Groundwater Compliance for the Shallow Flow System - Fall 2025
TABLE 5 Groundwater Compliance for the Deep Flow System - Spring 2025
TABLE 6 Groundwater Compliance for the Deep Flow System - Fall 2025
TABLE 7 Field Data Summary – Spring 2025
TABLE 8 Field Data Summary – Fall 2025
TABLE 9 Site Feature GPS Coordinates
TABLE 10 Groundwater Ionic Balance And Piper Plot Data - Spring
TABLE 11 Groundwater Ionic Balance And Piper Plot Data - Fall

FIGURES

FIGURE 1 Site Location Map
FIGURE 2 Site Plan
FIGURE 3A Shallow Groundwater Contours (May 14, 2025)
FIGURE 3B Deep Groundwater Contours (September 29, 2025)
FIGURE 4A Deep Groundwater Contours (May 14, 2025)
Figure 4B Deep Groundwater Contours (September 11, 2025)

© 2025 Pinchin Ltd.

APPENDICES

APPENDIX A	Supporting Documentation
Appendix A-1	Waste Environmental Compliance Approval – Notice No. 1
Appendix A-2	Waste Environmental Compliance Approval – Notice No. 2
Appendix A-3	Sewage Works Environmental Compliance Approval
Appendix A-4	Letter Report – Stormwater Quality Monitoring and Evaluation Modifications
Appendix A-5	MECP 2018 Inspection Report
APPENDIX B	Borehole Logs
Appendix B-1	Borehole Logs
APPENDIX C	Groundwater Level Elevations
Table C-1	Groundwater Level Elevations
Figure C-1	Groundwater Elevation Hydrograph – Shallow Flow System
Figure C-2	Groundwater Elevation Hydrograph – Deep Flow System
APPENDIX D	Groundwater Quality Results
Table D-1	Leachate Analytical Results – General Parameters
Table D-2	Leachate Analytical Results – Volatile Organic Compounds
Table D-3	Groundwater Analytical Results – General Parameters
Table D-4	Groundwater Analytical Results – Volatile Organic Compounds
Table D-5	Surface Water Analytical Results – General Parameters
Figure D-1	Concentration vs. Time Plot – Chloride – Shallow Flow System
Figure D-2	Concentration vs. Time Plot – Boron – Shallow Flow System
Figure D-3	Concentration vs. Time Plot – Chloride – Deep Flow System
Figure D-4	Concentration vs. Time Plot – Boron – Deep Flow System
APPENDIX E	Piper Plot Diagrams
	Piper Plot Diagram - Spring 2025 (Shallow)
	Piper Plot Diagram - Spring 2025 (Deep)
	Piper Plot Diagram - Fall 2025 (Shallow)
	Piper Plot Diagram - Fall 2025 (Deep)
APPENDIX F	Laboratory Certificates of Analysis
APPENDIX G	Landfill Gas Monitoring Results
Table G-1	Landfill Gas Monitoring Results
APPENDIX H	Semi-annual Site Inspection Records
APPENDIX I	MECP Monitoring and Screening Checklist

© 2025 Pinchin Ltd.

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 Mitchell Industrial Landfill (Site). The Site is located on Lot 24, Concession 2, in the former Township of Fullarton, Ontario, near the south boundary of the former Town of Mitchell, Ontario. The Site is owned and was formerly operated by the Municipality of West Perth (Municipality). A Site Location Map and Site Plan are provided in Figures 1 and 2, respectively. The Site has an approved waste disposal area of approximately 4.0 hectares (ha) within the total Site area of 16.1 ha. The Site is approved to accept solid, non-hazardous municipal waste.

According to previous reports, the Site operated since 1980, under the West Disposal Site Environmental Compliance Approval (ECA) Number A151202, issued on March 10, 1980. This ECA was amended on September 18, 2008 (Notice No. 1), and February 1, 2011 (Notice No. 2) (Waste ECA) to incorporate requirements for Site operations, monitoring, reporting and Site closure. A copy of the Waste ECA amendments are provided in Appendix A-1 and A-2, respectively.

On November 10, 2010, the Ministry of the Environment, Conservation and Park (MECP) issued Municipal and Private Sewage Works ECA Number 7228-88HS3R (Sewage ECA) in accordance with Section 53 of the Ontario Water Resources Act for establishing a stormwater management facility. A copy of the Sewage ECA is included in Appendix A-3.

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

- 2019-2024 Annual Monitoring Reports, Mitchell Industrial Landfill, Township of Mitchell, Ontario prepared by Pinchin for the Corporation of Municipality of West Perth (2019-2024 Pinchin Annual Monitoring Reports); and
- Document entitled “Municipality of West Perth, Mitchell Industrial Landfill, 2018 Annual Monitoring Report” prepared by RWDI Air Inc. (RWDI) for the Municipality of West Perth and dated December 12, 2018 (2018 RWDI Annual Monitoring Report).

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, Mitchell Industrial Landfill Site*”, dated December 2007 (2007 Burnside Report). According to RWDI, the 2007 Burnside Report recommended that if the waste footprint at the Site were to continue to expand to the approved area, a semi-annual monitoring program should be developed, and consideration should be given to expanding the monitoring well network to better monitor and interpret the environmental impacts of the Site. As a result, twelve (12) additional monitoring wells were installed at the Site in 2008.

© 2025 Pinchin Ltd.

In October 2009, a Design and Operations Plan (D&O Plan) was submitted to the MECP, as noted in the 2018 RWDI Annual Monitoring Report. The D&O Plan provides a description of the landfill design and solid waste management related features at the Site, as well as Site operation and maintenance procedures.

Three (3) landfill gas probes were installed in 2010 at two (2) locations (GP9 and GP10) to monitor the migration of methane within the subsurface between the waste footprint and structures within 100 metres (m) of the waste footprint, according to the 2018 RWDI Annual Monitoring Report. Two (2) groundwater monitoring wells were also installed at MW11, followed by four (4) additional monitoring wells in 2013 at MW12 and MW13 between the waste footprint and the North Thames River.

Condition 7.0 of the Waste ECA required that an Environmental Monitoring Plan (EMP) be prepared for the Site. According to the 2018 RWDI Annual Monitoring Report, the EMP was submitted in 2010 in the Burnside report entitled “Environmental Monitoring Plan, Mitchell Industrial Landfill Site”. The monitoring program for the Site has been conducted in accordance with Condition 7.0 of the Waste ECA since 2008. Annual monitoring reports for the 2008 through 2018 monitoring period were completed for the Site by other consultants in December of each calendar year, as required in the Waste ECA.

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:

Mr. Tim McBride, B.Sc., P.Geo., QP_{ESA}
tmcbride@Pinchin.com
Pinchin Ltd.
662 Falconbridge Road, Suite #3
Sudbury, ON P3A 4S4

The lead Environmental Technician for the Site groundwater and methane gas monitoring program was Ms. Deana Bettencourt of Pinchin. Ms. Bettencourt’s contact information is provided below:

Ms. Deana Bettencourt, B.Sc.
dbettencourt@pinchin.com
Pinchin Ltd.
225 Labrador Drive, Unit #1
Waterloo, ON N2K 4M8

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 landfill;

© 2025 Pinchin Ltd.

- 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 were compared to the relevant trigger mechanisms and quality objectives per the Waste ECA and the Environmental Contingency Plan (ECP) for the Site, as dated December 2010 and prepared by Burnside.

The 2025 Annual Monitoring Report has been prepared to meet the reporting requirements outlined in Condition 9.1 of the Waste ECA. 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;

© 2025 Pinchin Ltd.

- 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. Pinchin's opinion 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;
- Pinchin's 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 our 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 herein 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

According to the 2018 RWDI Annual Monitoring Report, a Site inspection was completed by the MECP on July 12, 2018. A Solid Non-Hazardous Waste Disposal Site Inspection Report dated August 1, 2018 (MECP 2018 Inspection Report) was provided to the Municipality by the MECP. Based on a review of the 2018 RWDI Annual Monitoring Report, the operational actions required as part of the above-noted inspection report have generally been addressed by the Municipality. A copy of the MECP 2018 Inspection Report is provided in Appendix A-5.

© 2025 Pinchin Ltd.

At the time of writing this report, correspondence and/or MECP review comments regarding the 2024 Pinchin 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 on Lot 24, Concession 2, in the former Township of Fullarton, Ontario, near the south boundary of the former Town of Mitchell, in the Municipality of West Perth of Perth County. The Site is surrounded by the North Thames River to the west, agricultural land to the south, a wetland (former lagoons), commercial property, and Municipality-owned recreational park to the east, and commercial/industrial properties to the north and northeast.

There are no natural surface water bodies on the Site; however, some surface water ponding was noted in previous reports northwest of the waste fill area. A stormwater management system has been implemented at the Site that consists of a stormwater management pond (SWM Pond) and surface water ditches that allow for the catchment of runoff from the landfill and the management of stormwater that may accumulate at the Site, according to the 2018 RWDI Annual Monitoring Report. The SWM Pond collects surface water runoff from the landfill and gradually discharges the retained water to the North Thames River, which flows south along the west boundary 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

It was noted in previous reports that the Municipality estimated that the waste extends to a maximum depth of approximately 3.7 meters below ground surface (mbgs), with the top of the waste ranging from approximately 1 to 10 m above ground surface (mags) as the waste at the south extent of the fill area has been placed in a mount.

According to the Ministry of Northern Development and Mines, the soil geology in the vicinity of the Site is reported to consist of silt and clay with minor sand and gravel derived from fine-textured glaciolacustrine deposits on the west portion of the Site, and stone (poor), sandy silt to silty sand-textured till on Paleozoic terrain on the east portion of the Site. 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.

© 2025 Pinchin Ltd.

The overburden in the area of the Site is not a local source of drinking water and no major overburden aquifers have been identified near the Site. Locally, the shallow groundwater flow around the Site is interpreted to be dominated by the local drainage network, with shallow flow toward the North Thames River, which flows south along the west boundary of the Site.

Static water levels were recorded by Pinchin in all of the accessible wells for the 2025 groundwater monitoring events. Water levels were measured prior to purging and developing in preparation for sampling, to ensure the water levels are representative of static conditions. May and September 2025 groundwater elevations, as measured by Pinchin personnel, are presented in Table C-1 of Appendix C.

3.0 SUBSURFACE CONDITIONS

According to previous reports, seven (7) test pits were excavated at the Site in order 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 2.0 and 3.3 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 available historic operational data indicated that the Site operated using both the area fill and trench and fill method since the late 1960s. The previous reports 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

The Site operated during the 2025 monitoring events, in accordance with the governing permits for the Site as noted below:

- Waste Disposal ECA No. A151202, dated March 10, 1980, with amendments on February 1, 2011 (Waste ECA); and
- Industrial Sewage Works ECA No. 7228-88HS3R, dated November 10, 2010 (Sewage ECA).

No waste was received at the Site in 2025. The Client had previously informed Pinchin that soil and clay materials have been accepted at the Site for cover purposes.

4.1 Accepted Waste Types

Condition 3.3 of the Waste ECA indicates that only *municipal waste as defined in the EPA may be landfilled at the Site. No liquid industrial waste or hazardous waste shall be disposed of at the landfill*.

© 2025 Pinchin Ltd.

According to previous annual reports, the Site historically accepted waste rubber, waste by-products (i.e., Durisol) from Armtech Limited Partnership (formerly Durisol Inc.), sediment dredged from the North Thames River, and other waste organic materials. Durisol is a low-density, cement-bonded wood-fibre composite made from post-industrial recycled waste lumber and Portland cement.

In 2019, the Site only accepted cement-bonded wood-fibre industrial waste from one (1) local industry (Armtech Limited Partnership/Nexcem Inc.). The 2018 RWDI Annual Monitoring Report indicated that the cement-bonded wood-fibre is identified in the D&O Plan as suitable cover material. Therefore, additional cover material was not placed on top of the cement-bonded wood-fibre waste at the Site in 2019.

4.2 Waste Volume and Remaining Capacity

No waste was received at the Site between November 2022 and October 2025. The 2022 Pinchin Annual Monitoring Report indicated that the estimated total waste-in-place quantity was 103,511 m^3 as of October 2022. Since no waste was received at the Site between November 2022 and October 2025, the total waste-in-place quantity at the Site is estimated to be approximately 103,511 m^3, as of October 2025.

The Waste ECA indicates that the Site has a maximum approved theoretical capacity of 121,600 m^3. Subtracting the estimated waste-in-place volume from the theoretical capacity provides a remaining capacity of approximately 18,869 m^3.

The quantity of waste and estimated volume of waste disposed of at the Site over the past five (5) years is provide in the following summary.

Year	Annual Waste Quantity (tonnes)	Annual Waste Volume (cubic meters)
2020	1,704	2,840
2021	2,852	4,753
2022	468	780
2023-2025	0	0
Average	**1,005**	**1,675**

The Client has informed Pinchin, that a closure plan for the Site is being initiated. In addition, the Client informed Pinchin that the Site has stopped accepting two concrete based waste streams as a result of quality of the water runoff from the tipping area. The Client has capped the fill area with imported soil material. As part of the 2022 Annual Monitoring Report, the Client informed Pinchin that due to water quality runoff from the tipping area, the tipping area was capped with the imported soil, improving water quality runoff.

© 2025 Pinchin Ltd.

As required in Condition 4.1 of the Waste ECA, the area within a 30 m distance outside of the licenced landfill area is considered to be the buffer area for the Site.

4.3 Complaint Summary

No complaints were received by the Municipality regarding the Site in 2025.

4.4 Site Operation Upgrades

There were no operational upgrades to the Site in 2025; with the exception of imported of soil and clay materials for capping purposes.

5.0 METHODOLOGY

The 2025 Monitoring Program at the Site included semi-annual leachate, groundwater and landfill gas monitoring. The semi-annual monitoring events were completed between May 14 and 15, 2025, and between September 29 to 30, 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. Field data for the annual monitoring events are presented in Tables 8 and 9.

The current monitoring program was completed in accordance with the Waste ECA and the EMP (December 2010, Burnside) for the Site and consisted of procedures for the purging and sampling of leachate and groundwater monitoring wells, sampling of the SWM Pond, as well as landfill gas monitoring.

5.1 Monitoring Well Details

A total of twenty-three (23) 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 MW3, MW5, MW6, MW7, MW8, MW9, MW10, MW11, MW12 and MW13. The shallow well is designated with the postscript “S” (i.e., MW3S) and the deeper well is designated with the postscript “D” (i.e., MW3D). The remaining single wells (MW1, MW2, and MW4) are shallow wells. The following is a summary of the monitoring well locations:

- MW1 is a shallow overburden monitoring well located east of the waste footprint within the buffer area;
- MW2 is a shallow overburden monitoring well located south of the waste footprint within the buffer area;
- MW3S/D are shallow and deep overburden monitoring wells, respectively, located along the west boundary of the waste footprint;

© 2025 Pinchin Ltd.

- MW4 is a leachate monitoring well located within the southern area of the waste footprint;
- MW5S/D are shallow and deep overburden monitoring wells, respectively, located west of the waste footprint within the buffer area;
- MW6S/D are shallow and deep overburden monitoring wells, respectively, located north of the waste footprint within the buffer area;
- MW7S/D are shallow and deep overburden monitoring wells, respectively, located northeast of the waste footprint, near the east property line;
- MW8S/D are shallow and deep overburden monitoring wells, respectively, located south of the waste footprint within the buffer area;
- MW9S/D are shallow and deep overburden monitoring wells, respectively, located east of the waste footprint along the east property line;
- MW10S/D are shallow and deep overburden monitoring wells, respectively, located east of the waste footprint near the east property line;
- MW11S/D are shallow and deep overburden monitoring wells, respectively, located northwest of the waste footprint along the North Thames River;
- MW12S/D are shallow and deep overburden monitoring wells, respectively, located west of the waste footprint along the North Thames River; and
- MW13S/D are shallow and deep overburden monitoring wells, respectively, located west of the waste footprint between the footprint and the North Thames River.

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 9.

5.2 Groundwater Level Measurements

Groundwater levels were manually measured at the Site during the semi-annual monitoring events 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 14 and September 29, 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 twenty-three (23) monitoring wells on May 14, 2025, and September 29, 2025, in accordance with Pinchin's Standard Operation Procedures (SOPs).

© 2025 Pinchin Ltd.

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.

To develop monitoring wells, Pinchin removed three (3) well casing volumes, or purged until dry. Pinchin returned the following day to complete sampling. 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.

Samples collected for metals analysis were filtered in the field using dedicated 0.45-micron in-line filters prior to preservation.

As an insufficient volume of liquid was present in monitoring wells MW9D, MW10S, MW11S and MW12S at the time of the September 2025 monitoring event. In addition, limited sample was present within MW10D, resulting in only select parameters collected.

Samples collected for metals analysis were filtered in the field using dedicated 0.45-micron in-line filters prior to preservation. Other parameters sampled, 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 F.

5.4 Stormwater Sampling

Samples of stormwater discharge are to be collected from the SWM Pond during the semi-annual monitoring events when a rainfall event causes a discharge. Where stormwater discharge is observed from the SWM Pond outlet, a grab sample is collected from the SWM Pond, immediately upstream of the outlet structure inlet.

In 2025, no discharge was observed from the outlet in the May or September 2025; as such no samples were collected from SWM Pond during the semi-annual monitoring events.

5.5 Landfill Gas Monitoring

Landfill gas (methane) monitoring was completed at the twenty-three (23) monitoring well locations, as well as the three (3) gas probes at the Site, on May 14 and September 29, 2025. Landfill gas measurements were obtained immediately after removing push-on monitoring well caps 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

© 2025 Pinchin Ltd.

methane (CH4). For landfill gas measurements calibrated for methane, 100% of the LEL is equivalent to 5% volume of methane in air.

5.6 Historical Surface Water Sampling

The previous annual monitoring reports indicated that surface water samples were collected at surface water monitoring stations located upstream (SW1) and downstream (SW2) of the Site in the North Thames River. During a Site meeting in April 2008, it was noted that the MECP agreed that surface water monitoring could be discontinued due to the assimilative capacity of the North Thames River and the unlikely event that a landfill influence would be detected. As such, surface water monitoring in the North Thames River has not been required to be completed for the Site since 2007 and the historical surface water quality data for the above-noted surface water monitoring stations are included in Table D-5 for reference.

6.0 QUALITY ASSURANCE AND QUALITY CONTROL EVALUATION

Various quality assurance/quality control (QA/QC) protocols were following during the 2025 semi-annual monitoring events 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

© 2025 Pinchin Ltd.

"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 above QA/QC measures, Pinchin obtained laboratory-prepared trip blanks and also collected a total of (4) field duplicate groundwater samples taken from groundwater monitoring wells MW5S and MW11D for analysis to assess the suitability of field sampling methods and laboratory performance. The field duplicate samples were collected immediately following collection of the regular samples. The frequency of groundwater sample analysis complied with the requirement that one duplicate groundwater or surface water 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 15, 2025	MW5S	DUP-08
Groundwater	May 15, 2025	MW8S	DUP-09
Groundwater	September 30, 2025	MW2	DUP-105
Groundwater	September 30, 2025	MW11D	DUP-106

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

© 2025 Pinchin Ltd.

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.

The results of the original and duplicate sample satisfied the criteria of the QA/QC evaluations with few exceptions as outlined below:

Sample Date	Original Sample ID	Field-Prepared Duplicate ID	Parameters	QA/QC Evaluation
May 15, 2025	MW5S	DUP-08	Ammonia	Exceeded the corresponding performance standard of 30%.
May 15, 2025	MW8S	DUP-09	Total Organic Nitrogen	Exceeded the corresponding performance standard of 30%.

The original groundwater sample MW5S and MW8S collected in May 2025, and the corresponding field duplicates DUP-105 and DUP-106, respectively, likely exceeded the standard RPD values as a result of sample inhomogeneity of the groundwater itself. Although QA/QC exceptions were identified, the relevant original sample results were deemed to be representative of conditions at the time of sampling. Based on the above noted evaluation, the results of the duplicate analysis indicated that the concentrations for the original sample are acceptable for inclusion into the database for interpretive purposes.

Thus, the 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 or the original sample are acceptable for inclusion into the database for interpretive purposes.

6.1 Data Quality Evaluation

Water quality samples collected by Pinchin were generated in accordance with acceptable procedures with few exceptions. Samples submitted for analyses and sample temperatures upon receipt at the project laboratory ranged between approximately 11˚ Celsius (˚C) to 18 to 20 ˚C during the May and September 2025 sampling event. Based on high ambient temperatures during the sampling of the groundwater wells during both sampling events, it is likely that these samples were unable to be cooled to below 10° Celsius prior to laboratory submission (samples were delivered to ALS Laboratory the same day as sampling). Holding times were exceeded for dissolved mercury in the dissolved mercury in DUP-106 and several dissolved metal parameters within MW10D, in September 2025. It is Pinchin's opinion that analytical data for groundwater samples is accurate as presented and acceptable for inclusion into the database for interpretive purposes.

© 2025 Pinchin Ltd.

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 percent 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.

The results of the sample and duplicate analyses satisfied the criteria of the QA/QC evaluations. It is Pinchin's opinion, the 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.

No VOCs were detected in the submitted trip blanks throughout the semi-annual monitoring programs.

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 semi-annual monitoring events 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 9.1 of the Waste ECA and the ECP for the Site.

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 concentrations 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 Tables 3 through 6.

© 2025 Pinchin Ltd.

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: MW6S/D, MW7S/D, MW9S/D, MW10S/D, MW11S/D and MW12S/D. For each relevant parameter, the analytical results from the 2025 semi-annual monitoring events 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 MW8S for the shallow flow system, as well as MW8D for the deep flow system.

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				
MW1	East edge of waste footprint	Downgradient/Crossgradient	No	No
MW2	South of waste footprint	Downgradient/Crossgradient	No	No
MW3S	West edge of waste footprint	Downgradient	No	No
MW4	Waste	Leachate	No	No
MW5S	West of waste footprint	Downgradient	No	No
MW6S	Northwest of waste footprint	Crossgradient	Yes	Yes
MW7S	Northeast corner of property line	Upgradient/Crossgradient	Yes	Yes
MW8S	Southeast of waste footprint	Upgradient	No	Background
MW9S	East property line	Upgradient/Crossgradient	Yes	Yes
MW10S	East of waste footprint	Upgradient	Yes	Yes
MW11S	West of waste footprint	Downgradient	Yes	Yes
MW12S	West of waste footprint	Downgradient	Yes	Yes

© 2025 Pinchin Ltd.

Monitoring Well	Location	Position Relative to Waste Fill Area	Property/CAZ Boundary Monitoring Well	Trigger Compliance Monitoring Well
MW13S	West of waste footprint	Downgradient	No	No
Deep Wells				
MW3D	West edge of waste footprint	Downgradient	No	No
MW5D	West of waste footprint	Downgradient	No	No
MW6D	Northwest of waste footprint	Crossgradient	Yes	Yes
MW7D	Northeast corner of property line	Upgradient/Crossgradient	Yes	Yes
MW8D	Southeast of waste footprint	Upgradient	No	Background
MW9D	East property line	Upgradient/Crossgradient	Yes	Yes
MW10D	East of waste footprint	Upgradient	Yes	Yes
MW11D	West of waste footprint	Downgradient	Yes	Yes
MW12D	West of waste footprint	Downgradient	Yes	Yes
MW13D	West of waste footprint	Downgradient	No	No

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

Consistent with previous annual monitoring and reporting programs, the trigger mechanism for groundwater at the Site is activated if the analytical results for at least three (3) parameters from the most recent monitoring event are greater than their respective trigger concentration at a compliance monitoring well.

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

© 2025 Pinchin Ltd.

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 × (Cr – Cb) where:

- C_b = Background concentration (in this case, a geometric mean concentration to 2024).
  - Number of analytical testing data (n) in background monitoring wells MW8S = 32 (2008-2024).
  - Geometric mean concentration value (C_b) = 2.84 milligrams per liter (mg/L).
- C_r = Maximum allowable concentration of a parameter in groundwater (ODWS criterion).
  - ODWS criterion for chloride (C_r) = 250 mg/L.

© 2025 Pinchin Ltd.

- 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 = 2.84 mg/L
- C_r = 250 mg/L
- X = 0.50

Thus, Cm = 2.84 + 0.50 × (250 – 2.84)

= 126 mg/L in the Shallow Flow System

To evaluate the shallow groundwater quality in 2025 would require the use of 126 mg/L for the parameter chloride. Therefore, the maximum allowable concentration of chloride at a downgradient boundary of the Site would be approximately 126 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 to 6.

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

© 2025 Pinchin Ltd.

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 Stormwater Trigger Mechanism

Condition 6 (2) of the Sewage ECA outlines the trigger mechanism for stormwater at the Site. The Sewage ECA identifies un-ionized ammonia, phenols, total phosphorus, boron, and iron as trigger parameters and a trigger concentration for each parameter. The trigger concentrations are based on the relevant PWQO. The Sewage ECA applies to the SWM Pond at the Site.

Due to previous water quality results, the outlet structure for the SWM Pond has been operated in a closed position. In 2025, no discharge was observed from the outlet in the May or September 2025; as such no samples were collected from SWM Pond during the semi-annual monitoring events.

It is noted that the Municipality provided Pinchin with monthly analytical results for the SWM Pond for September 2024 to October 2025. Of the analyzed parameters one or more trigger parameters (total un-ionized ammonia and/or total ammonia) exceeded the applicable trigger limits for each sampling event.

7.4 Primary Indicator Parameters

As indicated in previous 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 to 6.

© 2025 Pinchin Ltd.

8.0 GROUNDWATER ELEVATION RESULTS

Groundwater levels have been monitored in the leachate and groundwater monitoring wells at the Site since May 2006 by previous consultants. Monitoring well locations are depicted 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. Hydrographs of the groundwater level elevations at the Site are presented in Figure C-1 (shallow wells) and Figure C-2 (deep wells), Appendix C.

8.1 Leachate Elevation

Groundwater level measurements have been taken in the leachate monitoring well, MW4, at the Site since 2006. A hydrograph of the leachate elevation at MW4 is presented in Figure C-1, Appendix C. The leachate elevations at MW4 generally fluctuated over time with no distinctive trends of increasing or decreasing levels. The leachate elevations measured in 2025 was consistent with historical elevations. It is noted that minimal amount of water was available to sample during the September 2025 monitoring event, which is consistent with historical events in 2016 through 2022.

Based on the leachate elevation in MW4 and the shallow groundwater elevation in MW1, MW2 and MW3S located near the waste footprint boundary, relative to the groundwater elevation in the remaining shallow groundwater monitoring wells at the Site, there appears to be a mound of leachate present within the waste above the groundwater table. As a result, it is interpreted that the shallow groundwater flow in the immediate vicinity of the waste footprint flows in a radial pattern away from the waste footprint, with a more regional flow to the west, toward the North Thames River.

8.2 Shallow Groundwater Flow

The shallow groundwater elevations measured for the 2025 semi-annual monitoring events were generally consistent with historical elevations. Historically, monitoring well MW10S and MW12S have been dry and/or nearly dry since monitoring began in 2008. During the September 2025 semi-annual event MW10S was dry and MW11S and MW12S had insufficient volume of water to collect a sample. 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 ground surface topography and overburden soils, as well as the North Thames River, located adjacent to the west-northwest of Site, and flows south along the west boundary of the Site. The inferred groundwater flow pattern in the shallow monitoring wells demonstrates a flow in the west-northwest direction, generally toward the North Thames River. Contour mapping of the shallow groundwater elevations and the

© 2025 Pinchin Ltd.

interpreted groundwater flow direction in the vicinity of the Site for the spring and fall monitoring events are depicted in Figure 3A and 3B.

As mentioned previously, it is interpreted that localized shallow groundwater flow in the immediate vicinity of the Site flows in a radial pattern away from the waste footprint, generally in the direction of the North Thames River. The Site is situated on the edge of a natural slope with ground surface elevations decreasing from east to west toward the North Thames River. It is inferred that a portion of precipitation at the Site infiltrates through the cover material, where relevant, and into the waste, while the remainder ultimately runs off into the SWM Pond and the surface water ditches around portions of the perimeter of the Site. Previous reports indicate 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.

It has been noted in previous reports, that the observed groundwater elevations within the landfill gas probes (GP9 and GP10S/D) are not representative of the shallow groundwater flow system and may represent a perched groundwater condition at these locations. Additionally, the historical groundwater elevations at MW10S are anomalous to the remainder of the shallow groundwater flow system monitoring well groundwater elevations. As a result, the 2025 and historical groundwater elevations from GP9, GP10S/D and MW10S are excluded from the interpretations presented in this report. Continued monitoring is required during the semi-annual monitoring events of the groundwater elevations within landfill gas probes GP9 and GP10S to assess the groundwater elevations at these monitoring locations in the long-term. The measured groundwater elevations, as well as the subsurface conditions at and nearby the Site, should be evaluated to determine a potential cause(s) of the anomalous groundwater elevations.

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 screened from approximately 4.5 m deeper in the overburden than the respective shallow groundwater monitoring wells at the Site.

The deep groundwater elevations measured for the 2025 semi-annual monitoring events were consistent with historical elevations with the exception of monitoring well MW10D. During September 2025 monitoring event, monitoring MW10D had limited groundwater within the well and only select parameters were able to be sampled. Six other monitoring events reported dry conditions within MW10D (June 2008, September 2020, May and September 2023 and May and September 2024); however, historically water has been present during spring and fall monitoring events. 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. It is noted that monitoring well MW9D was dry during the September 2025 monitoring event, which was consistent with historical fall sampling events in 2018 to 2022.

© 2025 Pinchin Ltd.

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 is influenced by the North Thames River and is interpreted to flow from east-southeast to west-northwest across the Site.

Contour mapping of the deep groundwater elevations and the interpreted deep groundwater flow direction in the vicinity of the Site for the spring and fall monitoring events are provided in Figures 4A and B, respectively.

It is also noted that the observed groundwater elevations within monitoring wells MW9D and MW10D are anomalous to the remainder of the deep groundwater flow system monitoring well groundwater elevations. As a result, the 2025 groundwater elevations have been excluded from Figures 4A and B. Continued monitoring is required during the semi-annual monitoring events of the groundwater elevations within monitoring wells MW9D and MW10D to assess the groundwater elevations at these monitoring locations in the long-term. The measured groundwater elevations, as well as the subsurface conditions at and nearby the Site, should be evaluated to determine the potential cause(s) of the anomalous groundwater elevations.

As discussed, during the September 2024 semi-annual monitoring event, monitoring well MW5D was observed to be damaged. This monitoring well was reinstalled in October 2024. Groundwater elevations are provided on Figures 4A/B and within Appendix C, however, the October 2025 elevation was not utilized for groundwater contour interpretation.

9.0 GROUNDWATER QUALITY RESULTS

The 2025 groundwater quality analytical results are presented in Tables D-1 to D-5, Appendix D. Historical (2006 to 2024) analytical results are also included for comparison. Laboratory Certificates of Analysis are provided in Appendix F.

9.1 Leachate

Leachate monitoring well MW4 is situated within the waste footprint and, therefore, the groundwater quality at these locations is inferred to represent leachate at the Site. The analytical results for MW4 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 analytical results for parameter concentrations at MW4 were generally consistent with historical results.

In September 2023, a limited sample was collected for MW4 requiring lab field filtration for general metals and dissolved organic carbon (DOC). The lab had insufficient volume of liquid to assess total dissolved solids (TDS) within MW4 in September 2023. Parameters measured during the September 2023 semi-annual sampling event above their historical range included, total hardness, chloride, nitrate and nitrite as nitrogen, organic nitrogen, chemical oxygen demand (COD), barium, calcium, magnesium and selenium.

© 2025 Pinchin Ltd.

During the September 2023 sampling event that leachate indicator chloride was above its historical upper range (340 mg/L versus the upper concentration limit of 146 mg/L reported in September 2013) and above the ODWS (250 mg/L). It was noted in the field that sediment was present within MW4, which may present with a positive bias for parameters reported. This change in water quality may be the result of a seasonal fluctuation and it was noted that the 2024 sampling events indicated a seasonal fluctuation in manganese, chloride and COD. However, given that MW4 has been consistently dry during the historical fall sampling events between 2016 and 2022 and in 2025, a trend cannot be confirmed at this time. Additional sampling events are required to confirm the September 2023 and 2024 results.

Overall, the leachate at MW4 is slightly alkaline with a pH level of 7.47 during the May 2025 semi-annual sampling event. The leachate quality from the landfill waste at the Site, as determined from samples obtained from MW4, 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 TDS, alkalinity, organic nitrogen, DOC, iron and manganese have typically been greater in the leachate at the Site relative to background concentrations.

MW4 was included in further investigation using Piper Plots graphing techniques. The results are discussed in Section 9.2.4.

9.1.2 Volatile Organic Compounds

The analytical results for VOCs are presented in Table D-2, Appendix D. For the May 2025 semi-annual monitoring event, concentrations of VOC constituents within leachate well MW4 were below their respective RDLs, with some exceptions.

During the May 2025 monitoring event, the VOCs detected in leachate monitoring well MW4 generally included chlorinated solvents, which have been detected historically within the leachate at MW4. The 2025 and historical concentrations of the detected VOCs have generally fluctuated with no apparent increasing or decreasing trend. The May 2025 VOC detections at leachate monitoring well MW4 were below their respective ODWS, with the exception of trichloroethylene and vinyl chloride, and were within respective historical upper ranges.

The VOCs detected within the leachate at MW4 are currently not a concern, as there is no negative VOC groundwater quality effects within the compliance monitoring wells at the Site. Although, the typical landfill leachate indicator parameters (chloride and boron) are not typically elevated in the MW4 (source well), likely due to the installation details, the chemical properties of these VOC contaminants (high density, etc.) result in these constituents of the landfill derived plume “sinking” faster in this area and being quantified at depth.

© 2025 Pinchin Ltd.

In summary, select VOCs continued to be detected in the landfill leachate during 2025 with concentrations that are consistent with historical findings. Detected VOC concentrations noted in the leachate source represented within MW4 do not quantify concentrations that would warrant remedial action.

9.2 Groundwater

Based on the measured groundwater level elevations and the inferred groundwater flow pattern in the shallow and deep flow systems, the groundwater at monitoring wells MW8S and MW8D is interpreted to represent background groundwater quality conditions in the shallow and deep flow systems. The remaining shallow and deep monitoring wells, with the exception of leachate monitoring well MW4, represent either crossgradient or 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.

As discussed in Section 5.3, an insufficient volume of groundwater was present for sampling in MW9D, MW10S, MW11S and MW12S in September 2025 and limited sample was present in MW10D resulting in incomplete parameter analysis in September 2025.

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 vs. time plots 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 to supplement the trigger mechanisms to evaluate potential leachate influences on groundwater quality. The analytical results for compliance monitoring wells that were greater than their respective ODWS in 2025 were generally consistent with historical results with some exceptions.

Of the parameters that exceeded the ODWS, parameters that were above their respective historical ranges were reported in the following compliance monitoring wells:

- A reported concentration of total hardness MW6D in September 2025;

© 2025 Pinchin Ltd.

- A reported concentration of total alkalinity MW7S in May 2025. It is noted that the reported concentration of alkalinity (19,000 mg/L) was greater than the reported concentrations of alkalinity in leachate well MW4 or any other monitoring well over the available historic database. Pinchin notes that MW5D also had an increase of alkalinity in October 2024 (17,400 mg/L);
- TDS within MW7D in September 2025;
- TDS within MW9S which continued to increase in concentration from May to September 2025, total alkalinity in May 2025 which decreased to within historical concentration levels in September 2025 and chloride in May 2025 which remained relatively consistent in concentration in September 2025;
- Total hardness, TDS and chloride within MW9D in May 2025;
- Total hardness, TDS, alkalinity, nitrate and nitrate, nitrate and organic nitrogen within 10S in May 2025. Pinchin notes that only three samples have been collected from this monitoring well historically as a result of limited groundwater (sampled in 2022, 2023 and 2025). To determine whether a trend is occurring, Pinchin will require more sampling events for confirmation;
- Total hardness, TDS and alkalinity within MW10D in May 2025; and
- Total hardness and TDS within MW12D increased above historical range in September 2025.

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

As depicted 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 MW6S (2020, 2021 and 2023) and MW9S (2015 to current).

Monitoring well nest MW8S/D is located south of the waste footprint within the buffer area and is considered a background monitoring well as it is situated upgradient of the waste fill area relative to inferred groundwater flow direction.

During the semi-annual monitoring events in 2022 and 2023, select parameters were measured at concentrations higher than historical upper limits measured in MW8S. As part of the 2025 monitoring program, analytical results for total hardness, TDS, total alkalinity, and organic nitrogen were measured at concentrations above their respective ODWS in May and September 2025 and were below the historical upper concentration limit in MW8S. Pinchin notes that concentrations of total hardness, TDS, organic nitrogen and aluminum were also detected above their respective ODWS and historical upper concentration range within MW8D in May 2025, with concentrations of organic nitrogen, aluminum decreasing in September 2025. Pinchin also notes that COD was detected at a level above the historical

© 2025 Pinchin Ltd.

upper concentration limit in May 2025; however, this parameter also decreased to within historical concentration ranges in September 2025.

Based on nitrogen cycle parameters and increased concentrations of select parameters identified in MW8S/D, it is Pinchin's opinion that water quality may be affected by historical sewage lagoons located east of the Site and situated hydraulically upgradient of MW8S/D. It is therefore interpreted that the plume from the sewage lagoon is sinking with distance and is not discharging to the adjacent downgradient surface water ditch system associated with the stormwater management system. Further discussion is provided in Section 9.2.4.

Monitoring well nest MW5S/D are located west of waste footprint and based on measured groundwater elevations are downgradient of the landfill approximate waste footprint. Concentrations of total alkalinity in both MW5S/D in September 2024, as well as COD and organic nitrogen within MW5S were above their historical upper limit concentrations in September 2024. Concentrations of these parameters decreased in 2025 within MW5S/D with exception of organic nitrogen within MW5D which exceeded the applicable ODWS and historical upper concentration limit in May 2025 (decreasing in September 2025). The concentration of chloride within MW5S/D has exhibited an overall increasing trend since May 2014 similar to compliance monitoring wells MW11S/D, located further downstream of the waste footprint. Based on the chloride concentrations at MW5S/D and MW11S/D, as well as the increased aforementioned parameters, the groundwater quality downgradient of the landfill may be influenced by the landfill. The correlation between COD and organic nitrogen indicates that an increase of organic material is present within the groundwater. This could be a result of soil capping at the Site, resulting in decreased dilution of leachate. Pinchin notes that several concentrations of additional parameters measured within newly reinstalled MW5D were detected above their historical concentration limit in September 2024. Elevated parameter concentrations may be positively biased by sediment present within this monitoring well. It was Pinchin's opinion that MW5D be redeveloped thoroughly in 2025 and MW5S/D be resampled to confirm elevated parameter concentrations are not indicative of a trend of concern at this time. It is noted that the MW5S/D parameters that exceeded in 2024 and May 2025, decreased to levels within the historical range in September 2025.

The concentration of chloride at monitoring well MW9S has been greater than the respective trigger concentration since May 2015. The concentration of chloride exhibited an overall increasing trend since May 2015 and has since been exhibiting a fluctuating trend. Prior to 2015, the concentration of chloride was consistently below the respective trigger concentration and stable with no apparent increasing trend at MW9S. Based on the measured groundwater elevations, it is interpreted that monitoring well MW9S is upgradient of the waste footprint but may be within the effects of the radial influence of the waste deposits on the shallow groundwater flow system.

© 2025 Pinchin Ltd.

In addition, since 2015, the concentrations of chloride and sodium, which have also been greater than their respective historical concentrations in MW9S, are generally greater than within the leachate at monitoring well MW4 and within the groundwater at monitoring wells located closer to the waste footprint than MW9S with the exception of September 2023 by which concentrations of chloride were similar to concentrations within the leachate at monitoring well MW4. Historical results indicate that concentrations since May 2015 of the aforementioned parameters with MW9S may not be solely attributed to the landfill and indicate that the increased concentrations of these parameters could be result of a source other than the landfill.

To discern the source of the increased concentrations of chloride, total hardness, TDS, calcium, magnesium and sodium at MW9S, previous annual monitoring reports indicated that the Municipality contacted the occupants of the property east of the Site in the fall of 2016 to verify if they use a water softener system and, if so, determine where the backwater water from the system is being discharged. Based on these findings, a water softener system was not used at the property east of the Site and therefore, the increased concentration of chloride was determined not to be from the backwash water from a water softener system at this property. Previous annual monitoring reports identified that the concentrations of the aforementioned parameters with MW9S since May 2015 may be attributed to the possible application of de-icing salt during the winter to the off-Site paved roadway/driveways and parking lot area located at the properties east of the Site and MW9S. Based on the topography of the Site and surrounding area, the ground surface of the properties east of the Site is higher than the ground surface at MW9S and, based on measured groundwater elevations in the area, is also interpreted to be hydraulically upgradient of MW9S. An additional investigation into the source of these impacts was completed during the 2025 Monitoring Program using the Piper Plot graphing techniques to define groundwater ionic balance. Further discussion is provided in Section 9.2.4.

As indicated in Figure D-3, the 2025 concentrations of chloride within the deep groundwater compliance wells have remained in compliance with the respective trigger concentration for the Site with the exception of MW6D in September 2021 and MW9D (September 2014 to current). During the September 2025 sampling event, MW9D had insufficient volume for sampling. At monitoring well MW9D, the concentration of chloride was greater than the respective trigger concentration (126 mg/L) in May 2025 and exceeded the historical upper limit for chloride for MW9D. The remaining parameters that exceeded the ODWS within MW9D were within their respective historical ranges with the exception of total hardness and TDS. Monitoring well MW9D is interpreted to be upgradient of the waste footprint, based on measured groundwater elevations. Similar to MW9S, Piper Plots were used to further investigate the source of impacts within MW6D and MW9D. Further discussion is provided in Section 9.2.4.

Concentrations of chloride within MW6S/D have historically been elevated relative to the concentration at the remaining shallow and deep compliance monitoring wells, with the exception of MW9S/D. Concentrations of chloride within MW6S/D met the trigger concentration (126 mg/L) in May 2025 and September 2025 and have presented an overall decreasing and fluctuating concentration trend since

© 2025 Pinchin Ltd.

September 2021. MW6S/D are located northwest of the waste footprint and situated hydraulically crossgradient relative to the waste footprint. Based on groundwater flow direction and elevated concentrations of chloride measured in MW6S/D relative to monitoring wells situated closer to the waste footprint, it is inferred that elevated concentrations of chloride are not attributed to the landfill. Additional investigation into the source of chloride impacts was completed using Piper Plot graphing techniques (similar to MW9S) and further discussion is provided in Section 9.2.4. Monitoring wells MW6S/D are also located near Frank Street, which runs along the north boundary of the Site, the elevated concentrations of chloride at MW6S/D may be related to the application of road salt, as part of winter de-icing. No remedial action is warranted at this time to address elevated concentration levels measure within monitoring wells MW6S/D.

The concentration of chloride and total alkalinity within compliance monitoring well MW7S were measured at concentrations greater than historical upper limits in May 2025. In addition, concentrations of TDS and total alkalinity were measured above historical results in MW7D in September 2025. Monitoring well nest MW7S/D is located northeast of the waste footprint and situated hydraulically upgradient relative to the waste footprint. Based on groundwater flow direction and elevated concentrations measured in MW7S/D relative to monitoring wells situated closer to the waste footprint, it is inferred that elevated concentrations of chloride are not attributed to the landfill. Additional investigation into the source of these impacts was completed using Piper Plot graphing techniques (similar to MW9S) and further discussion is provided in Section 9.2.4.

During September 2025 sampling events, monitoring well MW10S had insufficient volume for sampling and MW10D had insufficient volume for the sampling of all parameters. It is noted that monitoring well MW10S has historically had insufficient volume of groundwater since sampling began in June 2009 until September 2021; however, in May 2022 and 2023, a sufficient amount of groundwater was collected for submission of a groundwater sample. The sample collected in May 2025 from MW10S detected hardness, TDS, alkalinity, nitrates, organic nitrogen and DOC concentrations that were measured above their respective ODWS and historical upper concentration limit (with the exception of DOC which was within the historical concentration range). Concentrations of total hardness, TDS and total alkalinity within MW10D were above their historical upper concentration limit in May 2025. It is noted that insufficient volume for sample collected was observed within MW10D in September 2025, which limited the range of parameters that could be sampled. Continued monitoring should be completed at MW10S/D, to confirm historical and current exceedances at this well nest is not presenting a trend of concern.

The chloride concentration at the remaining shallow compliance monitoring wells MW11S and MW12S have exhibited an increasing and/or fluctuating trend since October 2014 and May 2016, respectively. The concentrations of chloride have remained in compliance with the respective trigger concentration for the Site indicating that the noted concentrations are attenuated to acceptable levels of groundwater quality at the trigger monitoring well locations at the downgradient property line. An increasing trend of chloride concentrations has also been identified within MW11D and MW12D since 2015; however, the

© 2025 Pinchin Ltd.

concentrations of chloride at MW11D and MW12D have remained in compliance with the respective trigger concentrations for the Site. Based on the sodium and/or chloride concentrations at MW11D and MW12D, the groundwater quality downgradient of the landfill may be influenced by the landfill; however, the noted concentrations are at acceptable concentrations and have not unsatisfactorily impacted the groundwater quality at the trigger monitoring well locations at the downgradient property line. Therefore, no remedial action is warranted at this time in relation to chloride trends. Concentrations of total hardness and TDS were detected above their historical upper limit within MW12D. The concentrations of chloride and aforementioned parameters at MW11S/D and MW12S/D should continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring. Monitoring wells MW11S/D and MW12S/D were also included in the additional investigation using Piper Plot graphing techniques for comparison purposes and further discussion is provided in Section 9.2.4.

The concentration of boron within each shallow and deep groundwater compliance monitoring well has remained in compliance with the trigger concentration for the Site, as indicated in Figure D-2 and Figure D-4, respectively. Generally, the concentration of boron within compliance monitoring wells has been stable with no apparent increasing or decreasing trend.

As discussed above, monitoring locations MW6S/D and MW7S/D are located near Frank Street, which runs parallel to the northern boundary of the Site. As such, the elevated concentrations of the chloride at MW6D and MW7D may be related to road de-icing practices in the winter. It is also noted that there have been no distinct increases in concentration of the other indicator parameters within the monitoring well MW7D that would indicate a distinct landfill leachate influence. MW6D was included in the additional investigation into source impacts using Piper Plot graphing techniques. Further discussion is presented in Section 9.2.4.

Since groundwater monitoring began at the Site in 2008, concentrations of most parameters in the shallow and deep groundwater monitoring wells have generally fluctuated or been stable with no apparent increasing or decreasing trend. Based on the analytical results for the tested parameters, the groundwater quality downgradient of the landfill in the vicinity of monitoring well nests MW11S/D and MW12S/D may be influenced by the landfill. The groundwater quality at monitoring wells MW11S/D and MW12S/D should continue to be evaluated to verify that concentration trends of concern are not occurring.

9.2.2 Volatile Organic Compounds

For the 2025 annual monitoring event, concentrations of VOC constituents within the groundwater compliance monitoring wells were below their respective RDLs, with the exception of toluene at MW9D in September 2025 and n-hexane in MW12D in May 2025. The parameters above the RDLs were below the applicable ODWS. Quantifiable VOC concentrations were reported at monitoring wells positioned within the immediate vicinity of the landfill waste footprint (MW1, MW2, MW3D, MW5D and MW13S/D). No

© 2025 Pinchin Ltd.

remedial action is warranted to address the 2025 VOC concentrations detected at the groundwater monitoring wells.

9.2.3 Trigger Mechanism Assessment

The groundwater analytical results for the 2025 annual monitoring event and their respective trigger concentrations are presented in Tables 3 to 6. 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 the ECP for the Site.

Property Boundary Monitoring Well	Parameter(s)	Trigger Concentration (mg/L)	May 2025 Analytical Result (mg/L)	September 2025 Analytical Result (mg/L)
Shallow Groundwater Monitoring Wells				
MW6S	Total Hardness	540	598	580
	Total Dissolved Solids	530	709	706
	Alkalinity	501	516	-
MW7S	Total Hardness	540	552	581
	Total Dissolved Solids	530	562	666
	Alkalinity	501	19000	540
	Manganese	0.03	0.322	0.393
MW9S	Total Hardness	540	786	734
	Total Dissolved Solids	530	1240	1420
	Alkalinity	501	1180	-
	Chloride	126	367	361
	Manganese	0.03	0.117	0.0318
	Sodium	103	105	111
MW10S	Total Dissolved Solids	530	830	Insufficient
	Alkalinity, Total (as CaCO3)	501	1070	
	Fluoride	0.42	0.497	

© 2025 Pinchin Ltd.

Property Boundary Monitoring Well	Parameter(s)	Trigger Concentration (mg/L)	May 2025 Analytical Result (mg/L)	September 2025 Analytical Result (mg/L)
	Nitrate-N	5.6	18.4	volume for sample collection.
	Organic Nitrogen	0.61	2.86	
	Dissolved Organic Carbon	4.6	7.42	
	Sodium	103	136	

Property Boundary Monitoring Well	Parameter(s)	Trigger Concentration (mg/L)	May 2025 Analytical Result (mg/L)	September 2025 Analytical Result (mg/L)
Deep Groundwater Monitoring Wells				
MW7D	Total Hardness	580	-	584
	Total Dissolved Solids	653	661	982
	Alkalinity	593	1210	9000
	Fluoride	0.42	0.600	0.583
	Organic Nitrogen	0.32	-	1.36
MW9D	Total Hardness	580	696	Insufficient volume for sample collection.
	Total Dissolved Solids	653	1020	
	Chloride	129	295	
	Fluoride	0.42	0.654	
	Organic Nitrogen	0.31	0.806	
MW10D	Total Hardness	580	661	Insufficient volume for sample collection.
	Total Dissolved Solids	653	940	
	Alkalinity	593	811	-
	Fluoride	0.42	1.12	Insufficient

© 2025 Pinchin Ltd.

Property Boundary Monitoring Well	Parameter(s)	Trigger Concentration (mg/L)	May 2025 Analytical Result (mg/L)	September 2025 Analytical Result (mg/L)
	Organic Nitrogen	0.32	0.478	volume for sample collection.
	Sulphate	265	313	
MW11D	Nitrate-N	3.0	3.05	5.67
	Organic Nitrogen	0.32	0.474	0.500
MW12D	Total Dissolved Solids	653	-	802
	Nitrate-N	3.0	-	4.12
	Organic Nitrogen	0.32	0.629	0.457

The analytical results for at least three (3) parameters were greater than their respective trigger concentration within compliance monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D. The analytical results were generally consistent with historical results with few exceptions, as discussed below.

Monitoring well nest MW6S/D is located northwest of the waste footprint and is situated hydraulically crossgradient of the landfill waste footprint, based on the measured groundwater elevation. Analytical results for three or more parameters were greater than their respective trigger concentrations within monitoring well MW6S in May 2025. Concentrations of alkalinity in May 2025 and total hardness and TDS in May 2025 and September 2025, exceeded their respective trigger concentrations. The aforementioned parameters were measured at concentrations levels greater than within shallow monitoring well MW3S, located in a closer position and situated downgradient to the waste footprint. Based on groundwater flow direction and elevated concentrations measured in MW6S relative to monitoring wells situated closer to the waste footprint, it is inferred that parameters exceeded trigger concentrations are not attributed to the landfill and may indicate impacts contributed by another source. This well is also located near Frank Street, which runs along the north boundary of the Site, the historically elevated concentrations of chloride MW6S may be related to the application of road salt, as part of winter de-icing. The analytical results for MW6D during the 2025 sampling events, the reported concentrations for all parameters were below the trigger concentrations. During the September 2021 monitoring event, the concentration of chloride within MW6D was measured above the historical upper range and was the first exceedance of the trigger concentration for MW6D. As part of the 2025 semi-annual monitoring events chloride was measure below the historical upper range and met the trigger concentrations for both MW6S and MW6D. As part of an additional investigation of impact sources at monitoring well nest MW6S/6D was included in Piper Plots. Further discussion is provided in Section 9.2.4.

© 2025 Pinchin Ltd.

Monitoring well MW7S and MW7D are located in the northeast corner of the Site, south of Frank St. and, based on measured groundwater elevations, are upgradient of the landfill waste footprint. The analytical results for parameters that were greater than their respective trigger concentrations at MW7S and MW7D were each within their respective historical upper ranges with the exception of the concentration of total alkalinity at MW7S in May 2025 (which decreased in September 2025), and TDS and alkalinity within MW7D in September 2025. The concentrations of the indicator parameters within MW7S and MW7D, have generally been stable or fluctuated with no apparent increasing or decreasing trend over the long-term, which indicates that the groundwater quality at this location is stable and not degrading as a result of a landfill leachate influence. It is noted that the concentration of chloride has increased in concentration slightly since 2021 within MW7S, however has not exceeded the trigger concentration for chloride. In addition, elevated concentrations of alkalinity within MW7D have been observed since 2024. Based on the location of MW7S/D, groundwater flow direction and the general stability of the groundwater quality, the noted analytical results for MW7S and MW7D are not inferred to be impacted by the landfill and do not represent an immediate concern to groundwater quality. Remedial actions are not warranted regarding MW7S and MW7D.

The 2025 analytical results for chloride within MW9S/D are not consistent with the historical concentrations prior to May 2015, for which the previous historical upper limit was 12.4 mg/L. As discussed in Section 9.2.1, the concentration of chloride exhibited a generally increasing trend from May 2015 to May 2017 and has since exhibited a fluctuating and increasing trend. Prior to 2015, the concentration of chloride was consistently below the respective trigger concentration and stable with no apparent increasing trend at MW9S. At MW9D, the concentration of chloride increased above the trigger concentration in May 2018, and has since illustrated a fluctuating and increasing trend. The 2025 analytical results for chloride at monitoring wells MW9S/D was greater than respective historical upper limit concentration in May 2025, remaining consistent in September 2025 (MW9D had insufficient volume for sample collection in September 2025). The concentration of chloride at MW9D has been gradually increasing since 2015, however the concentration has remained less than the concentration at monitoring well MW9S. In addition, measured concentrations of total alkalinity, TDS and sodium within MW9S were detected above historical ranges and above corresponding concentrations measured within leachate well MW4 in May 2025. Furthermore, measured concentrations of total hardness and TDS within MW9D in May 2025 were above historical ranges and also above corresponding concentrations measured leachate well MW4. As monitoring wells MW9S and MW9D are inferred to be upgradient of the landfill, the elevated analytical results for chloride may be attributed to the radial groundwater influence associated with the waste deposits of the landfill or another source. The chloride concentrations quantified at the MW9S/D monitoring well nest are significantly higher than those observed at the source well MW4 and suggest the contribution of another source. Further discussion is provided in Section 9.2.4.

Monitoring well nest MW10S/D is located along the east boundary of the waste footprint and based on measured groundwater elevations, is also upgradient of the landfill. As noted previously, during

© 2025 Pinchin Ltd.

September 2025 monitoring events, an insufficient volume of groundwater for sampling was reported within MW10S and limited groundwater was available for MW10D, resulting in no sample collected at MW10S and a sample for limited parameters within MW10D in September 2025. Monitoring well MW10S has historically had insufficient volume of groundwater since sampling began in June 2009. In May 2022, May 2023 and May 2025, a sufficient amount of groundwater was collected for submission of groundwater sample. Analytical results that exceeded trigger concentrations within MW10S in May 2025 for TDS, alkalinity, fluoride, nitrate, organic nitrogen and DOC were greater than their respective historical upper limit concentration. Based on the limited analytical history within MW10S, Pinchin is unable to discern whether an increasing concentration trend is occurring within MW10S. The analytical results within MW10D were less than their respective historical upper limit concentration with the exception of total hardness, TDS and alkalinity. As monitoring wells MW10S and MW10D are upgradient of the landfill, the historical analytical results for concentrations that exceeded trigger concentrations may not be solely attributed to landfill derived leachate effects. Historical and/or analytical results measured at MW10S/D, similar to MW9S/D analytical results, indicate that elevated concentrations of these parameters may be the result of another source of impacts, other than the landfill.

Monitoring well nest MW11S/D is located west of the waste footprint and based on measured groundwater elevations, is downgradient of the landfill. MW11S/D met trigger mechanism assessment for the Site in May and September 2025. The parameters that were greater than the respective trigger concentrations within MW11D, were within historical ranges, with the exception of nitrate as nitrogen in September 2025. The concentration of chloride within MW11S and MW11D has exhibited an increasing and fluctuating trend since May 2014, however, the concentration of chloride has remained in compliance with the respective trigger concentration for the Site. The concentration of chloride at MW11S/D is similar to that detected at internal assessment location MW5S/D which is situated between the limit of waste and MW11S/D. Based on the chloride concentrations at MW5S/D and MW11S/D, the groundwater quality downgradient of the landfill may be influenced by the landfill, however, the noted concentrations are at acceptable concentrations and have not unacceptably impacted the groundwater quality. Thus, no remedial action is warranted, at this time, to address the noted concentrations. The concentrations of chloride at MW11S/D and nitrate in MW11D will continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring. Monitoring wells MW11S/D were also included in additional source impact investigation for comparison using Piper Plot graphing techniques and is discussed in Section 9.2.4.

Monitoring well nest MW12S/D is situated along the west boundary of the Site and downgradient of the landfill relative to inferred groundwater flow direction. Monitoring well MW12S met the trigger mechanism for the Site in May 2025, however insufficient volume of groundwater was present to complete sampling in September 2025. It is noted that organic nitrogen measured in MW12S exceeded the applicable trigger concentration for this parameter in May 2023; however, met the trigger concentration in May 2025. No remedial action is warranted in relation to the organic nitrogen exceedance within MW12S. Monitoring

© 2025 Pinchin Ltd.

well MW12D met the applicable trigger mechanism for the Site in May 2025 and exceeded in September 2025. The concentration of TDS, nitrate and organic nitrogen exceeded their respective concentrations MW12D in September 2025. It is noted that chloride concentrations in both MW12S and MW12D have indicated a gradual increase in chloride since 2015/2016, however chloride concentrations have remained below the trigger concentration (126 mg/L). Based on the location of MW12S/D, this monitoring well nest is situated downgradient of the landfill, the groundwater quality downgradient of the landfill may be influence by the landfill; however, the elevated nitrogen cycle parameters reported within these wells, MW12S/D well nest may be influenced by historical sewage lagoons. Monitoring wells MW12S/D were also included in additional source impact investigation for comparison using Piper Plot graphing techniques and is discussed in Section 9.2.4.

Based on a review of the analytical results for the 2025 groundwater monitoring events, the groundwater quality downgradient of the landfill is of acceptable quality. The analytical results for at least three (3) parameters were greater than their respective trigger concentration within compliance monitoring wells compliance monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D. Ongoing monitoring should be completed to verify that the constituent concentrations that were greater than their respective trigger concentrations in select compliance monitoring wells are not exhibiting an increasing trend of concern over the long-term.

Monitoring wells MW6S/6D, MW9S/D, MW11S/D and 12S/D were included in further investigation using Piper Plot graphing techniques to verify that the concentrations of the aforementioned parameters at these monitoring well nests are not a result of landfill leachate. Further discussion is provided in Section 9.2.4.

9.2.4 Groundwater Ionic Balance and Piper Plot Data

Upgradient well nest MW9S/D and cross-gradient well nest MW6S/D have quantified elevated analytical concentrations and are interpreted to be influenced by the radial groundwater flow associated with the waste deposits of the landfill and/or another source. To further investigate these potential impacts, the geochemical data for these groundwater monitoring wells were analyzed for the major ion composition using tri-linear piper plots. Background well nests MW8S/D and MW10S, source well MW4 and downgradient well nests MW11S/D and MW12S/D are also to be analyzed for comparison. It is noted however, MW4, MW9D, MW10S, MW11S and MW12S did not have sufficient volume to collect a sample during the September 2025 event. It should also be noted that a partial sample was collected at MW10D during the fall sampling event due to an insufficient volume of water and therefore, could not be included in the tri-linear piper plot for this monitoring event.

The May 2025 and September 2025 piper plot data for the shallow and deep monitoring wells are presented in Tables 10 and 11, respectively. The positions of the monitoring wells on the piper plot diagrams are presented in Appendix E.

© 2025 Pinchin Ltd.

For each well nest, the shallow and deep monitoring wells plotted in similar positions, indicating no significant differences in water types between the shallow and deep systems, with the exception of well nest MW10, in which the shallow and deep monitoring wells plotted differently.

Comparing the May 2025 and September 2025 monitoring events, the positions on the piper plot diagrams did not demonstrate significant seasonal changes at each of the monitoring locations.

In May 2025, the majority of the plotted monitoring locations were positioned on the cation grid within the calcium dominant region, with the exception of MW10S which was positioned within the sodium dominant region, as well as MW9D and MW10D which had no dominant type. All plotted monitoring locations were positioned on the anion grid within the bicarbonate dominant region. This resulted in all wells being projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW10S which is projected as a sodium bicarbonate type water.

In September 2025, all of the plotted monitoring locations were positioned on the cation grid within the calcium dominant region. All the plotted monitoring locations were positioned on the anion grid within the bicarbonate dominant region with the exception of MW9S which was positioned within the chloride dominant region. This resulted in all wells being projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW9S which is projected as a calcium chloride type water.

The plot of major ion chemistry for upgradient well nest of concern, MW9S and to a lesser extent MW9D, plot further away from the rest of the wells. This visually demonstrates that these wells have a slightly different major ion chemistry, indicating that an impact is occurring. Well nest MW9S/D is located directly downgradient of the lagoons. Given the piper plot positions, as well as the observed elevated concentrations of nitrogen cycle parameters currently and historically within these wells, it appears that wells MW9S/D is impacted by the upgradient historical sewage lagoons. It is noted that a sample could not be collected from MW9D during the fall sample event due to an insufficient volume of water. The other upgradient well nest of concern, MW10S/D, located directly within the historical sewage lagoons, indicated similar results to the MW9S/D nest suggesting that this location is also experiencing impacts. It is noted that complete samples could not be collected from MW10S and MW10D during the fall sampling event due to an insufficient volume of water.

The plot of major ion chemistry for cross-gradient well nest of concern MW6S/D previously plotted towards the impacted wells (MW9S/D), demonstrating that impacts are also occurring at these wells. The impact was interpreted to potentially be related to the sewage lagoons as these wells are located downgradient from the lagoons and the other impacted wells; however, as the wells are located near the road, the impacts may also be related to road salt application and runoff. It is noted that the 2025 spring and fall piper plot results indicate that MW6S/D is plotted closer to the non-impacted wells. The position of MW6S/D should continue to be monitored to determine if impacts related to the sewage lagoons are occurring at this location.

© 2025 Pinchin Ltd.

Based on the plot of major ion chemistry for background nest MW8S/D and downgradient nests MW11S/D and MW12S/D, these wells do not initially appear to be impacted. Based on the observed B-7 exceedances and nitrogen cycle parameters, monitoring wells MW8S/8D, MW11D and MW12D, it appears that these wells may be impacted by the sewage lagoons. It is therefore interpreted that the plume from the sewage lagoon may be sinking with distance and is not discharging to the adjacent downgradient surface water ditch system associated with the stormwater management system.

Based on the results of the additional investigation and observed B-7 exceedances, it is Pinchin's recommendation that trigger mechanism assessment at the Site incorporate the potential impacts related to historical sewage lagoons at monitoring wells MW6S/D, MW8S/8D, MW9S/9D, MW10S/D, MW11S/D and MW12S/12D. As the elevated concentrations quantified at these locations presently and historically, are inferred to be a result of influences from sources other than landfill leachate, no remedial actions are warranted at this time.

9.3 Stormwater Quality

The stormwater management system at the Site consists of a SWM Pond and surface water ditches that allow for the catchment of runoff from the landfill and the management of stormwater that may accumulate at the Site. Stormwater runoff from the landfill is collected in the SWM Pond and, following a period of retention, gradually discharges the retained water to the North Thames River.

The outlet structure of the SWM pond is equipped with two (2) gate valves. Under routine operations, the upper valve is maintained in an open position, while the lower valve is closed. Effluent discharges to the North Thames River through the upper valve, such that the typical water level in the SWM Pond is not completely drained. The stormwater monitoring location is located near the inlet to the SWM Pond outlet structure. Samples are to be collected at the SWM Pond during the semi-annual monitoring events when there is discharge from the SWM Pond outlet. When discharge is observed, a grab sample is collected at SWM Pond from within the stormwater management pond immediately upstream of the outlet structure inlet.

As discussed in Section 5.4, direct discharge from the SWM Pond outlet was not observed during the May 2025 or September 2025 monitoring event and no drainage was observed over the sidewall of the SWM Pond. Thus, a stormwater sample was not required to be collected for this monitoring event. The historical analytical results for the SWM Pond are presented in Table D-5, Appendix D.

9.3.1 General Chemistry

A summary of the historical stormwater analytical results compared to the SWM Pond trigger concentrations is presented in Section 9.3.2 and analytical results are presented in Table D-5, Appendix D. The stormwater quality data at the SWM Pond are compared to the PWQO, where available.

Overall, since stormwater monitoring began at the Site in 2013, detected concentrations have generally been stable or fluctuated with no apparent increasing or decreasing trend over the long-term, which

© 2025 Pinchin Ltd.

indicates that the groundwater quality at this location is stable and not negatively influenced by landfill derived leachate. It is noted that concentrations of TDS, alkalinity, fluoride, total kjeldahl nitrogen, DOC, COD, cadmium, cobalt, copper, lead molybdenum, nickel, potassium, dissolved aluminum and mercury were above the respective historical upper limit concentrations in September 2021. Based on the heavy precipitation events observed during the September 2021 semi-annual monitoring events, it was Pinchin's opinion that analytical results for parameters above their historical upper limit concentration were likely due to sediment in the sample caused by the disturbance of the SWM Pond at this time.

9.3.2 Trigger Mechanism Assessment

The Municipality provided Pinchin with analytical results for the SWM Pond collected in October 2024 through October 2025. It is noted that October 2024 through February 2025, the pond was either dry or frozen, and from July 2025 to September 2025, the pond was dry. Of the analyzed parameters one or more trigger parameters (total un-ionized ammonia, total ammonia and/or phenols) exceeded the applicable trigger limits for each sampling event within May and October 2025. The Municipality is required to report overflows as a spill to the MECP's Spill Action Centre, per Condition 5.1 of the Waste ECA.

10.0 LANDFILL GAS MONITORING RESULTS

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

Landfill gas was not detected at any of the leachate, groundwater monitoring wells or gas probes during the May or September 2025 semi-annual monitoring events.

Historical results indicate that landfill gas is being generated in the waste at the Site. Historically, a few near detection limit levels of landfill gas have been detected during monitoring events; however, these detections 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. The concentration of methane gas should continue to be monitored over subsequent monitoring events to evaluate the concentration trends over time. No remedial actions are warranted, at this time.

As noted in previous annual reports, the screened interval of select monitoring wells used to assess for landfill gas may be below the groundwater table and therefore, may not reliably represent, from a vapour perspective, the concentrations of gases in the vadose zone at the Site. Due to the aforementioned minor limitations to the monitoring network to evaluate landfill gas migration in the vadose zone at the Site, if new structures are built on or nearby (< 100 m) to the Site in the future, the landfill gas monitoring

© 2025 Pinchin Ltd.

program should be re-evaluated for its assessment effectiveness. Landfill gas should continue to be monitored at the Site as part of the annual monitoring program to assess for the presence and, if detected, concentrations of landfill gas over time. If the landfill gas concentrations beyond the waste footprint are confirmed during the next regularly scheduled monitoring event, then consideration should be given to the implementation of winter monitoring events (when the risk for gas migration is greatest).

11.0 SITE INSPECTION OBSERVATIONS

The Waste ECA and EMP for the Site recommend semi-annual Site inspections. The semi-annual Site inspections were conducted by Pinchin on May 14 and September 29, 2025. Copies of the semi-annual Site inspection records are provided in Appendix H. Findings from the 2025 semi-annual Site inspections are presented below.

- The front gate at the Site was closed and secured with a padlock when applicable;
- The fence around the perimeter of the Site boundary, where applicable, was in good condition;
- During the September 2022 semi-annual Site inspection, Pinchin observed soil material being placed northeast of MW4. The Client informed Pinchin that the waste fill area was capped with imported soil. The Client also informed Pinchin that capping of the waste footprint continued in 2025. There were no additional exposed areas of soil cover material over the waste footprint observed during the 2025 Site Inspections;
- The monitoring wells at the Site are locked and appeared to be generally in good condition;
- 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 outbreaks at the Site;
- During the September 2025 monitoring event, fallen trees and tree damage were observed in the vicinity of monitoring well MW3S/D, restricting access. Pinchin informed the Municipality of the fallen trees and the Municipality notes that clearing of this damage will be completed.
- There were no reports or indications of 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.

© 2025 Pinchin Ltd.

The Client also conducted monthly inspections during 2025. There were no additional issues identified by the Client 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 semi-annual monitoring program for the Site, including analytes, are summarized in Table 1 with monitoring locations depicted in Figure 2. The parameter list should be reviewed, and modified, if necessary, to ensure it includes the required data to facilitate the utilization of hydrochemical facies diagrams, in order to assess the source of the elevated chloride, concentrations reported at the crossgradient and upgradient monitoring well nests MW6S/6D and MW9S/D, respectively.

An Annual Monitoring Report that details the findings of the 2026 monitoring period will be prepared and submitted to the MECP by December 19, 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

- Locally, the groundwater flow regime at the Site is influenced by surficial features such as ground surface topography and overburden soils, as well as the North Thames River, which flows southerly along the west boundary of the Site. In 2025, the groundwater flow pattern in the shallow monitoring wells demonstrated flow generally toward the North Thames River. It is interpreted that localized shallow groundwater flow in the immediate vicinity of the Site flows in a radial pattern away from the waste footprint, with a predominantly western component towards the North Thames River. Regionally, groundwater flow in or near the bedrock is inferred to reflect bedrock topography and flow southwest. Locally, the deep groundwater flow around the Site is influenced by the North Thames River and is interpreted to flow from east to west across the Site with some degree of mounding, possibly related to the waste deposits resulting in an inferred groundwater divide;
- The leachate and groundwater elevations measured at the Site in 2025 were generally consistent with historical elevations. Groundwater level elevations in the deep groundwater monitoring wells, the have generally fluctuated over time with no distinctive trends in increasing or decreasing levels;
- In 2025, the Ontario Drinking Water Standard (ODWS) exceedances within the groundwater background and compliance monitoring wells were generally consistent with historical results with some exceptions. Concentrations of total hardness, total alkalinity, total dissolved solids (TDS), chloride, nitrate and nitrite as nitrogen, nitrate as nitrogen

© 2025 Pinchin Ltd.

and/or organic nitrogen were detected above their respective historical upper concentration limits in MW6D, MW7S/7D, MW9S/D, MW10S/D and/or MW12D. Furthermore, concentrations of chloride above the ODWS were detected above historical upper concentration limits within MW9S/D. Based on nitrogen cycle parameters and increased concentrations of select parameters identified in MW8S, it is Pinchin's opinion that water quality may be affected by historical sewage lagoons located east of the Site and situated hydraulically upgradient of MW8S. Overall, since the start of groundwater monitoring in 2008, concentrations of most parameters in the shallow and deep groundwater compliance monitoring wells have generally fluctuated or been consistent with no apparent increasing or decreasing trend;

- The concentrations of primary leachate indicator parameters chloride and boron within the shallow and deep groundwater compliance monitoring wells that are downgradient of the waste footprint (MW11S/D and12S/D) were in compliance with their respective trigger concentration for the Site. For the remainder of the leachate indicator parameters, there have also been no increasing concentration trends of note at the groundwater compliance monitoring wells downgradient of the waste footprint that would indicate an impending exceedance of a trigger mechanism for the Site as a result of a landfill leachate influence. No remedial action is warranted at this time;
- There was insufficient volume of groundwater for sample collection at compliance monitoring wells MW9D, MW10S, MW11S and MW12S in September 2025. Monitoring well MW10D had limited groundwater available for sampling in September 2025, resulting in limited parameter analyses;
- In 2025, the analytical results for at least three (3) parameters were greater than their respective trigger concentration within compliance monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D:
    - MW6S is located northwest of the waste footprint and situated crossgradient relative to the waste footprint. Based on groundwater flow direction and elevated concentrations measured in MW6S relative to monitoring wells situated closer to the waste footprint, it is inferred that elevated parameter concentrations are not attributed to the landfill and may indicate contribution of a separate source;
    - Monitoring well nest MW7S/D is located in the northeast corner of the Site, south of Frank St. and based on measured groundwater elevations, are upgradient of the landfill waste footprint. The concentrations that were greater than their respective trigger concentration are inferred to be not landfill related as they were detected at locations that based on the measured groundwater elevations, are upgradient of the waste footprint. Therefore, no remedial actions are warranted at this time to address the 2025 groundwater quality at these monitoring locations;

© 2025 Pinchin Ltd.

- Monitoring well nest MW9S/D is located along the east boundary of the Site and based on measured groundwater elevations, are also upgradient of the landfill. The analytical results for parameters that were greater than their respective trigger concentrations at MW9S/D were less than their respective historical upper limit concentrations with the exception chloride, total alkalinity, TDS and sodium in MW9S, and chloride, total hardness and TDS within MW9D. At MW9S, the concentration of chloride exhibited a generally increasing trend from May 2015 to May 2017 and has since exhibited a fluctuating gradually increasing trend. The concentration of chloride at MW9D has been gradually increasing since 2015, however the concentration is typically less than its concentration at monitoring well MW9S. As monitoring wells MW9S and MW9D were inferred to be upgradient of the landfill, the elevated analytical results for chloride may be attributed to the radial groundwater influence associated with the waste deposits of the landfill or another source. The chloride concentrations quantified at MW9S/D in 2025 are significantly higher than those observed at the source well MW4 (with the exception of measured chloride concentration within MW4 reported in September 2023). Historical chloride concentrations reported at MW9S/D suggest the contribution of another source;
- Monitoring well nest MW10S/D is located along the east boundary of the waste footprint and based on measured groundwater elevations, is located upgradient of the landfill. As such, the historical analytical results that were greater than their respective trigger concentration may not be solely attributed to landfill derived leachate effects. Historical and/or analytical results measured at MW10S/D, similar to MW9S/D analytical results, indicate that elevated concentrations of these parameters may be the result of another source of impacts, other than the landfill;
- The concentration of chloride within MW11S/D has exhibited a slightly increasing and fluctuating trend since May 2014, however, the concentration of chloride has remained in compliance with the respective trigger concentration for the Site. The concentration of chloride at MW11S/D is similar to that detected at internal assessment location MW5S/D, which is situated between the limit of waste and MW11S/D. Based on the chloride concentrations at MW5S/D and MW11S/D, the groundwater quality downgradient of the landfill may be influenced by the landfill, however, the noted chloride concentrations are at acceptable concentrations and have not unacceptably impacted the groundwater quality. Thus, no remedial action is warranted, at this time, to address the noted concentrations. The

© 2025 Pinchin Ltd.

concentrations of chloride at MW11S/D will continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring;

- Monitoring well nest MW12S/D is situated along the west boundary of the Site and downgradient of the landfill relative to inferred groundwater flow direction. Monitoring wells MW12S/D met the trigger mechanism for the Site in May 2025. Monitoring well MW12D exceeded the applicable trigger mechanism for the Site for TDS, nitrate and organic nitrogen in September 2025. Based on the location of MW12S/D, situated downgradient of the landfill, the groundwater quality downgradient of the landfill may be influence by the landfill; however, the elevated nitrogen cycle parameters reported within these wells, indicates that the MW12S/D well nest may be influenced by historical sewage lagoons. The concentrations exceeding the applicable standards at MW12S/D will continue to be evaluated to verify that a concentration trend of concern for these parameters is not occurring; and
- Based on the chloride and sodium concentrations noted at compliance monitoring wells MW11S/D and MW12S/D, as well as at internal assessment monitoring wells MW5S/D and MW13S/D, the groundwater quality downgradient of the landfill may be influenced by the landfill. However, the noted concentrations are at acceptable concentrations and have not unacceptably impacted the groundwater quality. At this time, no remedial action is warranted to address the noted concentrations.

- Upgradient monitoring well nest MW9S/D and cross-gradient monitoring well nest MW6S/D have quantified elevated analytical concentrations and are interpreted to be influenced by the radial groundwater flow associated with the waste deposits of the landfill or another source. To further investigate these potential impacts, the geochemical data for these groundwater monitoring wells were analysed for the major ion composition using tri-linear Piper Plots:
  - Background well nests MW8S/D and MW10S/D, source well MW4 and downgradient well nests MW11S/D and MW12S/D have also been analyzed for comparison. It is noted however that MW4, MW9D, MW10S, MW11S and MW12S did not have sufficient volume to collect a sample during the September 2025 event. It should also be noted that only a partial sample was collected at MW10D during the fall sampling event due to an insufficient volume of water and therefore, could not be included in the tri-linear piper plot for this monitoring event;

© 2025 Pinchin Ltd.

- For each well nest, the shallow and deep monitoring wells plotted in similar positions, indicating no significant differences in water types between the shallow and deep systems with the exception of well nest MW10, in which the shallow and deep monitoring wells plotted differently;
- In comparing the May 2025 and the September 2025 monitoring events, the positions on the piper plot diagrams did not demonstrate significant seasonal changes at each of the monitoring locations;
- In May 2025, all wells were projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW10S which is projected as a sodium bicarbonate type water;
- In September 2025, all wells were projected as calcium bicarbonate type waters, which is typical of shallow fresh groundwater, with the exception of MW9S which is projected as a calcium chloride type water;
- The plot of major ion chemistry for upgradient well nest of concern, MW9S and to a lesser extent MW9D, plot further away from the rest of the wells. Well nest MW9S/D is located directly downgradient of the lagoons. Given the piper plot positions, as well as the observed elevated concentrations of nitrogen cycle parameters currently and historically within these wells, it appears that wells MW9S/D is impacted by the upgradient historical sewage lagoons. It is noted that a sample could not be collected from MW9D during the fall sample event due to an insufficient volume of water. The other upgradient well nest of concern, MW10S/D, located directly within the historical sewage lagoons, indicated similar results to the MW9S/D nest suggesting that this location is also experiencing impacts. It is noted that complete samples could not be collected from MW10S and MW10D during the fall sampling event due to an insufficient volume of water;
- The plot of major ion chemistry for cross-gradient well nest of concern MW6S/D previously plotted towards the impacted wells (MW9S/D), demonstrating that impacts are also occurring at these wells. The impact was interpreted to potentially be related to the sewage lagoons as these wells are located downgradient from the lagoons and the other impacted wells; however, as the wells are located near the road, the impacts may also be related to road salt application and runoff. It is noted that the 2025 spring and fall piper plot results indicate that MW6S/D is plotted closer to the non-impacted wells. The position of MW6S/D should continue to be monitored to determine if impacts related to the sewage lagoons are occurring at this location;

© 2025 Pinchin Ltd.

- Based on the plot of major ion chemistry for background nest MW8S/D and downgradient nests MW11S/D and MW12S/D, these wells do not initially appear to be impacted. Based on the observed B-7 exceedances and nitrogen cycle parameters for monitoring wells MW8S/8D, MW11D and MW12D, it appears that these wells may be impacted by the sewage lagoons. It is therefore interpreted that the plume from the sewage lagoon may be sinking with distance and is not discharging to the adjacent downgradient surface water ditch system associated with the stormwater management system; and
- Based on the results and the observed B-7 exceedances, it is Pinchin's recommendation that trigger mechanism assessment at the Site incorporate the potential impacts related to historical sewage lagoons at monitoring wells MW6S/D, MW8S/8D, MW9S/9D, MW10S/D, MW11S/D and MW12S/12D. As certain impacts are inferred to be a result of co-mingled groundwater plumes, as opposed to being solely that of landfill derived leachate, no remedial actions are warranted at this time.

- For the 2025 semi-annual monitoring events, concentrations of VOC within the groundwater compliance monitoring wells were below their respective laboratory reportable detection limit (RDL) with the exception of toluene at MW9D in September 2025 and n-hexane within MW12D in May 2025. VOCs within compliance monitoring wells have not exhibited an apparent increasing or decreasing trend. Quantifiable concentrations were reported at monitoring wells positioned within the immediate vicinity of the landfill waste footprint (MW1, MW2, MW3D, MW5D and MW13S/D). No remedial action is warranted to address the 2025 VOC concentrations detected at the groundwater compliance monitoring wells;
- As noted in previous annual monitoring reports, the stormwater management pond (SWM Pond) was sampled during the spring of 2014, and there were two (2) trigger concentrations that were exceeded (phenols and total phosphorus). During the May and September 2025 semi-annual monitoring events, the outlet structure for the SWM Pond was being operated in a closed position due to the water quality results reported for the 7 May 2014 monitoring event. In 2025, no discharge was observed from the outlet in the May or September, and as such no sample was collected. The Municipality provided Pinchin with monthly analytical results for October 2024 through October 2025 for the SWM Pond. Of the analyzed parameters one or more trigger parameters (total un-ionized ammonia, total ammonia and/or phenols and/or boron) exceeded the applicable trigger limits for sampling event for each sampling event. Confirmation samples collected to date have not had all trigger parameters satisfied for three (3) consecutive sampling events and thus, the SWM Pond remains in a non-discharging state. Pending acceptable

© 2025 Pinchin Ltd.

chemical results for three (3) consecutive events, the outlet valve can be re-opened. It is the understanding of Pinchin that, as needed, the stormwater in the SWM Pond is pumped out by the Municipality and treated at the Mitchell Wastewater Treatment Facility;

- The 2018 RWDI Annual Monitoring Report indicated that a letter report (Stormwater Quality Monitoring and Evaluation Modifications, prepared by RWDI and dated March 4, 2016), which summarized proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site, was submitted to the MECP on March 23, 2016, for MECP review and approval of the proposed modifications. Within a Solid Non- Hazardous Waste Disposal Site Inspection Report for the Municipality's Mitchell Domestic Landfill, dated July 19, 2018, the MECP proposed that a meeting be held with the MECP and Municipality to discuss the surface water and stormwater quality at the Mitchell Domestic Landfill. The Municipality also wishes to discuss the stormwater quality at the Site during the proposed meeting. As of the date of this report the proposed meeting with the MECP is still pending; and
- The landfill gas monitoring results for 2025 are generally consistent with historical results at the Site. Landfill gas was not detected during the May or September 2025 semi-annual monitoring events. Historical results have indicated that landfill gas is being generated in the waste at the Site. Based on monitoring findings from the established monitoring network, landfill gas may be seasonally migrating beyond the waste footprint within the subsurface. The concentration of methane gas should continue to be monitored over subsequent monitoring events to evaluate the concentration trends over time. No remedial actions are warranted, at this time.

14.0 RECOMMENDATIONS

Based on the findings of the 2025 Monitoring Program, the following recommendations are provided for your 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. The analyte list should include the required parameters to facilitate the utilization of hydrochemical facies diagrams for inclusion in future reports to assist in the evaluation of landfill derived impacts versus those originating from other influences;
- Ongoing monitoring should be completed to verify that the constituent concentrations that were greater than their respective trigger concentrations in 2025 and historically at compliance monitoring wells MW6S/D, MW7S/D, MW9S/D, MW10S/D, MW11S/D and MW12S/D are not exhibiting an increasing trend of concern in the long-term. Within

© 2025 Pinchin Ltd.

MW6S/D and MW9S/D, the concentrations of chloride should be evaluated over subsequent monitoring events to assess the trends over time;

- Ongoing monitoring of compliance monitoring wells MW11S/D and MW12S/D, as well as internal assessment monitoring wells MW5S/D and MW13S/D, should be completed to evaluate these locations for trends of concern;
- Based on the results of the additional investigation using Piper Plots and observed B-7 exceedances, it is Pinchin's recommendation that trigger mechanism assessment at the Site incorporate the potential impacts related to historical sewage lagoons at monitoring wells MW6S/D, MW8S/8D, MW9S/9D, MW10S/D, MW11S/D and MW12S/12D;
- Ongoing monitoring of VOC constituents in the leachate at the Site should be completed to verify that the VOCs detected in the source and near-field wells are not exhibiting an increasing trend of concern over time. At this time, no remedial actions are warranted;
- As indicated in previous annual monitoring reports, if the outlet valve of the SWM Pond is to be re-opened, re-opening should not occur until sampling of the stormwater within the SWM Pond, for three (3) consecutive sampling events have confirmed acceptable water quality, pending approval of the aforementioned proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site. If required, to prevent off-Site discharge of water from the South SWM Pond, the stormwater in the South SWM Pond should be pumped out for treatment at the Mitchell Wastewater Treatment Facility;
- As indicated in previous annual monitoring reports, to prevent bypass of unacceptable water quality, with respect to the PWQO and/or Site-specific trigger concentrations, to the natural environment, it is recommended that the Municipality develop alternative means for pumping out the stormwater from the SWM Pond during wet conditions when access with a liquid hauler truck is limited. When the SWM Pond is being operated in a closed position due to unacceptable stormwater quality results and discharge over the sidewall of the SWM Pond is observed, the Municipality should report the discharge to the MECP's Spills Action Centre, per Condition 5.1 of the Waste ECA;
- Due to the minor limitations to the monitoring network to evaluate landfill gas migration in the vadose zone at the Site, if new structures are built on or nearby (< 100 m) to the Site in the future, the landfill gas monitoring program should be re-evaluated for its assessment effectiveness. Landfill gas should continue to be monitored at the Site as part of the annual monitoring program to assess for the presence and, if detected, concentrations of landfill gas over time. If the landfill gas concentrations beyond the waste footprint are confirmed during the next regularly scheduled monitoring event, then consideration should be given to the implementation of winter monitoring events (when the risk for gas migration is greatest); and

© 2025 Pinchin Ltd.

- To prevent unauthorized access, it is recommended that the front gate remain closed and locked when Municipality staff are not present at the Site, as well as during non-operational hours.

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 Mitchell Industrial 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.

© 2025 Pinchin Ltd.

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 9.1 of the Waste Disposal Site Environmental Compliance Approval Number A150202 for the Industrial 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 Ltd. 2019-2024. Annual Monitoring Report, Mitchell Industrial Landfill, Municipality of West Perth.
2. RWDI AIR Inc. 2018. Annual Monitoring Reports, Mitchell Industrial 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, Mitchell Industrial Landfill Site. File: MSO10830.61. December 2007.

© 2025 Pinchin Ltd.

TABLES

TABLE 1
ANNUAL MONITORING PROGRAM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Monitoring Locations				
Monitoring Group	***Monitoring Location ID***			***Total Number***
Leachate	MW4			1
Groundwater (GW)	MW1, MW2, MW3S, MW3D, MW5S, MW5D, MW6S, MW6D, MW7S, MW7D, MW8S, MW8D, MW9S, MW9D, MW10S, MW10D, MW11S, MW11D, MW12S, MW12D, MW13S and MW13D			22
Gas Probes (GP)	GP9, GP10S and GP10D			3
Stormwater	SWM Pond			1
Monitoring Locations				
Task	***Monitoring Locations***	***Field Indicator Parameters***	***Lab Analytical Parameters***	***Monitoring Frequency*** [1]
Liquid Levels	Leachate Wells, GW Wells & GPs	N/A	N/A	Semi-Annually
Combustible Gas Monitoring	Leachate Wells, GW Wells & GPs	Methane (CH_4)	N/A	Semi-Annually
Monitoring Well Purging	Leachate and GW Wells	N/A	N/A	Semi-Annually
Sample Collection	Leachate and GW Wells	FIP List[2]	LAP-GC List [4] & VOCs	Semi-Annually
	SWM Pond	FIP-SW List[3]	LAP-Storm List [5]	Semi-Annually
QA/QC Duplicate Sampling	One (1) GW Well	Equivalent to Original Sample	Equivalent to Original Sample	Semi-Annually
QA/QC Trip Blanks	One (1) Set of VOC Trip Blanks per Sample Shipment	N/A	VOCs	Semi-Annually
Site Inspection	Site	N/A	N/A	Semi-Annually

Notes: 1. Semi-annual monitoring tasks are completed in the Spring and Fall, typically in May and September.

2. Field Indicator Parameters (FIP): Temperature, pH, and Electrical Conductivity.

3. Field Indicator Parameters - Surface Water (FIP-SW): Temperature, pH, Electrical Conductivity, Dissolved Oxygen, and Turbidity.

4. 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, Organic Nitrogen, PO4, SO4, DOC, COD, Phenols, Dissolved Metals (Al, As, Ba, B, Cd, Ca, Cr, Cu, Fe, Pb, Mg, Mn, K, Se, Si, Na and Zn).

5. Lab Analytical Parameters - Surface Water (LAP-Storm): Total Hardness, pH, TDS, Alkalinity (Bicarbonate, Carbonate and Total), Total NH3, Unionized NH3, Br, Cl, F, NO3, NO2, NO3 + NO2, TKN, PO4, Total Phosphorus, SO4, DOC, COD, Phenols, Turbidity, Dissolved Al & Hg, Total Metals (Al, Ag, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mo, Ni, K and Zn).

6. Samples collected from the SWM Pond during the semi-annual monitoring events when runoff from rainfall causes discharge from the SWM Pond outlet.

7. VOCs denotes volatile organic compounds.

TABLE 2
MONITORING WELL CONSTRUCTION DETAILS
Mitchell Industrial Landfill
Frank Street, 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*	*Hydraulic Conductivity*	
							Hydraulic Conductivity (m/sec)	*Bouwer Rice (m/sec)*
MW1	343.04	343.81	0.69	8.50	4.57	Silt Till Sand Silty Sand	4.30E-08	
MW2	338.25	339.01	0.80	4.44	3.05	Silty Sand	5.00E-07	
MW3S	339.43	340.23	0.70	4.63	3.05	Topsoil Fill Silty Sand	1.80E-07	
MW3D	339.43	340.21	0.63	9.24	3.05	Silty Sand Sand	4.70E-08	
MW4	347.83	348.59	0.80	10.61	7.6	Topsoil Fill Waste Sandy Silt		
MW5S	335.42	336.35	0.94	4.82	3.05	Sandy Silt Sand & Gravel Sand		
MW5D	335.48	336.37	0.81	8.57	1.52	Sand Sand & Gravel	4.10E-07	3.90E-07
MW5D- replacement well	335.48	336.42	0.94	8.53	3.05	Sand Sand & Gravel		
MW6S	337.61	338.40	0.76	5.32	3.05	Silty Sand Sandy Silt	2.90E-08	2.20E-08
MW6D	337.56	338.52	0.93	10.55	1.52	Sand & Silt Sand		
MW7S	343.99	344.91	0.97	8.65	3.05	Silt Sand & Silt	5.90E-08	5.20E-06
MW7D	344.01	344.96	0.96	13.63	1.52	Sand & Silt	5.90E-10	2.10E-10
MW8S	342.67	343.44	0.75	5.15	3.05	Silty Clay Silty Sand Clayey Sandy Silt	7.50E-09	5.70E-09
MW8D	342.88	343.76	0.88	9.12	1.52	Silt Clayey Silt	1.90E-08	6.00E-06
MW9S	342.39	343.16	0.72	7.70	3.05	Silt & Sand	1.30E-09	1.10E-09
MW9D	342.32	343.21	0.79	12.27	1.52	Silt & Sand	Dry	Dry
MW10S	345.30	346.04	0.72	10.04	3.05	Silt Till Sand & Silt	Dry	Dry
MW10D	345.25	346.04	0.70	15.25	3.05	Silt Till	Dry	Dry
MW11S	333.92	334.88	0.83	4.61	3.05	Sand & Silt Silty Sand Sand	1.10E-07	8.30E-06
MW11D	333.89	334.81	0.89	7.26	1.52	Sand & Silt Silty Sand Sand		
MW12S	334.58	335.58	0.90	4.22	3.05	Sandy Silt Sand		
MW12D	334.58	335.33	0.71	8.44	1.52	Sand	3.20E-06	
MW13S	334.59	335.60	0.85	5.30	3.05	Gravelly Silt Sand	8.10E-05	
MW13D	334.63	335.61	0.98	9.04	1.52	Gravelly Silt Sand	3.40E-06	
GP9	342.37	343.19	0.82	2.30	1.52	Silt & Clay		
GP10S	345.27	346.29	1.02	3.08	1.52	Silt		
GP10D	345.27	346.29	1.02	6.13	1.52	Clay		

Notes: 1. mASL denotes metres above sea level.
2. mBGS denotes metres below ground level.
3. m/sec denotes metres per second.
4. Benchmark - The local datum used for surveying was related to geodetic elevations presented on Ontario Base Mapping using a factor of +248.790.
5. MW7S and MW7D were extended and recased in 2011 to accound for grade changed. The elevations were resurveyed in September 2011.
6. Blank denotes data not available.
7. N/A denotes not applicable.
7. Note: MW5D was reinstalled in October 2024.

TABLE 3
SUMMARY OF GROUNDWATER COMPLIANCE FOR THE SHALLOW FLOW SYSTEM - SPRING 2025
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	*Background Quality (Cb)*	*ODWS (Cr)*	*X*	*Guideline B-7 Criteria (Cm)*	*Background Well*	*Property Boundary Wells*						*Additional Wells*					
					MW8S	*MW6S*	*MW7S*	*MW9S*	*MW10S*	*MW11S*	*MW12S*	*MW1*	*MW2*	*MW3S*	*MW4*	*MW5S*	*MW13S*
					May-25	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*
General Chemistry																	
Total Hardness (as CaCO3)	539	100	0.5	540	508	**598**	**552**	**786**	228	329	420	482	622	410	648	536	571
Total Dissolved Solids	530	500	0.5	530	547	**709**	**562**	**1240**	**830**	480	484	502	716	447	692	756	711
Alkalinity, Total (as CaCO3)	491	500	0.5	501	502	**516**	**19000**	**1180**	**1070**	278	387	2800	651	400	667	538	574
Chloride	2.9	250	0.5	126	2.47	108	55.9	**367**	11.4	83.1	46.4	9.83	6.76	4.07	55.4	62.8	54.1
Fluoride	0.057	1.5	0.25	0.42	0.051	<0.100	0.072	<0.100	**0.497**	0.062	0.042	0.097	<0.100	0.124	<0.100	<0.100	<0.100
Nitrate-N	4.35	10	0.25	5.6	5.05	<0.100	0.852	0.367	**18.4**	0.12	2.9	0.034	2.63	<0.020	<0.100	10.1	1.83
Nitrite-N	0.026	1	0.25	0.27	<0.010	<0.050	<0.020	<0.050	<0.020	<0.010	<0.010	<0.010	<0.050	<0.010	<0.050	0.352	<0.050
Organic Nitrogen	0.61	0.15	0.5	0.61	0.698	0.153	0.307	0.323	**2.86**	0.254	0.489	0.263	0.522	4.89	7.74	0.898	0.870
Sulphate	22.7	500	0.5	261	26.1	18.2	17.9	30.3	92.3	23.8	15.7	26.9	15.9	4.44	3.67	27.2	45.9
Dissolved Organic Carbon	4.2	5	0.5	4.6	3.79	2.28	2.70	1.94	**7.42**	1.53	1.42	2.05	3.64	10.3	14.1	4.80	7.57
Aluminum	0.0092	0.1	0.5	0.054	<0.0010	<0.0010	<0.0010	0.0022	0.0330	0.0016	0.0085	0.0016	0.0037	0.0122	0.0028	0.0018	0.0013
Arsenic	0.001	0.01	0.25	0.0030	0.00022	0.00016	0.00016	0.00041	0.00295	0.00012	0.00014	0.00019	0.00019	0.00118	0.00059	0.00037	0.00042
Barium	0.054	1	0.25	0.29	0.0478	0.0630	0.1180	0.1550	0.0161	0.0603	0.0251	0.0656	0.0666	0.0421	0.0957	0.129	0.135
Boron	0.048	5	0.25	1.3	0.034	0.033	0.051	0.016	0.048	<0.010	0.012	0.018	0.036	<0.100	0.055	0.025	0.068
Cadmium	0.00010	0.005	0.25	0.0014	0.0000106	<0.0000050	<0.0000050	<0.0000050	0.0000123	0.0000067	0.0000092	0.0000058	0.0000083	<0.0000500	0.0000283	0.0000522	0.000113
Chromium	0.0012	0.05	0.25	0.013	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00064	<0.00050	<0.00050	<0.00050	<0.00500	<0.00050	<0.00050	<0.00050
Copper	0.0018	1	0.5	0.50	0.00117	0.00061	0.00129	0.00090	0.00868	0.00093	0.00045	0.00043	0.00075	<0.00200	0.00082	0.00195	0.00304
Iron	0.0181	0.3	0.5	0.16	<0.010	<0.010	<0.010	0.052	0.035	<0.010	<0.010	<0.010	<0.010	1.49	0.750	0.054	<0.010
Lead	0.00031	0.01	0.25	0.0027	<0.000050	<0.000050	<0.000050	<0.000050	0.000131	<0.000050	<0.000050	<0.000050	<0.000050	<0.000500	0.000113	<0.000050	<0.000050
Manganese	0.0043	0.05	0.5	0.03	0.00017	0.00389	**0.322**	**0.117**	0.00206	0.00072	0.00040	0.170	0.00125	0.474	2.54	1.46	0.512
Mercury	0.00002	0.001	0.25	0.00026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Selenium	0.00066	0.05	0.25	0.0130	0.000378	<0.000050	0.000068	0.000086	0.000331	<0.000050	0.000129	0.000108	0.000112	<0.000500	0.000297	0.000112	0.000202
Sodium	6.3	200	0.5	103	5.32	61.8	54.3	**105**	**136**	47.5	26.4	12.1	11.2	8.27	36.9	55.7	43.2
Zinc	0.0032	5	0.5	2.5	<0.0010	<0.0010	<0.0010	0.0022	0.0029	0.0013	<0.0010	<0.0010	<0.0010	<0.0100	0.0035	0.001	0.0015

Notes:
1. Background quality is based on the geometric mean of the historical results for monitoring well MW8S.
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. Dash (-) denotes data not available.
13. Unless otherwise stated, all units are reported in mg/L.

TABLE 4
SUMMARY OF GROUNDWATER COMPLIANCE FOR THE SHALLOW FLOW SYSTEM - FALL 2025
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Background Quality (Cb)	ODWS (Cr)	X	Guideline B-7 Criteria (Cm)	Background Well	Property Boundary Wells						Additional Wells					
					MW8S	MW6S	MW7S	MW9S	MW10S	MW11S	MW12S	MW1	MW2	MW3S	MW4	MW5S	MW13S
					Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25	Sep-25
General Chemistry																	
Total Hardness (as CaCO3)	539	100	0.5	540	594	**580**	**581**	**734**	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	505	684	553	Insufficient volume for sample collection.	485	576
Total Dissolved Solids	530	500	0.5	530	605	**706**	**666**	**1420**				521	797	651		690	786
Alkalinity, Total (as CaCO3)	491	500	0.5	501	506	477	**540**	418				396	595	539		446	510
Chloride	2.9	250	0.5	126	3.49	83.5	46.2	**361**				15.7	9.41	10.4		87.6	64.4
Fluoride	0.057	1.5	0.25	0.42	<0.100	<0.100	<0.100	<0.100				0.088	<0.100	<0.100		<0.100	0.107
Nitrate-N	4.35	10	0.25	5.6	3.53	<0.100	0.893	0.554				<0.020	2.11	<0.100		0.444	0.655
Nitrite-N	0.026	1	0.25	0.27	<0.050	<0.050	<0.050	<0.050				<0.010	<0.050	<0.050		<0.050	<0.050
Organic Nitrogen	0.61	0.15	0.5	0.61	0.906	0.232	0.344	0.504				0.526	0.687	4.30		0.450	0.897
Sulphate	22.7	500	0.5	261	24.3	15.9	16.9	18.7				25.0	14.6	32.9		23.2	41.4
Dissolved Organic Carbon	4.2	5	0.5	4.6	3.20	2.05	2.42	1.88				2.45	3.90	15.1		5.41	6.68
Aluminum	0.0092	0.1	0.5	0.054	0.0625	<0.0010	0.0071	0.0025				0.0026	0.0968	<0.0100		0.0026	0.0086
Arsenic	0.001	0.01	0.25	0.0030	0.00030	0.00019	0.00021	0.00019				0.00015	0.00023	0.00481		0.00032	0.00027
Barium	0.054	1	0.25	0.29	0.0662	0.0645	0.114	0.149				0.0513	0.0731	0.0658		0.123	0.113
Boron	0.048	5	0.25	1.3	0.047	0.050	0.053	0.025				0.026	0.048	0.144		0.052	0.079
Cadmium	0.00010	0.005	0.25	0.0014	0.0000121	<0.0000050	0.0000053	0.0000105				0.0000098	0.0000077	<0.0000500		0.0000486	0.0000151
Chromium	0.0012	0.05	0.25	0.013	0.00082	<0.00050	<0.00050	<0.00050				<0.00050	<0.00050	<0.00500		<0.00050	<0.00050
Copper	0.0018	1	0.5	0.50	0.00184	0.00076	0.00124	0.00112				0.00191	0.00119	<0.00200		0.00313	0.00228
Iron	0.0181	0.3	0.5	0.16	0.051	<0.010	<0.010	<0.010				<0.010	0.076	8.09		0.014	<0.010
Lead	0.00031	0.01	0.25	0.0027	0.000074	<0.000050	<0.000050	<0.000050				<0.000050	0.000080	<0.000500		<0.000050	<0.000050
Manganese	0.0043	0.05	0.5	0.03	0.00448	0.00116	**0.393**	**0.0318**				0.308	0.00952	0.801		1.16	0.0244
Mercury	0.00002	0.001	0.25	0.00026	<0.0000050	<0.0000050	<0.0000050	<0.0000050				<0.0000050	<0.0000050	<0.0000050		<0.0000050	<0.0000050
Selenium	0.00066	0.05	0.25	0.0130	0.000282	0.000052	0.000061	0.000072				<0.000050	0.000107	<0.000500		0.000118	0.000150
Sodium	6.3	200	0.5	103	7.22	71.2	54.7	**111**				9.75	13.8	12.6		80.6	52.3
Zinc	0.0032	5	0.5	2.5	0.0021	0.0022	0.0012	0.0028				0.0015	0.0021	<0.0100		0.0026	0.0019

Notes:
1. Background quality is based on the geometric mean of the historical results for monitoring well MW8S.
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. Dash (-) denotes data not available.
13. Unless otherwise stated, all units are reported in mg/L.

TABLE 5

SUMMARY OF GROUNDWATER COMPLIANCE FOR THE DEEP FLOW SYSTEM - SPRING 2025

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	*Background Quality (Cb)*	*ODWS (Cr)*	*X*	*Guideline B-7 Criteria (Cm)*	*Background Well*	*Property Boundary Wells*						*Additional Wells*		
					MW8D	*MW6D*	*MW7D*	*MW9D*	*MW10D*	*MW11D*	*MW12D*	*MW3D*	*MW5D*	*MW13D*
					May-25	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*	*May-25*
General Chemistry														
Total Hardness (as CaCO3)	580	100	0.5	580	669	523	550	**696**	**661**	383	456	965	526	434
Total Dissolved Solids	653	500	0.5	653	648	616	**661**	**1020**	**940**	482	554	1560	874	631
Alkalinity, Total (as CaCO3)	593	500	0.5	593	515	433	**1210**	491	**811**	370	398	2570	3360	438
Chloride	8.1	250	0.5	129	8.01	97.4	40.6	**295**	38.1	65.9	42.6	57.6	102	104
Fluoride	0.064	1.5	0.25	0.42	<0.100	<0.100	**0.600**	**0.654**	**1.12**	0.082	0.025	<0.100	0.107	<0.100
Nitrate-N	0.71	10	0.25	3.0	0.584	<0.100	0.383	0.294	0.108	**3.05**	2.41	<0.100	5.50	0.306
Nitrite-N	0.028	1	0.25	0.27	<0.050	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.050	<0.050	<0.050
Organic Nitrogen	0.32	0.15	0.5	0.32	2.49	0.102	0.297	**0.806**	**0.478**	**0.474**	**0.629**	17.9	25.9	1.06
Sulphate	30.5	500	0.5	265	22.0	29.0	42.7	36.4	**313**	22.6	14.8	2.32	32.0	33.0
Dissolved Organic Carbon	3.2	5	0.5	4.1	2.76	1.29	2.04	2.86	1.04	1.42	1.30	31.3	4.96	4.13
Aluminum	0.0048	0.1	0.5	0.052	0.101	<0.0010	0.0035	0.0225	0.0014	0.0015	0.0012	<0.0100	0.0151	0.0159
Arsenic	0.0004	0.01	0.25	0.0028	0.00031	0.00013	0.00019	0.00033	0.00029	0.00016	0.00011	0.0132	0.00050	0.00027
Barium	0.091	1	0.25	0.32	0.108	0.0688	0.142	0.180	0.0660	0.0366	0.0328	0.246	0.104	0.110
Boron	0.051	5	0.25	1.3	0.045	0.020	0.042	0.037	0.061	0.016	0.020	0.807	0.032	0.032
Cadmium	0.00008	0.005	0.25	0.0013	0.0000094	0.0000184	<0.0000050	<0.0000050	0.0000083	0.0000060	<0.0000050	<0.0000500	0.0000113	0.0000097
Chromium	0.0010	0.05	0.25	0.013	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00078	<0.00500	<0.00050	<0.00050
Copper	0.0013	1	0.5	0.50	0.00110	0.00045	0.00040	0.00064	0.00069	0.00068	0.00190	<0.00200	0.00192	0.00245
Iron	0.023	0.3	0.5	0.16	0.325	<0.010	0.119	0.033	<0.010	<0.010	0.033	25.5	0.036	0.082
Lead	0.00025	0.01	0.25	0.0027	0.000367	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000500	0.000060	<0.000050
Manganese	0.07	0.05	0.5	0.07	0.114	0.0354	0.0431	0.00268	0.00284	0.00037	0.00043	0.612	0.949	0.0846
Mercury	0.000020	0.001	0.25	0.00026	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Selenium	0.00035	0.05	0.25	0.0128	0.000051	<0.000050	<0.000050	0.000106	0.00242	0.000320	0.000060	<0.000500	0.000074	0.000120
Sodium	26.8	200	0.5	113	14.3	37.2	81.5	103	29.8	40.3	31.8	105	68.5	66.9
Zinc	0.008	5	0.5	2.5	0.0043	0.0026	0.0025	0.0063	0.0014	<0.0010	0.0020	<0.0100	0.0017	0.0044

Notes:
1. Background quality is based on the geometric mean of the historical results for monitoring well MW8D.
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. Dash (-) denotes data not available.
13. Unless otherwise stated, all units are reported in mg/L.

TABLE 6

SUMMARY OF GROUNDWATER COMPLIANCE FOR THE DEEP FLOW SYSTEM - FALL 2025

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	*Background Quality (Cb)*	*ODWS (Cr)*	*X*	*Guideline B-7 Criteria (Cm)*	*Background Well*	*Property Boundary Wells*						*Additional Wells*		
					MW8D	*MW6D*	*MW7D*	*MW9D*	*MW10D*	*MW11D*	*MW12D*	*MW3D*	*MW5D*	*MW13D*
					Sep-25	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*	*Sep-25*
General Chemistry														
Total Hardness (as CaCO3)	580	100	0.5	580	656	552	**584**		-	337	480	894	565	628
Total Dissolved Solids	653	500	0.5	653	648	650	**982**		-	424	**802**	1560	751	676
Alkalinity, Total (as CaCO3)	593	500	0.5	593	518	413	**9000**		525	266	492	1540	513	414
Chloride	8.1	250	0.5	129	8.03	93.3	41.0		39.9	48.6	42.2	71.9	68.6	90.1
Fluoride	0.064	1.5	0.25	0.42	<0.100	<0.100	**0.583**		-	0.110	0.030	<0.100	<0.100	<0.100
Nitrate-N	0.71	10	0.25	3.0	0.993	<0.100	0.163		-	**5.67**	**4.12**	<0.100	2.72	0.318
Nitrite-N	0.028	1	0.25	0.27	<0.050	<0.050	<0.050		-	<0.010	<0.010	<0.050	<0.050	<0.050
Organic Nitrogen	0.32	0.15	0.5	0.32	0.376	0.124	**1.36**		-	**0.500**	**0.457**	6.80	1.05	0.506
Sulphate	30.5	500	0.5	265	20.3	26.0	41.1		-	17.8	14.1	2.34	27.8	28.0
Dissolved Organic Carbon	3.2	5	0.5	4.1	2.45	1.07	1.95		-	1.55	0.88	33.9	6.03	5.77
Aluminum	0.0048	0.1	0.5	0.052	0.0028	<0.0010	0.0028	Insufficient volume for sample collection.	0.0014	<0.0010	0.0373	0.114	0.0354	2.86
Arsenic	0.0004	0.01	0.25	0.0028	0.00021	0.00013	0.00015		0.00028	0.00011	<0.00010	0.00461	0.00027	0.00163
Barium	0.091	1	0.25	0.32	0.113	0.0704	0.151		0.0544	0.0311	0.0279	0.134	0.124	0.132
Boron	0.051	5	0.25	1.3	0.048	0.025	0.037		0.064	0.012	0.019	0.853	0.056	0.035
Cadmium	0.00008	0.005	0.25	0.0013	0.0000053	0.0000146	<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000500	0.0000146	0.0000877
Chromium	0.0010	0.05	0.25	0.013	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	0.00084	<0.00500	<0.00050	0.00565
Copper	0.0013	1	0.5	0.50	0.00101	0.00051	0.00099		0.00093	0.00080	0.00051	<0.00200	0.00321	0.00923
Iron	0.023	0.3	0.5	0.16	<0.010	0.011	<0.010		<0.010	<0.010	0.030	7.60	0.032	4.70
Lead	0.00025	0.01	0.25	0.0027	<0.000050	<0.000050	<0.000050		<0.000050	<0.000050	<0.000050	<0.000500	0.000053	0.00306
Manganese	0.07	0.05	0.5	0.07	0.0872	0.0571	0.0205		0.00112	0.00043	0.00182	0.232	0.691	1.91
Mercury	0.000020	0.001	0.25	0.00026	<0.0000050	<0.0000050	<0.0000050		-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000053
Selenium	0.00035	0.05	0.25	0.0128	0.000063	<0.000050	<0.000050		0.00218	0.000255	0.000118	<0.000500	0.000119	0.000097
Sodium	26.8	200	0.5	113	15.2	40.6	79.8		30.0	36.3	24.3	116	59.9	65.1
Zinc	0.008	5	0.5	2.5	0.0040	0.0022	0.0048		<0.0010	<0.0010	0.0012	<0.0100	0.0014	0.0202

Notes:
1. Background quality is based on the geometric mean of the historical results for monitoring well MW8D.
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. Dash (-) denotes data not available.
13. Unless otherwise stated, all units are reported in mg/L.

TABLE 7
FIELD DATA SUMMARY - SPRING 2025
Mitchell Industrial Landfill
Frank Street, 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		
MW1	0.0	6.97	898	13.2	Yes	Yes	No observed deficiencies.	None
MW2	0.0	6.43	1043	9.2	Yes	Yes	No observed deficiencies.	None
MW3S	0.0	6.99	738	14.3	Yes	Yes	Protective casing cap is broken at hinge.	None
MW3D	0.0	6.37	2558	11.8	Yes	Yes	No observed deficiencies.	None
MW4	0.0	7.09	1250	13.4	Yes	Yes	No observed deficiencies.	None
MW5S	0.0	6.96	1063	10.5	Yes	Yes	No observed deficiencies.	DUP-08
MW5D	0.0	6.75	1230	11.4	Yes	Yes	No observed deficiencies.	None
MW6S	0.0	7.09	1301	11.5	Yes	Yes	No observed deficiencies.	None
MW6D	0.0	6.69	1081	11.6	Yes	Yes	No observed deficiencies.	None
MW7S	0.0	7.08	1155	10.9	Yes	Yes	No observed deficiencies.	None
MW7D	0.0	6.89	1197	12.4	Yes	Yes	No observed deficiencies.	None
MW8S	0.0	6.62	900	9.8	Yes	Yes	No observed deficiencies.	DUP-09
MW8D	0.0	6.91	1121	14.7	Yes	Yes	No observed deficiencies.	None
MW9S	0.0	6.67	1826	11.1	Yes	Yes	No observed deficiencies.	None
MW9D	0.0	7.14	1701	14.4	Yes	Yes	No observed deficiencies.	None
MW10S	0.0	7.44	1023	14.2	Yes	Yes	No observed deficiencies.	None
MW10D	0.0	7.03	1218	16.8	Yes	Yes	No observed deficiencies.	None
MW11S	0.0	6.41	860	10.7	Yes	Yes	No observed deficiencies.	None
MW11D	0.0	7.00	813	10.2	Yes	Yes	No observed deficiencies.	None
MW12S	0.0	7.02	887	14.6	Yes	Yes	No observed deficiencies.	None
MW12D	0.0	6.71	897	9.7	Yes	Yes	No observed deficiencies.	None
MW13S	0.0	6.48	1216	8.8	Yes	Yes	No observed deficiencies.	None
MW13D	0.0	6.96	1120	13.9	Yes	Yes	No observed deficiencies.	None
GP9	0.0	-	-	-	N/A	N/A	No observed deficiencies.	None
GP10S	0.0	-	-		N/A	N/A	No observed deficiencies.	None
GP10D	0.0	-	-	-	N/A	N/A	No observed deficiencies.	None

Monitoring Location	Location Description	Water Measurements					Analytical Chemistry		Flow (L/s)	Comments
		pH	Conductivity (µS/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	General Chemistry	VOCs		
SWM Pond	SWM Pond west of fill area near MW5	N/A	N/A	N/A	N/A	N/A	Yes	No	N/A	Water in pond but not overflowing and no flow from the outlet.

Notes: 1. CH_4 denotes methane gas.
2. Methane gas reading are expressed as percent lower explosive limit.
3. pH denotes pH units.
4. µS/cm denotes microsiemens per centimetre.
5. VOCs denotes volatile organic compounds.
6. mg/L denotes milligrams per litre.
7. NTU denotes nephelometric turbidity units.
8. L/s denotes litres per second.
9. N/A denotes not applicable.
10. Dash (-) denotes data not available.

TABLE 8
FIELD DATA SUMMARY - Fall 2025
Mitchell Industrial Landfill
Frank Street, 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		
MW1	0.00	7.21	891	12.00	Yes	Yes	No observed deficiencies.	None
MW2	0.00	6.51	983	14.20	Yes	Yes	No observed deficiencies.	DUP-105
MW3S	0.00	6.39	881	14.10	Yes	Yes	Broken hinge and fallen tree restricting well access.	None
MW3D	0.00	6.50	2262	12.20	Yes	Yes	No observed deficiencies.	None
MW4	0.00	6.96	1014	20.50	Yes	Yes	No observed deficiencies.	None
MW5S	0.00	6.75	978	14.20	Yes	Yes	No observed deficiencies.	None
MW5D	-	-	-	-	No	No	No observed deficiencies.	None
MW6S	0.00	6.57	1045	15.60	Yes	Yes	No observed deficiencies.	None
MW6D	0.00	6.87	863	13.30	Yes	Yes	No observed deficiencies.	None
MW7S	0.00	6.71	1008	12.70	Yes	Yes	No observed deficiencies.	None
MW7D	0.00	7.34	1209	12.00	Yes	Yes	No observed deficiencies.	None
MW8S	0.00	6.61	875	13.70	Yes	Yes	No observed deficiencies.	None
MW8D	0.50	6.88	1080	10.90	Yes	Yes	No observed deficiencies.	None
MW9S	0.00	6.53	1593	13.00	Yes	Yes	No observed deficiencies.	None
MW9D	0.00	7.24	1605	14.40	Yes	Yes	No observed deficiencies.	None
MW10S	0.00	-	-	-	Yes	Yes	No observed deficiencies.	Dry
MW10D	0.00	-	-	-	No	No	No observed deficiencies.	Dry
MW11S	0.00	6.96	799	16.60	Yes	Yes	No observed deficiencies.	None
MW11D	0.00	7.36	763	11.10	Yes	Yes	No observed deficiencies.	DUP-106
MW12S	0.00	7.19	958	18.90	Yes	Yes	No observed deficiencies.	None
MW12D	0.00	6.88	762	11.20	Yes	Yes	No observed deficiencies.	None
MW13S	0.00	6.88	1044	11.30	Yes	Yes	No observed deficiencies.	None
MW13D	0.00	6.80	880	10.70	Yes	Yes	No observed deficiencies.	None
GP9	0.00	-	-	-	N/A	N/A	No observed deficiencies.	None
GP10S	0.00	-	-	-	N/A	N/A	No observed deficiencies.	None
GP10D	0.00	-	-	-	N/A	N/A	No observed deficiencies.	None

Monitoring Location	Location Description	Water Measurements					Analytical Chemistry		Flow (L/s)	Comments
		pH	Conductivity (µS/cm)	Temperature (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	General Chemistry	VOCs		
SWM Pond	SWM Pond west of fill area near MW5	NM	NM	NM	NM	NM	No	No	N/A	Water in pond but not overflowing and no flow from the outlet.

Notes: 1. CH_4 denotes methane gas.
2. Methane gas reading are expressed as percent lower explosive limit.
3. pH denotes pH units.
4. µS/cm denotes microsiemens per centimetre.
5. VOCs denotes volatile organic compounds.
6. mg/L denotes milligrams per litre.
7. NTU denotes nephelometric turbidity units.
8. L/s denotes litres per second.
9. N/A denotes not applicable.
10. Dash (-) denotes data not available.

TABLE 9
SITE FEATURE GPS COORDINATES
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Site Feature Name	*UTM Coordinates*	
	Easting	Northing
Front Gate	483804	4811728
MW1	483684	4811504
MW2	483575	4811446
MW3S	483555	4811546
MW3D	483554	4811543
MW4	483605	4811463
MW5S	483512	4811613
MW5D	483513	4811611
MW6S	483631	4811787
MW6D	483632	4811789
MW7S	483804	4811703
MW7D	483806	4811706
MW8S	483632	4811413
MW8D	483634	4811414
MW9S	483708	4811553
MW9D	483709	4811555
MW10S	483771	4811494
MW10D	483769	4811491
MW11S	483477	4811643
MW11D	483475	4811645
MW12S	483424	4811558
MW12D	483426	4811557
MW13S	483488	4811545
MW13D	483489	4811543
GP9	483707	4811551
GP10S/D	483773	4811496

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).

TABLE 10
GROUNDWATER IONIC BALANCE AND PIPER PLOT DATA - SPRING
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Raw Data (mg/L)	Deep																													
	MW6D						MW8D						MW9D					MW10D				MW11D					MW12D					
	May-20	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-25*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*
Ca	126	126	132	126	125	136	166	170	156	165	160	182	147	137	140	143	168	121	128	124	131	112	108	104	106	114	118	122	121	118	121	136
Mg	44.1	46.8	42.8	47.2	43.3	44.6	48.1	49.1	47.4	48.0	51.3	52.1	60.3	56.3	59.9	59.9	67.2	73.2	77.7	78.5	81.0	24.2	25.4	25.3	24.7	23.8	24.7	24.7	26.4	27.6	26.7	28.2
Na	25.2	23.7	35.4	29.7	44.6	37.2	20	19.1	15.4	6.88	15.2	14.3	110	97.2	108	97.4	103	32.7	31.3	29.1	29.8	27.9	35.6	39.9	37.5	40.3	23.2	25.2	28.6	29.6	26.6	31.8
K	1.11	1.11	1.27	1.14	1.29	1.22	2.49	2.32	2.07	2.13	2.32	2.25	2.92	2.88	3.48	3.88	3.94	4.47	4.88	4.79	4.90	1.65	1.68	2.02	1.90	1.89	0.692	0.725	0.756	0.763	0.801	0.932
Cl	94.1	121	107	115	87.5	97.4	8.9	12.7	13.6	13.2	9.48	8.01	229	257	246	266	295	38.0	37.5	40.9	38.1	48.9	43.9	66.0	56.5	65.9	30.6	44.2	34.1	34.4	44.1	42.6
SO4	36.9	38.0	32.0	32.3	27.3	29.0	21.5	23.1	23.2	27.4	22.3	22.0	42.5	40.8	32	34.6	36.4	286	345.0	340.0	313	17.3	18.2	18.7	20.4	22.6	15.0	15.7	14.2	12.6	11.6	14.8
ALK	441	382	461	359	432	433	632	575	629	538	686	515	455	420	630	676	491	372	406	344	811	331	402	341	410	370	462	358	469	511	444	398
pH	7.44	7.66	7.46	7.69	7.53	7.56	7.07	7.23	7.27	7.56	7.21	7.4	7.64	6.23	7.84	7.61	7.52	7.71	7.98	7.88	7.95	7.75	7.51	7.76	7.57	7.74	7.5	7.58	7.30	7.69	7.48	7.54
Ion Balance and Piper Plot (%)																																
Cations:	11.04	11.20	11.68	11.49	11.77	12.11	13.18	13.41	12.41	12.54	12.93	14.05	17.16	15.77	16.70	16.40	18.49	13.60	14.27	14.04	14.62	8.84	9.07	9.06	9.00	9.45	8.95	9.24	9.47	9.47	9.41	10.51
Anions:	12.23	11.84	12.90	11.09	11.67	12.00	13.33	12.33	13.44	11.69	14.44	10.97	16.44	16.49	20.19	21.73	18.89	14.46	16.35	15.11	23.80	8.35	9.65	9.06	10.21	9.72	10.41	8.73	10.63	11.44	10.36	9.46
CBE (%):	-5.13	-2.78	-4.94	1.78	0.45	0.42	-0.58	4.21	-3.98	3.48	-5.53	12.28	2.14	-2.23	-9.46	-13.98	-1.06	-3.07	-6.81	-3.67	-23.87	2.81	-3.09	-0.03	-6.29	-1.43	-7.54	2.83	-5.75	-9.45	-4.78	5.26
Mg:	32.87	34.39	30.15	33.80	30.26	30.32	30.04	30.12	31.44	31.51	32.66	30.52	28.92	29.38	29.51	30.05	29.90	44.30	44.81	46.02	45.58	22.54	23.04	22.98	22.58	20.73	22.72	22.01	22.93	23.99	23.34	22.07
Ca:	56.95	56.15	56.39	54.71	52.98	56.06	62.87	63.24	62.74	65.67	61.77	64.65	42.75	43.35	41.83	43.51	45.33	44.40	44.77	44.08	44.70	63.25	59.41	57.29	58.76	60.21	65.81	65.92	63.73	62.20	64.15	64.55
Na + K	10.19	9.46	13.46	11.50	16.76	13.62	7.09	6.64	5.83	2.82	5.57	4.84	28.32	27.28	28.66	26.44	24.77	11.30	10.42	9.89	9.72	14.21	17.55	19.73	18.66	19.07	11.48	12.07	13.34	13.81	12.51	13.38
Cl:	21.70	28.84	23.41	29.25	21.15	22.89	1.88	2.91	2.86	3.18	1.85	2.06	39.30	43.96	34.36	34.53	44.05	7.41	6.47	7.64	4.52	16.51	12.83	20.54	15.61	19.12	8.29	14.29	9.05	8.48	12.01	12.70
SO4:	6.28	6.68	5.17	6.06	4.87	5.03	3.36	3.90	3.60	4.88	3.22	4.17	5.38	5.15	3.30	3.31	4.01	41.18	43.92	46.86	27.38	4.31	3.93	4.30	4.16	4.84	3.00	3.75	2.78	2.29	2.33	3.26
HCO3 + CO3:	72.02	64.48	71.43	64.68	73.98	72.08	94.76	93.19	93.55	91.94	94.93	93.77	55.31	50.89	62.34	62.16	51.94	51.41	49.61	45.50	68.10	79.17	83.24	75.17	80.23	76.04	88.70	81.97	88.17	89.23	85.66	84.04

Note: As a result of occasional inadequate groundwater samplinbg volume, select monitoring wells are not included in the Piper Plots during these dry monitoring events.

TABLE 11
GROUNDWATER IONIC BALANCE AND PIPER PLOT DATA - SPRING
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Raw Data (mg/L)	Shallow																																	
	MW4						MW6S						MW8S						MW9S						MW10S		MW11S					MW12S				
	May-20	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-23*	*May-25*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*	*May-20*	*May-21*	*May-22*	*May-23*	*May-24*	*May-25*
Ca	167	173	154	169	149	172	197	191	162	160	152	176	166	172	158	166	158	156	215	212	188	197	209	232	32.8	53.7	114	95	80.1	87.8	103	133	127	116	118	116	129
Mg	52.3	51.2	45.4	49.3	46.8	53.2	48.3	45.3	38.6	42.6	42.2	38.5	30.1	28.4	28.0	30.5	31.0	28.8	44.7	44.9	41.9	43.4	50.6	50.1	17.8	22.8	19.7	16.0	15.9	15.6	17.4	23.5	24.3	23.4	27.6	22.9	23.7
Na	45.2	39.6	31.4	39.7	28.2	36.9	46.8	47.0	54.5	59.0	63.3	61.8	7.25	5.82	5.21	5.60	5.69	5.32	81.9	83.9	78.2	84.3	101	105	118.0	136	29.2	44.6	54	38.8	47.5	15	29.2	19.4	29.6	25.1	26.4
K	3.31	3.39	4.09	4.77	3.39	2.96	0.936	0.934	0.874	0.930	0.949	0.954	1.04	0.892	0.824	0.902	0.846	0.808	1.58	1.54	1.34	1.54	1.66	1.58	2.18	3.01	15.80	15.60	13.4	15.5	16.2	0.701	0.427	0.453	0.763	0.4	0.267
Cl	65.5	62.7	26.1	47.0	24.7	55.4	130	159	117	125	92.3	108	2.82	2.14	2.19	2.18	1.82	2.47	276	286	273	306	336	367	6.14	11.4	46.50	84.20	79.7	52.3	83.1	17.5	41.80	24.40	34.4	33.1	46.4
SO4	3.50	6.60	0.62	3.51	1.54	3.67	35.9	30.2	20.7	19.1	18.2	18.2	25.5	29.8	21.3	23.7	21.8	26.1	25.2	25.0	22.5	20.0	20.0	30.3	92.0	92.3	19.4	18.1	20.9	17.4	23.8	9.96	11.6	12.7	12.6	10.1	15.7
ALK	656	633	706	673	656	667	545	566	618	590	1260	516	489	465	540	611	554	502	469	456	497	652	520	1180	475	1070	355	304	279	331	278	438	392	380	511	417	387
pH	7.01	7.11	7.45	7.65	7.22	7.47	7.25	7.44	7.30	7.37	7.58	7.34	7.14	7.15	7.48	7.61	7.21	7.44	7.11	7.33	7.31	7.58	7.34	7.47	8.53	8.29	7.78	7.52	7.95	7.84	7.76	7.42	7.58	7.42	7.69	7.39	7.6
Ion Balance and Piper Plot (%)																																					
Cations:	14.69	14.66	12.89	14.34	12.60	14.64	15.86	15.33	13.65	14.08	13.84	14.66	11.10	11.20	10.44	11.06	10.70	10.41	18.01	17.96	16.27	17.11	19.03	20.31	8.29	10.55	8.98	8.41	8.00	7.75	9.05	9.26	9.62	8.57	9.47	8.77	9.54
Anions:	15.03	14.56	14.86	14.85	13.84	14.97	15.31	16.42	16.08	15.71	28.16	13.74	10.38	9.97	11.30	12.76	11.58	10.64	17.68	17.70	18.10	22.08	20.29	34.56	11.58	23.62	8.81	8.83	8.26	8.45	8.39	9.45	9.25	8.55	11.44	9.48	9.37
CBE (%):	-1.15	0.34	-7.08	-1.74	-4.68	-1.10	1.80	-3.46	-8.16	-5.48	-34.11	3.26	3.35	5.78	-3.96	-7.15	-3.91	-1.13	0.92	0.74	-5.34	-12.68	-3.20	-25.98	-16.54	-38.26	0.98	-2.44	-1.60	-4.33	3.77	-1.04	1.93	0.14	-9.45	-3.84	0.92
Mg:	29.30	28.75	28.98	28.29	30.57	29.90	25.05	24.32	23.26	24.90	25.10	21.61	22.31	20.87	22.08	22.69	23.83	22.77	20.42	20.57	21.20	20.88	21.88	20.30	17.67	17.79	18.04	15.66	16.36	16.57	15.82	20.89	20.79	22.47	23.99	21.48	20.44
Ca:	56.74	58.91	59.61	58.81	59.01	58.62	61.96	62.18	59.21	56.71	54.82	59.89	74.61	76.66	75.55	74.90	73.65	74.80	59.57	58.89	57.68	57.46	54.81	57.01	19.74	25.40	63.32	56.51	49.98	56.54	56.78	71.68	65.89	67.55	62.20	65.97	67.46
Na + K	13.96	12.35	11.41	12.89	10.42	11.48	12.98	13.50	17.53	18.40	20.08	18.50	3.08	2.47	2.37	2.41	2.51	2.42	20.01	20.54	21.12	21.66	23.31	22.69	62.59	56.81	18.64	27.83	33.66	26.90	27.40	7.43	13.32	9.98	13.81	12.56	12.11
Cl:	12.29	12.15	4.96	8.93	5.04	10.44	23.96	27.31	20.53	22.44	9.25	22.18	0.77	0.61	0.55	0.48	0.44	0.65	44.03	45.58	42.55	39.10	46.73	29.95	1.50	1.36	14.89	26.91	27.23	17.46	27.93	5.22	12.74	8.05	8.48	9.85	13.97
SO4:	0.48	0.94	0.09	0.49	0.23	0.51	4.88	3.83	2.68	2.53	1.35	2.76	5.11	6.22	3.93	3.87	3.92	5.11	2.97	2.94	2.59	1.89	2.05	1.83	16.55	8.13	4.59	4.27	5.27	4.29	5.90	2.19	2.61	3.09	2.29	2.22	3.49
HCO3 + CO3:	87.22	86.90	94.96	90.58	94.73	89.05	71.16	68.86	76.79	75.03	89.41	75.06	94.12	93.17	95.53	95.65	95.64	94.24	53.00	51.48	54.87	59.01	51.22	68.22	81.96	90.50	80.52	68.82	67.50	78.26	66.17	92.58	84.65	88.85	89.23	87.93	82.54

Note: As a result of occasional inadequate groundwater samplinbg volume, select monitoring wells are not included in the Piper Plots during these dry monitoring events.

TABLE 11
GROUNDWATER IONIC BALANCE AND PIPER PLOT DATA - FALL
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Raw Data (mg/L)	Shallow																							
	MW4					MW6S						MW8S						MW9S						MW11S	
	May-20	*May-21*	*May-22*	*Sep-23*	*Sep-24*	*Oct-20*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Oct-20*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Oct-20*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Sep-23*	*Sep-24*
Ca	167	173	154	201	153	175	181	186	168	161	165	156	170	213	164	172	174	175	181	202	192	222	213	108	118
Mg	52.3	51.2	45.4	69.3	48.0	41.4	40.3	49.1	43.2	35.0	40.9	32.6	30.6	44.6	50.3	36.4	38.8	38.9	44.2	48.2	44.9	50.0	49.0	19.2	19.0
Na	45.2	39.6	31.4	50	41.2	37	58.4	56.5	66	61.1	71.2	6.79	4.26	7.23	16.7	7.08	7.22	75.2	88.9	93.6	98.0	108	111	53.5	44.0
K	3.31	3.39	4.09	3.36	2.92	1.14	1.490	1.110	1.15	1.18	1.13	1.15	1.090	2.08	2.32	1.22	1.21	1.73	1.730	1.82	1.86	1.85	1.81	20.7	17.60
Cl	65.5	62.7	26.1	340	177	125	160	111	132	68.8	83.5	5.5	4.00	5.20	12.3	2.59	3.49	227	234	309	308	339	361	68	57.6
SO4	3.50	6.60	0.62	25.1	7.27	33	25.4	20.4	18.6	17.0	15.9	26.6	23.7	22.3	25	24.6	24.3	23.7	23.9	22.6	17.6	19.4	18.7	20.6	22.1
ALK	656	633	706	538	752	508	630	545	518	1190	477	507	585	543	644	855	506	441	540	414	492	450	418	431	386
pH	7.01	7.11	7.45	7.68	7.77	7.18	7.05	7.31	7.35	7.48	7.42	7.35	7.51	7.20	7.18	7.53	7.27	7.13	7.58	7.34	7.15	7.36	7.47	7.19	7.78
Ion Balance and Piper Plot (%)																									
Cations:	14.69	14.66	12.89	17.99	13.45	13.76	14.93	15.81	14.84	13.60	14.73	10.79	11.21	14.67	13.11	11.92	12.22	15.25	16.58	18.16	17.59	19.94	19.54	9.83	9.82
Anions:	15.03	14.56	14.86	20.86	20.17	14.35	17.63	14.45	14.46	26.07	12.22	10.84	12.30	11.46	13.74	17.67	10.72	15.71	17.89	17.46	18.89	18.96	18.93	10.95	9.80
CBE (%):	-1.15	0.34	-7.08	-7.39	-19.98	-2.11	-8.31	4.50	1.29	-31.43	9.31	-0.22	-4.60	12.27	-2.34	-19.44	6.56	-1.49	-3.80	1.98	-3.57	2.52	1.59	-5.42	0.09
Mg:	29.30	28.75	28.98	31.69	29.36	24.76	22.22	25.56	23.96	21.17	22.86	24.86	22.45	25.02	31.58	25.13	26.13	20.99	21.94	21.84	21.01	20.64	20.64	16.08	15.93
Ca:	56.74	58.91	59.61	55.74	56.76	63.46	60.51	58.71	56.50	59.06	55.91	72.13	75.64	72.47	62.43	72.02	71.05	57.27	54.47	55.49	54.48	55.56	54.41	54.85	59.99
Na + K	13.96	12.35	11.41	12.57	13.88	11.78	17.27	15.73	19.55	19.76	21.23	3.01	1.90	2.51	5.99	2.85	2.82	21.74	23.59	22.67	24.51	23.80	24.95	29.07	24.09
Cl:	12.29	12.15	4.96	45.97	24.75	24.57	25.60	21.68	25.75	7.44	19.28	1.43	0.92	1.28	2.53	0.41	0.92	40.76	36.90	49.92	46.00	50.44	53.81	17.44	16.58
SO4:	0.48	0.94	0.09	2.50	0.75	4.71	3.00	2.94	2.68	1.36	2.71	5.11	4.01	4.05	3.79	2.90	4.72	3.14	2.78	2.69	1.94	2.13	2.06	3.92	4.70
HCO3 + CO3:	87.22	86.90	94.96	51.52	74.50	70.72	71.40	75.38	71.57	91.20	78.01	93.46	95.07	94.67	93.68	96.69	94.36	56.10	60.32	47.38	52.05	47.43	44.13	78.64	78.72

Note: As a result of occasional inadequate groundwater samplinbg volume, select monitoring wells are not included in the Piper Plots during these dry monitoring events.

TABLE 12
GROUNDWATER IONIC BALANCE AND PIPER PLOT DATA - FALL
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Raw Data (mg/L)	Deep																									
	MW6D						MW8D						MW9D		MW10D		MW11D					MW12D				
	Oct-20	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Oct-20*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Sep-23*	*Sep-24*	*Sep-22*	*Sep-25*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*	*Oct-20*	*Sep-21*	*Sep-22*	*Sep-23*	*Sep-24*	*Sep-25*
Ca	117	120	131	135	136	139	151	153	165	155	168	174	146	152.0	96.1	127	98.8	94.8	93.9	102.0	98.9	113	113	128	118	126	139
Mg	42.2	48.7	47.2	50.0	42.9	49.7	43.3	53.1	50.4	33.9	48.2	53.9	65.2	63.5	80.4	85.0	25.7	23.7	20.7	22.0	21.9	23.9	28.8	28.4	26.6	26.0	32.2
Na	21.0	34.3	34.5	32.6	42.8	40.6	18	19.6	15.9	6.88	14.5	15.2	121.0	109.0	29.3	30.0	29.4	30.4	32.6	36.7	36.3	17.6	19.0	24.7	26.0	26.6	24.3
K	1.00	1.23	1.27	1.29	1.28	1.30	2.14	2.38	2.23	1.16	2.24	2.28	3.70	4.14	5.14	5.06	1.800	2.06	1.91	1.89	2.24	0.666	0.737	0.774	0.834	0.814	0.888
Cl	118	155	96	108	102	93.3	11.2	13.3	12.2	3.23	9.26	8.03	260.0	290.0	35.8	39.9	46.4	44.0	48.8	49.3	48.6	28.8	35.8	28.5	37.3	49.1	42.2
SO4	37.5	31.6	33.3	28.0	29.2	26.0	22.3	22.4	21.3	25.0	24.0	20.3	31.7	36.4	277.0	-	15.5	14.1	15.0	19.1	17.8	14.4	14.4	12.4	12.4	12.5	14.1
ALK	380	446	386	439	500	413	582	674	542	587	592	518	532	4140	63.8	525	340	310	352	369	266	389	517	324	706	411	492
pH	7.47	7.53	7.63	7.49	7.55	7.44	7.11	7.48	7.33	6.98	7.39	7.41	7.37	7.65	8.53	7.76	7.89	7.78	7.52	7.67	7.77	7.55	7.65	7.85	7.35	7.53	7.46
Ion Balance and Piper Plot (%)																											
Cations:	10.25	11.52	11.95	12.30	12.21	12.83	11.92	12.92	13.13	10.85	13.04	13.84	18.01	17.66	12.82	14.77	8.37	8.06	7.86	8.54	8.37	8.39	8.85	9.82	9.23	9.60	10.67
Anions:	11.70	13.94	11.12	12.40	13.48	11.43	12.41	14.31	11.62	12.34	12.59	11.00	18.63	91.67	8.05	-	8.42	7.73	8.72	9.16	7.06	8.89	11.64	7.54	15.42	9.86	11.32
CBE (%):	-6.62	-9.52	3.60	-0.40	-4.93	5.77	-2.02	-5.11	6.11	-6.42	1.75	11.42	-1.68	-67.70	22.86	-	-0.33	2.07	-5.23	-3.48	8.54	-2.88	-13.60	13.15	-25.11	-1.30	-2.96
Mg:	33.88	34.79	32.49	33.45	28.91	31.89	29.90	33.83	31.59	25.70	30.42	32.05	29.79	29.59	51.62	47.37	25.27	24.21	21.68	21.19	21.52	23.45	26.77	23.80	23.72	22.28	24.84
Ca:	56.96	51.98	54.68	54.76	55.58	54.08	63.22	59.10	62.71	71.27	64.30	62.75	40.45	42.95	37.41	42.92	58.90	58.72	59.64	59.56	58.94	67.22	63.69	65.05	63.80	65.46	65.03
Na + K	9.16	13.23	12.83	11.80	15.51	14.03	6.88	7.07	5.70	3.03	5.28	5.20	29.75	27.45	10.97	9.71	15.83	17.07	18.67	19.25	19.54	9.33	9.55	11.14	12.49	12.26	10.12
Cl:	28.44	31.36	24.42	24.57	21.35	23.04	2.55	2.62	2.96	0.74	2.07	2.06	39.38	8.92	12.55	-	15.54	16.06	15.78	15.18	19.43	9.14	8.68	10.67	6.82	14.05	10.52
SO4:	6.67	4.72	6.23	4.70	4.51	4.74	3.74	3.26	3.82	4.22	3.97	3.84	3.54	0.83	71.65	-	3.83	3.80	3.58	4.34	5.25	3.37	2.58	3.43	1.67	2.64	2.59
HCO3 + CO3:	64.88	63.92	69.34	70.73	74.14	72.23	93.71	94.12	93.22	95.04	93.96	94.10	57.08	90.25	15.80	-	80.63	80.14	80.64	80.48	75.32	87.48	88.75	85.91	91.50	83.31	86.88

Note: As a result of occasional inadequate groundwater samplinbg volume, select monitoring wells are not included in the Piper Plots during these dry monitoring events.

As a result of limited groundwater within MW10D, pH reported was collected in the field and not provided by the laboratory in September 2025.

FIGURES



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT (BURNSIDE, 2013)
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- GP9 — LANDFILL GAS PROBE LOCATION
- FILLED IN SEWAGE LAGOON
- DUCKS UNLIMITED WETLAND AREA

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

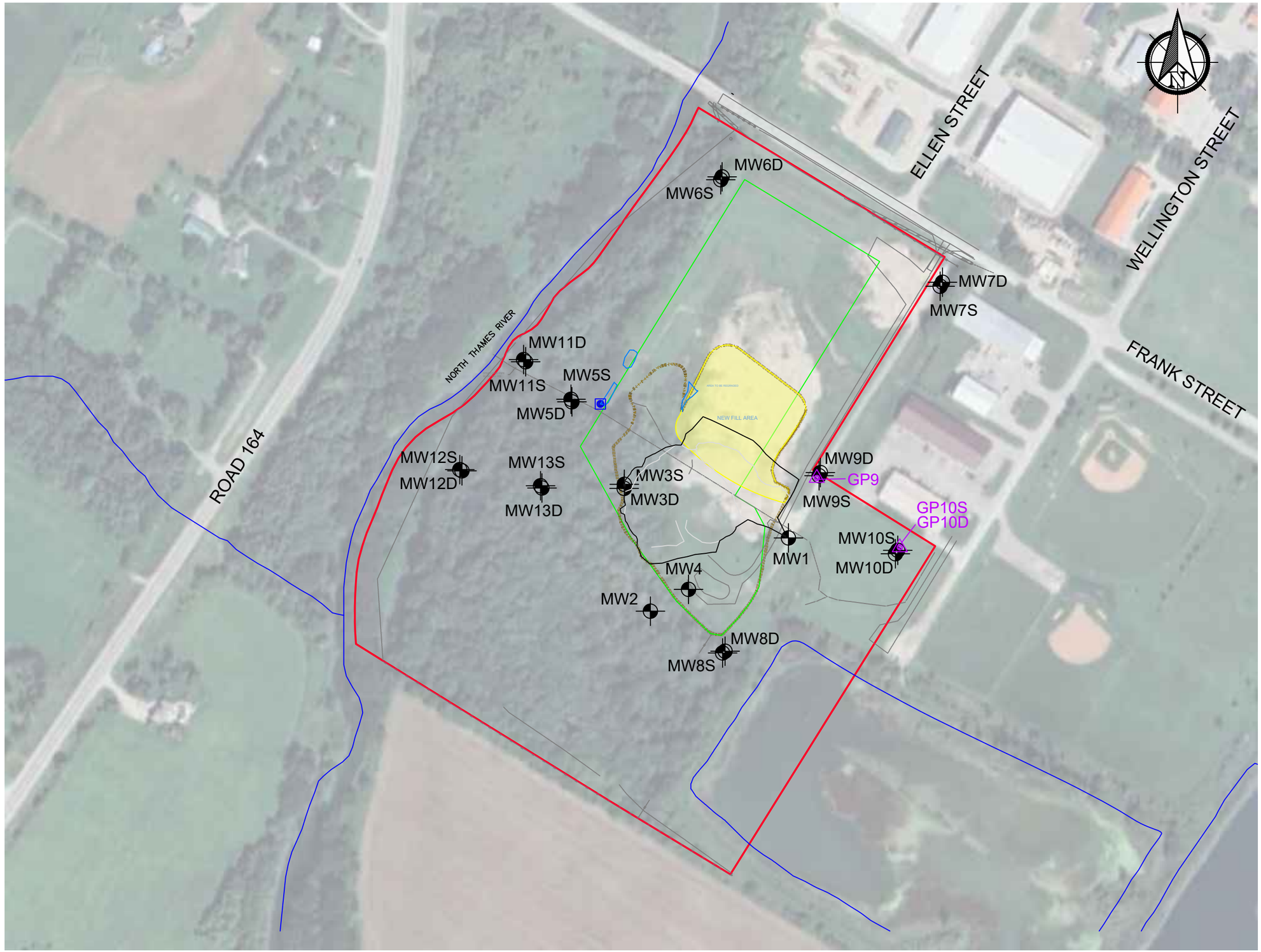
CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
SITE LOCATION MAP

SCALE	PROJECT NO.
1:8000	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	1



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- SWM POND — SURFACE WATER SAMPLING LOCATION
- GP9 — LANDFILL GAS PROBE LOCATION

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

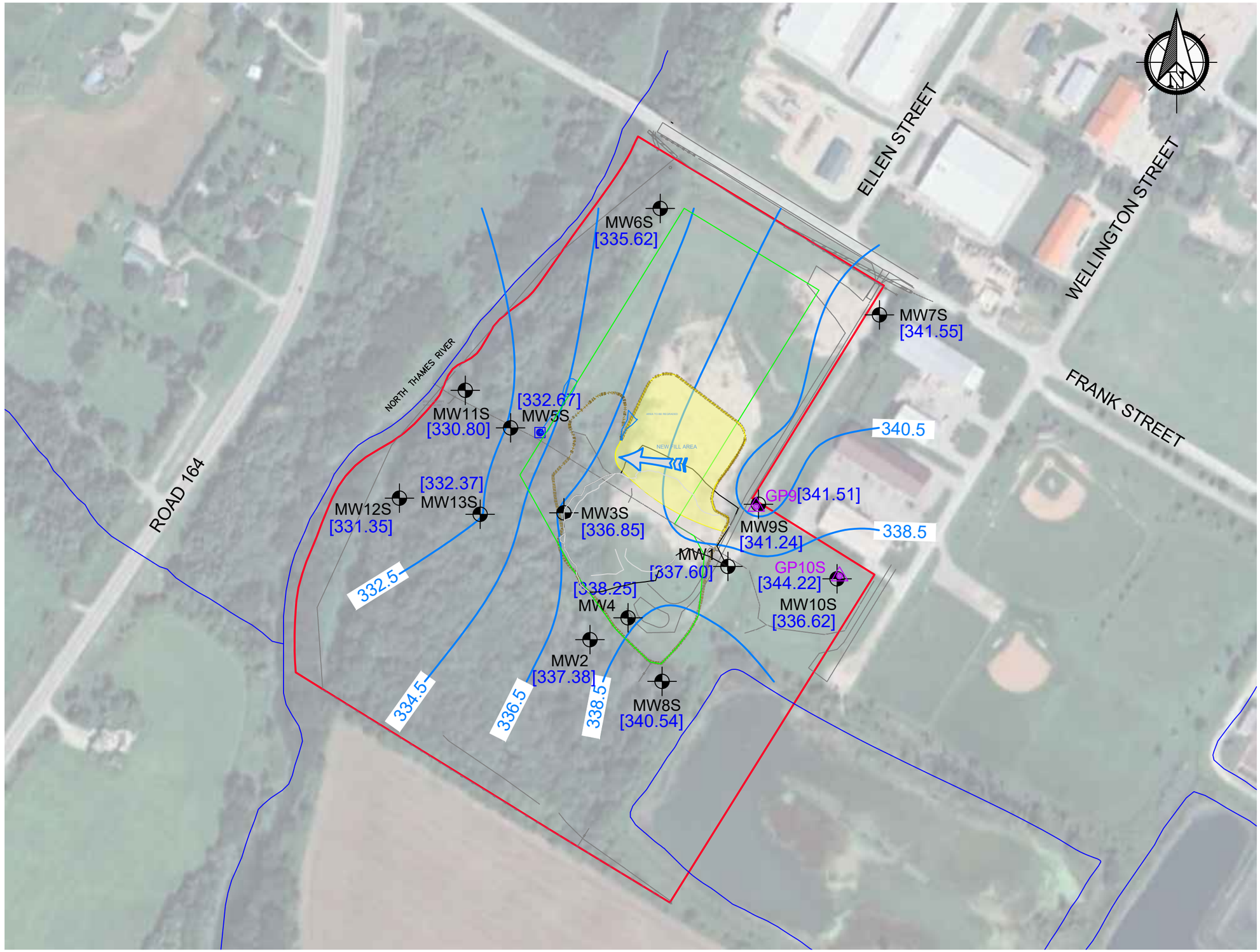
CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
SITE PLAN

SCALE	PROJECT NO.
1:1300	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	2



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- SWM POND — SURFACE WATER SAMPLING LOCATION
- GP9 — LANDFILL GAS PROBE LOCATION
- [346.81] — GROUNDWATER ELEVATION
- 346.0 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

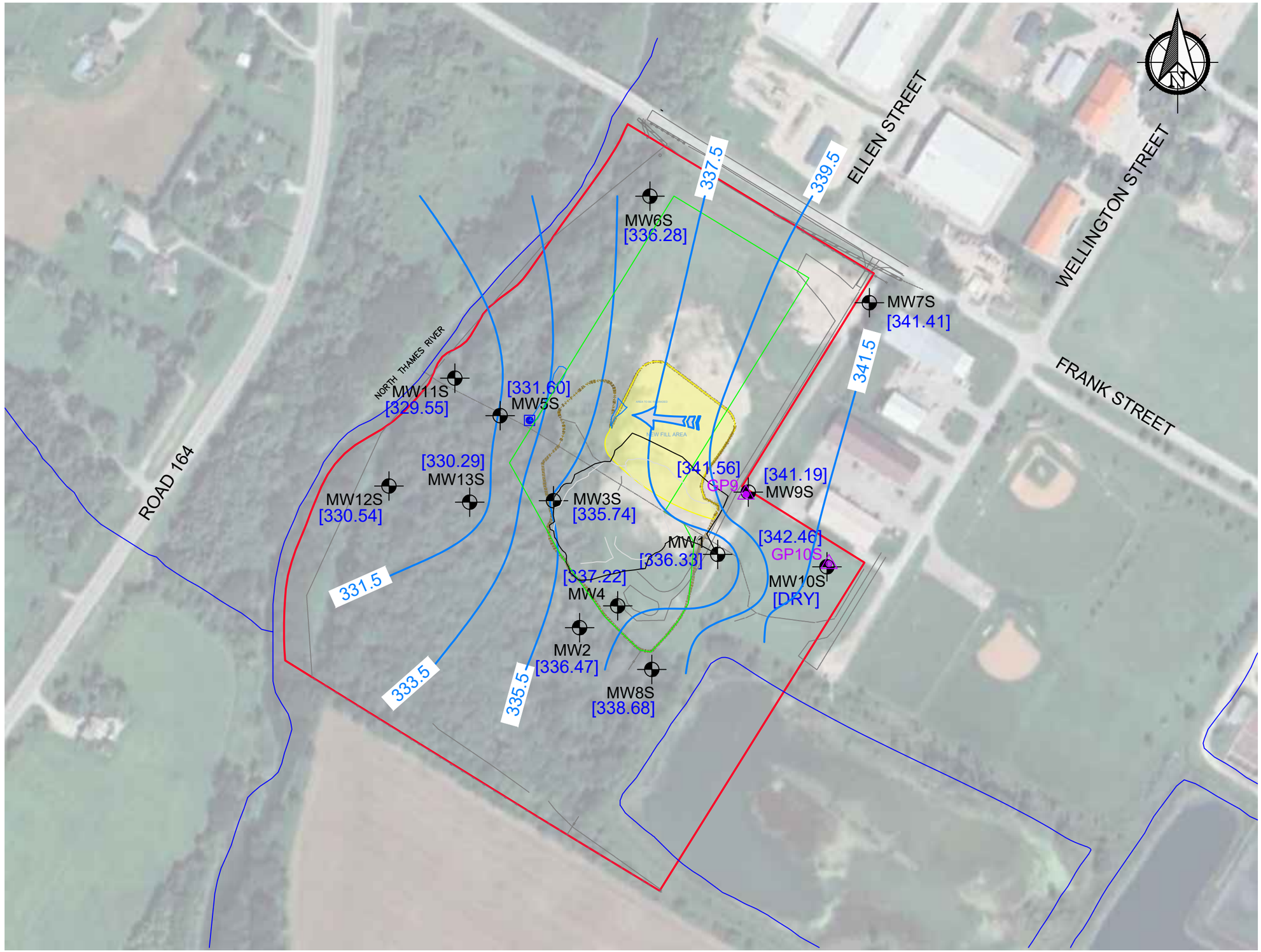
CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
SHALLOW GROUNDWATER CONTOURS (MAY 14, 2025)

SCALE	PROJECT NO.
1:3000	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	3A



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- SWM POND — SURFACE WATER SAMPLING LOCATION
- GP9 — LANDFILL GAS PROBE LOCATION
- [346.81] — GROUNDWATER ELEVATION
- 346.0 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

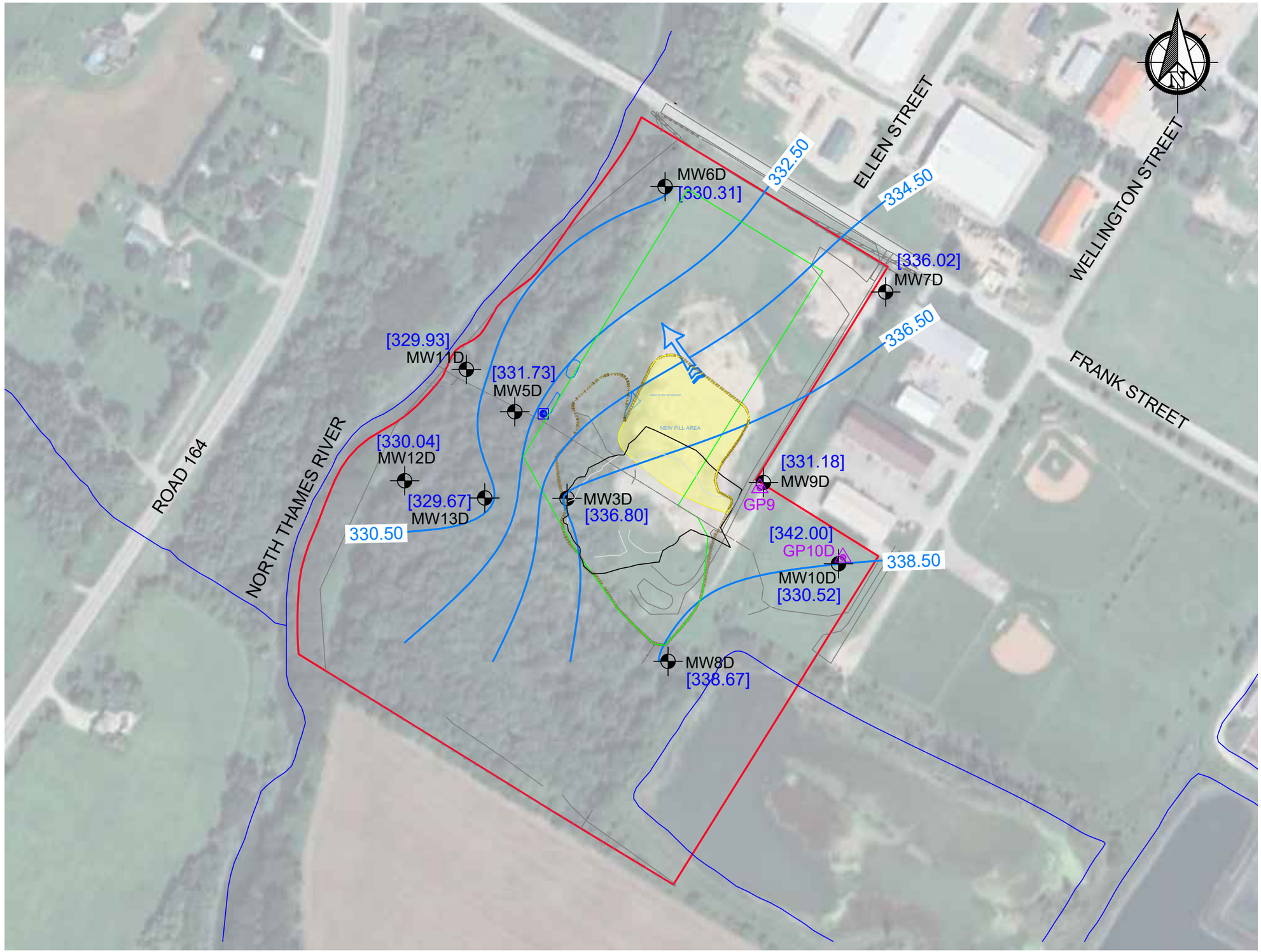
CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
SHALLOW GROUNDWATER CONTOURS (SEPT 29, 2025)

SCALE	PROJECT NO.
1:3000	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	3B



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- SWM POND — SURFACE WATER SAMPLING LOCATION
- GP9 — LANDFILL GAS PROBE LOCATION
- [346.81] — GROUNDWATER ELEVATION
- 346.0 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

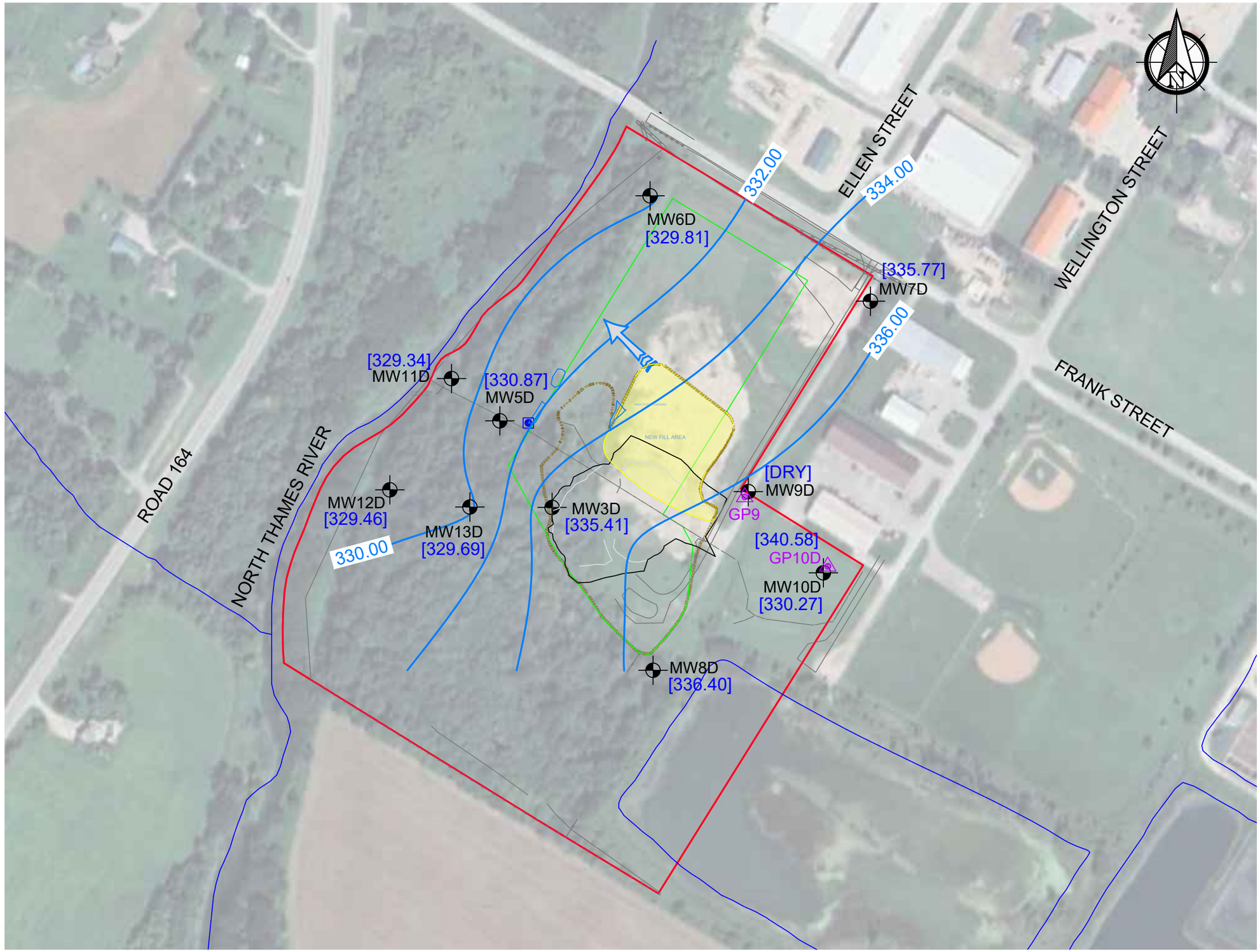
CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
DEEP GROUNDWATER CONTOURS (MAY 14, 2025)

SCALE	PROJECT NO.
1:3000	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	4A



LEGEND

- MITCHELL INDUSTRIAL LANDFILL SITE BOUNDARY
- LICENSED LANDFILL AREA (4 HA.)
- APPROXIMATE WASTE FOOTPRINT
- FORMER ACTIVE FILL AREA
- MW7S/D — MONITORING WELL LOCATION AND DESIGNATION
- SWM POND — SURFACE WATER SAMPLING LOCATION
- GP9 — LANDFILL GAS PROBE LOCATION
- [346.81] — GROUNDWATER ELEVATION
- 346.0 — GROUNDWATER CONTOUR ELEVATION
- INFERRED GROUNDWATER FLOW DIRECTION ARROW

NOTES:

1. PLAN DETAILS OBTAINED FROM 2018 MITCHELL INDUSTRIAL LANDFILL ANNUAL MONITORING REPORT (RWDI, 2018)
2. AIR PHOTO FROM GOOGLE EARTH 2023

PINCHIN

CLIENT NAME
CORPORATION OF THE MUNICIPALITY OF WEST PERTH

PROJECT NAME
2025 ANNUAL MONITORING REPORT

PROJECT LOCATION
MITCHELL INDUSTRIAL LANDFILL

FIGURE NAME
DEEP GROUNDWATER CONTOURS (SEPT 29, 2025)

SCALE	PROJECT NO.
1:3000	333568.002
DATE	FIGURE NO.
NOVEMBER 2025	4B

APPENDIX A

Supporting Documentation

Appendix A-1

Waste Environmental Compliance Approval – Notice No. 1

RECEIVED
DEC - 9 2008
R.J. BURNSIDE & ASSOCIATES
LIMITED

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A151202
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: West Perth (Mitchell Industrial Landfill)
Lot 24, Concession 2 (Georgaphic Township of Fullarton)
Municipality of West Perth, County of Perth

You are hereby notified that I have amended Provisional Certificate of Approval No. A151202 issued on March 10, 1980 for the use and operation of a 4 hectare waste disposal site having a maximum capacity of 121,600 cubic meters, being known as the Mitchell Landfill Industrial , 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 Mitchell Industrial 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. Design and Operation

3.1 By no later than **August 14, 2009**, the *Owner* shall submit to the *Director* for approval, with copies to the *District Manager* , a Design, Operation and Maintenance Plan pertaining to current operational procedures for landfilling and waste management at the *Site* . The plan shall include but not be limited to the following:

a) A plan(s) showing the *Site* location, *Site* plan, *Site* condition, landfilling staging plan and approved limits of wastes;
b) A description of the landfill design and solid waste management related features such as but not limited to the following:

i. Landfill containment features (Engineered or natural attenuation)
ii. Leachate Collection System;
iii. Landfill Sideslopes
iv. Any on-site drains
v. Monitoring wells;
vi. Surface water drainage structures or features;
vii. Utilities; and
viii. Waste Management Area and Structures

c) A discussion on the landfill service area, the type of waste accepted, waste inspection procedures, theoretical site capacity, the current volume of waste landfilled and the expected remaining life expectancy;

d) *Site* operation and maintenance procedures. These items shall include but not be limited to the following:

i) Hours of Operation;
ii) Security/Access
iii) Signage;
iii) Burning of Materials;
iv) Daily/Interim Cover Material;
v) Recycling Operations;
vi) Equipment and Buildings;
vii) Litter Control
viii) Dust and noise Control
viii) Animal/Vector Control

e) Schedule for inspections at the *Site* , including outdoor storage facilities;

f) Description of leachate management plan for the site and a contingency plan to address leachate outbreaks or migration off-site;

g) Description of the steps to be taken to address complaints at the site such as odours, dust, noise, vectors, vermin, rodents;

h) Closure plans for the landfill including but not limited to the following:

i. description of the end use for the landfill
ii. drawings showing the final contours;
iii. the final waste volume;
iii. the thickness of the final cover; and
iv. the material to be used for the final cover.

3.2. Any changes to the Site Design and Operation Manual shall be submitted to and approved by the *Director* prior to their implementation.

3.3. Only municipal waste as defined in the *EPA* may be landfilled at the site. No liquid industrial waste or hazardous waste shall be disposed of at the landfill.

3.4. The site shall have a maximum volume capacity of **121,600 cubic meters**.

3.5. By no later than **August 14, 2009**, the *Owner* shall clearly stake the limit of the landfill;

3.6. A sign shall be posted in a prominent location at the *Site* entrance clearly stating the following:

i. *Owner* 's name;
ii. Operator's name;

iii. Provisional Certificate of Approval No.;
iv. Type of Waste Accepted
v. the hours of operation;
vi. Public access to the *Site* is prohibited during non-operational hours; and
vii. Contact telephone number to call with complaints or in the event of an emergency.

3.7. (1) By no later than **August 14, 2009**, 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. 3.7(1) is acceptable shall install perimeter fencing and post "No Trespassing" signs at 30 metre intervals in the proposed locations.

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

3.9. (1) Soil cover material with a minimum thickness of 150 mm or an approved thickness of alternative cover material as approved by the Director shall be placed over the entire working face at the end of every operating week;

(2) 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.

3.10. i. The *Owner* shall undertake litter pick-up around the property in the early spring and late fall, including the fenceline and any surface water bodies on the property.

ii. The *Owner* shall also undertake regularly scheduled litter pick-ups around the site between the months of May and September.

3.11. 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.

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

(ii) Within one (1) week of an leachate outbreak being identified during the weekly inspections identified in Condition No. 3.16 (i), the *Owner* shall notify the District Office in writing of the occurrence and actions to be taken.

4.0. Buffer Area

4.1. By no later than **August 14, 2009**, the *Owner* shall submit to the *District Manager* , a report that details and a schedule for steps to be taken to ensure a minimum 30 m buffer is created around the limit of landfilling.

5.0. Spills

5.1. 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.

6.0. Record Keeping

6.1. The *Owner* shall establish and maintain a written record of daily operations 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 of record;
b) hours of operation; and
c) an approximation of the type, amount and source of waste received (ie. loads or vehicles/day).

6.2. 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

6.3. 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.

6.4. The *Owner* shall establish and maintain a written record of all occurrences of receipt of unacceptable waste 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) waste generator;
b) type of unacceptable waste;
c) an estimate on the amount of unacceptable waste;
d) nature of unacceptable waste;
e) steps taken to remove waste;
f) actions taken by the Owner to prevent recurrence.

6.5. 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.

7.0. Environmental Monitoring Plan

7.1. (1) By no later than **December 19, 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. 7.1 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.

8.0. Waste Volume Determination

8.1. (i) By no later than **December 19, 2008**, and by every other December 19th thereafter, provided the Site has accepted waste between the time periods, until the *Site* is closed, 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. (9.1), 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.

9.0. Annual Reporting

9.1. By no later than **December 19, 2008**, and by December 19th of every year thereafter, the *Owne* r shall submit, to the *District Manager* , an annual *Site* operation, 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 summary of type and estimated quantity of incoming waste accepted during the reporting period;
b) a summary of total amount of waste received at the site, remaining capacity and remaining life expectancy of the site;
c) a summary of the site's operational procedures and an assessment of compliance with the Certificate requirements;
d) a summary of recycling operations;
e) 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.
f) Sampling protocols, and a description of any problems encountered during the sampling events which may have impacted the reliability of analytical results;
g) 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;
h) 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;
i) 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;
j.) A discussion on the contaminant attenuation zone and buffer zone requirements;
k.) QA/QC protocol must be described; and

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

10.0. Closure Plan

10.1. At least 2 years prior to the anticipated date of closure of this *Site* , 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.

10.2. 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-4576).

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 to ensure the Owner has an approved Design, Operation and Maintenance plan for the landfill that reflects the current operations. The condition is also added 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. Once approved, the Plan shall be incorporated into the Certificate.*

3. *The reason for Condition (3.2) is to ensure any changes to the Design and Operations Plan are approved and incorporated into the Certificate.*

4. *The reason for Condition (3.3) is to clearly identify that only municipal waste may be landfilled at the Site.*

5. *The reason for Condition (3.4) is to identify the maximum capacity of the Site.*

6. *The reason for Condition (3.5) is to ensure the limits of the landfill are clearly identified for the Owner and the Ministry.*

7. *The reasons for Condition (3.6), (3.8), (3.9), (3.10), (3.11) 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.*

8. *The reason for Condition (3.7) 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.*

9. *The reasons for Condition (3.12) 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.*

10. *The reasons for Condition (5.1), (6.1), (6.2), (6.3), (6.4) and (6.5) 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.*

11. *The reason for Condition (7.1) 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.*

12. *The reason for Condition (8.1) 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.*

13. *The reasons for Condition (9.1) 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.

14. *The reason for Conditions (10.1) and (10.2) 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. A151202 dated March 10, 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 18th day of September, 2008

Tes Gebrezghi

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

DG/

c: District Manager, MOE London - District
MOE Initiated, The Corporation of the Municipality of West Perth

Appendix A-2

Waste Environmental Compliance Approval – Notice No. 2

MS0193070.2011

RECEIVED
FEB - 9 2011
R.J. BURNSIDE & ASSOCIATES
LIMITED

Ontario

Ministry of the Environment
Ministère de l'Environnement

AMENDMENT TO PROVISIONAL CERTIFICATE OF APPROVAL
WASTE DISPOSAL SITE
NUMBER A151202
Notice No. 2
Issue Date: February 1, 2011

The Corporation of the Municipality of West Perth
169 St. David St
Post Office Box, No. 609
Mitchell, Ontario
N0K 1N0

Site Location: West Perth (Mitchell Landfill Industrial)
RP 44R-4576
Lot 24, Concession 2
West Perth Municipality, County of Perth

You are hereby notified that I have amended Provisional Certificate of Approval No. A151202 issued on March 10, 1980, and amended on September 18, 2008 for use and operation of a 4.0 ha waste disposal site within a total area of 16.12 ha , as follows:

Conditions 3.1 and 7.1.(1) are hereby revoked and replaced with the following conditions:

3.1 The Owner shall ensure that the Site is designed and operated in accordance with the submitted report titled *The Municipality of West Perth Mitchell Industrial Landfill Site Design and Operation Report* , prepared by R.J Burnside & Associates Ltd, signed by Kent Hunter, P. Eng., dated October 2009, and additional details outlined in Item Number 4 of this Certificate.

7.1. (1). The Owner shall ensure that environmental monitoring program at the Site, as outlined in the following table, is carried out by qualified persons, with the results included in the Annual Reporting as

specified in Condition 9.1 of the Certificate.

Location	Frequency	Parameters
GP9, GP10-S, GP10-D and any other landfill gas monitoring wells installed in the future	Semi-annual, spring and fall	CH4
Stormwater Managment Pond	Semi-annual, spring and fall	Field Parameters: Conductivity, pH, temperature Laboratory Parameters: Alkalinity, Aluminium, Total Ammonia, Arsenic, Barium, Beryllium, Bicarbonate, Bromide, Boron, Cadmium, Carbonate, Calcium, Chloride, Chromium, Cobalt, Copper, Conductivity, Fluoride, Iron, Hardness, Lead, Nickel, Total Kjeldahi Nitrogen, Nitrate, Nitrite, Nitrate plus Nitrite, Organic Nitrogen, Magnesium, Mercury, Molybdenum, pH, Phenol, Phosphate, Total Phosphorus, Silver, Zinc, Sulphate (as SO4), Turbidity, Chemical Oxygen Demand, Dissolved Organic Carbon, Total Dissolved Solids
Groundwater monitoring wells: MW1, MW2, MW3S, MW3D, MW5S, MW5D, MW6S, MW6D, MW7S, MW7D, MW8S, MW8D, MW9S, MW9D, MW10S, MW10D, and other groundwater wells installed in the future and deemed necessary for the continued assessment of the Site	Semi-annual, spring and fall	Field Parameters: water levels, pH, conductivity Laboratory Parameters: Aluminium, Arsenic, Barium, bromide, Boron, Calcium, Cadmium, Chloride, Chromium, Copper, Iron, Potassium, Magnesium, Manganese, Mercury, Sodium, Lead, Orthophosphate as P, Sulphate, pH, Alkalinity (as CaCO3), total Hardness as CaCO3), Carbonate (as CaCO3), Bicarbonate (as CaCO3), Ammonia as N, Nitrate as N, Nitrite as N, Dissolved Organic Carbon, Chemical Oxygen Demand, Total Dissolved Solids, Conductivity, Phenol, Volatile Organic Compounds

The following items are added to Schedule A:

3. Report titled The Municipality of West Perth Mitchell Industrial Landfill Site Design and Operation Report, prepared by R.J Burnside & Associates Ltd, signed by Kent Hunter, P. Eng., dated October 2009.

4. Letter dated December 10, 2010, from Kent Hunter, P. Eng., R.J Burnside & Associates Ltd, in response to the MOE comments.

The reason for this amendment to the Certificate of Approval is to approve an updated Design and Operation plan and a monitoring program at the Site.

This Notice shall constitute part of the approval issued under Provisional Certificate of Approval No. A151202 dated March 10, 1980 and subsequent amendments.

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 1st day of February, 2011

THIS NOTICE WAS MAILED
ON Feb. 4, 2011
9 c
(Signed)

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

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

Appendix A-3

Sewage Works Environmental Compliance Approval

Ontario

Ministry of the Environment
Ministère de l'Environnement

CERTIFICATE OF APPROVAL
MUNICIPAL AND PRIVATE SEWAGE WORKS

NUMBER 7228-88HS3R
Issue Date: November 10, 2010

The Corporation of the Municipality of West Perth
169 St. David St
Post Office Box, No. 609
Mitchell, Ontario
N0K 1N0

Site Location: Mitchell Industrial Landfill
Ref. Plan 44R-4576
Lot 24, Concession 2
West Perth Municipality, County of Perth

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

establishing a stormwater management facility to service a total of 4.60 ha approved landfill footprint within a total of 16.12 ha landfill property of Mitchell Industrial Landfill located in the Municipality of West Perth, County of Perth, designed to provide quantity and quality control by attenuating peak stormwater flows from storm events up to 1:100 year return frequency at or below pre-development levels, consisting of the following:

Stormwater Management Pond (SWM Pond):

a stormwater management facility (**SWM Pond**) to service a total drainage area of 4.60 ha located at the south western part of the landfill site, consisting of the following:

- one (1) approximately 352.7 m long 1.0 m top width perimeter ditch (**Ditch #1**) running along the southern side and western side of the landfill site having a minimum of 0.3 m depth, and 3H:1V side slopes, discharging collected stormwater to a forebay described below;

- one (1) approximately 542.0 m long 1.0 m top width perimeter ditch (**Ditch #2**) running along the eastern side, the northern side, and western side of the landfill site having a minimum of 0.3 m depth, and 3H:1V side slopes, discharging collected stormwater to a forebay described below;

- one (1) forebay with approximate length of 6.0 m, width of 2.0 m, and depth of 1.2 m,

equipped with rip-rap lined inlet structure and rock-lined berm, discharging to an extended wet detention pond described below;

- one (1) extended wet detention pond (**SWM Pond**) providing a total storage capacity of 674.1 m^3 consisting of a permanent pool storage volume of 466.5 m^3 (at elevation 336.1 m masl) with a maximum depth of 1.2 m and an extended storage volume of 207.6 m^3 with an extended storage depth of 0.3 m (at elevation of 336.4 m masl), equipped with one (1) 200 mm diameter PVC outlet pipe discharging to one (1) 1,500 mm diameter precast concrete manhole, three (3) 200 mm diameter PVC outlet discharge pipes each equipped with a 100 mm diameter orifice and a gate valve, and one (1) 200 mm diameter common PVC discharge pipe with perforations at the discharge side, discharging to an existing ditch which eventually flows to North Thames River; and

- including all controls and appurtenances.

all in accordance with the Application for Approval of Municipal and Private Sewage Works dated March 26, 2010 submitted by Municipality of West Perth, design specifications and drawings prepared by R. J. Burnside & Associates, Newmarket, Ontario and the following documents:

1. "Mitchell Industrial Landfill Stormwater Management Plan" dated February 2010 prepared by R. J . Burnside & Associates Limited, Newmarket, Ontario.

2. Additional information dated September 7, 2010 submitted by Mr. Kent Hunter, P. Eng., R. J . Burnside & Associates Limited, including design specifications and drawings of the proposed stormwater management facility at Mitchell Industrial Landfill.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"*Act* " means the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended;

"*Certificate* " means this entire certificate of approval document, issued in accordance with Section 53 of the *Act* , and includes any schedules;

"*CBOD5* " means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"*Director* " means any *Ministry* employee appointed by the Minister pursuant to section 5 of the *Act* ;

"*District Manager* " means the District Manager of the London District Office of the Ministry;

"*Ministry* " means the Ontario Ministry of the Environment;

"*Owner* " means Municipality of West Perth and includes its successors and assignees;

"Substantial Completion" has the same meaning as *"substantial performance"* in the Construction Lien Act;

"*Works*" means the sewage works described in the *Owner*'s application, this *Certificate* and in the supporting documentation referred to herein, to the extent approved by this *Certificate*;

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL PROVISIONS

(1) The *Owner* shall ensure that any person authorized to carry out work on or operate any aspect of the *Works* is notified of this *Certificate* and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these Conditions, the *Owner* shall design, build, install, operate and maintain the *Works* in accordance with the description given in this *Certificate*, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this *Certificate*.

(3) Where there is a conflict between a provision of any submitted document referred to in this *Certificate* and the Conditions of this *Certificate*, the Conditions in this *Certificate* shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the listed submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The requirements of this *Certificate* are severable. If any requirement of this *Certificate*, or the application of any requirement of this *Certificate* to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this certificate shall not be affected thereby.

2. CHANGE OF OWNER

(1) The *Owner* shall notify the *District Manager* and the *Director*, in writing, of any of the following changes within 30 days of the change occurring:

(a) change of *Owner*;

(b) change of address of the *Owner*;

(c) change of partners where the *Owner* is or at any time becomes a partnership, and a

copy of the most recent declaration filed under the Business Names Act, R.S.O. 1990, c.B17 shall be included in the notification to the *District Manager* ;

(d) change of name of the corporation where the *Owner* is or at any time becomes a corporation, and a copy of the most current information filed under the Corporations Information Act, R.S.O. 1990, c. C 39 shall be included in the notification to the *District Manager* ;

(2) In the event of any change in ownership of the *Works* , other than a change to a successor municipality, the *Owner* shall notify in writing the succeeding owner of the existence of this *Certificate* , and a copy of such notice shall be forwarded to the *District Manager* and the *Director* .

3. UPON THE SUBSTANTIAL COMPLETION OF THE WORKS

(1) Within one year of the *Substantial Completion* of the *Proposed Works* , a set of as-built drawings showing the *Works* "as constructed" shall be prepared. These drawings shall be kept up to date through revisions undertaken from time to time and a copy shall be retained at the *Works* or at operational office of the *Owner* for the operational life of the *Works* .

4. MONITORING AND RECORDING

(1) The *Owner* shall carry out the following stormwater monitoring program. Stormwater grab samples shall be collected from the sampling points shown in Table 1 at a **semi-annual frequency** (**Spring** and **Fall**[*]) and analysed for the following parameters listed in Table 1:

Table 1 - Stormwater Monitoring
Sampling Point: SWM Pond Discharge Outlet

Parameters	Parameters	Field Parameters
Alkalinity	Aluminum	Conductivity
Bicarbonate	Arsenic	pH
Bromide	Barium	Temperature
Carbonate	Boron	
Chemical Oxygen Demand	Beryllium	
Conductivity	Cadmium	
Chloride	Calcium	
Dissolved Organic Carbon	Chromium	
Fluoride	Cobalt	
Hardness (CaCO3)	Copper	
Nitrate as Nitrogen	Iron	
Nitrite as Nitrogen	Lead	
(Nitrate + Nitrite) Nitrogen	Magnesium	

pH	Molybdenum	
Phenols	Nickel	
Phosphate	Potassium	
Sulphate (as SO4)	Silver	
Total Ammonia (as N)	Zinc	
Total Dissolved Solids		
Total Kjeldahl Nitrogen		
Total Phosphorus		
Turbidity		
Un-ionized Ammonia		

*** Note:** Grab samples shall be collected from the SWM pond outlet discharge point after a runoff from rainfall event causing a discharge from the SWM Pond.

(2) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following:

(a) the Ministry's Procedure F-10-1, “Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works (Liquid Waste Streams Only), as amended from time to time by more recently published editions;

(b) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and,

(c) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition), as amended from time to time by more recently published editions.

(3) The *Owner* shall retain for a minimum of three (3) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this *Certificate* .

5. EFFLUENT OBJECTIVES

(1) For the parameters monitored under Condition 4 (1) and for those with a designated **Provincial Water Quality Objectives** (**PWQO**) (Un-ionized Ammonia, Phenols, Phosphorus, pH, Arsenic, Boron, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, and Zinc), the *Owner* shall use best efforts to design, construct and operate the *Works* to ensure that their respective **PWQO**s are not exceeded.

6. OPERATION AND MAINTENANCE

(1) Before the commencement of operation of the *Works* , the *Owner* shall prepare a " **Stormwater Contingency and Remedial Action Plan**" for the *Works* and submit a copy to the *District Manager* for approval;

(2) The *Owner* shall operate the *Works* in a **normally open position**. The *Owner* shall compare monitoring results obtained from the *Works* under Condition 4(1) with the trigger levels of the selected trigger parameters listed below to identify any potential leachate impact to stormwater discharged from the ponds.

Table 2
Trigger Parameters

Parameter	**Trigger Level** (mg/L)
Un-ionized Ammonia	0.02
Phenols	0.001
Total Phosphorus	0.03
Boron	0.20
Iron	0.30

(3) In the event that a monitoring result for any of the parameters listed under Condition 6 (2) exceeds its corresponding trigger level, the *Owner* shall re-sample within two weeks after receipt of the monitoring results to confirm the exceedence for that parameter.

(4) In the event that the presence of the parameter(s) of concern is (are) not confirmed after the second round of sampling conducted under Condition 6 (3), then, normal stormwater monitoring shall be resumed;

(5) In the event that the presence of any parameter of concern is confirmed after the second round of sampling conducted under Condition 6 (3), the *Owner* shall operate the *Works* in a **normally closed position** and notify the *District* Manager forthwith;

(6) While operating the *Works* in a **normally closed position**, the *Owner* shall implement the approved "Stormwater Contingency and Remedial Action Plan" prepared under Condition 6 (1) and collect a grab sample and analyze for the trigger parameters listed under Condition 6 (2) at a **monthly frequency** preferably after a rainfall event;

(7) The *Owner* shall resume operating the *Works* in a **normally open position** if monitoring results for all trigger parameters from three (3) consecutive sampling events conducted under Condition 6 (6) are less than their respective trigger levels.

(8) Discharge of contaminated stormwater from the *Works* to storm sewer/surface water is prohibited, except where it is necessary to avoid loss of life, personal injury, danger to public health or severe property damage;

(9) After three (3) years of monitoring in accordance with Condition 4 (1), the Owner may submit to the *District Manager* a request for changes to the list of trigger parameters and corresponding trigger levels stipulated under Condition 6 (2) along with supporting

monitoring data and an assessment report and such changes shall be approved by the *District* Manager in writing from time to time;

(10) The *Owner* shall prepare an operations manual within six (6) months of *Substantial Completion* of the *Proposed Works* , that includes, but not necessarily limited to, the following information:

(a) operating procedures for routine operation of the *Works* ;

(b) inspection programs, including frequency of inspection, for the *Works* and the methods or tests employed to detect when maintenance is necessary;

(c) repair and maintenance programs, including the frequency of repair and maintenance for the *Works* ;

(d) procedures for the inspection and calibration of monitoring equipment;

(e) procedures for receiving, responding and recording public complaints, including recording any follow up actions taken.

(11) The *Owner* shall maintain the operations manual current and retain a copy at the location of the *Works* or operational office of the *Owner* for the operational life of the *Works* . Upon request, the *Owner* shall make the manual available to *Ministry* staff.

7. REPORTING

(1) The *Owner* shall, upon request, make all manuals, plans, records, data, procedures and supporting documentation available to *Ministry* staff.

(2) The *Owner* shall prepare, and submit to the *District Manager* upon request, a performance report on an annual basis by **December 19th** to coincide with the Annual Monitoring Report of the Site. The first such report shall cover the period following the commencement of operation of the *Works* and subsequent reports shall be submitted to cover successive annual periods following thereafter. The reports shall contain, but shall not be limited to, the following information:

(a) a summary and interpretation of all monitoring data collected for stormwater under Condition 4, including an overview of the success and adequacy of the *Works* ;

(b) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the *Works* ;

(c) a description of any operating problems encountered and corrective actions taken;

(d) any other information the *District Manager* requires from time to time.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the *Works* are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the *Certificate* and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review. The condition also advises the Owners their responsibility to notify any person they authorized to carry out work pursuant to this *Certificate* the existence of this *Certificate* .

2. Condition 2 is included to ensure that the *Ministry* records are kept accurate and current with respect to the approved works and to ensure that subsequent owners of the *Works* are made aware of the *Certificate* and continue to operate the *Works* in compliance with it.

3. Condition 3 is included to require that the *Works* be properly operated and maintained such that the environment is protected .

4. Condition 4 is included to enable the *Owner* to evaluate and demonstrate the performance of the *Works* on a continual basis, so that the *Works* are properly operated and maintained at a level which is consistent with the design objectives specified in the *Certificate* and that the *Works* does not cause any impairment to the receiving watercourse.

5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the *Owner* is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs.

6. Condition 6 is included to require that the *Works* be properly operated and maintained such that the environment is protected .

7. Condition 7 is included to ensure that the *Ministry* is made aware of problems as they arise, and to provide a compliance record for all the terms and conditions outlined in this *Certificate,* so that the *Ministry* can work with the *Owner* in resolving any problems in a timely manner.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, 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 101 of the Ontario Water Resources Act , R.S.O. 1990, Chapter 0.40, 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 works are 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 53, *Ontario Water Resources 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 sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 10th day of November, 2010

Ian Parrott, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

SH/

c: District Manager, MOE London - District
Kent Hunter, RJ Burnside & Associates

Appendix A-4

Letter Report – Stormwater Quality Monitoring and Evaluation Modifications

RWDI
CONSULTING ENGINEERS & SCIENTISTS

Tel: 519.823.1311
Fax: 519.823.1316

RWDI AIR Inc.
650 Woodlawn Road West
Guelph, Ontario, Canada
N1K 1B8
Email: solutions@rwdi.com

CANADA'S BEST MANAGED COMPANIES
Platinum member

March 4, 2016

Mr. Rob Wrigley – District Manager
Ministry of the Environment and Climate Change – London District Office
733 Exeter Road
London, ON N6E 1L3

Re: Stormwater Quality Monitoring and Evaluation Modifications
Mitchell Industrial Landfill – Sewage Works ECA No. 7228-88HS3R
RWDI Reference No. 1601427 - 7000

Email: rob.wrigley@ontario.ca

Dear Mr. Wrigley,

On behalf of the Municipality of West Perth (Municipality), **RWDI AIR Inc. (RWDI)** is pleased to provide to the Ministry of the Environment and Climate Change (MOECC) this letter report summarizing proposed modifications to the monitoring and evaluation requirements for stormwater quality within the Stormwater Management Pond (SWM Pond) at the Mitchell Industrial Landfill (Site). The Municipality is requesting that the MOECC review and approve the proposed modifications, which are detailed in **Section 2** of this letter report.

1. BACKGROUND

The Site has a MOECC approved stormwater monitoring program, which is governed by the Municipal and Private Sewage Works Environmental Compliance Approval (ECA) No. 7228-88HS3R, dated November 10, 2010 (Sewage ECA). The Sewage ECA outlines the stormwater monitoring and evaluation requirements for the SWM Pond at the Site. The SWM Pond collects surface water runoff from the Site and, following a period of retention, gradually discharges the retained water to the North Thames River, which is adjacent to the west boundary of the Site and flows in a southerly direction.

Historically, surface water samples were collected at surface water monitoring stations located upstream (SW1) and downstream (SW2) of the Site in the North Thames River. During a Site meeting in April 2008, the MOECC agreed that surface water monitoring could be discontinued at the Site due to the assimilative capacity of the North Thames River and the unlikely event that a landfill influence would be detected. As such, surface water monitoring of the North Thames River has not been required to be completed for the Site since 2007. The aforementioned agreement is noted in the 2012 Annual Monitoring Report for the Site, as well as a Groundwater and Surface Water Review letter prepared and provided by the MOECC to the Municipality, dated August 20, 2012, MOECC reference No. 4214-8PYQLL.

This document is intended for the sole use of the party to whom it is addressed and may contain information that is privileged and/or confidential. If you have received this in error, please notify us immediately.

® RWDI name and logo are registered trademarks in Canada and the United States of America

Per the requirements of the Sewage ECA, samples of stormwater discharge are to be collected at a semi-annual frequency from the SWM Pond outlet discharge point after a runoff from rainfall event causes a discharge from the SWM Pond. To evaluate the stormwater quality within the SWM Pond, the stormwater chemical quality is compared to the trigger concentrations for selected trigger parameters listed in Condition 6.(2) of the Sewage ECA. The trigger concentrations are equivalent to the relevant Provincial Water Quality Objectives (PWQO). The selected trigger parameters and respective trigger concentrations are presented in the following summary.

Trigger Parameter	Trigger Concentration (mg/L)
Un-ionized Ammonia	0.02
Phenols	0.001
Total Phosphorus	0.03
Boron	0.20
Iron	0.30

The PWQO are intended to provide guidance in making water quality management decisions such that surface waters should not be further degraded than background conditions. They are often used as a starting point in deriving water effluent requirements for the regulation of effluent discharges. Where the PWQO are more stringent than the background conditions, the relevant site-specific discharge requirements should consider the background surface water quality such that the effluent discharge will not degrade the receiving surface water quality from background conditions. In accordance with the PWQO, this may include developing site-specific guidance for select parameters and/or biomonitoring studies.

The findings for the stormwater monitoring program to-date have noted that, although the trigger concentration (or PWQO) for a select trigger parameter is exceeded from time-to-time, based on the aforementioned historical surface water sample results, the surface water quality within the North Thames River upstream of the Site has also exceeded the PWQO for select trigger parameters. According to Condition 6.(9) of the Sewage ECA, after three (3) years of monitoring the stormwater quality within the SWM Pond, the Municipality may submit to the MOECC District Manager a request for changes to the aforementioned list of trigger parameters and/or corresponding trigger concentrations, along with supporting monitoring data and an assessment report. Monitoring of the stormwater quality within the SWM Pond has been completed since 2013.

To consider the surface water quality within the North Thames River upstream of the Site as part of the evaluation process for the stormwater quality from the SWM Pond, the Municipality is requesting modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond, as detailed in **Section 2**.

2. STORMWATER ASSESSMENT MODIFICATIONS

The proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site are noted below.

- Use historic chemical data from the background surface water monitoring station SW1, which was located to evaluate surface water quality within the North Thames River upstream of the Site, to calculate the trigger concentration for each of the trigger parameters listed in Condition 6.(2) of the Sewage ECA. Chemical data for SW1 is available for 2006 to 2007. As discussed, in 2008 the MOECC approved the discontinuation of surface water monitoring at the Site for the North Thames River.

- Calculate the 80th percentile of the historic data for each trigger parameter from background station SW1. Where the 80th percentile for a given trigger parameter exceeds the PWQO upstream of the Site, the 80th percentile shall be used as the trigger concentration for the respective trigger parameter. Where the 80th percentile is less than the respective PWQO, the PWQO shall be used as the trigger concentration.

- In accordance with Condition 6.(3) of the Sewage ECA, if a trigger concentration is exceeded for any of the trigger parameters, the Municipality will resample the stormwater within the SWM Pond within two (2) weeks of receiving the monitoring results to confirm the exceedance of that parameter. Additionally, as part of the confirmatory sampling event, the Municipality will also collect a sample for biological toxicity analysis (acute lethality to Daphnia Magna and Rainbow Trout) to assess if the stormwater quality exiting from the SWM Pond has the potential for detrimental effects to aquatic life within the surface water within from the North Thames River. If the biological toxicity analysis results are acceptable, regardless of any trigger concentration or chemical data noted for the confirmatory sampling event, the stormwater will be considered acceptable for continued discharge from the SWM Pond.

- If the biological toxicity analysis results are not acceptable, the Municipality will operate the outlet valve for the SWM Pond in a normally closed position (non-discharge state) and notify the MOECC District Manager within ten (10) business days of this occurrence. The Municipality will then complete sampling for the trigger parameters and for biological toxicity analysis until acceptable biological toxicity analysis results are confirmed. Upon confirmation of acceptable biological toxicity analysis results, the Municipality will return the SWM Pond outlet valve to a normally open position for stormwater discharge and will notify the MOECC District Manager within ten (10) business days of this occurrence.

3. UPDATED STORMWATER TRIGGER CONCENTRATIONS

Considering the discussion in **Section 2**, the following summary details the trigger parameters and their respective proposed trigger concentrations, based on the historic chemical data for surface water station SW1 from 2006 to 2007. The historic chemical data for the trigger parameters for SW1, along with the calculated proposed trigger concentrations, are presented in **Table 1** (attached).

Trigger Parameter	Current Trigger Concentration (mg/L)	Proposed Trigger Concentration (mg/L)
Un-ionized Ammonia	0.02	0.020
Phenols	0.001	0.0042
Total Phosphorus	0.03	0.25
Boron	0.20	0.20
Iron	0.30	0.30

Notes: 1) 'mg/L' denotes milligrams per litre.

4. CLOSURE

We trust that this letter report detailing proposed modifications to the monitoring and evaluation requirements for stormwater quality within the Stormwater Management Pond at the Mitchell Industrial Landfill is satisfactory for the MOECC to approve the modifications as outlined in **Section 2**. Should there be any questions or comments, please contact us.

Yours very truly,

RWDI AIR Inc.

Brent J. Langille, B.Sc., P.Geo.
Senior Consultant / Associate

Andy de Jong, M.A.Sc., P.Eng.
Project Manager

AGD/BJL
Attach.

TABLES

Table 1: Site Background Surface Water Chemistry - General Parameters
Trigger Concentration Assessment for the Stormwater Management Pond

Mitchell Industrial Landfill, Mitchell, Ontario
Municipality of West Perth
Project No. 1601427-7000

Historic Surface Water Chemical Data

Parameter	Unit	PWQO	SW1	SW1	SW1
			May-06	May-07	Sep-07
Unionized Ammonia	mg/L	0.02	Not Required for Analysis		
Phenols	mg/L	0.001	**0.003**	<0.001	**0.005**
Total Phosphorus	mg/L	0.03	**0.37**	0.02	**0.07**
Boron (B)	mg/L	0.2	0.024	0.028	0.054
Iron (Fe)	mg/L	0.3	0.15	0.236	0.138

Calculation Data

Parameter	Unit	PWQO	SW1	SW1	SW1	Current SWM Pond Trigger Concentration	80th Percentile of the Historic Data	Proposed Trigger Concentration
			May-06	May-07	Sep-07			
Unionized Ammonia	mg/L	0.02	Not Required for Analysis			0.02	N/A	0.020
Phenols	mg/L	0.001	**0.003**	0.0005	**0.005**	0.001	0.0042	0.0042
Total Phosphorus	mg/L	0.03	**0.37**	0.02	**0.07**	0.03	0.25	0.25
Boron (B)	mg/L	0.2	0.024	0.028	0.054	0.20	0.044	0.20
Iron (Fe)	mg/L	0.3	0.15	0.236	0.138	0.30	0.20	0.30

Notes: 1) PWQO denotes Provincial Water Quality Objectives of the Ministry of the Environment and Energy, as revised February 1999.

2) < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).

3) Bold and Shaded denotes exceedance of the PWQO.

4) Where a concentration was detected at less than the laboratory RDL or MRL, the value was assumed to be half the RDL (or MRL) for the purposes of this assessment.

5) Blank denotes data not available.

6) It is noted that the MOECC agreed at a Site meeting in April 2008 that surface water monitoring in the North Thames River at stations SW1 and SW2 could be discontinued at the Site. Thus, surface water sampling was discontinued given the assimilative capacity of the North Thames River and the unlikely event of being able to detect landfill impacts. This agreement is noted in the 2012 Annual Monitoring Report for the Site, as well as a Groundwater and Surface Water Review letter prepared and provided by the MOECC to the Municipality of West Perth, which is dated August 20, 2012, reference No. 4214-8PYQLL.

Appendix A-5

MECP 2018 Inspection Report

Ministry of the Environment, Conservation and Parks
Southwestern Region
London District Office
London District
733 Exeter Rd
London ON N6E 1L3
Fax: (519) 873-5020
Tel: (519) 873-5000

Ministère de l'Environnement, de la Protection de la nature et des Parcs
Direction régionale du Sud-Ouest
733 Exeter Rd
London ON N6E 1L3
Télécopieur: (519) 873-5020
Tél:(519) 873-5000

Ontario

August 1, 2018

The Corporation of the Municipality of West Perth
169 St. David St.
Mitchell, West Perth, ON N0K 1N0
Attention: Mr. Richard Wright

Dear Mr. Wright,

RE: Solid, Non-Hazardous Waste Disposal Site Inspection
Reference Number 2574-B23SCB

Thank you for your cooperation during the inspection conducted on July 12, 2018. I have enclosed the final inspection report.

The inspection report outlines any identified non-compliance with Ministry legislation, policies, and/or approvals at the facility. In addition, the report details actions necessary to bring the facility into compliance (see Section 5.0).

Please read the enclosed report carefully, and feel free to call me at 519-873-4009 should you have any further questions.

Yours truly,

Sommer Foster

Sommer Foster
Provincial Officer (Bilingual)
London District Office

File Storage Number: SI MI TC CR

Ontario

Ministry of the Environment, Conservation and Parks
Ministère de l'Environnement, de la Protection de la nature et des Parcs

Solid Non-Hazardous Waste Disposal Site Inspection Report

Client:	The Corporation of the Municipality of West Perth Mailing Address: 169 St. David St, West Perth, Ontario, Canada, N0K 1N0 Physical Address: 169 St. David St, West Perth, Municipality, County of Perth, Ontario, Canada, N0K 1N0 Telephone: (519)348-8429, Extension: 236, FAX: (519)348-8935, email: rwright@westperth.com Client #: 2163-4KFS4B, Client Type: Municipal Government, NAICS: 913910		
Inspection Site Address:	Mitchell Industrial Landfill Address: Lot: 24, Concession: 2, Ref. Plan 44R-4576, Geographic Township: FULLARTON, West Perth, Municipality, County of Perth District Office: London - District GeoReference: Map Datum: NAD83, Zone: 17, Accuracy Estimate: 1-10 metres eg. Good Quality GPS, Method: GPS, UTM Easting: 484506, UTM Northing: 4812937, , LIO GeoReference: Zone: , UTM Easting: , UTM Northing: , Latitude: 43.4559, Longitude: -81.2009 Site #: 3358-84GLMX		
Contact Name:	Richard Wright	**Title:**	Environmental Services Coordinator
Contact Telephone:	519-301-4388 **ext**	**Contact Fax:**	519-348-8935
Last Inspection Date:	2017/03/10		
Inspection Start Date:	2018/07/12	**Inspection Finish Date:**	2018/07/12
Region:	Southwestern		

1.0 INTRODUCTION

Ontario has a comprehensive legislation and regulatory framework to ensure that wastes are managed in an environmentally safe manner. Through the Environmental Protection Act (EPA) and accompanying regulations, the Ministry of the Environment, Conservation and Parks (herein referred to as the ministry) has established a cradle-to-grave approach that includes the systematic control of collection , storage, transportation, treatment, recovery, and disposal of waste.

As part of the ministry's London District Office 2018-2019 inspection workplan, a proactive Solid Non-Hazardous Waste Disposal Site inspection was conducted at the Mitchell Industrial Landfill , owned and operated by the Municipality of West Perth (herein referred to as the municipality). The site is located on Lot 24, Concession 2, on the south side of Frank St. in the former Township of Fullarton. The site is surrounded by the Thames River (northern branch) to the west, agricultural cropland to the south, a wetland, a municipality-owned recreational park and commercial businesses to the east, and commercial/industrial properties to the north and northeast along Frank St .

The Mitchell Industrial Landfill (herein referred to as the site) has reportedly been operating as a waste disposal site since 1966. The site historically served a portion of the industrial base of the former Town of Mitchell . Received waste formerly consisted of waste rubber, waste by-products (Durisol) from Armtech Limited Partnership (formerly Durisol Inc.), sediment dredged from the North Thames River, and other waste organic materials.

The site now accepts non-hazardous solid waste from local industries. Waste by-products generated from local industries accepted at site are non-hazardous, but are not considered to be inert. The site was developed with minor environmental controls, suitable for industrial waste with a different composition from municipal waste, thereby conserving space in other landfills in West Perth.

The site was inspected on Thursday, June 12, 2018, by Provincial Officer Sommer Foster, in cooperation with municipality staff Richard Wright (Environmental Services Coordinator). The purpose of the inspection was to assess the site's compliance with requirements outlined in the EPA, the site's Waste Disposal Site Environmental Compliance Approval (ECA) No. A151202, the site's Municipal and Private Sewage Works ECA No. 7228-88HS3R, Ontario Regulation (O. Reg.) 347 (General – Waste Management), O. Reg. 232/98 (Landfilling Sites), and other relevant ministry legislation, policies, and guidelines. The inspection included a review of ministry files and a site visit.

2.0 INSPECTION OBSERVATIONS

Certificate of Approval Number(s):
Waste Disposal Site ECA No. A151202 (herein referred to as the Waste ECA)
- The initial approval for Mitchell Industrial landfill site was issued on 1972/12/20, and re-issued on 1973/03/31, 1974/05/23, and 1975/07/21. These initial approvals were certificates that only indicated that the Township of Mitchell was operating a landfill at site.
- The ECA was again amended on 1980/03/10 to include more detail relating to size and operating conditions. The ECA approved the use and operation of a 4-hectare (ha) landfill site that would accept waste consisting of 100% non-hazardous solid industrial waste. The condition requiring the ECA to be registered on property title was added.
- Notice 1 (issued 2008/09/18): This notice added conditions regarding design and operation, buffer areas, spills, record keeping, environmental monitoring, waste volume determination, annual reporting, and planning for site closure.
- Notice 2 (issued 2011/02/01): This notice revoked and replaced Conditions 3.1 and 7.1 (1), approving the updated Design and Operation (D&O) manual and environmental monitoring program.

Municipal and Private Sewage Works ECA No. 7228-88HS3R (herein referred to as the Sewage Works ECA)
- This ECA approves the establishment and operation of a stormwater management works at the Mitchell Industrial Landfill site.

2.1 FINANCIAL ASSURANCE:

Specifics:
Waste disposal sites owned by municipalities do not require the provision of financial assurance, according to O. Reg. 232/98, Section 17 (9).

2.2 APPROVED AREA OF THE SITE:

Specifics:
The Waste ECA approves the use and operation of a 4-ha landfill area on the 16.1-ha property.

At time of inspection, the limit of the landfilling area was marked with wooden stakes spray-painted with orange, in accordance with Condition 3.5 of the Waste ECA. The placement of these stakes informs the limit of the landfilling area to private contractors who may deposit and spread wastes at times when there are no municipality staff present.

A buffer of at least 30 metres (m) is required between the limit of the landfill and the property boundary, under Condition 4.1 of the Waste ECA. This buffer requirement is met on all sides of the waste footprint.

2.3 APPROVED CAPACITY:

Specifics:
Condition 3.4 in the Waste ECA approves the site to have a maximum theoretical capacity of 121,600 m^3. Based on land surveys and calculations conducted by the municipality's consultant, the 2017 annual report indicated that there remained a capacity of approximately 32,362 m^3 (Waste ECA Condition 8.1).

The municipality maintains records of waste received at site, as per Condition 6.1 of the Waste ECA. Based on the rate of waste received and deposited between November 2016 and October 2017, the landfill is estimated to reach maximum capacity in 24 years. Operations are not expected to terminate within two years, and therefore the municipality is not required to submit a closure plan (Waste ECA Condition 10).

2.4 ACCESS CONTROL:

Specifics:

2.4.1 Sign

The sign posted at the gate entrance fails to comply completely with Condition 3.6 of the Waste ECA as it does not include information relating to type of waste accepted and hours of operation.

2.4.2 Fencing and "No Trespassing" Signs

As per Condition 3.7 of the Waste ECA, the D&O manual identifies areas around the perimeter of the landfill that require fencing to effectively limit unauthorized persons access to the landfill and the type of fencing. A chain-link fence with lockable access gates was installed along the north perimeter, while the east perimeter has been outfitted with a 1.2-m post-and-wire fence. No fencing was installed along the south and west perimeters due to public access being limited by natural features (i.e. dense woods, Thames River).

"No trespassing" were posted at 30-m intervals, as per Condition 3.7 of the Waste ECA.

2.4.3 Entrance Gate

Under Condition 3.8, the municipality is required to lock and secure the entrance gate during non-operational hours. Typical practice is to keep the gate open and unlocked at all times, including during non-operational hours and at times when there are no trained operational staff on-site, and is therefore failing to comply with Condition 3.8. A person of the public was observed accessing site during Provincial Officer's site visit to take woodchips from the pile being stored temporarily at the front of the site. See Section 2.10.1 of this report for more information regarding on-site storage of woodchips. The municipality shall lock and secure the entrance gate to prevent unauthorized public access, as per Condition 3.8 of the Waste ECA.

2.5 COVER MATERIAL:

Specifics:

Condition 3.9 in the Waste ECA requires the application of cover material over the working face (daily cover) and over areas where landfilling has been temporarily discontinued for six months or more (intermediate cover). Durisol was the only waste accepted at site in 2017, and is identified in the D&O manual as an appropriate cover material. No additional material was applied to cover deposited Durisol over the waste footprint. No exposed waste was observed in the historic waste mound at the south end of the property at time of site visit. Vegetation was actively growing on the slope and top of the historic waste mound.

2.6 WASTE BURNING:

Specifics:

The Waste ECA does not address the burning of waste at site. As indicated in the D&O manual Section 6.1.6, burning of waste at the site is strictly prohibited. At time of site visit, there was no evidence of waste burning.

2.7 GROUNDWATER/SURFACEWATER IMPACT:

Specifics:

2.7.1 Groundwater

According to annual reports from 2017 and previous years, the overburden is composed of fine-grained silts and clay, which restricts the downward flow of groundwater and contaminants, thus protecting groundwater supply aquifer from contamination. The aquifer associated with the site's overburden is not a local source of drinking water. Local shallow groundwater is interpreted to flow radially around the site away from the waste footprint in a predominantly westerly direction towards the North Thames River.

Samples of groundwater monitoring wells are required to be taken and analysed twice annually, as per Condition 7.1 of the Waste ECA. Samples shall then be analysed for concentrations of organic and inorganic parameters listed in Condition 7.1, and compared to respective trigger concentrations calculated based on the ministry's Reasonable Use Policy (RUP). A trigger mechanism is activated if the concentrations of three or more parameters in groundwater samples exceed RUP trigger concentrations. Trigger mechanism activation acts as an alert signalling that groundwater may have been negatively impacted by the landfill, and additional studies are required to determine the cause of increased parameter concentrations.

Tables D-3 and D-4 of the 2017 annual report demonstrated that most monitoring wells were sampled semi-annually, but not all. Monitoring wells MW3S/D, MW9D, MW10D, MW11S, and MW12S did not have enough water to be sampled during monitoring site visits in either May or September 2017, and there were no additional attempts to resample monitoring wells. The exception was monitoring well MW10S, which has been dry since June 2009, and was

not able to be sampled again in 2017 due to being perpetually dry. The municipality shall ensure that consultants hired by the municipality take complete samples twice annually from monitoring wells that are not dry, during both the spring and fall, to meet Condition 7.1 of the Waste ECA and to best understand environmental conditions of site and possible impacts to groundwater on- and off-site.

As per the 2017 annual report, groundwater quality downgradient of landfill was found to be of generally acceptable quality. Leachate did not appear to have influenced groundwater quality sampled from monitoring wells in 2017. The following results were noted in 2017 annual report as they may be indicative of potential landfill impacts.

- MW11S (shallow flow system) and MW11D (deep flow system):
  - Location: West of waste footprint, interpreted to be downgradient relative to waste footprint.
  - Results: A pattern of slightly increasing concentration of chloride (a primary leachate indicator parameter) was detected in monitoring wells MW11S and MW11D since monitoring began in 2008. Concentrations do not exceed RUP trigger concentration.
  - Discussion: This increasing parameter concentration may be indicative of landfill-influenced groundwater in both shallow and deep flow systems. However, it did not appear that groundwater quality had been unacceptably impacted by leachate. Monitoring continues.
- MW9S (shallow flow system) and MW9D (deep flow system):
  - Location: East property line, interpreted to be upgradient/crossgradient relative to waste footprint.
  - Results: Chloride levels have exceeded RUP trigger concentrations in the shallow flow system since May 2015. In 2017, levels of other parameters were found to exceed their respective RUP concentrations in both shallow and deep flow systems (MW9S: total hardness, total dissolved solids (TDS), organic nitrogen, manganese; MW9D: TDS, fluoride, organic nitrogen, sodium). A trigger mechanism was activated.
  - Discussion: As monitoring wells MW9S and MW9D are interpreted to be upgradient/crossgradient to the waste footprint, exceedances are not attributed to be caused by the landfill. Investigation continues to assess whether parameter concentrations result from landfill leachate influences.
- MW7S (shallow flow system) and MW7D (deep flow system)
  - Location: Northeast corner of property line, interpreted to be upgradient/crossgradient relative to waste footprint.
  - Results: In 2017, levels of multiple parameters exceeded their respective trigger concentrations (MW7S: total dissolved solids (TDS), alkalinity, organic nitrogen, and manganese; MW7D: TDS, alkalinity, fluoride, organic nitrogen, and sodium). A trigger mechanism was activated for both MW7S and MW7D.
  - Discussion: As monitoring wells MW7S and MW7D are interpreted to be upgradient/crossgradient relative to the waste footprint, like MW9S and MW9D, exceedances are not attributed to be caused by the landfill. Investigation continues to assess whether parameter concentrations result from landfill leachate influences.

The following monitoring wells and gas probes were examined during site visit:

- MW1: Locked; vegetation not cleared from around well casing; soil erosion exposing well casing below ground level, which may allow water to accumulate.
- MW2: Locked; vegetation not cleared from around well casing.
- MW9S, MW6D, GP9S, and GP9D: Locked; vegetation not cleared from around well casing; soil erosion exposing well casing below ground level, which may allow water to accumulate.
- MW6S and MW6D: Locked; vegetation not cleared from around well casing.

Improperly managed wells may pose problems to groundwater. Wells can act like pathways that allow the movement of contaminants, such as bacteria, animals, plants, chemicals, and landfill leachate, into underground aquifers. Under O. Reg. 903 (Wells Regulation), well owners are responsible for the maintenance of every well located on their property at all times in a way that prevents the entry of surface water and other foreign materials into the well. While there is no evidence that contaminated water has entered into well, the municipality is reminded of its requirement to maintain all wells on property at all times after the completion of the wells' structural stage in a manner sufficient to prevent the entry into the well of surface water and other foreign materials, according to O. Reg. 903 Section 20 (1). At the minimum, this includes clearing vegetation from around well casings, and ensuring that ground around well casings remains intact and does not allow for the accumulation of potentially contaminated surface water around the base of the well casing.

2.7.2 Surface Water

The waste footprint is approximately 100 m east of the Thames River. There are no surface water bodies on-site, but surface water ponding has historically occurred north of the waste footprint, according to the 2017 annual report. The on-site stormwater management (SWM) system consists of a SWM pond and stormwater ditches that allow for the catchment of runoff from the landfill, and, following a period of retention, gradually discharge retained water to the Thames River.

As per Condition 7.1 of the Waste ECA and Condition 4 of the Sewage Works ECA, the SWM pond outlet discharge point is required to be sampled after rainfall events causing a discharge from the SWM pond to identify potential leachate impacts. A trigger mechanism is activated whenever the concentration of at least 1 of the parameters listed in Waste ECA Condition 7.1 and Sewage Works ECA Condition 5 (2) exceeds its respective RUP trigger concentrations. Once an exceedance event is confirmed, the SWM pond outlet structure is required to operate in a normally closed (or non-discharging) position.

The outlet structure of the SWM pond has operated in a normally closed position since May 2014 when surface water quality was deemed to be unsuitable for discharge, as per Condition 5 (5) of the Sewage Works ECA. Stormwater runoff is pumped out of the SWM pond after rainfall events by liquid hauler trucks, and transported to the Mitchell Wastewater Treatment Facility. However, during wet conditions when SWM works is likely to fill up more quickly, the soil is soft and wet, and liquid hauler trucks are not able to get to the SWM pond to pump water out.

Despite being operated in a closed position, drainage from SWM pond was observed over the sidewall during the May 2017 monitoring event, as indicated in the 2017 annual report. Analysis results of samples obtained during May 2017 discharge event demonstrated that surface water quality in SWM pond continues to not satisfy Sewage Works ECA Condition 5 (2) trigger parameter concentrations.

The discharge of contaminated stormwater from the SWM works to surface water is prohibited under Condition 5 (8) of the Sewage Works ECA. Not only did the municipality allow the discharge of confirmed contaminated stormwater, but it also failed to report this discharge (or spill) to the ministry, as per Condition 5.1 of the Waste ECA. Furthermore, this event is likely to not have been the only discharge event, especially during periods with snow melt or rainfall, due to the difficulty of driving liquid hauler trucks to pump out the SWM works.

The most recent SWM works operations manual (August 2012; Appendix A-5 in 2012 annual report prepared by R.J. Burnside & Associates Limited) included the Stormwater Contingency and Remedial Action Plan in Appendix B. However, Appendix B only included a letter written by the Upper Thames River Conservation Authority (UTRCA) that commented on the operations plan; no contingency and remedial plan was provided. As indicated in the UTRCA letter, the operations plan does not elaborate on how the municipality will manage spill situations where stormwater may inadvertently spill over and discharge from the SWM pond to surface water when SWM works is required to operate in a non-discharging state.

The municipality shall retain a qualified professional to develop and implement a contingency plan to manage contaminated stormwater to prevent its discharge from the SWM pond when stormwater quality results require outlet structures to be operated in a normally closed position. The contingency plan shall address conditions of heavy rain, snow melt, and when soils are too wet and soft to allow for liquid hauler trucks to reach the SWM pond.

2.8 LEACHATE CONTROL SYSTEM:

Specifics:
There is no active collection or treatment of leachate at site. Leachate is currently managed through natural attenuation in soils underlying the site.

Monitoring well MW4 situated in the waste footprint and samples are interpreted to be representative of leachate. Historically, the mildly alkaline leachate sampled from MW 4 has been characterized in the 2017 annual report by greater concentrations of most general parameters, major ions, organic parameters and select metals relative to background groundwater quality (i.e. TDS, alkalinity, organic nitrogen, dissolved organic carbon, iron, and manganese).

Samples are required to be taken twice annually, as per Condition 7.1 of the Waste ECA. Similarly to Section 2.7 of this inspection report, the minimum sampling requirements have not been met for the 2017 monitoring program. Tables D-1 and D-2 in the 2017 annual report indicated that there was not enough liquid available for a sample during consultants' September site visit, but there no additional attempts to resample monitoring well again in Fall 2017. The municipality shall ensure that samples are taken twice annually, during the spring and fall, to meet Condition 7.1 of the Waste ECA and to best understand environmental conditions of site, including those of leachate.

As per Condition 3.12 of the Waste ECA, the municipality is required to conduct visual inspections for leachate breakout on a weekly basis, to record results of inspection, and to report occurrences to the ministry's London District Office within one week of identifying leachate breakouts. However, Section 6.7 of the D&O manual indicates that visual inspection of leachate breakouts are to be conducted on a monthly basis due to the infrequent use of the site. In addition, under Condition 2.7 (a) of the Waste ECA, the conditions of the Waste ECA shall take precedence over the D&O manual. The municipality only conducts inspections on a monthly basis and therefore fails to comply with

Condition 3.12. The municipality shall increase frequency of visual inspections for leachate breakouts , ensuring to inspect entire landfill, including the south side of the historic area that has a steep slope and heavy vegetation cover .

At time of site visit, there was no evidence of water in contact with exposed waste.

2.9 METHANE GAS CONTROL SYSTEM:

Specifics:
There is no active methane gas collection or control at site . Methane gas generated within waste footprint is allowed to escape to the atmosphere through natural processes . While the D&O manual Section 5.2 refers to an on-site kiosk equipped with a landfill gas monitoring device , there are currently no permanent buildings or enclosed spaces on -site in which landfill gas has the potential to build up . The closest permanent structures to the waste footprint are off -site commercial facilities east of the property boundary .

Condition 7 (1) of the Waste ECA requires semi -annual monitoring of methane gas at site . Landfill gas measurements were obtained at 23 monitoring wells and at 3 gas probes. The 2017 annual report stated that landfill gas was detected above the lower explosive limit (LEL) of 1% methane in air at the leachate monitoring well (MW4). However, no landfill gas was detected above the 1% LEL in monitoring wells and gas probes beyond the waste footprint . The report concluded that landfill gas did not appear to be migrating beyond the waste footprint within the subsurface at concentrations that would represent an explosive risk to nearby structures .

2.10 OTHER WASTES:

Specifics:
This section of the inspection report will be used to discuss other wastes and miscellaneous topics that do not fit in other sections of this report, but remain relevant to the solid, non-hazardous waste disposal site inspection.

2.10.1 Other Wastes
No wastes other than solid, non-hazardous wastes are accepted at site, as per Condition 3.3 of the Waste ECA.

Materials such as gravel, sand, clean top soil, asphalt, woodchips, old machinery, concrete jersey barriers and flower planters were being stored at front of site, north of the landfilling area for future use on municipal property .

2.10.2 Litter
The municipality is required to undertake regular litter pick -up around the property May through September, including along the fenceline and in any surface water bodies on the property , as per Condition 3.10 of the Waste ECA. The municipality maintains records demonstrating that staff are picking up litter during required times .

2.10.3 Vermin and Vectors
The municipality is required to adequately control on -site vermin and vector, as per Condition 3.11 of the Waste ECA. The municipality maintains records that demonstrate staff inspect site monthly for rodents and birds . The 2017 annual report indicated that there were no significant problems with vermin or vectors . This finding was supported by observations made during site visit conducted for the purposes of this inspection report .

2.10.4 Reporting Spills and Upsets
As per Condition 5.1 of the Waste ECA, the municipality is required to report all spills and upsets immediately to the ministry's Spills Action Centre (SAC), and to record in a log the nature of spills /upsets, and actions taken for clean -up, correction, and prevention of future occurrence. There are no ministry records of any reported spills or upsets occurring at site, or municipality records that document any spills or upsets . Nevertheless, in May 2017, there was a discharge of stormwater from the SWM pond to the nearby north branch of the Thames River . While this was communicated to the ministry in the annual report , the municipality shall report all spills and upsets immediately to SAC at 1-866-MOE-TIPS (663-8477), and document the required information , as per Condition 5.1.

2.10.5 Complaints and Environmental Emergency Situations
The municipality is required to document all complaints received and any environmental emergency situations that occur at site, as per Condition 6.2 of the Waste ECA. Municipal staff indicated that site has not received any complaints regarding site operations. There were no records of complaints or environmental emergency situations at time of site visit.

2.10.6 Unacceptable Waste
The municipality is required to document all occurrences of receipt of unacceptable waste at site , as per Condition 6.4 of the Waste ECA. There were no records of such occurrences, and municipality staff confirmed that site has not received any unacceptable waste, including illegally dumped waste.

3.0 REVIEW OF PREVIOUS NON-COMPLIANCE ISSUES

The site was last inspected on 2011/05/25. Review of ministry files demonstrated no outstanding complaints or issues , orders, or other abatement instructions relating to the company .

4.0 SUMMARY OF INSPECTION FINDINGS (HEALTH/ENVIRONMENTAL IMPACT)

Was there any indication of a known or anticipated human health impact during the inspection and /or review of relevant material, related to this Ministry's mandate?

No

Specifics:

None.

Was there any indication of a known or anticipated environmental impact during the inspection and /or review of relevant material ?

Yes

Specifics:

Allowing the discharge of contaminated stormwater from the SWM works to surface water for reasons other than being necessary to avoid loss of life , personal injury, danger to public health or severe property damage (Sewage Works ECA Condition 5 (8); see Section 2.7.2 above)

Was there any indication of a known or suspected violation of a legal requirement during the inspection and/or review of relevant material which could cause a human health impact or environmental impairment ?

Yes

Specifics:

Failure to post sign that includes all information required under Waste ECA Condition 3.6 (see Section 2.4.1 above)

Failure to ensure that the entrance gate is locked and secured during non -operational hours (Waste ECA Condition 3.8; see Section 2.4.3 above).

Failure to ensure that environmental monitoring program at the site is conducted semi -annually as outlined in Waste ECA Condition 7.1 (1) (see Sections 2.7.1 and 2.8 above).

Failure to report all spills and upsets to the ministry 's Spills Action Centre and to record 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 (Waste ECA Condition 5.1; see Sections 2.7.2 and 2.10.4 above).

Failure to conduct and document on a weekly basis visual inspections of the landfill site for leachate outbreaks (Waste ECA Condition 3.12 (i); see Section 2.8 above).

Was there any indication of a potential for environmental impairment during the inspection and /or the review of relevant material ?

No

Specifics:

None.

Was there any indication of minor administrative non -compliance?

No

Specifics:

None.

5.0 ACTION(S) REQUIRED

As a result of these findings , the Corporation of the Municipality of West Perth is required to complete the following action items:

1. Retain a qualified professional to develop and implement a contingency plan to manage contaminated stormwater to prevent its discharge from the SWM pond when stormwater quality results require outlet structures to be operated in a normally closed position . The contingency plan shall address conditions of heavy rain , snow

melt, and when soils are too wet and soft to allow for liquid hauler trucks to reach the SWM pond (Sewage Works ECA Condition 5 (8); and Section 2.7.2 above).

2. Post a sign in a prominent location at the site entrance clearly stating information required under Condition 3.6 of the Waste ECA (see Section 2.4.1 above).

3. Ensure that the entrance gate is locked and secured during non-operational hours, as per Condition 3.8 of the Waste ECA (see Section 2.4.3 above).

4. Ensure that the environmental monitoring program is carried out semi-annually in the spring and fall by qualified persons as outlined in Condition 7.1 (1) of the Waste ECA (see Sections 2.7.1 and 2.8 above).

5. Report all spills and upsets immediately to the ministry's Spills Action Centre, and record in a log as to the nature of the spill or upset, and the action(s) taken for clean-up, correction and prevention of future occurrences, as per Condition 5.1 of the Waste ECA (see Sections 2.7.2 and 2.10.4 above).

6. Conduct and document visual inspections of the landfill site for leachate outbreaks on a weekly basis, as per Condition 3.12 (i) of the Waste ECA (see Section 2.8 above).

6.0 OTHER INSPECTION FINDINGS

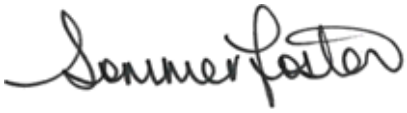
During site visit, municipality staff inquired about operating a dog park on the landfill property in the buffer area. The municipality may direct their inquiries, including the one regarding operating a dog park, to the ministry's Client Services and Permissions Branch by phone at 1-800-461-6290 or by email at MOECCpermissions@ontario.ca. The municipality is reminded that any changes to the site's design and operations manual shall be submitted and approved by the ministry prior to their implementation, as per Condition 3.2 of the Waste ECA.

7.0 INCIDENT REPORT

Applicable
1233-B37NYF

8.0 ATTACHMENTS

PREPARED BY:
Environmental Officer:
Name: **Sommer Foster**
District Office: **London District Office**
Date: **2018/07/31**
Signature



REVIEWED BY:
District Supervisor:
Name: **Dan Cromp**
District Office: **London District Office**
Date: **2018/08/01**

Signature:



File Storage Number: SI MI TC CR

Note:
"This inspection report does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they may apply to this facility. It is, and remains, the responsibility of the owner and/or the operating authority to ensure compliance with all applicable legislative and regulatory requirements"

APPENDIX B
Borehole Logs

Appendix B-1
Borehole Logs

LOG OF DRILLING OPERATIONS

MW1

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.2**	Location: **Mitchell, Ontario**	Ground (m amsl): **94.24**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/27/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/27/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description (Surface Elevation (m): 94.24)	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.
		TOPSOIL: ~300 mm thick		0.30	cement				
5.0	1.0	SILT: Brown and grey mottling, trace sand and gravel, occasional rootlets to 1.5 m in depth, very moist					SS		16
	2.0				bentonite seal		SS		25
10.0	3.0	-becoming light brown at approximately 2.3 m in depth					SS		30
		SILT TILL: Grey, some gravel trace sand, occasional cobble, moist		3.35	silica sand pack	@ 25 mm	SS		50
15.0	4.0						SS		74
	5.0						SS		66
		SAND: Light brown, some silt and gravel, poorly-graded, moist		5.64	▽	@ 125 mm	SS		50
20.0	6.0								
	7.0	SILTY SAND: Light brown, some gravel, very moist		7.16		@ 150 mm	SS		50
25.0	8.0	BOREHOLE TERMINATED		8.38	8.38				

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **5/16/2006**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\ORANGEVILLE\10830IND.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW2

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.2**	Location: **Mitchell, Ontario**	Ground (m amsl): **89.45**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/27/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/27/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.
		Surface Elevation (m): **89.45**							
		TOPSOIL: ~400 mm thick		0.40	cement				
5.0	1.0	SILTY SAND: Light brown, trace gravel, occasional rootlets to 1.5 m in depth, wet			bentonite seal		SS		6
	2.0				silica sand pack		SS		13
10.0	3.0	-increasing to some gravel at approximately 2.3 m depth					SS		10
							SS		69
	4.0					@ 135 mm	SS		50
		BOREHOLE TERMINATED		4.57	4.57				

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **5/16/2006**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\ORANGEVILLE\10830IND.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW3 S&D

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.2**	Location: **Mitchell, Ontario**	Ground (m amsl): **90.66**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/27/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/28/2006**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description (Surface Elevation (m): 90.66)	Strat. Plot	Depth (m)	Sample Num.	Sample Type	Sample Int.	Sample N.Val.
		FILL: Topsoil and silty sand and gravel, black, occasional large wood pieces, very moist to wet				SS		6
5.0	1.0					SS		6
	2.0			2.29		SS		8
10.0	3.0	SILTY SAND: Light grey, some gravel, saturated				SS		9
	4.0					SS		27
15.0	5.0	SANDY SILT: Light brown, some gravel		4.50		SS		48
20.0	6.0	SILTY SAND: Light brown, some gravel, wet		5.64	@ 75 mm	SS		50
	7.0			7.16				
25.0	8.0	SAND: Light brown, some silt, trace gravel, wet			@ 150 mm	SS		50
30.0	9.0				@ 125 mm	SS		50
		BOREHOLE TERMINATED		9.75				

cement
bentonite seal
silica sand pack
bentonite seal
silica sand pack
9.14

Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **5/16/2006**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\ORANGEVILLE\10830IND.GPJ TEMPLATE.GDT 22/9/10

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

BURNSIDE

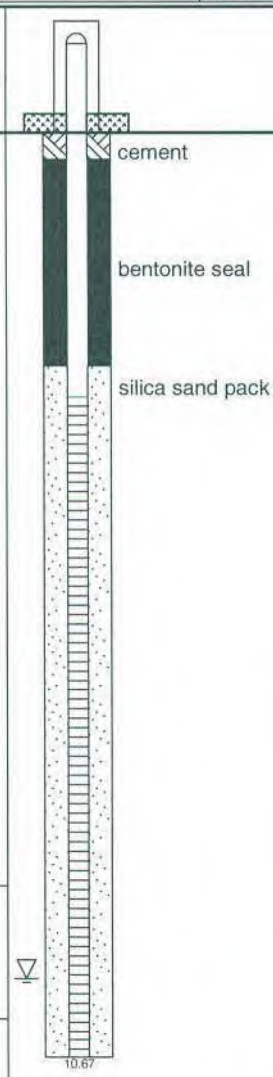
LOG OF DRILLING OPERATIONS

MW4

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill**	Logged by: **C. Ostrowka**
Project No.: **MSO 10830.2**	Location: **Mitchell, Ontario**	Ground (m amsl): **99.04**
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/27/2006**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/27/2006**	Sand Pack (m amsl):

Surface Elevation (m): **99.04**

Depth Scale (ft) (m)	Stratigraphic Description	Strat. Plot	Depth (m)	Sample Num.	Type	Int.	N.Val.
	FILL: Silt, dark brown, trace topsoil, gravel, moist to very moist						
	-thin black scrap rubber pieces from approximately 1.5 to 7.6 m in depth -occasional scrap metal pieces at approximately 2.0 to 3.0 m in depth -becoming dark greyish brown at approximately 2.3 m in depth						
	-becoming dark grey and wet at approximately 6.1 m in depth			@ 275 mm	SS	X	58
	-possible large piece of concrete encountered at approximately 7.6 m in depth			@ 50 mm	SS	X	50
	FILL: Silt, olive colour, trace topsoil, organics, sand, and gravel, saturated		8.68		SS	X	11
	SANDY SILT: Light brown, some gravel, saturated		10.21		SS	X	11
	BOREHOLE TERMINATED		11.28				



Prepared By: **C. Ostrowka** Checked By: **K. Hawkes** Date Prepared: **5/16/2006**

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE			
Water found @ time of drilling	Pipe: **51 mm dia. PVC**	AC	Auger Cutting	SS	Split Spoon
Static Water Level -	Screen: **51 mm dia. PVC #10 slot**	CS	Continuous	AR	Air Rotary
		RC	Rock Core	WC	Wash Cuttings

BHLOG GUELPH P:\GINT\PROJECTS\ORANGEVILLE\10830IND.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW5s

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **J. Rutherford**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/12/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/12/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark to medium brown SILT and ORGANIC matter, trace fine sand, firm massive, moist.			cement	1	SS			
	1.0				bentonite seal	2	SS			1.0
5.0		Medium brown SANDY SILT, some gravel and cobbles, subangular, loose, soft, wet.		1.37	silica sand pack	3	SS		5.0	
	2.0	Light brown SAND AND GRAVEL, some silt, trace cobbles, subangular to angular, loose, massive, saturated.		1.98		4	SS			2.0
10.0	3.0				silica sand pack	5	SS		10.0	3.0
	4.0					6	SS			4.0
15.0		Light brown fine SAND, some subangular gravel, well sorted, v. loose, saturated.		4.57		7	SS		15.0	
	5.0			5.03	cave					5.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW5d

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **J. Rutherford**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/12/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/12/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)
		Dark to medium brown SILT and ORGANIC matter, trace fine sand, firm massive, moist.		
5.0	1.0	Medium brown SANDY SILT, some gravel and cobbles, subangular, loose, soft, wet.		1.37
	2.0	Light brown SAND AND GRAVEL, some silt, trace cobbles, subangular to angular, loose, massive, saturated.		1.98
10.0	3.0			
	4.0			
15.0	5.0	Light brown fine SAND, some subangular gravel, well sorted, v. loose, saturated.		4.57
		Light brown fine SAND, some silt to silty, trace gravel, compact, generally massive but some minor layering, wet to saturated.		5.18
20.0	6.0			
	7.0			
25.0	8.0	Light brown SAND AND GRAVEL, silty, some layering, saturated.		7.47
		Light brown SAND, some silt, trace gravel, dense with loose seams, some layering, wet.		8.08
				8.69



SAMPLE Num.	Type	Int.	N.Val.
1	SS		9
2	SS		6
3	SS		16
4	SS		82
5	SS		11
6	SS		40
7	SS		42
8	SS		78
9	SS		75
10	SS		78
11	SS		82
12	SS		85+

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW6s

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/13/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/13/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL, firm, massive, moist.		0.30	cement					
5.0	1.0	Light brown SILTY SAND, some gravel, loose to v. dense with depth, massive, moist. Increasing silt with depth.			bentonite seal				5.0	1.0
	2.0				silica sand pack					2.0
10.0	3.0	SANDY SILT, some gravel, v. dense, massive, moist, (TILL).		3.05					10.0	3.0
	4.0				silica sand pack					4.0
15.0	5.0			5.31	5.33				15.0	5.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE				
Water found @ time of drilling	Pipe: **51 mm dia. PVC**	AC	Auger Cutting	SS	Split Spoon
Static Water Level -	Screen: **51 mm dia. PVC #10 slot**	CS	Continuous	AR	Air Rotary
		RC	Rock Core	WC	Wash Cuttings

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW6d

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **J. Rutherford**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/13/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/13/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.
		Dark brown TOPSOIL, firm, massive, moist.		0.30	cement	1	SS		9
	1.0	Light brown SILTY SAND, some gravel, loose to v. dense with depth, massive, moist. Increasing silt with depth.			bentonite seal	2	SS		8
5.0	2.0					3	SS		10
						4	SS		26
10.0	3.0			3.05		5	SS		55
	4.0	SANDY SILT, some gravel, v. dense, massive, moist, (TILL).				6	SS		64
15.0	5.0				grout	7	SS		50+
						ns	SS		
20.0	6.0			6.10		ns	SS		70+
	7.0	Medium grey brown SAND AND SILT, very dense, massive, friable, moist, (TILL).				10	SS		150+
25.0	8.0				bentonite seal	11	SS		150+
					silica sand pack	12	SS		100+
30.0	9.0			9.14		13	SS		59
	10.0	Medium brown fine SAND, trace sub-angular to sub-rounded gravel, dense, massive, saturated.			silica sand pack	14	SS		77
35.0	11.0				10.67	15	SS		103
				11.28					

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW7s

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/14/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/15/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Light brown stony FILL.		0.23	cement					
	1.0	Medium to dark brown mixture of SILT and organic material. Trace sand, gravel and clay. Compact, firm, moist. Some roots, occ. rust coloured mottling.		1.07						
5.0	2.0	Light to medium brown SILT with some clay to clayey, trace to some sand, trace gravel, firm to stiff, massive, moist. Minor grey/brown and light brown/orange brown mottling.			bentonite seal				5.0	1.0
10.0	3.0								10.0	3.0
	4.0									4.0
15.0	5.0	Light brown SILT. Some sand and gravel, trace to some clay. Massive, stiff, moist. More friable than above unit, sample tends to be break apart on horizontal planes (TILL).		4.57	silica sand pack				15.0	5.0
20.0	6.0				silica sand pack				20.0	6.0
	7.0									7.0
25.0	8.0	Medium grey SAND AND SILT, trace to some clay, trace gravel. Massive, very stiff to hard, moist to wet. Hard drilling, many stones. (TILL).		7.62 8.03	8.03				25.0	8.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW7d

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/14/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/14/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)
		Light brown stony FILL.		0.23
		Medium to dark brown mixture of SILT and organic material. Trace sand, gravel and clay. Compact, firm, moist. Some roots, occ. rust coloured mottling.		1.07
		Light to medium brown SILT with some clay to clayey, trace to some sand, trace gravel, firm to stiff, massive, moist. Minor grey/brown and light brown/orange brown mottling.		
		Light brown SILT. Some sand and gravel, trace to some clay. Massive, stiff, moist. More friable than above unit, sample tends to be break apart on horizontal planes (TILL).		4.57
		Medium grey SAND AND SILT, trace to some clay, trace gravel. Massive, very stiff to hard, moist to wet. Hard drilling, many stones. (TILL).		7.62
				14.33



SAMPLE Num.	Type	Int.	N.Val.
1	SS		17
2	SS		13
3	SS		13
4	SS		15
5	SS		13
6	SS		35+
7	SS		74
8	SS		61
9	SS		85+
10	SS		60+
11	SS		53+
12	SS		50+
13	SS		60+
14	SS		
15	SS		79
16	SS		107
17	SS		82
18	SS		89
19	SS		60+

Depth Scale (ft): 5.0, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, 45.0
Depth Scale (m): 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, 11.0, 12.0, 13.0, 14.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW8s

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/15/2008**	Static Water Level (m amsl):
Drilling Method: **Solid Stem Auger**	Date Completed: **5/15/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL, soft, moist.		0.23	cement					
	1.0	Dark brown SILT and organic matter, some clay, trace sand and gravel, soft to firm, massive, moist.			bentonite seal					1.0
5.0									5.0	
	2.0	Medium brown SILTY CLAY, trace sand and gravel, firm, massive, moist.		1.52	silica sand pack					2.0
10.0	3.0			3.05					10.0	3.0
		Medium to light brown SILTY SAND, some clay to clayey, trace gravel, firm to soft, wet to saturated.		3.35	silica sand pack					
	4.0	Medium brown CLAYEY SANDY SILT, some to trace subangular gravel, trace cobbles, hard, massive, moist, (TILL).								4.0
15.0	5.0			5.18	5.18				15.0	5.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307 8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW8d

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/15/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/15/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL, soft, moist.		0.23	cement	1	SS		7		
	1.0	Dark brown SILT and organic matter, some clay, trace sand and gravel, soft to firm, massive, moist.			bentonite seal	2	SS		6		1.0
5.0				1.52		3	SS		13	5.0	
	2.0	Medium brown SILTY CLAY, trace sand and gravel, firm, massive, moist.				4	SS		10		2.0
10.0	3.0			3.05		5	SS		20	10.0	3.0
		Medium to light brown SILTY SAND, some clay to clayey, trace gravel, firm to soft, wet to saturated.		3.35	grout	6	SS		51		
	4.0	Medium brown CLAYEY SANDY SILT, some to trace subangular gravel, trace cobbles, hard, massive, moist, (TILL).				7	SS		73+		4.0
15.0	5.0					8	SS		55+	15.0	5.0
	6.0			6.10		9	SS		49	20.0	6.0
20.0		Medium to light brown SILT, some sand and clay, trace to some gravel, dense, stiff, moist, (TILL).			bentonite seal						
	7.0				silica sand pack	10	SS		62		7.0
25.0		Medium brown CLAYEY SILT, some sand and subangular gravel, very stiff to hard, massive, moist, (TILL).		7.62		11	SS		50+	25.0	
	8.0			8.23	silica sand pack	12	SS		65+		8.0
30.0	9.0	Medium grey SILT, some clay to clayey, some sand and subangular gravel, very stiff to hard, massive, moist, (TILL).		9.20		13	SS		74+	30.0	9.0
				9.75							

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE				
Water found @ time of drilling	Pipe: **51 mm dia. PVC**	AC	Auger Cutting	SS	Split Spoon	
Static Water Level -	Screen: **51 mm dia. PVC #10 slot**	CS	Continuous	AR	Air Rotary	
		RC	Rock Core	WC	Wash Cuttings	

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

GP9

BURNSIDE

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/14/2010**	Static Water Level (m amsl):
Drilling Method: **Solid Stem Auger**	Date Completed: **4/14/2010**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL.		0.18	cement					
	1.0	Light brown SILT AND CLAY, trace sand and gravel, firm to stiff, massive, moist, plastic.			bentonite seal					1.0
5.0					silica sand pack				5.0	
	2.0			2.29	2.29					2.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE				
Water found @ time of drilling	Pipe: **32 mm dia. PVC**	AC	Auger Cutting	SS	Split Spoon	
Static Water Level -	Screen: **32 mm dia. PVC #10 slot**	CS	Continuous	AR	Air Rotary	
		RC	Rock Core	WC	Wash Cuttings	

BHLOG ORANGEVILLE P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 29/11/10

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

LOG OF DRILLING OPERATIONS

MW9s

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/20/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/20/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL.		0.18	cement					
5.0	1.0	Light brown SILT AND CLAY, trace sand and gravel, firm to stiff, massive, moist, plastic.							5.0	1.0
	2.0				bentonite seal					2.0
		Light brown SILT AND SAND, some clay, trace to some gravel, very stiff to hard, massive, moist to wet, (TILL).		2.59						
10.0	3.0								10.0	3.0
	4.0				silica sand pack					4.0
15.0	5.0								15.0	5.0
					silica sand pack					
20.0	6.0								20.0	6.0
		Medium grey SILT AND SAND, trace to some clay, some sand, trace gravel, very stiff to hard, massive, moist. (TILL).		6.10						
25.0	7.0			7.62					25.0	7.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW9d

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/16/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/16/2008**	Sand Pack (m amsl):

Depth Scale (ft) (m)	Stratigraphic Description	Depth (m)
	Dark brown TOPSOIL.	0.18
	Light brown SILT AND CLAY, trace sand and gravel, firm to stiff, massive, moist, plastic.	2.59
	Light brown SILT AND SAND, some clay, trace to some gravel, very stiff to hard, massive, moist to wet, (TILL).	6.10
	Medium grey SILT AND SAND, trace to some clay, some sand, trace gravel, very stiff to hard, massive, moist. (TILL).	12.80



SAMPLE Num.	Type	Int.	N.Val.
1	SS		13
2	SS		12
3	SS		23
4	SS		30
5	SS		35
6	SS		55
7	SS		58+
8	SS		88
9	SS		53
10	SS		50+
11	SS		53+
12	SS		63+
13	SS		57+
14	SS		61
15	SS		107+
16	SS		61
17	SS		95

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE			
Water found @ time of drilling	Pipe: **51 mm dia. PVC**	AC	Auger Cutting	SS	Split Spoon
Static Water Level -	Screen: **51 mm dia. PVC #10 slot**	CS	Continuous	AR	Air Rotary
		RC	Rock Core	WC	Wash Cuttings

BHLOG GUELPH P:\GINT\PROJECTS\M\MSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

GP10s/d

BURNSIDE

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/14/2010**	Static Water Level (m amsl):
Drilling Method: **Solid Stem Auger**	Date Completed: **4/14/2010**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
5.0	1.0	Dark brown TOPSOIL and SILT, some clay, trace sand and gravel, loose, moist.		0.30	cement				5.0	1.0
		Medium brown SILT, clayey, trace sand and gravel, firm to stiff, massive, moist, some plasticity.			bentonite seal					
10.0	3.0				silica sand pack				10.0	3.0
		Medium grey CLAY, silty, trace sand and subangular gravel, soft to firm, massive, wet, plastic.		3.35	bentonite seal					
15.0	5.0				silica sand pack				15.0	5.0
20.0	6.0			6.10					20.0	6.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

MONITORING WELL DATA
- Pipe: **32 mm dia. PVC**
- Screen: **32 mm dia. PVC #10 slot**

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

BHLOG ORANGEVILLE P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 29/11/10

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

LOG OF DRILLING OPERATIONS

MW10s

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/21/2008**	Static Water Level (m amsl):
Drilling Method: **Solid Stem Auger**	Date Completed: **5/21/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL and SILT, some clay, trace sand and gravel, loose, moist.		0.30	cement					
	1.0	Medium brown SILT, clayey, trace sand and gravel, firm to stiff, massive, moist, some plasticity.			bentonite seal					1.0
5.0	2.0								5.0	2.0
10.0	3.0								10.0	3.0
		Medium grey CLAY, silty, trace sand and subangular gravel, soft to firm, massive, wet, plastic.		3.35	grout					
15.0	5.0								15.0	5.0
20.0	6.0	Medium grey SILT TILL, some clay to clayey, trace to some sand and gravel, hard, moist.		6.10	bentonite seal				20.0	6.0
	7.0				silica sand pack					7.0
25.0	8.0	Medium grey SAND and SILT, trace clay and gravel, compact, massive, moist.		7.62					25.0	8.0
		Medium grey SILT TILL, some clay to clayey, some sand, trace to some gravel, hard, moist.		7.85	silica sand pack					
30.0	9.0								30.0	9.0
	10.0			10.06	10.06					10.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW10d

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

BURNSIDE

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **5/21/2008**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **5/21/2008**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL and SILT, some clay, trace sand and gravel, loose, moist.		0.30	cement	1	SS		11		
	1.0	Medium brown SILT, clayey, trace sand and gravel, firm to stiff, massive, moist, some plasticity.			bentonite seal	2	SS		23		1.0
5.0	2.0					3	SS		24	5.0	2.0
						4	SS		36		
10.0	3.0					5	SS		25	10.0	3.0
		Medium grey CLAY, silty, trace sand and subangular gravel, soft to firm, massive, wet, plastic.		3.35		6	SS		14		
	4.0										4.0
15.0	5.0					7	SS		13	15.0	5.0
						8	SS		25		
20.0	6.0	Medium grey SILT TILL, some clay to clayey, trace to some sand and gravel, hard, moist.		6.10	grout	9	SS		74+	20.0	6.0
	7.0					10	SS		100+		7.0
25.0		Medium grey SAND and SILT, trace clay and gravel, compact, massive, moist.		7.62		11	SS		30+	25.0	
	8.0	Medium grey SILT TILL, some clay to clayey, some sand, trace to some gravel, hard, moist.		7.85							8.0
						12	SS		60+		
30.0	9.0					13	SS		30+	30.0	9.0
	10.0					14	SS				10.0
35.0						15	SS		50+	35.0	
	11.0					16	SS				11.0
40.0	12.0					17	SS		85+	40.0	12.0
	13.0				bentonite seal	18	SS		45+		13.0
45.0	14.0				silica sand pack	19	SS		96	45.0	14.0
					silica sand pack	20	SS		100+		
50.0	15.0				15.24	21	SS		40+	50.0	15.0
				15.85							

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW11s

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/15/2010**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/15/2010**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL and SILT with organics, trace sand, gravel and clay, very soft, moist, some plasticity.		0.25	cement					
	1.0	Medium to light reddish brown fine SAND AND SILT, trace gravel and clay, very soft to soft, massive, wet, some plasticity, few small pockets of coarser sand.			bentonite seal					1.0
5.0	2.0				silica sand pack				5.0	2.0
10.0	3.0				silica sand pack				10.0	3.0
	4.0	Greyish brown SILTY SAND, trace gravel, 1 - 2 mm stones throughout, trace to no clay, firm to stiff, non plastic.		3.25						4.0
		Greyish brown fine SAND, some silt, trace gravel, dense, stiff, massive, wet, non plastic.		4.27						
				4.57	4.57					

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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; SS Split Spoon; CS Continuous; AR Air Rotary; RC Rock Core; WC Wash Cuttings

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307 8C.GPJ TEMPLATE.GDT 22/9/10

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

LOG OF DRILLING OPERATIONS

MW11d

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Lantech Drilling Services Inc.**	Date Started: **4/15/2010**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **4/15/2010**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL and SILT with organics, trace sand, gravel and clay, very soft, moist, some plasticity.		0.25	cement		SS		13		
	1.0	Medium to light reddish brown fine SAND AND SILT, trace gravel and clay, very soft to soft, massive, wet, some plasticity, few small pockets of coarser sand.					SS		6		1.0
5.0	2.0						SS		8	5.0	2.0
							SS		4		
10.0	3.0				bentonite seal		SS		26	10.0	3.0
		Greyish brown SILTY SAND, trace gravel, 1 - 2 mm stones throughout, trace to no clay, firm to stiff, non plastic.		3.25			SS		78		4.0
15.0	4.0	Greyish brown fine SAND, some silt, trace gravel, dense, stiff, massive, wet, non plastic.		4.27			SS		63	15.0	5.0
	5.0	Greyish brown SILTY SAND, trace gravel, trace 1 - 2 mm stones, trace to no clay, some minor layering, firm to stiff, non plastic.		5.03			SS		55+		
20.0	6.0	Greyish light brown SAND AND GRAVEL, medium to coarse sand, trace silt, loose, saturated, non plastic, gravel is mostly limestone.		5.94	silica sand pack		SS		67	20.0	6.0
	7.0			6.71	silica sand pack		SS		70+		7.0
25.0	8.0	Medium speckled greyish brown SAND, some gravel to gravelly, trace silt, loose to compact, saturated, non plastic, some alternating medium and coarse layers (3 - 5 cm wide), medium layers include some fine sand.		8.08	cave		SS		69	25.0	8.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

LEGEND	MONITORING WELL DATA	SAMPLE TYPE	
▼ Water found @ time of drilling	Pipe: **51 mm dia. PVC**	AC	Auger Cutting
▽ Static Water Level -	Screen: **51 mm dia. PVC #10 slot**	CS	Continuous
		RC	Rock Core
		SS	Split Spoon
		AR	Air Rotary
		WC	Wash Cuttings

BHLOG GUELPH P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 22/9/10

LOG OF DRILLING OPERATIONS

MW12s

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Noll Drilling Inc.**	Date Started: **3/18/2013**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **3/18/2013**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark to medium brown SILT and ORGANICS, some gravel, sand and clay, soft, moist, some plasticity.		0.30	cement					
	1.0	Medium brown SANDY SILT, clayey, trace gravel, soft to very soft, moist to wet, some to no plasticity. Darker coloured near top, becoming wetter with depth.			bentonite seal					1.0
5.0									5.0	
	2.0			1.83						2.0
		Light to medium brown SAND, fine, some silt, trace gravel and clay, soft at top but becoming stiffer with depth to very stiff at bottom, wet but becoming less saturated with depth, non plastic.			silica sand pack					
10.0	3.0								10.0	3.0
	4.0			4.27	4.27					4.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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; SS Split Spoon; CS Continuous; AR Air Rotary; RC Rock Core; WC Wash Cuttings

BH:LOG ORANGEVILLE P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 3/21/13

LOG OF DRILLING OPERATIONS

MW12d

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Noll Drilling Inc.**	Date Started: **3/15/2013**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **3/15/2013**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	Type	Int.	N.Val.	Depth Scale (ft)	Depth Scale (m)
		Dark to medium brown SILT and ORGANICS, some gravel, sand and clay, soft, moist, some plasticity.		0.30	cement		SS		2		
	1.0	Medium brown SANDY SILT, clayey, trace gravel, soft to very soft, moist to wet, some to no plasticity. Darker coloured near top, becoming wetter with depth.					SS		4		1.0
5.0							SS		5	5.0	
	2.0	Light to medium brown SAND, fine, some silt, trace gravel and clay, soft at top but becoming stiffer with depth to very stiff at bottom, wet but becoming less saturated with depth, non plastic.		1.83			SS		2		2.0
10.0	3.0				grout		SS		4	10.0	3.0
	4.0						SS		10		4.0
15.0	5.0						SS		15	15.0	5.0
							SS		27		
	6.0				bentonite seal						6.0
20.0							SS		57	20.0	
	7.0						SS		78		7.0
25.0					silica sand pack		SS		100+	25.0	
	8.0			8.23	8.23						8.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BH:LOG ORANGEVILLE P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 3/21/13

LOG OF DRILLING OPERATIONS

MW13s

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Noll Drilling Inc.**	Date Started: **3/19/2013**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **3/19/2013**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	Depth Scale (ft)	Depth Scale (m)
		Dark brown TOPSOIL.		0.10	cement					
		Medium brown SILT AND CLAY, trace sand, soft to firm, moist, plastic.		0.61						
	1.0	Light brown GRAVELLY SILTY SAND, trace to some clay, loose becoming stiffer with depth to very stiff below 7.6m. Moist to wet below 2 m. Non plastic.			bentonite seal					1.0
5.0									5.0	
	2.0	(see notes on MW13d)								2.0
10.0	3.0				silica sand pack				10.0	3.0
	4.0									4.0
15.0									15.0	
	5.0			5.18	5.18					5.0

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG ORANGEVILLE P:\GINT\PROJECTS\MMSO14307.8C.GPJ TEMPLATE.GDT 3/21/13

LOG OF DRILLING OPERATIONS

MW13d

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

Client: **Municipality of West Perth**	Project Name: **Mitchell Industrial Landfill Site**	Logged by: **D. Durham**
Project No.: **MSO14307**	Location: **Mitchell, Ontario**	Ground (m amsl):
Drilling Co.: **Noll Drilling Inc.**	Date Started: **3/19/2013**	Static Water Level (m amsl):
Drilling Method: **Hollow Stem Auger**	Date Completed: **3/19/2013**	Sand Pack (m amsl):

Depth Scale (ft)	Depth Scale (m)	Stratigraphic Description	Strat. Plot	Depth (m)		SAMPLE Num.	SAMPLE Type	SAMPLE Int.	SAMPLE N.Val.
		Dark brown TOPSOIL.		0.10	cement				6
		Medium brown SILT AND CLAY, trace sand, soft to firm, moist, plastic.		0.61					4
5.0	1.0	Light brown GRAVELLY SILTY SAND, trace to some clay, loose becoming stiffer with depth to very stiff below 7.6m. Moist to wet below 2 m. Non plastic.							12
	2.0								8
10.0	3.0	Note: Generally sample recovery was very poor. Difficult to assess the content of the finer portion (silts and clays) due to high number of blows and poor recovery. Samples tended to be pulverized, not cohesive and formed wet slurry in the spoon. Gravel size stones (and greater?) impeded spoon penetration.			grout				120+
	4.0								75+
15.0	5.0								100+
									120+
20.0	6.0				bentonite seal				150+
	7.0								200+
25.0	8.0								225+
					silica sand pack				300+
30.0	9.0			9.30	9.14				200+

Prepared By: **D. Durham** Checked By: **K. Hawkes** Date Prepared:

This borehole log was prepared for hydrogeological and/or environmental purposes and does not necessarily contain information suitable for a geotechnical assessment of the subsurface conditions. Borehole data requires interpretation by R. J. Burnside & Associates Limited personnel before use by others.

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

BHLOG ORANGEVILLE P:\GINT\PROJECTS\MWSO14307.8C.GPJ TEMPLATE.GDT 3/21/13

Log of Borehole: MW5D (Replacement)

Project #: 333658.001 ***Logged By:*** DH

Project: Annual Monitoring Report

Client: Municipality of West Perth

Location: Mitchell Industrial Landfill Site

Drill Date: October 7, 2024

SUBSURFACE PROFILE					SAMPLE			
Depth (ft / m)	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
0 ft / 0 m		Ground Surface						
		Silt Medium to dark brown, some organics, trace sand, moist.	0.00					
4.5 ft / 1.37 m		***Sandy Silt*** Medium brown, some gravel and cobbles, wet.	1.37					
6.5 ft / 1.98 m		***Sand and Gravel*** Light brown, some silt, trace cobbles, wet.	1.98	Bentonite; Riser				

Contractor: Strata Drilling Group

Drilling Method: Hollow Stem Augers

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

Log of Borehole: MW5D (Replacement)

Project #: 333658.001 **Logged By:** DH

Project: Annual Monitoring Report

Client: Municipality of West Perth

Location: Mitchell Industrial Landfill Site

Drill Date: October 7, 2024

Depth	Symbol	Description	Measured Depth (m)	Monitoring Well Details	Recovery (%)	Sample ID	Soil Vapour Concentration* (ppm) CGI/PID	Laboratory Analysis
15								
16		***Sand*** Light brown, some silt, trace gravel, wet.	4.57					
17	5							
18								
19								
20	6							
21								
22								
23	7							
24								
25		***Sand and Gravel*** Light brown, some silt, wet.	7.47					
26	8							
27		***Sand*** Light brown, some silt, trace gravel, wet.	8.08					
28		End of Borehole	8.53					
29		Note: No soil samples were collected or submitted for laboratory analyses. Please refer to previous 2008 RDWI borehole log for additional information.		Water level measured 4.88 mbgs on October 7, 2024.				
30	9							

Silica Sand

Screen

Contractor: Strata Drilling Group

Drilling Method: Hollow Stem Augers

Well Casing Size: 5.08 cm

Note:
* Soil vapour concentrations measured using a RKI Eagle 2 equipped with a photoionization detector (PID) and a combustible gas indicator (CGI).

Grade Elevation: NM

Top of Casing Elevation: NM

APPENDIX C
Groundwater Level Elevations

Table C-1

Groundwater Level Elevations

TABLE C-1
GROUNDWATER LEVEL ELEVATIONS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Monitoring Well	MW1	MW2	MW3S	MW3D	MW4	MW5S	MW5D	MW6S	MW6D	MW7S	MW7D	MW8S	MW8D	MW9S	MW9D	MW10S	MW10D	MW11S	MW11D	MW12S	MW12D	MW13S	MW13D	GP9	GP10S	GP10D
Measuring Point Elevation[1] (mASL)	343.81	339.01	340.23	340.21	348.59	336.35	336.37	338.4	338.52	344.14	344.19	343.44	343.76	343.16	343.21	346.04	346.04	334.88	334.81	335.58	335.33	335.6	335.61	343.19	346.29	346.29
Measure Point Elevation[2] (mASL)	343.81	339.01	340.23	340.21	348.59	336.35	336.42	338.4	338.52	344.91	344.96	343.44	343.76	343.16	343.21	346.04	346.04	334.88	334.81	335.58	335.33	335.6	335.61	343.19	346.29	346.29
Water Level Elevations (mBTOP)																										
11-May-06	6.68	1.75	3.41	4.40	10.55																					
06-Jun-06	7.22	1.88	3.73	4.74																						
23-May-07	7.02	1.88	3.55	4.21	10.75																					
13-Sep-07	8.33	3.61	5.23	6.54	11.38																					
24-Jun-08	7.4	1.79	3.49	3.78	10.88	4.03	4.93	1.96	8.06	2.32	7.7	2.83	5.26	3.31	Dry	Dry	Dry									
18-Sep-08	7.63	1.75	3.49	3.71	11.00	4.44	5.06	2.01	7.74	2.25	7.45	2.44	5.32	2.67	12.67	Dry	15.4									
04-Jun-09	6.35	1.89	3.46	3.57	10.62	4.19	4.96	2.2	7.99	2.53	7.8	3.13	5.05	2.71	11.73	Dry	14.37									
10-Sep-09	7.45	2.72	4.72	5.6	11.13	5.19	5.85	2.78	8.46			4.3	6.38	4.54	12.72	Dry	14.65									
12-May-10	5.55	1.34	3.01	3.07	10.19	3.11	4.21	1.8	7.69	2.21	7.6	2.22	4.34	1.74	11.81	Dry	14.58	1.58	3.34						1.75	3.18
13-Sep-10	7.48	3.01	4.12	4.63	11.21	5.32	6.05	2.71	8.5	3.32	8.39	4.7	7.1	4.12	Dry	Dry	15.02	4.23	4.23					2.09	1.77	3.84
25-May-11	5	1.12	3.06	3.1	9.52	2.99	4.05	1.52	7.48			1.95	3.89	1.37	11.42	Dry	14.45	1.2	3.13					0.23	0.25	2.89
19-Sep-11	7.23	3.02	3.9	3.89	11.15	5.22	6	2.78	8.52	2.88	8.25	4.65	6.81	3.62	12.99	10.8	15.03	4.28	4.24					2.14	1.77	3.77
16-May-12	6.73	1.93	3.83	3.89	10.84	4.52	5.22	2.46	8.23	3.82	9.03	4.22	5.96	3.2	11.79	Dry	14.38	4.58	4.72							
11-Sep-12	7.82	3.28	4.95	5.39	11.32	Dry	6.39	5.38	8.56	4.33	9.56	5.3	7.78	5.01	Dry	Dry	15.03	5.3	5.22							
18-Apr-13	5.34	0.93	2.98	3.05	9.23	2.81	3.90	1.58	7.31	2.76	7.99	1.61	3.61	1.69	11.27	10.78	14.77	2.14	3.92	3.11	4.23	2.24	3.92	1.18	1.21	4.2
10-Sep-13	6.58	1.91	3.84	3.95	10.88	4.41	5.29	2.22	8.33	3.27	8.74	3.68	5.88	2.04	12.09	Dry	14.64	4.49	4.92	5.06	5.39	3.93	5.14			
24-May-14	6.43	1.87	3.77	3.87	10.92	4.35	5.15	2.14	8.21	3.27	8.63	3.51	5.64	1.96	11.92	10.05	14.22	4.25	4.75	4.25	5.16	3.78	4.98			
18-Sep-14	5.58	1.48	3.6	3.63	10.36	3.45	4.43	1.96	7.78	2.96	8.19	2.46	4.24	1.59	11.21	Dry	14.33	2.48	4.36	4.17	4.80	3.02	4.45	1.4		
26-May-15	6.46	1.97	3.88	3.89	10.76	4.24	5.06	2.46	8.21	3.63	8.93	3.55	5.34	2.46	12.29	Dry	15.48	4.43	4.74	4.61	5.19	3.70	4.94	2.02	2.62	4.34
16-Sep-15	7.27	2.63	4.67	4.8	11.18	4.94	5.6	3.02	8.35	3.69	8.99	4.41	6.48	2.44	11.71	Dry	14.46	4.93	4.91	5.04	5.40	4.74	5.40	1.8	2.74	4.78
16-May-16	6.1	1.5	3.52	3.56	10.37	3.8	4.71	2.13	8	3.21	8.58	3.07	5.02	1.57	11.19	Dry	14.11	3.7	4.54	4.28	4.98	3.28	4.67	1.38	4.27	2.23
22-Sep-16	7.61	3.12	5.01	5.28	Dry	5.1	5.9	4.53	8.54	3.89	9.22	4.78	7.12	3.41	12.18	Dry	14.66	5.28	5.19	5.03	5.69	5.33	5.81	2.52	3.66	5.34
08-May-17	5.84	0.91	2.74	2.81	9.40	1.33	3.69	1.28	7.17	2.68	7.83	1.61	3.66	1.37	10.82	Dry	14.54	1.59	3.77	3.06	4.14	2.09	3.80			
20-Sep-17	7.35	2.00	Dry	Dry	Dry	4.26	5.47	2.38	8.33	3.3	8.68	4.45	6.74	1.55	12.2	Dry	Dry	Dry	5.02	Dry	5.48	4.29	5.35	2.37	3.49	5.24
03-May-18	5.67	0.99	3.1	3.18	9.57	3.18	4.34	1.71	7.88	3.08	8.36	2.23	4.12	1.41	11.67	Dry	15.06	2.81	4.52	3.76	4.90	2.78	4.54	1.15	1.55	4.11
19-Sep-18	7.57	2.68	4.59	4.83	11.35	4.7	5.71	3.66	8.69	3.71	8.98	4.49	6.85	3.11	Dry	Dry	15.55	5.34	5.46	5.06	5.96	5.10	5.90	2.44	3.73	5.41
21-May-19	5.90	1.63	3.32	3.33	10.01	3.50	4.57	1.71	8.02	3.11	8.47	2.43	4.50	1.54	11.80	10.57	15.22	3.41	4.64	3.93	5.00	3.01	4.65			
05-Sep-19	7.62	2.94	4.36	4.55	11.31	4.88	5.80	3.60	8.68	3.92	9.22	4.40	6.72	3.34	Dry	Dry	15.53	5.35	5.41	5.04	5.84	5.03	5.87	2.54		
28-May-20	6.50	1.85	3.50	3.53	10.62	3.89	4.90	1.83	8.23	3.35	8.76	2.97	5.24	2.06	12.02	Dry	15.29	4.84	4.90	4.51	5.25	3.40	4.98			
01-Oct-20	7.60	2.88	4.50	4.63	Dry	4.72	5.74	2.41	8.76	3.80	9.10	4.70	7.13	2.75	Dry	Dry	15.66	Dry	5.65	Dry	5.98	5.08	5.97			
12-May-21	6.44	1.70	3.51	3.50	10.55	3.78	4.89	1.94	8.34	3.56	8.85	3.23	5.31	1.93	12.10	10.67	15.50	4.39	5.02	4.34	5.40	3.27	5.05	1.68	2.12	4.48
21-Sep-21	7.31	2.58	4.37	4.65	11.36	2.67	5.43	1.78	8.60	3.47	8.86	4.93	7.34	1.71	Dry	Dry	15.76	Dry	5.36	Dry	5.76	4.58	4.67		3.78	
10-May-22	5.83	1.15	3.25	3.29	9.84	3.27	4.45	1.40	7.99	3.12	8.53	2.22	4.24	1.61	11.79	8.43	15.41	2.68	4.67	3.77	5.01	2.83	4.68	1.43	1.56	4.15
13-Sep-22	7.57	2.79	4.37	4.72	11.38	5.21	6.23	3.40	8.85	4.00	9.33	4.86	7.39	2.83	Dry	Dry	15.72	5.35	5.74	5.05	6.19	5.36	6.19	2.22	3.83	5.76
10-May-23	6.09	1.43	3.32	3.31	10.16	3.40	4.57	1.34	8.06	3.19	8.74	2.39	4.64	1.61	12.39	9.38	Dry	3.15	4.78	4.00	5.13	3.01	4.80	1.47	1.53	4.52
08-Sep-23	7.08	2.16	3.81	3.87	11.11	4.30	5.25	1.93	8.44	3.49	8.99	4.26	6.49	2.27	12.37	Dry	Dry	4.57	5.95	Dry	5.57	3.77	5.26	1.81	2.54	5.33
09-May-24	5.93	1.37	3.37	3.36	10.07	3.41	4.58	1.56	8.12	3.24	8.79	2.55	4.62	1.60	12.06	10.30	15.55	3.29	4.80	3.91	5.14	3.01	4.83	1.43		1.73
11-Sep-24	7.27	2.37	4.08	4.10	11.10	4.53	4.73	2.30	8.63	3.90	9.25	4.45	5.60	2.72	12.55	Dry	Dry	5.18	5.34	5.04	5.77	4.15	5.55	2.63	3.62	4.66
14-May-25	6.21	1.63	3.38	3.41	10.34	3.68	4.69	2.78	8.21	3.36	8.94	2.90	5.09	1.92	12.03	9.42	15.52	4.08	4.88	4.23	5.29	3.23	5.94	1.68	2.07	4.29
29-Sep-25	7.48	2.54	4.49	4.80	11.37	4.75	5.55	2.12	8.71	3.50	9.19	4.76	7.36	1.97	Dry	Dry	15.77	5.33	5.47	5.04	5.87	5.31	5.92	1.63	3.83	5.71
Water Level Elevations (mASL)																										
May-06	337.13	337.26	336.82	335.81	338.04																					
Jun-06	336.59	337.13	336.50	335.47																						
May-07	336.79	337.13	336.68	336.00	337.84																					
Sep-07	335.48	335.40	335.00	333.67	337.21																					
Jun-08	336.41	337.22	336.74	336.43	337.71	332.32	331.44	336.44	330.46	341.82	336.49	340.61	338.50	339.85												
Sep-08	336.18	337.26	336.74	336.50	337.59	331.91	331.31	336.39	330.78	341.89	336.74	341.00	338.44	340.49	330.54		330.64									
Jun-09	337.46	337.12	336.77	336.64	337.97	332.16	331.41	336.20	330.53	341.61	336.39	340.31	338.71	340.45	331.48		331.67									
Sep-09	336.36	336.29	335.51	334.61	337.46	331.16	330.52	335.62	330.06			339.14	337.38	338.62	330.49		331.39									
May-10	338.26	337.67	337.22	337.14	338.40	333.24	332.16	336.60	330.83	341.93	336.59	341.22	339.42	341.42	331.40		331.46	333.30	331.47						344.54	343.11
Sept-10	336.33	336.00	336.11	335.58	337.38	331.03	330.32	335.69	330.02	340.82	335.80	338.74	336.66	339.04			331.02	330.65	330.58					341.10	344.52	342.45
May-11	338.81	337.89	337.17	337.11	339.07	333.36	332.32	336.88	331.04			341.49	339.87	341.79	331.79		331.59	333.68	331.68					342.96	346.04	343.40
Sep-11	336.58	335.99	336.33	336.32	337.44	331.13	330.37	335.62	330.00	341.26	335.94	338.79	336.95	339.54	330.22	335.24	331.01	330.60	330.57					341.05	344.52	342.52
May-12	337.08	337.08	336.40	336.32	337.75	331.83	331.15	335.94	330.29	341.09	335.93	339.22	337.80	339.96	331.42		331.66	330.30	330.09							
Sep-12	335.99	335.73	335.28	334.82	337.27		329.98	333.02	329.96	340.58	335.40	338.14	335.98	338.15			331.01	329.58	329.59							
Apr-13	338.47	338.08	337.25	337.16	339.36	333.54	332.47	336.82	331.21	342.15	336.97	341.83	340.15	341.47	331.94	335.26	331.27	332.74	330.89	332.47	331.10	333.36	331.69	342.01	345.08	342.09
Sep-13	337.23	337.10	336.39	336.26	337.71	331.94	331.08	336.18	330.19	341.64	336.22	339.76	337.88	341.12	331.12		331.40	330.39	329.89	330.52	329.94	331.67	330.47			
May-14	337.38	337.14	336.46	336.34	337.67	332.00	331.22	336.26	330.31	341.64	336.33	339.93	338.12	341.20	331.29	335.99	331.82	330.63	330.06	331.33	330.17	331.82	330.63			
Sep-14	338.23	337.53	336.63	336.58	338.23	332.90	331.94	336.44	330.74	341.95	336.77	340.98	339.52	341.57	332.00		331.71	332.40	330.45	331.41	330.53	332.58	331.16	341.79		
May-15	337.35	337.04	336.35	336.32	337.83	332.11	331.31	335.94	330.31	341.28	336.03	339.89	338.42	340.70	330.92		330.56	330.45	330.07	330.97	330.14	331.90	330.67	341.17	343.67	341.95
Sep-15	336.54	336.38	335.56	335.41	337.41	331.41	330.77	335.38	330.17	341.22	335.97	339.03	337.28	340.72	331.50		331.58	329.95	329.90	330.54	329.93	330.86	330.21	341.39	343.55	341.51
May-16	337.71	337.51	336.71	336.65	338.22	332.55	331.66	336.27	330.52	341.70	336.38	340.37	338.74	341.59	332.02		331.93	331.18	330.27	331.30	330.35	332.32	330.94	341.81	342.02	344.06
Sep-16	336.20	335.89	335.22	334.93		331.25	330.47	333.87	329.98	341.02	335.74	338.66	336.64	339.75	331.03		331.38	329.60	329.62	330.55	329.64	330.27	329.80	340.67	342.63	340.95
May-17	337.97	338.10	337.49	337.40	339.19	335.02	332.68	337.12	331.35	342.23	337.13	341.83	340.10	341.79	332.39		331.50	333.29	331.04	332.52	331.19	333.51	331.81			
Sep-17	336.46	337.01				332.09	330.90	336.02	330.19	341.61	336.28	338.99	337.02	341.61	331.01				329.79		329.85	331.31	330.26	340.82	342.80	341.05
May-18	338.14	338.02	337.13	337.03	339.02	333.17	332.03	336.69	330.64	341.83	336.60	341.21	339.64	341.75	331.54		330.98	332.07	330.29	331.82	330.43	332.82	331.07	342.04	344.74	342.18
Sep-18	336.24	336.33	335.64	335.38	337.24	331.65	330.66	334.74	329.83	341.20	335.98	338.95	336.91	340.05			330.49	329.54	329.35	330.52	329.37	330.50	329.71	340.75	342.56	340.88
May-19	337.91	337.38	336.91	336.88	338.58	332.85	331.85	336.69	330.50	341.80	336.49	341.01	339.26	341.62	331.41	335.47	330.82	331.47	330.17	331.65	330.33	332.59	330.96			
Sep-19	336.19	336.07	335.87	335.66	337.28	331.47	330.62	334.80	329.84	340.99	335.74	339.04	337.04	339.82			330.51	329.53	329.40	330.54	329.49	330.57	329.74	340.65		
May-20	337.31	337.16	336.73	336.68	337.97	332.46	331.52	336.57	330.29	341.56	336.20	340.47	338.53	341.10	331.19		330.75	330.04	329.91	331.07	330.08	332.21	330.63			
Oct-20	336.21	336.13	335.73	335.58		331.63	330.68	335.99	329.76	341.11	335.86	338.74	336.63	340.41			330.38		329.16		329.35	330.52	329.64			
May-21	337.37	337.31	336.72	336.71	338.04	332.57	331.53	336.46	330.18	341.35	336.11	340.21	338.45	341.23	331.11	335.37	330.54	330.49	329.79	331.24	329.93	332.33	330.56	341.51	344.17	341.81
Sep-21	336.50	336.43	335.86	335.56	337.23	333.68	330.99	336.63	329.93	341.44	336.10	338.51	336.42	341.45			330.28		329.45		329.57	331.02	330.94	343.19	342.51	346.29
May-22	337.98	337.86	336.98	336.92	338.75	333.08	331.97	337.00	330.53	341.79	336.43	341.22	339.52	341.55	331.42	337.61	330.63	332.20	330.14	331.81	330.32	332.77	330.93	341.76	344.73	342.14
Sep-22	336.24	336.22	335.86	335.49	337.21	331.14	330.19	335.00	329.67	340.91	335.63	338.58	336.37	340.33			330.32	329.53	329.07	330.53	329.14	330.24	329.42	340.97	342.46	340.53
May-23	337.72	337.58	336.91	336.90	338.43	332.95	331.85	337.06	330.46	341.72	336.22	341.05	339.12	341.55	330.82	336.66		331.73	330.03	331.58	330.20	332.59	330.81	341.72	344.76	341.77
Sep-23	336.73	336.85	336.42	336.34	337.48	332.05	331.17	336.47	330.08	341.42	335.97	339.18	337.27	340.89	330.84			330.31	328.86	330.54	329.76	331.83	330.35	341.38	343.75	340.96
May-24	337.88	337.64	336.86	336.85	338.52	332.94	331.84	336.84	330.40	341.67	336.17	340.89	339.14	341.56	331.15	335.74	330.49	331.59	330.01	331.67	330.19	332.59	330.78	341.76	346.29	344.56
Sep-24	336.54	336.64	336.15	336.11	337.49	331.82	331.69	336.10	329.89	341.01	335.71	338.99	338.16	340.44	330.66			329.70	329.47	330.54	329.56	331.45	330.06	340.56	342.67	341.63
May-25	337.60	337.38	336.85	336.80	338.25	332.67	331.73	335.62	330.31	341.55	336.02	340.54	338.67	341.24	331.18	336.62	330.52	330.80	329.93	331.35	330.04	332.37	329.67	341.51	344.22	342.00
Sep-25	336.33	336.47	335.74	335.41	337.22	331.60	330.87	336.28	329.81	341.41	335.77	338.68	336.40	341.19			330.27	329.55	329.34	330.54	329.46	330.29	329.69	341.56	342.46	340.58

Notes: 1. The elevations were surveyed in July 2008; MW11S/D were first surveyed in September 2010.

2. MW7S and MW7D were extended and recased in 2011 to account for grade changes. MW7S/D elevations were resurveyed in September 2011.

3. The local datum used for surveying was related to geodetic elevations presented on Ontairo Base Mapping using a factor of +248.790.

4. Italics denotes liquid levels that are not representative of actual conditions as they are not consistent with the other liquid levels in the database and, therefore, are excluded from interpretations effective November 2014.

5. mBTOP denotes metres below top of pipe.

6. mASL denotes metres above sea level.

7. Blank denotes data not available.

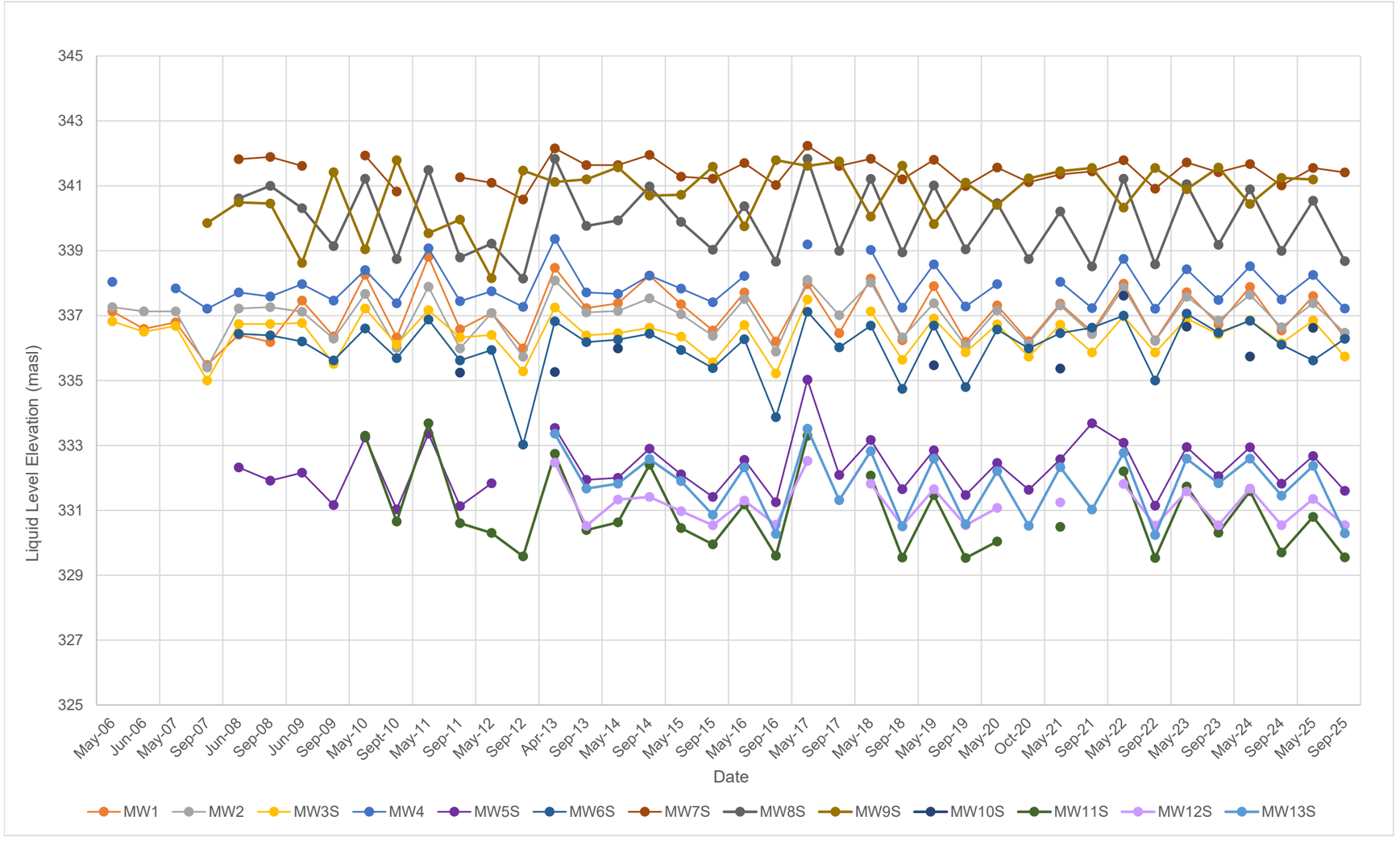
8. Note MW5D was reinstalled and recased in October 2024. Measure point elevation accounts for change in stickup.

Pinchin File: 333568.002

Figure C-1

Groundwater Elevation Hydrograph – Shallow Flow System

GROUNDWATER ELEVATION HYDROGRAPH
SHALLOW FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

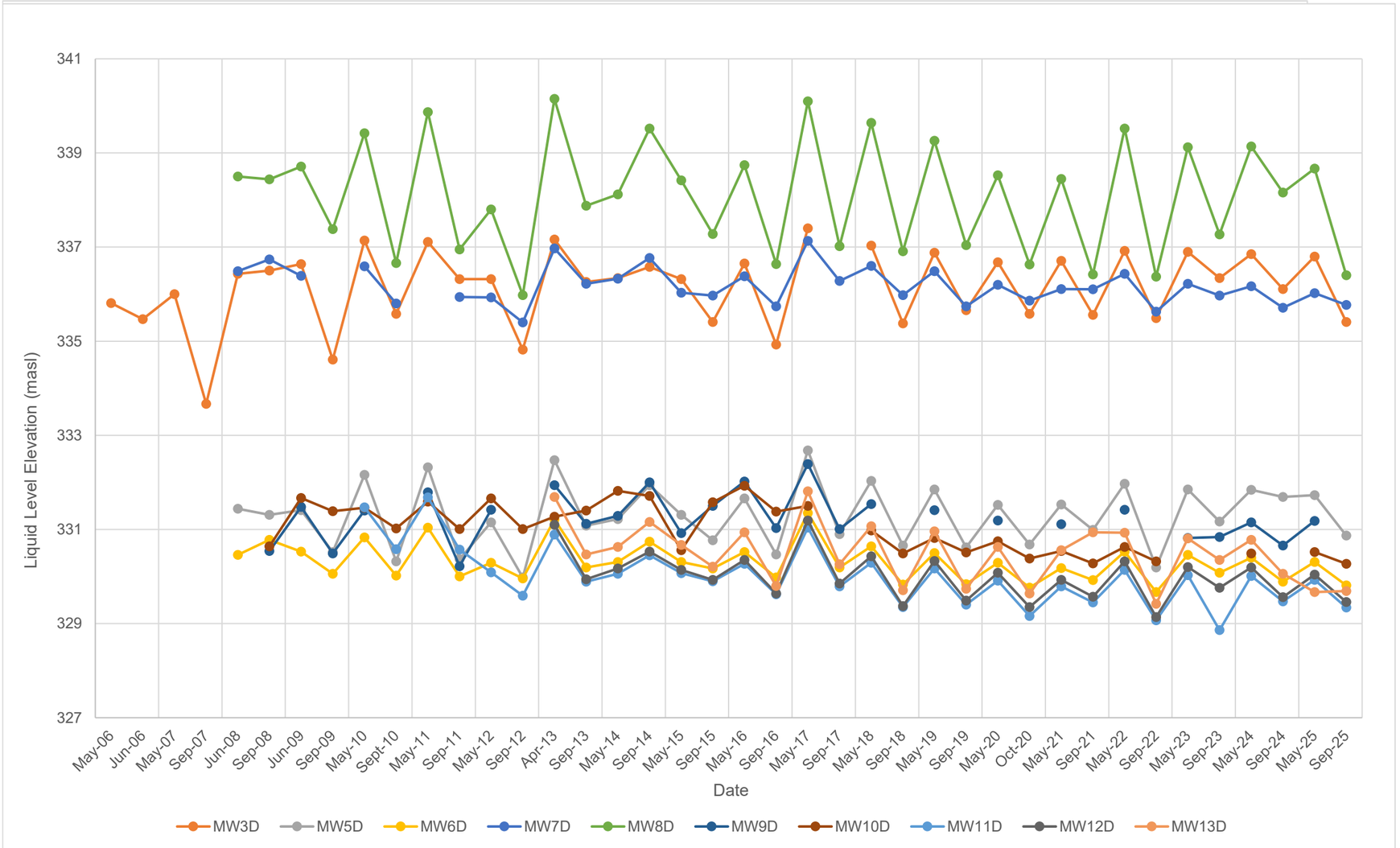


Pinchin File: 333568.002

Figure C-2

Groundwater Elevation Hydrograph – Deep Flow System

GROUNDWATER ELEVATION HYDROGRAPH
DEEP FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth



Pinchin File: 333568.002

APPENDIX D

Groundwater Quality Results

Table D-1

Leachate Analytical Results – General Parameters

TABLE D-1
LEACHATE ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4
			May-06	May-07	Jun-08	Sep-08	Jun-09	May-10	Sep-10	May-11	Sep-11	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	µS/cm	NV	1210	1210	1340	1300	1200	1130	622	1170	981	2180	1480	1520		1230	1148	INS	1420		1040		1240		978		1306		1204		1095		1305	1688	1236	1014	1250	
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**578**	**590**	**675**	**627**	**593**	**691**	**404**	**599**	**608**	**535**	**610**	**647**		**567**	**618**	**552**	**605**		**620**		**581**		**574**		**633**		**643**		**571**		**625**	**787**	**565**	**580**	**648**	
pH	pH	6.5-8.5 (OG)	7.84	7.83	7.83	7.66	7.88	7.88	8.1	7.76	7.97	8.24	7.79	7.17		7.21	7.68	7.78	7.55		7.31		7.18		6.95		7.01		7.11		7.45		7.65	7.68	7.22	7.77	7.47	
Total Dissolved Solids	mg/L	500 (AO)	**680**	**686**	**810**	**758**	**692**	**692**	412	**760**	**710**		**810**	**984**		**670**	**595**	**507**	**731**		**684**		**658**		**659**		**681**		**728**		**634**		**696**	**606**	**667**	**692**		
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	633	663	664	<5	630	640	330	668	579	1110	750	688		684	717	485	618		674		588		638		656		633		706		673	538	656	752	667	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<5	<5	634.000	<5	<5	<5	<5	<5	<5	<5	<5		<10	<10	<10	<10		<10		<10		<10		<10		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**633**	**663**	**664**	**634**	**630**	**640**	330	**668**	<5	**1110**	**750**	**688**		**685**	**717**	485	**618**		**674**		**588**		**638**		**656**		**633**		**706**		**673**	**538**	**656**	**752**	**667**	
Ammonia, Total (as N)	mg/L	NV	1.620	1.530	3.090		2.590	1.410	<0.0012	1.390	1.860	130	5.600	11.200		2.270	3.490	INS	2.730		2.550		3.58		2.76		3.86		2.39		3.31		3.85	2.76	3.15	2.86	2.11	
Bromide	mg/L	NV	0.610	0.740	0.870	0.750	<0.05	0.560	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25		0.350	<0.50	0.280	0.540		<0.50		0.32		0.33		<0.50		<0.50		0.27		0.43	<0.50	<0.50	0.56	<0.50	
Chloride	mg/L	250 (AO)	35.9	38.8	67.0	61.7	28.8	50.7	6.7	26.3	47.1	49.7	23.9	146.0		26.7	36.6	49.3	47.7		23.3		24.8		27.0		65.5		62.7		26.1		47.0	**340**	24.7	177	55.4	
Fluoride	mg/L	1.5 (MAC)	<0.05	<0.05	0.06	0.06	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	**2.20**	<0.25		<0.10	<0.10	0.08	<0.10		<0.10		0.087		0.036		<0.10		0.061		0.076	<0.100	<0.100	<0.100	<0.100	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	<0.05	<0.05	<0.05	0.000	<0.05	2.140	<0.05	<0.05	<0.05	<0.07	<0.07		<0.2	<0.15	0.284	<0.11		<0.11		<0.022		0.09		<0.11		<0.11		<0.020		<0.0224	5.60	<0.112	0.325	<0.112	
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	2.140	<0.05	<0.05	<0.05	<0.25	<0.25		<0.10	0.100	0.252	<0.10		<0.10		<0.020		0.069		<0.10		<0.10		<0.020		<0.020	5.21	<0.100	0.325	<0.100	
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25		<0.10	<0.050	0.032	<0.050		<0.050		<0.010		0.016		<0.050		<0.050		<0.010		<0.010	0.39	<0.050	<0.050	<0.050	
Organic Nitrogen	mg/L	0.15 (OG)	**2.10**	**3.2**	**1.96**	0.000	**3.51**	**1.47**	**0.599**	**8.43**	**5.48**	0.000	**14.20**	**14.8**		**5.72**	**1.97**	INS	**6.09**		**4.60**		**4.30**		**2.90**		**5.70**		**3.90**		**4.5**		**8.15**	**19.3**	**4.42**	**10.0**	**7.74**	
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.02	<0.5	2.500		0.005	0.220	0.142	0.024		<0.1030		<0.0030		<0.0030		<0.0030		0.0057		<0.0030		0.0046	0.0027	<0.0010	0.0104	<0.0010	
Sulphate	mg/L	500 (AO)	9.72	8.24	10.7	7.79	5.70	7.98	15	2	13	60.7	1	3		8	12	18	5		<1.5		2.18		4.81		3.5		6.6		0.62		3.51	25.1	1.54	7.27	3.67	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**14.9**	**12.2**	**23.1**		**24.2**	**32.0**	2.6	**233**	**33.7**		**119**	**62.6**	Insufficient volume for sample collection.	**11.2**	**11.1**	**14.7**	**25.1**	Insufficient volume for sample collection.	**20.2**	Insufficient volume for sample collection.	**19.4**	Insufficient volume for sample collection.	**15.7**	Insufficient volume for sample collection.	**15.2**	Insufficient volume for sample collection.	**24.3**	Insufficient volume for sample collection.	**22.8**	Insufficient volume for sample collection.	**27.0**	**23.8**	**16.4**	**15.7**	**14.1**	Insufficient volume for sample collection.
Chemical Oxygen Demand (COD)	mg/L	NV			46.0		71.0	80.0	<5	134.0	132.0		151.0	197.0		69.0	67.0	INS			100		128		75		128		100		140		125	548	103	496	138	
Phenols	mg/L	NV			0.001		0.003	0.004	<0.00101	0.0190			0.0270	0.0150		0.0015	0.0040	INS	0.0024		0.0052		0.0021		0.08		0.0052		0.0066		0.0021		0.0033	0.0024	0.0026	0.0015	0.0042	
Aluminum	mg/L	0.1 (OG)	0.03	<0.004	0.008		**0.238**	0.009	0.015	0.059	0.006	0.037	0.01	0.059		<0.010	<0.010	0.008	<0.0050		<0.0050		<0.0050		<0.0050		<0.0050		<0.0050		0.0019		0.0064	0.0109	0.0036	0.0036	0.0028	
Arsenic	mg/L	0.01 (IMAC)	0.004	<0.003	**0.011**		**0.018**	0.007	<0.003	**0.018**	0.005	0.009	0.005	0.004		<0.0010	0.0012	0.0033	0.00182		0.00062		0.00048		0.00057		0.00084		0.00083		0.00102		0.00056	0.00152	0.00049	0.00109	0.00059	
Barium	mg/L	1.0 (IMAC)	0.076	0.062	0.109		0.096	0.073	0.029	0.123	0.088	0.02	0.086	0.101		0.101	0.081	0.0641	0.122		0.101		0.0883		0.108		0.0968		0.128		0.106		0.114	0.132	0.104	0.0911	0.0957	
Boron	mg/L	5.0 (MAC)	0.05	0.047	0.04		0.057	0.039	0.016	0.054	<0.01	<0.01	0.028	0.062		0.027	0.043	0.031	0.035		0.048		0.042		0.045		0.037		0.037		<0.010		<0.010	0.012	0.034	0.02	0.055	
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.000090	0.000111	0.000033	0.000013		<0.000010		0.0000012		0.000059		0.000199		0.000456		0.0000199		0.0000089	0.0000613	0.000328	0.000062	0.0000283	
Calcium	mg/L	NV	164	159	181	170	161	188	126	160	162	130	166	177		155	165		162		169		162		155		167		173		154		169	201	149	153	172	
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	0.003		0.013	<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	<0.00050	<0.00050	<0.00050	
Copper	mg/L	1.0 (AO)	0.009	<0.003	<0.003		0.003	<0.003	<0.003	<0.003	<0.003	0.018	<0.003	<0.003		0.0011	0.0022	0.00283	0.00057		<0.00020		0.00047		0.00093		0.00415		0.00359		0.00229		0.00059	0.00231	0.00086	0.00273	0.00082	
Iron	mg/L	0.3 (AO)	**4.81**	**0.421**	**5.5**		**24.7**	**15.1**	<0.01	**33.9**	**1.88**	**1.72**	**7.52**	**4.55**		0.092	<0.050	0.05	0.035		**0.485**		0.029		**0.369**		0.026		0.026		**3.86**		**5.28**	0.014	**0.904**	0.030	**0.799**	
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.00050	<0.00050	0.000051	0.00019		<0.000050		<0.00050		0.000298		<0.000050		0.000231		0.000136		0.000074	0.000099	0.000120	0.000084	0.000113	
Magnesium	mg/L	NV	40.8	46.8	54.1	49.2	46.4	53.7	21.6	48.4	49.5	51.2	47.4	49.7		43.5	50	45.5	49.1		48.4		42.9		45.2		52.3		51.2		45.4		49.3	69.3	46.8	48.0	53.2	
Manganese	mg/L	0.05 (AO)	**1.62**	0.003	**1.96**		**1.05**	**1.48**	0.004	**1.55**	**1.05**	**1.17**	**1.52**	**1.97**		**1.95**	0.0112	**0.536**	**2.72**		**2.59**		**2.16**		**2.84**		**1.19**		**2.67**		**2.64**		**2.83**	**0.419**	**3.09**	**0.360**	**2.54**	
Mercury	mg/L	0.001			<0.0001		<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001		<0.00010	<0.000010	INS	<0.000010		<0.000010		<0.000010		<0.000010		<0.0000050		<0.0000050		<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Potassium	mg/L	NV	2.94	3.23	3.18	3.11	2.92	2.63	2.1	5.58	5.31	28.5	7.77	7.97		2.8	3.2	3.48	3.27		4.6		4.14		3.15		3.31		3.39		4.09		4.77	3.36	3.39	2.92	2.96	
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004		<0.004	<0.004	<0.004	<0.004	<0.004	<0.004				<0.00040	<0.00040	0.000462	0.000944		0.000708		<0.00050		0.000389		0.000581		0.000323		0.00127		0.000991	0.00222	0.000351	0.000522	0.000297	
Silicon	mg/L	NV	7.43	7.79	7.76		6.95	7.5	6.87	8.61	7.93	7.51	7.72	6.77		6	6.8	6.44	5.95		7.37		7.14		7.17		6.96		7.09		7.44		7.28	4.94	7.27	5.03	7.26	
Sodium	mg/L	200 (AO)	45.5	45.8	48.6	47.9	41.7	54.2	4.11	43.9	44.9	58.9	46.1	51.3		40.8	47.9	45.2	44.4		30.4		32.3		28.8		45.2		39.6		31.4		39.7	50	28.2	41.2	36.9	
Zinc	mg/L	5.0 (AO)	0.01	0.004	<0.004		0.411	<0.004	0.007	0.004	0.016	0.027	<0.005	0.014		0.0081	0.0081	0.0047	0.0053		0.0022		0.0117		0.003		0.0088		0.0134		0.0038		0.0031	0.0039	0.0109	0.0019	0.0035	

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. INS denotes insufficient volume for sample collection.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

Pinchin File: 333568.002

Table D-2

Leachate Analytical Results – Volatile Organic Compounds

TABLE D-2
LEACHATE ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4	MW4
			May-06	May-07	Jun-08	Jun-09	May-10	Sep-10	May-11	Sep-11	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone	µg/L	NV	<5	<10	<0.5	<1	<1	<1	**30**	**77**	**240**	<20		<20	<20		**32**		<20		<20		<20		<20		**206**		**56**		**31**	<20	**57**	<20	<20	
Benzene	µg/L	1 (MAC)	<2	<4	**0.71**	<0.2	**0.47**	<0.2	<0.4	<0.4	<0.8	<4		<0.50	<0.50		<0.50		**0.63**		<0.50		<0.50		**0.64**		<0.50		<0.50		<0.50	<0.50	<0.50	**0.52**	**0.60**	
Bromodichloromethane	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<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	<0.50	<0.50	
Bromoform	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	<0.50	
Bromomethane	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<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	<0.50	<0.50	
Carbon Tetrachloride	µg/L	2 (MAC)	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<4		<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.20		<0.20		<0.20		<0.20	<0.20	<0.20	<0.20	<0.20	
Chlorobenzene	µg/L	80 (MAC)	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
Dibromochloromethane	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	<0.50	
Chloroethane	µg/L	NV	**57**	**69**	**260**	**90**	**310**	<0.2	**64**	**180**	**35**	**1100**		**60.1**	<1.0		**211**		**56.2**		**59.2**		**136**		**314**		**131**		**148**		**94.5**	**110**	**155**	**47.9**	**219**	
Chloroform	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<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	<0.50	<0.50	
Chloromethane	µg/L	NV	<4	<8	<0.4	<0.4	<0.4	<0.4	<0.8	<0.8	<1.6	<8		<1.0	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	
Ethylene Dibromide	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.4	<2		<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	<0.20	
1,2-Dichlorobenzene	µg/L	200 (MAC)	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
1,3-Dichlorobenzene	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
1,4-Dichlorobenzene	µg/L	5 (MAC)	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
Dichlorodifluoromethane	µg/L	NV					<0.2	<0.2	<0.2	<0.4	<0.4	<0.8		<0.4	<0.8		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethane	µg/L	NV	**47**	**49**	**180**	**68**	**530**	<0.2	**170**	**160**	**120**	**1500**		**198**	**4.13**		**93.3**		**34.1**		**67**		**61.8**		**214**		**167**		**151**		**127**	**156**	**81**	**102**	**140**	
1,2-Dichloroethane	µg/L	5 (IMAC)	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<4		<0.50	<0.50		**0.64**		<0.50		<0.50		<0.50		**1.83**		**2.28**		**1.08**		**0.70**	**1.44**	**0.95**	**1.36**	**1.53**	
1,1-Dichloroethene	µg/L	14 (MAC)	<2	**6.2**	**8.7**	**8.7**	**55**	<0.2	**4.4**	**0.78**	**1.9**	**45**		**9.4**	<0.50		**6.96**		<0.50		**11.2**		**11.5**		**30.7**		**11.7**		**5.30**		**4.36**	**2.0**	**7.48**	**2.49**	**12.60**	
cis-1,2-Dichloroethylene	µg/L	NV	**12**	**15**	**170**	**43**	**520**	<0.2	**43**	**3.5**	**17**	**540**		**117**	<0.85		**62.9**		**3.6**		**91.6**		**70.3**		**258**		**128**		**50.8**		**52.6**	**16.7**	**74.1**	**51.1**	**138**	
trans-1,2-dichloroethylene	µg/L	NV	<2	<4	**15**	**16**	**19**	<0.2	**0.93**	**0.7**	<0.8	**15**		**2.83**	<0.50		**2.88**		<0.50		**2.68**		**2.61**		**8.65**		**3.36**		**1.63**		**1.44**	**0.80**	**2.11**	**0.89**	**4.64**	
Methylene Chloride	µg/L	50 (MAC)	<3	<6	<0.3	<0.3	<0.3	<0.2	<0.6	<0.6	<1.2	<6		<2.0	<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloropropane	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<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	<0.50	<0.50	
cis-1,3-Dichloropropene	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<4		<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.30		<0.30		<0.30		<0.30	<0.30	<0.30	<0.30	<0.30	
trans-1,3-Dichloropropene	µg/L	NV	<3	<6	<0.3	<0.3	<0.3	<0.2	<0.6	<0.6	<1.2	<6		<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.30		<0.30		<0.30		<0.30	<0.30	<0.30	<0.30	<0.30	
Ethylbenzene	µg/L	2.4 (AO)	<1	<2	<0.1	**0.31**	**0.11**	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
n-Hexane	µg/L	NV				<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<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	<0.50	<0.50	
2-Hexanone	µg/L	NV	<3	<6	<0.3	<0.3	<0.3	<0.2	<0.6	<0.6	<1.2	<6		<20	<20		<20		<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Ethyl Ketone	µg/L	NV	<9	<18	<0.9	<1	<1	<1	<2	<2	<4	<20		<20	<20		<20		<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	µg/L	NV	<3	<6	<0.3	<1	<1	<1	<2	<2	<4	<20		<20	<20		<20		<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl tert-butyl ether	µg/L	NV	<2	<4	<0.2	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8	<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	<0.50	
Styrene	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
1,1,1,2-Tetrachloroethane	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
1,1,2,2-Tetrachloroethane	µg/L	NV	<1	<2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.4	<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	<0.50	
Tetrachloroethene	µg/L	10 (MAC)	<1	<2	<0.1	<0.2	**0.44**	<0.2	<0.4	<0.4	<0.8	<4		<0.50	<0.50		**2.2**		**0.54**		**1.03**		**1.4**		**1.57**		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	**0.67**	
Toluene	µg/L	24 (AO)	<2	<4	**0.61**	**0.71**	**0.36**	<0.2	<0.4	<0.4	<0.8	**18**		**2.06**	<0.50		**0.9**		<0.50		<0.50		<0.50		<0.40		<0.40		<0.50		**1.77**	<0.50	<0.50	<0.50	**5.28**	
1,2,4-Trichlorobenzene	µg/L	NV	<3	<6	<0.3	<0.3	<0.3	<0.2	<0.6	<0.6	<0.12	<6		<10	<10		<10		<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
1,1,1-Trichloroethane	µg/L	NV	**180**	**310**	**320**	**300**	**1500**	<0.2	**69**	**30**	**15**	**1000**		**259**	**7.51**		**174**		**19.1**		287		350		**804**		**484**		**122**		**104**	**36.5**	**228**	<0.50	**505**	
1,1,2-Trichloroethane	µg/L	NV	<2	<4	<0.2	<0.2	0.74	<0.2	<0.4	<0.4	<0.8	<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	<0.50	<0.50	
Trichloroethylene	µg/L	5 (MAC)	**12**	**7**	**6.8**		**1.7**	<0.2	<0.4	<0.4	<0.8	**17**		**2.65**	<0.50		**9.52**		**2.59**		**5.38**		**11.4**		**35.7**		**17.8**		**2.02**		**2.02**	**2.44**	**9.06**	<0.50	**17.7**	
Trichlorofluoromethane	µg/L	NV	<4	<8	<0.4	<0.4	<0.4	<0.4	<0.8	<0.8	<1.6	<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	<0.50	<0.50	
Vinyl Chloride	µg/L	1 (MAC)	<1.7	**4.7**	**18**	**5.4**	**110**	<0.17	**9.2**	**0.34**	<0.68	**55**		**10.2**	<0.50		**8.32**		<0.50		**6.35**		**3.51**		**26.9**		**16.5**		**7.21**		**9.15**	**3.17**	**6.55**	<0.50	**12.9**	
o-Xylene	µg/L	NV	<1	<2	<0.1	**0.44**	**0.15**	<0.1	<0.2	<0.2	<0.4	<2		<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.30		<0.30		<0.40		<0.30	<0.30	<0.30	<0.30	<0.30	
m & p-Xylene	µg/L	NV	<2	<4	<0.2	**0.47**	<0.2	<0.2	<0.4	<0.4	<0.8	<4		<1.0	<1.0		<1.0		<1.0		<1.0		<1.0		<0.40		<0.40		<0.30		<0.40	<0.40	<0.40	<0.40	<0.40	
Xylenes(Total)	µg/L	90 (AO)	<2	<4	<0.2	**0.91**	<0.2	<0.2	<0.2	<0.4	<0.4	<0.8		<1.0	<1.0		<1.0		<1.0		<1.0		<1.0		<0.5		<0.5		<0.5		<0.5	<0.5	<0.5	<0.5	<0.50	

Insufficient volume for sample collection.

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-3

Groundwater Analytical Results – General Parameters

TABLE D-3

GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1	MW1
			May-06	May-07	Sep-07	Jun-08	Sep-08	Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	uS/cm	NV	1040	1160	1110	1060	1120	1040	1020	834	914	833	804	837	762	918	830	406	930	857	950	1000	970	745	816	920	1170	760	781	871	811	858	780	845	863	928	910	949	891	898	848
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	519	580	544	578	602	614	542	565	534	470	469	477	427	466	490	480	471	545	507	480	457	450	475	472	447	461	453	436	468	443	458	487	468	453	451	475	482	505
pH	N/A	6.5-8.5 (OG)	8.11	7.99	7.51	8.01	7.99	8.05	8.1	8.01	8.04	7.95	7.99	7.73	7.93	7.87	7.11	7.66	7.4	7.61	7.59	7.7	7.56	7.69	7.55	7.97	7.7	7.36	7.21	7.28	7.47	7.65	7.42	7.54	7.53	7.7	7.26	7.48	7.58	7.57	7.61
Total Dissolved Solids	mg/L	500 (AO)	596	808	840	750	702	636	610	552	608	520	564	584	534	618	538	531	511	506	424	552	523	524	531	569	549	558	514	493	480	491	466	496	470	478	483	452	493	502	521
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	429	434	454	475	479	480	461	468	467	463	442	460	406	422	493	482	490	441	414	432	373	500	398	486	454	468	446	474	411	441	616	448	401	459	538	457	489	2800	396
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	429	434	454	475	479	480	461	468	467	463	442	460	406	422	493	484	491	441	414	432	373	500	398	486	454	468	446	474	411	441	616	448	401	459	538	457	489	2800	396
Ammonia, Total (as N)	mg/L	NV	0.620	<0.02	0.120	0.070	<0.02	<0.02	<0.02	<0.02	<0.0212	0.06	0.160	<0.02	0.250	0.080	<0.02	0.074	<0.050	<0.050	0.073	0.205	0.064	<0.020	0.042	0.153	0.052	<0.020	<0.010	0.023	2.47	0.081	0.024	<0.0050	0.0056	<0.0050	0.005	0.0067	0.0057	0.0119	0.0141
Bromide	mg/L	NV	0.350	0.280	<0.05	0.220	0.240	<0.05	0.360	<0.05	<0.05	<0.05	0.380	<0.05	<0.05	<0.25	<0.25	0.100	0.100	0.110	<0.10	<0.10	<0.10	<0.10	<0.10	0.110	<0.10	<0.10	<0.10	<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)	84.9	102.0	116.0	57.3	69.6	47.2	48.7	12.7	26.6	9.28	18.2	12.1	14.6	10.6	10.5	7.7	8.5	7.8	72.9	7.7	9.1	9.2	10.7	8.6	10.1	8.37	11	9.73	11.9	9.48	10.9	8.07	11.0	9.52	12.8	8.78	11.6	9.83	15.7
Fluoride	mg/L	1.5 (MAC)	<0.05	0.13	0.05	0.10	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	0.11	0.49	0.51	0.06	0.10	0.12	0.07	0.09	0.10	0.082	0.091	0.107	0.102	0.109	0.093	0.086	0.086	0.092	0.088	0.063	0.075	0.097	0.088
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.100	<0.05	<0.05	<0.05	<0.05	0.033	<0.05	0.100	<0.05	0.25	1.650	<0.05	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	<0.03	0.061	<0.022	<0.022	0.111	<0.022	0.035	<0.022	<0.022	0.03	<0.022	<0.022	<0.022	0.02	<0.0224	0.03	<0.0224	0.0340	<0.0224	0.0340	<0.0224
Nitrate as N	mg/L	10.0 (MAC)	0.100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.100	<0.05	0.25	1.650	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.020	0.061	0.021	<0.020	0.111	<0.020	0.035	<0.020	<0.020	<0.020	0.033	<0.020	<0.020	<0.020	<0.0224	<0.020	0.026	<0.020	0.034	<0.020	0.034	<0.020
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Organic Nitrogen	mg/L	0.15 (OG)	0.00	0.08	0.00	0.090	0.35	0.53	0.330	0.15	0.73	0.740	0.05	0.13	0.52	0.02	0.17	0.42	0.39	0.58	<0.15	0.68	1.15	0.36	0.34	0.31	<0.15	0.460	0.250	0.50	<0.57	0.459	1.31	<0.500	0.206	0.56	0.437	0.390	0.311	0.263	0.526
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.500	<0.1	<0.1	<0.5	<0.25	0.004	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0056	<0.0010	<0.0010	<0.0010	0.0021	<0.0100
Sulphate	mg/L	500 (AO)	57	53	57	47	44	44	50	43	49	42.1	53	49	59	49	46	39	41	46	35	40	48	39	48	37	47	42.7	46	38.8	40.6	35.1	38.6	26.2	32.6	27	28.7	23.3	27.8	26.9	25.0
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	6.4	3.3	3.8	4.2	3.1	2.3	4.4	3.2	2.3	5.3	3.3	3.3	4.5	2.1	2.1	1.8	4.1	2.8	4.2	5.2	2.9	2.7	4.4	3.7	6.45	2.75	2.91	2.81	13.80	3.08	5.29	2.34	3.55	1.90	3.50	2.21	4.62	2.05	2.45
Chemical Oxygen Demand (COD)	mg/L	NV				<5	<5	18.0	<5	7.0	<5	<5	6.0	8.0		<5	<5	12.0	21.0	<10	<10		47.0	18.0	16.0	25.0	41.0	36	17	16	68	16	91	18	<10	24	18	15	12	11	16
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001		<0.001	<0.001	<0.0010	<0.0010	0.0030	0.0012	0.0015	0.0031	0.0023	0.0054	0.0014	0.0018	0.0171	0.0095	0.0033	0.123	<0.0010	0.0074	<0.0010	0.0022	<0.0010	0.0014	<0.0010	<0.0010	0.0022	0.0013
Aluminum	mg/L	0.1 (OG)	0.01	0.006	<0.004	<0.004	<0.004	0.007	<0.004	0.008	0.010	<0.004	0.01	0.006	0.015	0.006	<0.004	<0.010	<0.010	0.023	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.123	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0013	0.0036	<0.0010	0.0016	0.0026
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	0.0015	0.00021	0.00059	0.00059	0.00016	0.00015	0.00014	0.00016	0.00014	0.00018	0.00016	0.00101	0.00017	0.0004	<0.00010	0.00014	0.00012	0.00013	0.00019	0.00014	0.00019	0.00015
Barium	mg/L	1.0 (MAC)	0.051	0.059	0.058	0.055	0.065	0.055	0.051	0.067	0.055	0.08	0.057	0.049	0.054	0.063	0.072	0.058	0.0862	0.0243	0.055	0.0572	0.0528	0.0705	0.0511	0.0621	0.0524	0.0567	0.0495	0.0538	0.056	0.0667	0.0554	0.0673	0.0598	0.0691	0.0552	0.0677	0.0521	0.0656	0.0513
Boron	mg/L	5.0 (MAC)	0.05	0.019	0.028	0.013	0.026	0.017	0.015	0.015	0.017	0.015	0.016	0.013	0.013	0.011	0.018	0.014	0.012	0.016	0.018	0.017	0.018	0.019	0.024	0.018	0.02	0.021	0.02	0.02	0.019	0.017	0.023	0.014	0.022	0.015	0.022	0.016	0.022	0.018	0.026
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	0.0000085	0.0000063	0.0000087	0.0000058	0.0000098
Calcium	mg/L	NV	130	152	142	151	160	161	144	143	142	120	115	123	126	98	121	129	126	120	32.6	135	123	113	129	123	122	122	122	130	117	122	118	115	128	120	119	111	128	126	135
Chromium	mg/L	0.05 (MAC)	<0.003	0.003	0.003	0.003	0.01	0.006	<0.003	<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	<0.00050	<0.00050	<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	0.009	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00137	<0.00020	<0.00020	0.00066	0.00084	0.00073	0.00111	0.001	0.00077	0.00154	<0.00020	0.0004	<0.00020	0.00065	0.00403	0.00094	0.00171	0.00131	0.00236	0.00043	0.00191
Iron	mg/L	0.3 (AO)	0.287	0.709	0.05	0.255	0.168	0.103	0.104	<0.01	0.401	<0.01	0.113	<0.01	0.108	<0.01	0.01	<0.050	<0.050	<0.050	<0.010	0.042	<0.010	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.144	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium	mg/L	NV	47.3	48.6	45.9	48.9	49.1	51.5	44.3	50.4	43.6	44.3	39.2	39.5	44.2	39.9	40.7	40.1	41.4	15.3	41.3	41.7	36.2	40.8	36.3	39.9	34.6	38	38.4	39.9	34.9	39.9	36.1	41.4	40.6	41.0	37.8	42.2	37.8	40.7	40.7
Manganese	mg/L	0.05 (AO)	0.216	0.172	0.122	0.029	0.03	0.056	0.055	0.037	0.091	0.026	0.15	0.119	0.208	0.029	0.088	0.196	0.0956	0.0013	0.453	0.406	0.367	0.164	0.451	0.249	0.421	0.299	0.587	0.393	0.497	0.137	0.216	0.00325	0.541	0.00812	0.343	0.0629	0.406	0.170	0.398
Mercury	mg/L	0.001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	7.31	1.4	1.82	0.99	1.17	1.21	0.98	1.33	0.99	1.4	1.01	0.84	1.08	1.06	1.08	<1.0	1.2	45.4	0.907	1	0.841	1.15	0.768	0.884	0.744	0.795	0.842	0.793	1.1	0.951	0.783	0.841	0.761	0.98	0.825	0.912	0.778	0.848	0.790
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	<0.00040	<0.00040	<0.00040	<0.000050	0.000175	0.000047	0.000258	0.000051	<0.00050	<0.000050	0.000086	0.000075	0.000107	0.000093	0.000112	0.000087	0.000144	<0.000050	0.00014	<0.000050	0.000081	0.000134	0.000057	0.000108	<0.000050
Silicon	mg/L	NV	6.37	7.5	8.26	7.65	8	7.45	7.5	7.65	8.07	7.27	7.34	7.02	7.32	7.72	7.88	8.6	7.7	<1.0	8.64	7.9	7.64	8.29	8.24	7.97	7.71	8.16	8.34	7.93	7.14	8.3	8.04	8.35	8.49	8.5	8.35	8.29	8.27	8.90	8.29
Sodium	mg/L	200 (AO)	15.8	15.4	15	13.8	14.5	14.4	12.8	12.9	11.9	13	9.81	11.4	12	18.7	18.5	15.7	20.3	36.6	12.1	14.9	11.1	25	11	14.6	10.5	11.2	10.9	12.4	9.63	14.0	10.0	12.4	10.7	15.8	10.9	14.8	9.43	12.10	9.75
Zinc	mg/L	5.0 (AO)	0.014	<0.013	0.008	0.014	0.006	<0.004	0.008	0.009	<0.004	<0.004	0.012	<0.004	0.01	0.005	<0.005	0.0034	<0.0030	0.0030	0.0015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0028	0.0013	0.0013	0.0020	0.0010	<0.0010	0.0015

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2
			May-06	*May-07*	*Sep-07*	*Jun-08*	*Sep-08*	*Jun-09*	*Sep-09*	*May-10*	*Sep-10*
Field Electrical Conductivity	uS/cm	NV	1120	1040	1110	1020	1090	1070	1060	959	1060
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**527**	**455**	**577**	**554**	**630**	**600**	**605**	**557**	**647**
pH	N/A	6.5-8.5 (OG)	7.89	7.83	7.32	7.91	7.69	7.97	7.91	8.03	7.6
Total Dissolved Solids	mg/L	500 (AO)	**598**	**606**	**672**	**638**	**698**	**658**	**644**	**618**	**644**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	551	501	638	542	611	569	562	558	613
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**551**	**501**	**638**	**542**	**611**	**569**	**562**	**558**	**613**
Ammonia, Total (as N)	mg/L	NV	0.510	<0.02	0.240	1.100	<0.02	0.050	0.040	<0.02	0.110
Bromide	mg/L	NV	0.200	0.210	0.320	0.150	0.260	0.220	0.480	0.210	<0.05
Chloride	mg/L	250 (AO)	11.2	8.0	11.0	9.3	13.4	10.3	11.4	10.3	12.6
Fluoride	mg/L	1.5 (MAC)	<0.05	0.08	0.16	0.07	0.08	0.09	0.08	<0.05	<0.05
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	1.180	1.500	0.770	0.990	0.750	0.951	1.650	2.120	1.080
Nitrate as N	mg/L	10.0 (MAC)	1.180	1.500	0.770	0.990	0.750	0.950	1.650	2.120	1.080
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Organic Nitrogen	mg/L	0.15 (OG)	0.010	**0.18**	0.120	**0.650**	**1.120**	**0.580**	**0.580**	**0.440**	**0.390**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L	500 (AO)	62	36	40	46	38	31	34	30	32
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**7.5**	**6.9**	4.6	3.8	**5.1**	3.8	**31.5**	**6.5**	3.7
Chemical Oxygen Demand (COD)	mg/L	NV				7.0	<5	15.0	10.0	11.0	8.0
Phenols	mg/L	NV				<0.001	<0.001	<0.001	<0.001	<0.001	0.0
Aluminum	mg/L	0.1 (OG)	0.015	<0.004	0.005	<0.004	<0.004	0.007	<0.004	<0.004	0.013
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Barium	mg/L	1.0 (MAC)	0.043	0.049	0.042	0.041	0.057	0.048	0.052	0.051	0.052
Boron	mg/L	5.0 (MAC)	0.038	0.04	0.053	0.038	0.06	0.04	0.034	0.033	0.034
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium	mg/L	NV	159	121	164	161	185	176	176	167	188
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	<0.003	0.008	0.01	<0.003	<0.003	<0.003
Copper	mg/L	1.0 (AO)	0.003	<0.003	<0.003	0.008	<0.003	<0.003	<0.003	<0.003	<0.003
Iron	mg/L	0.3 (AO)	**0.355**	**0.448**	<0.005	0.166	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Magnesium	mg/L	NV	31.5	37	40.6	37	40.7	39	40.3	33.9	43
Manganese	mg/L	0.05 (AO)	**0.065**	0.025	**0.136**	0.004	0.011	0.007	0.004	0.003	0.016
Mercury	mg/L	0.001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Potassium	mg/L	NV	2.14	1.73	2.1	1.39	1.7	1.27	1.47	1.36	1.57
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Silicon	mg/L	NV	5.4	6.95	9.72	6.37	7.71	6.35	7.63	5.62	8.51
Sodium	mg/L	200 (AO)	45.7	20.9	18.4	24.6	20.2	15.6	16.9	21.6	17.4
Zinc	mg/L	5.0 (AO)	0.012	0.004	0.004	0.016	<0.004	0.006	<0.004	<0.004	0.012

Parameter	Unit	ODWS	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2
			May-11	*Sep-11*	*May-12*	*Sep-12*	*Apr-13*	*Sep-13*	*May-14*	*Sep-14*	*May-15*	*Sep-15*	*May-16*	*Sep-16*	*May-17*	*Sep-17*	*May-18*	*Sep-18*	*May-19*
Field Electrical Conductivity	uS/cm	NV	986	997	1050	928	1040	1020	598	1130	1130	1280	1280	1320	810	1066	1080	1480	954
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**542**	**666**	**610**	**527**	**627**	**623**	**639**	**641**	**615**	**724**	**625**	**584**	**560**	**596**	**569**	**623**	**603**
pH	N/A	6.5-8.5 (OG)	7.77	7.67	7.84	7.7	7.67	7.00	7.31	7.14	7.21	7.33	7.22	7.38	7.49	7.27	7.66	7.51	7.07
Total Dissolved Solids	mg/L	500 (AO)	**624**	**674**	**654**	**696**	**564**	**686**	**691**	**654**	**518**	**515**	**706**	**717**	**646**	**622**	**552**	**835**	**718**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	549	614	622	552	562	679	620	646	650	274	492	525	565	519	518	575	615
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**549**	<5	**622**	**552**	**562**	**679**	**621**	**647**	**650**	274	492	**525**	**565**	**519**	**518**	**575**	**615**
Ammonia, Total (as N)	mg/L	NV	0.02	0.110	0.030	0.270	0.040	0.040	0.058	0.192	0.291	0.177	<0.020	0.09	0.041	0.068	0.168	0.08	<0.010
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	0.140	0.140	0.210	<0.10	<0.50	0.16	<0.10	<0.10	0.11	0.16	<0.10
Chloride	mg/L	250 (AO)	10.5	11.9	11.6	13.0	8.2	13.2	8.2	8.3	9.8	7.1	8.8	11.2	4.8	8.06	4.42	8.72	5.29
Fluoride	mg/L	1.5 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.05	0.09	<0.10	0.06	0.03	<0.020	0.037	0.048	0.035
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	2.11	2.310	2.410	1.260	0.530	0.840	0.710	<0.2	0.049	<0.022	1.8	0.104	0.394	1.68	0.511	0.835	0.523
Nitrate as N	mg/L	10.0 (MAC)	2.11	2.310	2.410	1.260	0.530	0.840	0.710	0.140	0.049	<0.020	1.8	0.104	0.394	1.68	0.511	0.835	0.523
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Organic Nitrogen	mg/L	0.15 (OG)	**0.600**	**0.260**	**0.3**	**0.31**	**0.42**	0.10	**0.31**	**0.66**	**0.28**	**0.53**	**1.15**	**3.20**	**0.86**	**<1.5**	**<1.5**	**<1.5**	**2.40**
Orthophosphate as P	mg/L	NV	<0.1	0.350	<0.1	<0.1	<0.5	<0.25	0.004	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Sulphate	mg/L	500 (AO)	26	31	27	27	48	24	31	33	34	44	26.6	31	20	28.4	25.8	29.2	19.7
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**6.1**	4.6	**5.2**	3.8	4.0	4.5	3.0	**5.7**	**5.5**	**5.7**	**7**	4.9	4.8	**5.4**	**9.2**	**9.71**	4.98
Chemical Oxygen Demand (COD)	mg/L	NV	<5	24.0	15.0		<5	8.0	19.0	23.0	14.0	<10		340.0	50.0	108.0	41.0	109.0	33
Phenols	mg/L	NV	0.0	<0.001	<0.001		0.0	<0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.0010	0.0	0.0735
Aluminum	mg/L	0.1 (OG)	0.004	0.03	0.008	0.010	<0.004	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00019	0.00018	0.00024	0.00026	0.00017	0.00016	0.00017	0.0002
Barium	mg/L	1.0 (MAC)	0.052	0.063	0.051	0.061	0.04	0.065	0.0643	0.0813	0.0743	0.0741	0.0699	0.0624	0.0541	0.0655	0.0505	0.0659	0.0614
Boron	mg/L	5.0 (MAC)	0.043	0.027	0.029	0.035	0.029	0.04	0.03	0.034	0.035	0.038	0.034	0.039	0.035	0.039	0.035	0.035	0.038
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	0.000019	<0.000010	0.00001	<0.000010	<0.000010
Calcium	mg/L	NV	162	193	178	139	190	186	189	194	181	211	184	163	169	176	175	184	182
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	0.003	0.005	<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
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0012	<0.0010	0.00085	0.00099	0.00075	0.00085	0.001	0.00088	0.00088	0.00078
Iron	mg/L	0.3 (AO)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<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	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	33.5	44.7	40.1	43.7	37.1	38.5	40.3	38.2	39.5	48	40.3	42.8	33.4	38.3	31.8	39.7	36
Manganese	mg/L	0.05 (AO)	0.003	0.007	<0.002	0.018	0.003	0.004	<0.0010	0.0395	0.0267	**0.0545**	0.00503	0.00586	**0.0955**	**0.0569**	<0.00050	0.00077	0.00176
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Potassium	mg/L	NV	1.12	1.63	1.06	1.32	1.12	1.27	<1.0	1.8	1.3	1.46	1.41	1.31	1.88	1.27	1.94	1.27	1.7
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000113	0.000172	0.000152	0.00017	0.000139	<0.00050	0.000119	0.00012
Silicon	mg/L	NV	5.68	8.14	7.22	8.52	6.15	7.77	7.5	7.3	7.1	8.96	6.63	9.25	6.2	8.26	5.83	7.97	6.63
Sodium	mg/L	200 (AO)	13.8	18.1	16.9	17.6	16.3	19.8	17.8	19.1	17.9	20.4	19.1	19.5	14	20.4	11.6	21.7	12.4
Zinc	mg/L	5.0 (AO)	0.03	0.041	<0.004	0.005	<0.005	<0.005	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010

Parameter	Unit	ODWS	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2
			Sep-19	*May-20*	*Oct-20*	*May-21*	*Sep-21*	*May-22*	*Sep-22*	*May-23*	*Sep-23*	*May-24*	*Sep-24*	*May-25*	*Sep-25*
Field Electrical Conductivity	uS/cm	NV	1060	1124	1132	1081	1016	1129	995	1338	378	1082	983	1043	1128
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**639**	**673**	**618**	**645**	**551**	**666**	**665**	**615**	**628**	**619**	**652**	**622**	**684**
pH	N/A	6.5-8.5 (OG)	6.97	6.95	7.01	7.27	7.44	7.09	7.32	7.27	7.10	7.22	7.34	7.20	7.25
Total Dissolved Solids	mg/L	500 (AO)	**716**	**684**	**574**	**657**	**603**	**690**	**679**	**631**	**630**	**626**	**662**	**716**	**797**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	668	640	603	595	654	724	542	2150	618	1020	1990	651	595
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**668**	**640**	**603**	**595**	**654**	**724**	**542**	**2150**	**618**	**1020**	**1990**	**651**	**595**
Ammonia, Total (as N)	mg/L	NV	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.0255	0.0148	0.0069	0.0112	0.0136	<0.0050	0.0117
Bromide	mg/L	NV	0.13	<0.50	<0.50	<0.10	<0.10	<0.10	0.1	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	9.42	9.5	13.9	8.09	9.00	9.25	10.80	6.70	9.72	7.98	7.49	6.76	9.41
Fluoride	mg/L	1.5 (MAC)	0.04	<0.10	<0.10	0.037	0.039	0.029	0.037	0.048	<0.100	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	2.17	0.88	1.68	1.06	2.340	0.760	0.807	0.985	1.32	1.28	1.14	2.63	2.11
Nitrate as N	mg/L	10.0 (MAC)	2.17	0.88	1.68	1.06	2.34	0.76	0.807	0.985	1.32	1.28	1.14	2.63	2.11
Nitrite as N	mg/L	1.0 (MAC)	<0.010	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**0.72**	**0.64**	**0.79**	**0.51**	**0.74**	**<0.500**	**7.48**	**1.28**	**0.675**	**0.388**	**2.27**	**0.522**	**0.687**
Orthophosphate as P	mg/L	NV	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0100
Sulphate	mg/L	500 (AO)	31.5	28.6	27.4	24.3	28	16.8	21.9	19.4	18.6	15.4	16.0	15.9	14.6
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**5.71**	**5.60**	**7.50**	**5.39**	**7.25**	**5.16**	**5.48**	4.74	**5.27**	4.89	**5.84**	3.64	3.90
Chemical Oxygen Demand (COD)	mg/L	NV	48	18	35	25	20	25	11	58	30	45	276	13	22
Phenols	mg/L	NV	0.0108	0.0045	0.0031	0.0017	0.0086	0.0015	0.002	0.0013	0.0023	0.0012	0.0289	0.0020	0.0024
Aluminum	mg/L	0.1 (OG)	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.013	0.0045	<0.0010	<0.0010	<0.0010	<0.0010	0.0037	0.0968
Arsenic	mg/L	0.01 (IMAC)	0.00022	0.00023	0.0002	0.00017	0.00017	0.00019	0.00019	0.00016	0.00017	0.00018	0.00017	0.00019	0.00023
Barium	mg/L	1.0 (MAC)	0.07	0.0629	0.0681	0.0602	0.063	0.0672	0.0742	0.0638	0.0686	0.0702	0.0702	0.0666	0.0731
Boron	mg/L	5.0 (MAC)	0.038	0.035	0.04	0.037	0.045	0.035	0.042	0.035	0.043	0.037	0.045	0.036	0.048
Cadmium	mg/L	0.005 (MAC)	<0.000010	<0.000010	<0.000010	0.00001	<0.000010	0.0000117	<0.0000050	0.0000083	0.0000063	0.0000062	0.0000062	0.0000083	0.0000077
Calcium	mg/L	NV	185	200	181	195	165	197	194	182	185	179	193	187	198
Chromium	mg/L	0.05 (MAC)	<0.00050	<0.00050	<0.00050	<0.00050	0.00069	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	0.0008	0.00069	0.00086	0.00093	0.00082	0.00123	0.00103	0.00175	0.00106	0.00082	0.00132	0.00075	0.00119
Iron	mg/L	0.3 (AO)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.076
Lead	mg/L	0.01 (MAC)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000076	<0.000050	<0.000050	<0.000050	<0.000050	0.000080
Magnesium	mg/L	NV	42.9	42.4	40.2	38.2	33.5	42.3	43.9	39.0	40.3	41.8	41.3	37.8	46.0
Manganese	mg/L	0.05 (AO)	0.00203	<0.00050	<0.00050	0.00228	<0.00050	0.00887	0.00295	0.00022	0.00574	0.00091	0.00694	0.00125	0.00952
Mercury	mg/L	0.001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	1.3	1.13	1.14	1.76	1.89	1.66	1.25	1.88	1.41	1.65	1.41	1.54	1.45
Selenium	mg/L	0.05 (MAC)	0.000149	0.000126	0.000177	0.000112	0.000541	0.000094	0.000222	0.000103	0.000115	<0.000500	0.000096	0.000112	0.000107
Silicon	mg/L	NV	8.68	7.21	7.56	6.64	6.66	6.95	8.95	7.13	8.1	7.36	8.33	7.18	8.59
Sodium	mg/L	200 (AO)	20	15.8	17.7	14.7	14.6	13.6	17.1	12.7	15.6	13.5	14.0	11.2	13.8
Zinc	mg/L	5.0 (AO)	<0.0010	0.001	0.001	<0.0010	<0.0010	0.0014	<0.0010	0.0044	0.0011	<0.0010	0.0014	<0.0010	0.0021

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Unless otherwise stated, units are reported in mg/L.
8. NV denotes No Value.

TABLE D-3

GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW3S May-06	MW3S May-07	MW3S Jun-08	MW3S Sep-08	MW3S Jun-09	MW3S Sep-09	MW3S May-10	MW3S Sep-10	MW3S May-11	MW3S Sep-11	MW3S May-12	MW3S Sep-12	MW3S Apr-13	MW3S Sep-13	MW3S May-14	MW3S Sep-14	MW3S May-15	MW3S Sep-15	MW3S May-16	MW3S Sep-16	MW3S May-17	MW3S Sep-17	MW3S May-18	MW3S Sep-18	MW3S May-19	MW3S Sep-19	MW3S May-20	MW3S Oct-20	MW3S May-21	MW3S Sep-21	MW3S May-22	MW3S Sep-22	MW3S May-23	MW3S Sep-23	MW3S May-24	MW3S Sep-24	MW3S May-25	MW3S Sep-25
Field Electrical Conductivity	uS/cm	NV	1860	1320	1380	1660	1460	1840	2050	2310	2750	2520	2960	2010	2990	2330	717	2180	2452	2740	1930	2240	690		990	1430	827	1015	1003	1137	922	1076	827	1050	810	898	958	881	738	1010
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**664**	**598**	**677**	**760**	**656**	**811**	**1010**	**1100**	**1080**	**727**	**1210**	**940**	**1150**	**832**	**885**	**759**	**830**	**1030**	**700**	**850**	**331**		**414**	**475**	**446**	**488**	**494**	**519**	**438**	**343**	**412**	**496**	**370**	**500**	**419**	**507**	**410**	**553**
pH	N/A	6.5-8.5 (OG)	7.93	8.01	7.78	7.45	8.03	7.76	7.7	7.58	7.49	7.8	7.77	7.66	7.36	6.94	7.05	6.86	7.31	7.23	7.38	7.11	7.39		**8.91**	6.86	7.22	6.77	7.25	7.20	7.35	7.46	7.36	7.18	7.70	7.03	7.24	7.81	7.55	7.35
Total Dissolved Solids	mg/L	500 (AO)	**1010**	**824**	**920**	**1100**	**926**	**1050**	**1280**	**1360**	**1480**	**580**	**1660**	**1430**	**1480**	**1450**	**1160**	**1040**	**1200**	**1300**	**983**	**1210**	**463**		**571**	**675**	**575**	**661**	**545**	**588**	**562**	452	494	**652**	418	**576**	466	**593**	447	**651**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	1070	725	805	834	786	1000	1210	1440	1460	1540	1570	1050	1620	1410	1150	1120	1300	410	959	1140	376		352	540	519	614	541	624	496	399	516	646	417	548	479	551	400	539
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10		<10	<10	<10	<50	<10	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**1070**	**725**	**805**	**834**	**786**	**1000**	**1210**	**1440**	**1460**	**1540**	**1570**	**1050**	**1620**	**1410**	**1150**	**1120**	**1300**	**410**	**959**	**1140**	**376**		352	540	519	614	541	624	496	399	516	646	417	548	479	551	400	539
Ammonia, Total (as N)	mg/L	NV	38.500	15.000	23.900	24.600	20.200	26.800	46.300	64.900	74.500	86.200	75.500	21.5	95.7	69.6	73.3	52.9	79.4	70.3	27.7	41.9	0.108		7.02	12.2	8.75	11	10.5	13.6	10.1	0.764	7.33	16.5	4.65	8.29	6.02	9.3	3.08	6.80
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	0.130	0.100	<0.50	<0.50	<0.50	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<1.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
Chloride	mg/L	250 (AO)	15.0	4.2	2.3	50.3	25.6	35.5	31.8	39.3	165.0	152.0	208.0	103.0	96.3	95.2	75.1	56.0	54.3	82.1	23.9	6.16	6.57		9.78	15.1	10.7	15.8	9.76	10.6	7.99	3.21	6.25	14.3	6.37	4.64	5.73	4.94	4.07	10.4
Fluoride	mg/L	1.5 (MAC)	<0.05	0.11	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		0.072	0.093	0.061	0.07	0.043	<0.10	0.049	0.097	<0.020	<0.200	0.142	0.117	0.116	0.104	0.124	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	<0.05	<0.05	0.220	0.086	0.070	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	<0.15	<0.11	<0.11	<0.022	<0.022		<0.022	<0.022	0.025	<0.022	<0.022	<0.11	0.026	0.043	<0.020	<0.224	<0.0224	<0.0224	0.0290	<0.0224	<0.112
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	0.180	0.090	0.070	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.020	<0.020		<0.020	<0.020	0.025	<0.020	<0.020	<0.10	0.026	0.031	<0.0224	<0.200	<0.020	<0.020	<0.020	<0.020	<0.020	<0.100
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	0.140	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.050	<0.050	<0.050	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	0.012	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	0.029	<0.010
Organic Nitrogen	mg/L	0.15 (OG)	**2.10**	**1.70**	**1.30**	**4.00**	**4.50**	**6.70**	**12.20**	0.00	**3.30**	**32.80**	**10.50**	**31.1**	**1.80**	**0.40**	**4.60**	**14.0**	<3.0	<2.5	<1.0	**37.2**	**20.8**		**5.20**	**11.40**	**<2.0**	**25.1**	**8.7**	**<3.2**	**15.9**	**10**	**20.2**	**93.5**	**15.2**	**33.3**	**13.5**	**67.9**	**4.89**	**4.30**
Orthophosphate as P	mg/L	NV	<0.1	0.350	4.020	<0.1	<0.1	<0.1	4.440	<0.1	<0.1	<0.1	<0.1	<0.1	<2	<1	0.047	0.012	0.080	<0.0030	<0.0030	1.28	0.409		0.337	0.0299	0.0032	0.082	2.22	0.103	1.12	0.0045	1.86	2.56	1.08	1.14	0.0347	0.0255	0.513	0.0082
Sulphate	mg/L	500 (AO)	36	30	1	76	6	6	65	<0.1	4	2	11	74	18	6	18	8	17	34	9	0.65	55.8		44.4	15.1	35.60	6.72	4.41	6.80	14.10	35.80	4.36	4.10	4.45	4.20	5.99	5.23	4.44	32.9
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**31.4**	**73.4**	**63.0**	**52.1**	**41.8**	**45.4**	**60.0**	**51.0**	**58.6**	**58.3**	**52.7**	**54.3**	**42.0**	**42.5**	**48.5**	**46.4**	**33.2**	**32.0**	**26.3**	**22.7**	**64**	**20.1**	**15.8**	**39.2**	**11.8**	**16.5**	**21.5**	**22.1**	**28.8**	**23.6**	**13.4**	**21.7**	**12.4**	**23.6**	**12.0**	**21.4**	**10.3**	**15.1**
Chemical Oxygen Demand (COD)	mg/L	NV			134.0	108.0	124.0	161.0	126.0	114.0	235.0	168.0	146.0		117	107	146	113	123	110	307.0	46	444		108.0	307.0	46	321	254	122	425	147	378	1160	316	1140	284	862	110	85
Phenols	mg/L	NV			0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.001	0.0		0.004	0.005	0.008	0.005	0.004	0.004	0.002	0.018	0.004		0.0	0.0	0.0043	<0.010	0.0067	0.0035	0.0048	<0.010	<0.0050	<0.0100	<0.0050	0.0069	0.0012	0.0012	0.0025	0.0020
Aluminum	mg/L	0.1 (OG)	0.02	0.027	0.024	0.016	0.054	0.030	0.015	0.024	0.015	0.02	0.014	0.020	0.014	0.016	<0.10	<0.010	<0.010	<0.050	<0.0050	<0.0127	<0.0050		<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0119	0.0107	0.0113	0.0078	0.0061	0.0140	0.0049	0.0100	0.0122	<0.0100
Arsenic	mg/L	0.01 (IMAC)	0.014	0.006	0.007	0.015	0.004	0.01	0.004	0.009	0.009	0.013	0.011	0.013	<0.003	0.004	<0.010	0.0012	0.0017	0.0029	0.00155	0.0096	0.00122		0.00111	0.00122	0.00108	0.00445	0.00154	0.00090	0.00117	0.00126	0.00050	0.00086	0.00085	0.00150	0.00415	0.00395	0.00118	0.00481
Barium	mg/L	1.0 (MAC)	0.085	0.034	0.051	0.042	0.035	0.046	0.051	0.069	0.111	0.135	0.103	0.161	0.068	0.102	0.069	0.0196	0.0187	0.0311	0.01	0.041	0.0305		0.00691	0.0104	0.0391	0.0223	0.0204	0.0169	0.0276	0.0595	0.0522	0.0619	0.026	0.0838	0.0545	0.0562	0.0421	0.0658
Boron	mg/L	5.0 (MAC)	0.319	0.307	0.233	0.478	0.25	0.33	0.237	0.27	0.283	0.275	0.334	0.319	0.323	0.38	0.24	0.233	0.317	0.42	0.27	0.346	0.176		0.131	0.163	0.141	0.152	0.147	0.201	0.114	0.164	0.107	0.141	0.095	0.155	0.102	0.133	<0.100	0.144
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00090	<0.00090	<0.00090	<0.00010	<0.00010	<0.00010	<0.00010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Calcium	mg/L	NV	137	175	196	229	198	224	297	300	284	188	300	251	286	218	237	203	211	257	193	237	114		137	155	146	158	165	172	149	119	138	164	126	169	139	173	141	188
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	<0.003	0.01	0.019	<0.003	<0.003	0.004	<0.003	0.009	0.006	0.016	0.005	0.004	<0.0050	<0.00050	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0005	<0.00050	0.0005	<0.00050	<0.00050	<0.00050	<0.00500
Copper	mg/L	1.0 (AO)	0.015	<0.003	0.007	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.010	<0.0010	<0.0010	<0.0020	<0.00020	<0.00020	0.00041		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00046	0.00078	0.00248	0.00055	<0.00020	0.00029	<0.00020	0.00026	<0.00200	<0.00200
Iron	mg/L	0.3 (AO)	**5.41**	**7.7**	**15.2**	**5.23**	**5.55**	**13.2**	**19.4**	**28**	**33.7**	**43.1**	**36.6**	**48.4**	**25.3**	**26.6**	**30.9**	0.257	0.112	0.12	**3.95**	**11.5**	**0.191**		0.046	0.213	0.038	**5.09**	0.073	0.17	**0.372**	**0.806**	**2.68**	**9.77**	**1.72**	**4.27**	**2.44**	**5.09**	**1.49**	**8.09**
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000055	<0.000071	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000500	<0.000500
Magnesium	mg/L	NV	78.2	39.2	45.6	45.6	39.3	61.1	66.2	84.3	89.3	62.5	112	76	105	69.8	71	61	73.4	93.7	52.8	62.7	11		17.2	21.6	19.6	22.8	19.6	21.8	15.7	11.2	16.3	21.1	13.5	18.9	17.4	18.2	14.1	20.4
Manganese	mg/L	0.05 (AO)	**0.36**	**0.514**	**0.782**	**1.27**	**0.674**	**1.11**	**1.33**	**1.32**	**1.51**	**1.31**	**1.25**	**1.37**	**1.04**	**1.37**	**1.43**	**1.11**	**1.16**	**1.17**	**1.57**	**1.41**	**0.321**		**0.584**	**0.736**	**0.766**	**0.797**	**0.734**	**0.867**	**0.579**	0.0482	**0.952**	**1.04**	**0.324**	**0.7**	**0.84**	**0.942**	**0.474**	**0.801**
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Potassium	mg/L	NV	202	52.1	54.2	78.1	48.8	72.9	97.1	112	112	75.9	153	140	112	90	88	101	101	141	68.8	86.2	12.6		14.1	27.7	16	29	14.8	22.3	12.5	9.16	11.6	26	9.64	15.8	10.6	15.7	8.83	21.1
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.0040	<0.00040	<0.00040	<0.00050	0.000246	0.000648	0.000228		<0.00050	0.000117	0.000115	0.000239	0.000171	0.000197	0.000111	0.000245	0.015	0.00857	0.000179	0.00294	0.00287	0.000256	<0.000500	<0.000500
Silicon	mg/L	NV	8.47	8.7	11.6	10.6	10.4	12.2	15	15.7	16.9	17.6	17.1	15.8	17.9	17	17	13.9	17.1	14.7	17.2	19.9	5.45		7.49	10.1	8.36	10.1	8.56	9.62	7.81	7.33	9.27	9.94	7.99	9.46	9.19	9.91	8.03	8.68
Sodium	mg/L	200 (AO)	14.7	15.5	17.3	27.3	36.2	25.7	59.2	45.5	69.9	39.5	79.5	80.6	82.6	66.5	70.8	58.7	57	62.7	39.6	45.8	20.2		21	24.9	22.4	26.7	21.3	21.0	16.6	9.45	12.4	16.4	10.5	13.9	10.6	12.3	8.27	12.6
Zinc	mg/L	5.0 (AO)	0.015	<0.004	0.022	0.006	0.004	0.017	<0.004	0.01	0.024	0.019	0.006	0.005	<0.005	<0.005	<0.030	<0.0030	<0.0030	<0.010	<0.0010	0.0014	0.0011		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	0.0032	0.0026	<0.0010	0.0011	0.0014	0.0026	<0.0100	<0.0100

Insufficient volume for sample collection.

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3

GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW3D May-06	MW3D May-07	MW3D Sep-07	MW3D Jun-08	MW3D Sep-08	MW3D Jun-09	MW3D Sep-09	MW3D May-10	MW3D Sep-10
Field Electrical Conductivity	uS/cm	NV	2270	1940	2100	1830	1750	2650	1860	2110	2660
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**649**	**539**	**542**	**706**	**703**	**1050**	**614**	**900**	**995**
pH	N/A	6.5-8.5 (OG)	8.1	8.06	7.71	7.99	7.7	7.75	8	7.8	7.55
Total Dissolved Solids	mg/L	500 (AO)	**1350**	**1180**	**1340**	**1210**	**1140**	**1710**	**1050**	**1430**	**1640**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	1210	953	1060	999	861	1420	926	1130	1470
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<5	<5	<5	<5	<5	<5	<5	<5
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**1210**	**953**	**1060**	**999**	**861**	**1420**	**926**	**1130**	**1470**
Ammonia, Total (as N)	mg/L	NV	22.4	22.9	20.0	20.5	<0.02	24.1	17.8	17.1	1.5
Bromide	mg/L	NV	0.100	<0.05	0.200	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chloride	mg/L	250 (AO)	56.3	33.5	57.3	17.7	41.9	62.9	38.7	53.2	99.9
Fluoride	mg/L	1.5 (MAC)	<0.05	0.09	0.10	0.10	0.09	<0.05	<0.05	<0.05	<0.05
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.1	<0.05	<0.05	0.260	<0.05	0.000	0.120	0.140	<0.05
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	0.260	<0.05	<0.05	0.120	0.140	<0.05
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Organic Nitrogen	mg/L	0.15 (OG)	**0.20**	0.0	**1.70**	0.0	**21.68**	**2.40**	**1.60**	**5.80**	**29.17**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulphate	mg/L	500 (AO)	13	34	31	50	85	9	39	88	13
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**19.3**	**24.3**	**20.8**	**35.4**	**38.1**	**34.5**	**25.5**	**45.0**	**30.7**
Chemical Oxygen Demand (COD)	mg/L	NV				70.0	81.0	99.0	58.0	94.0	71.0
Phenols	mg/L	NV				0.001	0.003	<0.001	<0.001	0.002	0.007
Aluminum	mg/L	0.1 (OG)	0.01	0.007	0.005	0.004	0.007	0.033	0.013	0.008	<0.004
Arsenic	mg/L	0.01 (IMAC)	<0.003	0.006	<0.003	**0.028**	**0.059**	**0.024**	**0.011**	**0.021**	0.008
Barium	mg/L	1.0 (MAC)	0.17	0.174	0.202	0.097	0.1	0.24	0.138	0.156	0.165
Boron	mg/L	5.0 (MAC)	0.508	0.631	0.744	0.407	0.524	0.829	0.497	0.421	0.757
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Calcium	mg/L	NV	76.9	71	66.4	148	176	194	112	196	166
Chromium	mg/L	0.05 (MAC)	<0.003	0.004	0.01	0.004	0.01	0.026	<0.003	<0.003	0.005
Copper	mg/L	1.0 (AO)	0.009	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	<0.003	<0.003
Iron	mg/L	0.3 (AO)	0.189	**2.56**	**0.535**	**10.7**	**9.58**	**24**	**5.06**	**24.7**	**0.378**
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Magnesium	mg/L	NV	110	87.8	91.4	81.7	63.9	138	81.2	99.7	141
Manganese	mg/L	0.05 (AO)	**0.487**	**0.471**	**0.581**	**0.716**	**0.64**	**0.807**	**0.39**	**0.831**	**0.319**
Mercury	mg/L	0.001				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Potassium	mg/L	NV	394	297	325	199	156	285	210	247	375
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Silicon	mg/L	NV	6.81	6.27	9.07	8.89	10.2	8.5	7.31	10.7	10.4
Sodium	mg/L	200 (AO)	30.1	22.6	25.4	23.3	28	31.9	28.1	53.6	39.6
Zinc	mg/L	5.0 (AO)	0.014	0.019	<0.004	<0.004	0.005	0.005	0.009	<0.004	0.01

Parameter	Unit	ODWS	MW3D May-11	MW3D Sep-11	MW3D May-12	MW3D Sep-12	MW3D Apr-13	MW3D Sep-13	MW3D May-14	MW3D Sep-14	MW3D May-15	MW3D Sep-15	MW3D May-16	MW3D Sep-16	MW3D May-17	MW3D Sep-17
Field Electrical Conductivity	uS/cm	NV	2760	2660	3200	2750	2480	2770	606	2700	3420	3620	3070	3780	951	Insufficient volume for sample collection.
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**1090**	**1120**	**1110**	**1100**	**1030**	**1030**	**956**	**909**	**1210**	**1250**	**1110**	**1160**	**439**	
pH	N/A	6.5-8.5 (OG)	7.52	7.78	7.58	7.64	7.29	6.91	7.04	6.98	7.08	7	7.26	7.09	7.38	
Total Dissolved Solids	mg/L	500 (AO)	**1710**	**2080**	**1890**	**1940**	**1330**	**1920**	**1440**	**1460**	**1570**	**1970**	**1780**	**1990**	**690**	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	1390	1480	1550	1390	1330	1540	1180	1290	1470	460	1410	1320	563	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**1390**	<5	**1550**	**1390**	**1330**	**1540**	**1190**	**1290**	**1470**	460	**1410**	**1320**	**563**	
Ammonia, Total (as N)	mg/L	NV	30.7	24.2	11.8	28.6	39.9	27.2	39.4	25.800	19.000	28.900	28.1	36.200	15.000	
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<1	<1	0.190	0.290	0.850	0.610	<0.50	0.120	<0.50	
Chloride	mg/L	250 (AO)	180	194.0	238	198	93	180	106	149	**313**	**309**	158	61.8	16.9	
Fluoride	mg/L	1.5 (MAC)	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.10	0.04	<0.10	<0.020	<0.10	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	<0.15	<0.022	<0.11	<0.022	<0.11	
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.10	<0.020	<0.10	<0.020	<0.10	
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<1	<1	<0.10	<0.10	<0.050	<0.010	<0.050	<0.010	<0.050	
Organic Nitrogen	mg/L	0.15 (OG)	**3.50**	**1.40**	**17.2**	**1.90**	**14.60**	**1.60**	<0.15	**5.60**	**3.70**	<1.5	<1.0	**8.20**	<3.5	
Orthophosphate as P	mg/L	NV	<0.1	1.780	<0.1	<0.1	<2	<1	0.009	0.007	0.006	<0.0030	<0.0030	<0.0030	0.009	
Sulphate	mg/L	500 (AO)	1.01	14	62	34	30	47	66	60	116	120	72.6	34	68	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**42.3**	**36.6**	**35.7**	**26.4**	**31.1**	**40.1**	**27.6**	**30.8**	**32.5**	**33.8**	**32.5**	**34.3**	**15.6**	
Chemical Oxygen Demand (COD)	mg/L	NV	122.0	102.0	81.0		72.0	92.0	102.0	98.0	112.0	101.0		159.0	64.0	
Phenols	mg/L	NV	0.003	0.006	0.007		0.002	0.003	0.022	0.007	0.009	0.006	0.006	0.007	0.003	
Aluminum	mg/L	0.1 (OG)	0.009	0.02	0.012	0.013	0.008	0.008	<0.10	<0.010	<0.10	<0.050	<0.050	<0.050	<0.0050	
Arsenic	mg/L	0.01 (IMAC)	**0.015**	**0.041**	**0.026**	**0.027**	**0.017**	**0.026**	**0.012**	0.0039	<0.010	0.0041	0.0046	0.0097	0.00369	
Barium	mg/L	1.0 (MAC)	0.226	0.382	0.342	0.29	0.114	0.295	0.141	0.0902	0.167	0.21	0.115	0.251	0.00957	
Boron	mg/L	5.0 (MAC)	0.524	0.893	0.887	0.735	0.373	0.845	0.36	0.365	0.88	0.89	0.79	0.79	0.29	
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00090	<0.000090	<0.00090	<0.00010	<0.00010	<0.00010	<0.000010	
Calcium	mg/L	NV	235	189	188	172	254	197	240	189	232	212	211	179	121	
Chromium	mg/L	0.05 (MAC)	<0.003	0.011	<0.003	0.02	0.004	0.004	<0.0050	<0.00050	<0.0050	<0.0050	0.0183	<0.0050	<0.00050	
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.010	0.0013	<0.010	<0.0020	<0.0020	<0.0020	<0.00020	
Iron	mg/L	0.3 (AO)	**35.5**	**34.5**	**34.2**	**20.3**	**28.3**	**35.3**	**36.5**	0.058	<0.50	<0.10	**0.64**	**3.99**	**0.341**	
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0050	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050	<0.000050	
Magnesium	mg/L	NV	121	158	156	162	96.1	131	86.5	106	152	175	143	173	33.2	
Manganese	mg/L	0.05 (AO)	**1.11**	**0.489**	**0.488**	**0.265**	**1.3**	**0.662**	**1.49**	**0.683**	**0.444**	**0.225**	**0.838**	**0.268**	**0.719**	
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Potassium	mg/L	NV	232	440	440	386	160	313	158	259	376	403	323	406	76.7	
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.0040	<0.00040	<0.0040	<0.00050	<0.00050	<0.00050	0.000187	
Silicon	mg/L	NV	11.7	10.9	8.59	13.2	11.5	11.4	16	10.9	<10	9.63	10.2	10.1	11.7	
Sodium	mg/L	200 (AO)	72.6	64.1	66.9	56.2	84.5	77.9	64.2	59.7	82	84	81.2	76.2	31.7	
Zinc	mg/L	5.0 (AO)	0.016	0.015	0.005	0.005	<0.005	<0.005	<0.030	<0.0030	<0.030	<0.010	<0.010	<0.010	<0.0010	

Parameter	Unit	ODWS	MW3D May-18	MW3D Sep-18	MW3D May-19	MW3D Sep-19	MW3D May-20	MW3D Oct-20	MW3D May-21	MW3D Sep-21	MW3D May-22	MW3D Sep-22	MW3D May-23	MW3D Sep-23	MW3D May-24	MW3D Sep-24	MW3D May-25	MW3D Sep-25
Field Electrical Conductivity	uS/cm	NV	1960	3160	1805	2414	2672	2747	2569	>3999	1837	2569	2586	2577	2561	2262	2558	2654
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**753**	**942**	**823**	**959**	**1120**	**979**	**1080**	**639**	**988**	**1020**	**1760**	**908**	**896**	**818**	**965**	**894**
pH	N/A	6.5-8.5 (OG)	7.66	7.28	6.84	6.78	6.88	6.85	7.19	7.03	7.04	7.14	7.18	7.11	7.19	7.37	7.27	7.24
Total Dissolved Solids	mg/L	500 (AO)	**1150**	**1770**	**1190**	**1650**	**1730**	**1780**	**1880**	**1200**	**1500**	**1870**	**1530**	**1840**	**1530**	**1680**	**1560**	**1560**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	956	1330	1110	1340	1650	1650	820	1048.2	1480	820	1760	1650	1720	1410	2570	1540
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<10	<10	<50	<50	<10	<10	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**956**	**1330**	**1110**	**1340**	**1650**	**1650**	**820**	**1048.2**	**1480**	**820**	**1760**	**1650**	**1720**	**1410**	**2570**	**1540**
Ammonia, Total (as N)	mg/L	NV	17.4	20.8	17.6	17.6	20.2	24.5	19.3	14.6	15.9	19.2	17.2	23.8	19.9	19.7	19.3	17.5
Bromide	mg/L	NV	0.1	<0.50	<0.10	<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
Chloride	mg/L	250 (AO)	42.3	131	47.2	122	93.8	114	83.7	40.9	61.9	93.1	51.0	81	80.7	87.0	57.6	71.9
Fluoride	mg/L	1.5 (MAC)	0.049	<0.10	0.033	<0.10	<0.10	<0.10	<0.10	<0.10	<0.100	<0.100	<0.100	0.114	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.022	<0.11	<0.022	<0.11	<0.11	<0.11	<0.11	<0.11	<0.100	<0.112	<0.112	<0.112	<0.112	<0.112	<0.112	<0.112
Nitrate as N	mg/L	10.0 (MAC)	<0.020	<0.10	<0.020	<0.10	<0.10	<0.10	<0.10	<0.10	<0.112	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Nitrite as N	mg/L	1.0 (MAC)	<0.010	<0.050	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**<3.7**	**<4.9**	**<3.7**	**5.4**	**<5.0**	**<4.8**	**<3.8**	**<3.5**	**<4.06**	**<4.17**	**4.80**	**<5.08**	**<4.56**	**<4.41**	**17.9**	**6.80**
Orthophosphate as P	mg/L	NV	0.0076	0.0037	<0.0030	<0.0030	<0.0030	0.0073	<0.0030	<0.0030	<0.0030	<0.0030	0.0104	<0.0010	0.0033	0.0016	0.0034	0.0032
Sulphate	mg/L	500 (AO)	20.3	71	19.3	40	10.9	29.8	15.8	31.5	17.10	45.60	4.50	22.30	<1.50	9.36	2.32	2.34
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**22.1**	**43.9**	**25.8**	**41.7**	**49.6**	**61.9**	**51.8**	**29.2**	**34.4**	**45.2**	**30.6**	**46.6**	**39.9**	**41.1**	**31.3**	**33.9**
Chemical Oxygen Demand (COD)	mg/L	NV	86.0	144.0	75	114	124	217	129	94	115	130	104	151	128	120	415	131
Phenols	mg/L	NV	0.001	0.007	0.0066	0.0035	0.0048	0.0052	0.0042	0.0035	0.0031	0.0055	0.0034	0.0047	0.0073	0.0072	0.0044	0.0054
Aluminum	mg/L	0.1 (OG)	<0.0050	<0.050	<0.0050	<0.050	<0.050	<0.050	<0.050	<0.050	0.0222	0.0136	0.0147	<0.0100	0.0190	<0.0100	<0.0100	**0.114**
Arsenic	mg/L	0.01 (IMAC)	0.00372	0.002	0.00488	0.0081	0.0014	0.0026	0.0079	0.0011	**0.0144**	0.00947	0.0016	**0.0131**	**0.0122**	0.00794	**0.0132**	0.00461
Barium	mg/L	1.0 (MAC)	0.042	0.165	0.0615	0.173	0.123	0.16	0.139	0.114	0.129	0.19	0.0875	0.177	0.144	0.133	0.246	0.134
Boron	mg/L	5.0 (MAC)	0.455	0.82	0.512	0.79	1.00	1.05	0.98	0.65	0.758	1.02	0.752	0.861	0.764	0.766	0.807	0.853
Cadmium	mg/L	0.005 (MAC)	<0.000010	<0.000050	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500
Calcium	mg/L	NV	189	156	195	169	207	155	198	121	206	162	173	159	171	148	192	147
Chromium	mg/L	0.05 (MAC)	<0.00050	<0.0050	<0.00050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Copper	mg/L	1.0 (AO)	0.00194	0.0024	0.001	<0.0020	<0.0020	<0.0020	0.0049	<0.0020	0.00245	0.00495	0.00224	0.00277	<0.00200	<0.00200	<0.00200	<0.00200
Iron	mg/L	0.3 (AO)	0.033	<0.10	0.044	**6.15**	<0.10	<0.10	**5.78**	0.12	**22.8**	**12.4**	**4.56**	**18.6**	**23.5**	**8.08**	**25.5**	**7.60**
Lead	mg/L	0.01 (MAC)	<0.000050	<0.00050	<0.000050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Magnesium	mg/L	NV	68.4	134	81.4	131	146	144	141	82.1	115	149	107	124	114	109	118	128
Manganese	mg/L	0.05 (AO)	**1.06**	**0.291**	**1.11**	**0.401**	**0.852**	**0.237**	**0.612**	**0.298**	**0.901**	**0.236**	**0.738**	**0.385**	**0.679**	**0.357**	**0.612**	**0.232**
Mercury	mg/L	0.001	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	126	338	159	324	318	333	327	225	219	334	239	342	262	298	282	325
Selenium	mg/L	0.05 (MAC)	<0.00050	<0.00050	0.000281	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Silicon	mg/L	NV	11.9	9.47	13.8	10.4	9.63	8.8	9.6	10.9	10.1	8.57	9.68	9.04	8.78	8.52	9.78	8.86
Sodium	mg/L	200 (AO)	51.5	90.3	62.2	103	118	130	130	82.5	95.5	155	86.1	131	94.4	109	105	116
Zinc	mg/L	5.0 (AO)	0.001	0.062	<0.0010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0100	<0.0100	<0.0100	<0.0100	<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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S	MW5S
			Jun-08	Sep-08	Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	May-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	uS/cm	NV	1130	1090	1360	1220	698	1110	1100	1140	1250	1090	1590	691	900	1474	1450	1370	1280	562	924	1060	1480	1023	1094	1180	1036	985	1094	844	1043	800	1106	727	976	1082	1235
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**644**	**586**	**768**	**670**	**384**	**668**	**599**	**711**	**686**	**547**	**622**	**778**	**394**	**768**	**674**	**631**	**523**	**307**	**415**	**431**	**454**	**606**	**517**	**566**	**387**	**416**	**330**	**260**	**627**	**435**	**409**	**244**	**452**	**536**	**485**
pH	N/A	6.5-8.5 (OG)	7.94	7.64	7.94	7.96	7.91	7.78	7.77	7.82	7.95	7.8	6.94	7.23	7.24	7.15	7.07	7.58	7.24	7.71	7.31	7.83	7.51	6.98	7.05	7.26	7.36	7.67	7.53	7.81	7.20	8.02	7.42	7.77	7.78	7.55	7.80
Total Dissolved Solids	mg/L	500 (AO)	**746**	**660**	**862**	**738**	418	**720**	**656**	**844**	**812**	**620**	**674**	**902**	**505**	**806**	**741**	**787**	**751**	**508**	**636**	**619**	716	**752**	**749**	**669**	**588**	**606**	**653**	495	**779**	**562**	**655**	371	**674**	**756**	**690**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	585	544	679	637	352	589	510	603	669	530	641	788	482	857	356	550	491	366	497	472	471	633	557	562	476	446	482	330	632	404	503	336	2000	538	446
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**585**	**544**	**679**	**637**	352	**589**	**510**	**603**	**669**	**530**	**641**	**788**	**483**	**857**	356	**550**	**491**	366	497	472	471	633	**557**	562	476	446	482	330	**632**	404	**503**	336	**2000**	**538**	446
Ammonia, Total (as N)	mg/L	NV	0.720	0.270	0.350	1.310	<0.02	0.190	0.430	0.980	0.420	0.100	<0.02	1.990	1.100	2.350	3.910	0.332	0.763	0.154	0.505	0.077	1.04	0.058	0.028	0.016	0.269	0.038	0.328	0.147	0.0768	0.0182	0.0454	0.417	0.378	0.162	1.27
Bromide	mg/L	NV	0.090	<0.05	<0.05	<0.05	0.070	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.50	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.50	<0.10	<0.50	<0.10	<0.50	<0.10	<0.50	<0.10	<0.10	<0.50	<0.50
Chloride	mg/L	250 (AO)	8.1	12.6	7.1	9.4	13.1	13.5	22.8	21.8	39.3	18.2	33.4	21.8	18.4	38.1	40.3	20.0	33.5	74.1	42.9	45.3	58.9	31.7	46.2	46	66.7	76.4	116	104	48.7	75.5	65.9	86.3	59.5	62.8	87.6
Fluoride	mg/L	1.5 (MAC)	0.070	0.08	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	0.10	<0.10	0.07	0.13	0.04	0.068	0.075	0.054	0.057	<0.10	<0.10	0.092	<0.10	0.112	<0.100	0.091	<0.100	0.148	0.083	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	7.71	4.60	**13.2**	5.73	1.42	7.28	**17.9**	**18.4**	4.27	5.25	1.82	3.48	<0.2	0.546	0.108	10.574	0.835	0.968	<0.022	0.956	0.026	9.987	1.826	2.879	<0.11	0.540	<0.11	0.849	0.768	4.210	0.198	0.0990	0.355	**10.4**	0.444
Nitrate as N	mg/L	10.0 (MAC)	7.71	4.51	**13.0**	5.56	1.42	7.28	**17.9**	**18.4**	4.27	5.25	1.82	3.48	<0.10	0.410	0.068	10.400	0.687	0.947	<0.020	0.956	0.026	9.89	1.73	2.75	<0.10	0.528	<0.10	0.89	0.768	4.11	0.198	0.085	0.341	**10.1**	0.444
Nitrite as N	mg/L	1.0 (MAC)	<0.05	0.09	0.21	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.136	0.040	0.174	0.148	0.021	<0.010	<0.010	<0.010	0.097	0.096	0.129	<0.050	0.012	<0.050	0.041	<0.050	0.098	<0.050	0.014	0.014	0.352	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**1.50**	**1.51**	**1.55**	**1.38**	**0.31**	**1.21**	**0.84**	0.12	**1.22**	**0.56**	**0.95**	**1.4**	**0.33**	**1.08**	<0.15	**1.380**	**1.210**	**0.600**	<1.5	**0.500**	<1.5	**0.990**	**0.970**	**0.760**	**0.611**	**0.542**	**0.470**	**0.983**	**0.943**	**0.784**	**0.607**	**0.773**	**2.76**	**0.898**	**0.450**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.028	0.025	0.035	0.025	0.021	0.018	0.028	0.014	0.0105	0.0145	0.0186	0.0176	0.0227	0.0197	0.028	0.0111	0.0102	0.0054	0.0198	0.0282	0.0271	0.0098	0.0105	0.0157
Sulphate	mg/L	500 (AO)	44	40	40	39	48	52	56	53	47	47	39	33	12	30	25	35	79	20	41	23	58	29.9	53.5	23.0	23.7	22.0	23.5	14.8	36.7	21.4	19.4	10.2	23.4	27.2	23.2
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**9.3**	**7.1**	**20.4**	**31.1**	3.8	**9.5**	**8.7**	**7.9**	**11.6**	**6.1**	**10.9**	**12.1**	**9.2**	**14.9**	**13.3**	**12.3**	**10.4**	**6.5**	**7.2**	**7.8**	**12.3**	**8.26**	**7.41**	**7.52**	**6.42**	**6.61**	**6.87**	**8.02**	**9.85**	**6.48**	**5.65**	**6.42**	**7.87**	4.80	**5.41**
Chemical Oxygen Demand (COD)	mg/L	NV	5.0	<5	<5	35.0	19.0	5.0	13.5	7.0	20.0	26.0	8.0	20.0	43.0	32.0	36.0	32.0	72.0	26.0	32.0	33.0	86.0	42	52	30	25	24	22	33	36	30	27	38	270	20	19
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001	<0.001	<0.001	0.0013	0.0015	0.0024	0.0030	0.0019	0.0037	0.0027	0.0054	0.0019	0.0029	0.0055	0.0037	0.0040	0.0030	0.0020	0.0022	0.0019	0.0028	<0.0010	0.0015	0.0022	<0.0010	0.0028	0.0014
Aluminium	mg/L	0.1 (OG)	<0.004	<0.004	0.008	0.004	<0.004	0.009	<0.004	0.008	0.006	0.01	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	0.007	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0028	0.0018	0.0011	0.0012	0.0046	0.0012	0.0018	0.0026
Arsenic	mg/L	0.01 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.0010	0.00047	0.00054	0.00039	0.0011	0.00131	0.00068	0.0004	0.00052	0.00050	0.00057	0.00045	0.00045	0.00083	0.00193	0.00061	0.00032	0.00044	0.00097	0.00144	0.00037	0.00032
Barium	mg/L	1.0 (MAC)	0.058	0.069	0.083	0.095	0.026	0.063	0.051	0.082	0.08	0.089	0.089	0.142	0.0999	0.178	0.174	0.132	0.134	0.0759	0.118	0.116	0.139	0.146	0.135	0.113	0.104	0.0972	0.106	0.0747	0.16	0.0952	0.108	0.0602	0.114	0.129	0.123
Boron	mg/L	5.0 (MAC)	0.072	0.089	0.092	0.103	0.016	0.052	0.038	0.062	0.064	0.05	0.081	0.081	0.042	0.088	0.091	0.057	0.058	0.022	0.045	0.033	0.055	0.061	0.053	0.034	0.045	0.021	0.032	0.016	0.057	0.033	0.036	0.010	0.039	0.025	0.052
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0050	<0.0050	<0.0050	<0.0050	0.00041	0.00032	0.00033	0.00028	0.00004	0.00027	0.00031	0.00029	0.00034	0.00038	0.00034	0.00036	0.000129	0.0000491	0.000273	0.000544	0.0000369	0.0000219	0.0000522	0.0000486
Calcium	mg/L	NV	198	183	235	207	118	206	185	216	209	165	196	246	126	242	215	197	168	96.7	132	135	144	190	162	180	123	130	102	83.4	198	140	131	76.1	145.0	171	150
Chromium	mg/L	0.05 (MAC)	<0.003	0.007	0.013	<0.003	<0.003	<0.003	<0.003	0.004	0.004	<0.003	<0.003	<0.0050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<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)	0.007	0.006	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	0.004	0.0047	0.0032	0.0048	0.00517	0.00357	0.00368	0.00308	0.00257	0.00252	0.00493	0.00324	0.00324	0.00283	0.00297	0.00212	0.00158	0.00207	0.00235	0.00354	0.00313	0.00112	0.00195	0.00313
Iron	mg/L	0.3 (AO)	0.277	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.709**	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.520**	**0.783**	<0.010	<0.010	0.249	**0.640**	0.054	0.014
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	36.3	31.4	44	37.1	21.6	37.3	33.3	41.8	39.8	32.8	32.1	39.4	19.2	39.5	33	33.7	25.4	15.9	20.7	22.5	23.1	31.8	27.3	28.4	19.0	22.3	18.4	12.7	32.3	20.8	20.0	13	21.8	26.6	26.9
Manganese	mg/L	0.05 (AO)	0.01	0.006	0.006	0.025	<0.002	0.004	0.002	0.012	**0.237**	**2.69**	**1.25**	**2.17**	**0.808**	**1.23**	**2.02**	**2.89**	**1.97**	**2.37**	**2.72**	**2.33**	**1.47**	**2.46**	**1.80**	**0.98**	**1.09**	**1.32**	**1.36**	**1.71**	**2.31**	**1.30**	**1.50**	**1.02**	**1.69**	**1.46**	**1.16**
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	0.000021	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Potassium	mg/L	NV	11.3	12.5	16.5	22.5	3.79	9.01	9.3	12.2	20.8	26.5	23.9	25.9	25.8	29.8	33.4	22.6	22.4	28.4	25.5	22.8	27.1	27.4	27.1	23.1	30.2	32.6	37.2	20.8	31.3	26.8	42.1	21.5	28.9	25.4	28.9
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000191	0.000211	0.00021	0.000141	0.000161	<0.00050	0.000169	0.000183	0.000219	0.000152	0.000219	0.000122	0.0001	0.000121	0.000288	0.000134	0.000163	0.000090	0.000126	0.000112	0.000118
Silicon	mg/L	NV	4.18	4.54	4.42	4.72	2.38	5.16	3.42	4.31	5.82	5.5	4.79	5.3	4.3	5.3	6.4	4.25	4.24	3.32	4.43	3.37	4.18	4.2	4.45	4.04	3.77	3.82	3.85	3.37	5.47	3.45	4.5	2.86	4.55	3.91	4.56
Sodium	mg/L	200 (AO)	13.1	16	10.4	12.5	14.9	15.7	22.3	21.1	30.1	24.1	30.3	25.1	28.9	43.3	52.6	24.2	35	60.1	39.4	42.4	55.5	38.3	56.1	49.4	62.5	64.1	93.3	70.9	52.7	49.0	73.4	63.8	58.7	55.7	80.6
Zinc	mg/L	5.0 (AO)	0.006	0.006	0.015	0.005	0.008	<0.004	<0.004	0.01	<0.004	<0.005	<0.005	0.0055	<0.0030	<0.0030	0.0016	0.0014	0.0061	<0.0010	0.0014	<0.0010	0.0011	0.0013	0.0016	0.0018	0.001	<0.0010	0.001	0.0025	0.003	0.0015	0.0029	0.0015	0.0023	0.0010	0.0026

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L
9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW5D Jun-08	MW5D Sep-08	MW5D Jun-09	MW5D Sep-09	MW5D May-10	MW5D Sep-10	MW5D May-11	MW5D Sep-11	MW5D May-12	MW5D Sep-12	MW5D Apr-13	MW5D Sep-13	MW5D May-14	MW5D Sep-14	MW5D May-15	MW5D Sep-15	MW5D May-16	MW5D Sep-16	MW5D May-17	MW5D Sep-17	MW5D May-18	MW5D Sep-18	MW5D May-19	MW5D Sep-19	MW5D May-20	MW5D Oct-20	MW5D May-21	MW5D Sep-21	MW5D May-22	MW5D Sep-22	MW5D May-23	MW5D Sep-23	MW5D May-24	MW5D Oct-24	MW5D May-25	MW5D Sep-25
Field Electrical Conductivity	uS/cm	NV	1100	1140	1050	1030	1070	1100	1030	929	1090	1010	1200	1670	588	1250	1333	1500	1620	1590	1245	1253	1280	1480	952	1097	1115	1181	1193	1156	796	1144	1244	1101	1198	2338	1230	1242
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	632	601	596	552	593	664	551	584	591	630	652	712	638	638	699	787	736	715	652	623	580	552	556	598	529	556	536	588	493	601	497	474	524	527	526	565
pH	N/A	6.5-8.5 (OG)	7.99	7.74	7.98	7.98	7.9	7.64	7.86	7.86	7.75	7.88	7.77	7.16	7.48	7.27	7.18	7.16	7.26	7.19	7.1	7.17	7.75	7.45	7.1	6.97	7.24	7.16	7.25	6.99	6.59	7.28	7.50	7.08	7.34	7.43	7.53	7.45
Total Dissolved Solids	mg/L	500 (AO)	706	688	652	612	672	644	572	650	696	896	656	750	743	743	727	754	735	782	882	830	759	765	773	795	687	707	763	745	658	752	664	740	682	699	874	751
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	577	590	528	506	581	608	540	537	549	518	588	670	582	657	743	139	455	619	696	663	522	518	600	608	571	591	560	734	708	364	520	572	562	16600	3360	513
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	864	<5.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	577	590	528	506	581	608	540	537	549	518	588	670	583	659	743	139	455	619	696	663	522	518	600	608	571	591	560	734	708	364	520	572	562	17400	3360	513
Ammonia, Total (as N)	mg/L	NV	1.420	0.350	0.330	0.200	0.410	0.500	1.510	0.400	0.82	0.160	0.620	0.672	0.557	0.567	0.486	0.467	0.532	0.514	0.398	0.643	0.345	0.403	0.117	0.693	0.443	1.02	0.389	1.2	0.152	0.456	0.577	0.885	0.209	0.212
Bromide	mg/L	NV	0.050	<0.05	0.660	<0.05	0.100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.50	<0.10	<0.50	0.110	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	12.1	14.0	12.8	12.5	12.6	13.5	16.5	14.4	22.1	25.9	33.7	37.4	24.8	26.0	31.1	30.8	42.0	43.3	39.8	50.7	54.5	54.1	52.3	62	62.8	50.7	54.8	62.3	87.5	81.5	73.6	73.2	64.2	90.5	102	68.6
Fluoride	mg/L	1.5 (MAC)	0.070	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.020	<0.020	<0.10	<0.10	<0.10	0.023	<0.020	<0.10	<0.10	<0.10	<0.10	<0.100	<0.100	0.029	<0.100	<0.100	0.103	0.107	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	5.59	4.97	4.58	4.67	6.54	4.44	5.00	3.21	10.7	10.0	3.87	1.91	5.18	4.41	1.16	0.53	<0.11	0.114	2.080	1.02	1.51	0.8	1.94	1.26	3.49	3.149	3.04	1.51	0.541	0.817	2.66	2.15	5.03	1.15	5.50	2.72
Nitrate as N	mg/L	10.0 (MAC)	5.48	4.41	4.66	4.58	4.51	6.41	4.44	5.00	3.21	10.7	10.0	3.87	1.91	5.18	4.41	1.16	0.53	<0.10	0.114	2.080	1.02	1.51	0.8	1.94	1.26	3.49	3.09	3.04	1.51	0.541	0.743	2.66	2.15	5.03	1.15	5.50	2.72
Nitrite as N	mg/L	1.0 (MAC)	0.110	0.310	<0.05	0.160	0.130	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.050	<0.010	<0.050	<0.010	<0.010	<0.050	<0.050	<0.050	<0.010	<0.010	<0.050	0.059	<0.050	<0.050	<0.050	0.074	<0.010	<0.050	<0.050	<0.050	0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	0.41	1.35	1.16	1.14	1.09	1.09	0.82	0.02	0.21	0.85	0.66	0.07	0.66	1.57	0.40	0.31	0.540	0.460	0.790	0.350	0.790	<1.5	1.12	0.53	<1.5	0.70	0.64	0.71	0.429	<0.500	0.617	0.604	0.693	0.995	25.9	1.05
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Sulphate	mg/L	500 (AO)	34	28	34	38	43	40	48	43	46	50.1	46	45	48	48	50	43	37	34	34	39.5	44.1	44.9	37.4	37.6	37.8	41.1	38.1	39.5	32.4	35	30.6	29.5	32.5	25.8	32.0	27.8
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	8.5	5.6	7.2	5.9	8.5	6.9	5.5	5.8	7.0	6.1	5.3	5.8	5.9	7.6	7.9	9.1	9.9	8.7	6.9	7.9	6.8	12.6	6.52	6.78	5.47	7.22	6.66	9.40	5.62	7.90	5.99	6.75	6.65	6.93	4.16	6.03
Chemical Oxygen Demand (COD)	mg/L	NV	<5	<5	19.0	14.0	15.0	13.0	7.0	12.0	21.0	<5	6.0	12.0	23.0	25.0	21.0	12.0	<5	39.0	58.0	28.0	29.0	101.0	39	29	18	27	22	33	20	26	28	22	22	41	158	33
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	0.0140	0.0036	0.0020	0.0038	<0.0010	0.0060	0.0021	0.0019	0.0038	0.0073	0.0022	0.0037	0.0015	0.0067	<0.0010	0.0023	<0.0010	0.0013	0.0022	0.0023	0.0030
Aluminum	mg/L	0.1 (OG)	0.01	<0.004	0.010	<0.004	0.006	<0.004	<0.004	0.006	0.009	0.008	0.01	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0017	0.0016	<0.0010	<0.0010	<0.0010	0.0017	0.291	0.0151	0.0354
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00023	0.00029	0.00029	0.00026	0.00025	0.00022	0.00023	0.00024	0.00026	0.00022	0.00019	0.00022	0.0002	0.00023	0.00017	0.00020	0.00021	0.00046	0.00050	0.00027
Barium	mg/L	1.0 (MAC)	0.072	0.07	0.081	0.078	0.1	0.111	0.091	0.127	0.097	0.129	0.096	0.078	0.136	0.147	0.161	0.172	0.15	0.159	0.129	0.135	0.104	0.123	0.116	0.131	0.0924	0.128	0.112	0.139	0.111	0.136	0.0887	0.0817	0.119	0.0942	0.104	0.124
Boron	mg/L	5.0 (MAC)	0.062	0.078	0.069	0.064	0.067	0.073	0.061	0.077	0.061	0.067	0.064	0.06	0.063	0.058	0.081	0.073	0.073	0.071	0.069	0.072	0.054	0.067	0.066	0.066	0.049	0.065	0.048	0.062	0.042	0.061	0.039	0.038	0.044	0.10	0.052	0.056
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000053	<0.0000050	<0.0000050	0.0000064	<0.0000050	0.0000170	0.0000113	0.0000146
Calcium	mg/L	NV	176	173	171	160	172	193	160	171	174	186	192	210	194	194	209	235	217	213	192	187	175	167	167	180	157	170	165	179	149	182	151	140	157	139	167	176
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	0.007	0.006	<0.003	<0.003	<0.003	0.003	0.003	0.006	<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	<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)	0.007	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	0.003	<0.003	0.0018	0.0018	0.0019	0.00211	0.00188	0.00205	0.00204	0.00196	0.00192	0.00202	0.00181	0.00206	0.00152	0.00204	0.00201	0.00211	0.00344	0.0023	0.00141	0.00156	0.00180	0.00400	0.00192	0.00321
Iron	mg/L	0.3 (AO)	0.253	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.270	0.036	0.032
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000096	<0.00050	<0.00050	<0.00050	0.000334	0.00060	0.000053
Magnesium	mg/L	NV	45.6	41.1	41.1	37	39.6	44.1	36.9	38.2	37.9	40.2	41.8	45.6	37.6	37.2	42.9	48.8	47.3	44.4	41.8	37.8	34.7	32.9	34.1	36.2	33.1	32.1	30.2	34.5	29.3	35.7	29.1	30.3	32.000	43.8	26.5	30.6
Manganese	mg/L	0.05 (AO)	0.192	0.038	0.157	0.064	0.091	0.102	0.068	0.094	0.073	0.109	0.082	0.045	0.09	0.0151	0.0348	0.0747	0.083	0.0766	0.0974	0.0951	0.0358	0.019	0.0686	0.0615	<0.00050	0.0185	0.0390	0.0461	0.20	0.0435	0.0124	0.00165	0.0360	0.915	0.949	0.691
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Potassium	mg/L	NV	14.9	8.38	14.6	14.8	17.9	20.4	15.6	19.1	18	21.3	18.2	20.2	20.7	19.5	20.3	22.8	19.2	20.1	18.3	17.5	16.2	17.9	16.7	21	10.7	17.9	15.9	19.9	14.9	21.3	11.1	11.1	17.7	34.1	26.4	28.0
Selenium	mg/L	0.05 (IMAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.00079	0.000143	0.000121	0.00012	0.000112	<0.00050	0.00008	0.000106	0.000123	0.000078	0.000137	0.000077	0.000114	0.000075	0.000136	0.00007	0.000103	0.000099	0.000098	0.000074	0.000119
Silicon	mg/L	NV	6.34	6.47	5.66	5.38	4.32	6.15	5.72	5.37	5.87	5.99	5.03	5.82	5.7	5.8	6.4	7.64	6.7	6.68	6.12	6.5	5.51	5.5	5.82	6.15	5.84	5.45	5.48	5.61	5.15	5.84	5.66	5.6	5.55	7.2	4.76	4.84
Sodium	mg/L	200 (AO)	10.7	13.9	14.9	17	19.8	17.4	25	16.9	18.9	16.9	23.4	33.1	28.6	29.9	30.9	33.9	34.2	35.7	40.8	38.4	39.2	42.6	43.5	47	52.7	44.4	52.3	46.6	56.2	52.8	59.4	63.7	63.1	61.8	68.5	59.9
Zinc	mg/L	5.0 (AO)	0.028	<0.004	0.008	0.008	<0.004	0.005	0.02	0.009	<0.004	<0.004	0.007	<0.005	0.0045	<0.0030	<0.0030	0.0011	<0.0010	0.0014	0.0014	0.0015	0.0012	<0.0010	<0.0010	<0.0010	0.0022	<0.0010	<0.0010	<0.0010	0.003	0.001	<0.0010	<0.0010	0.0024	0.0038	0.0017	0.0014

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS		MW6S Jun-08	MW6S Sep-08	MW6S Jun-09	MW6S Sep-09	MW6S May-10	MW6S Sep-10	MW6S May-11	MW6S Sep-11	MW6S May-12	MW6S Sep-12	MW6S Apr-13	MW6S Sep-13	MW6S May-14	MW6S Sep-14	MW6S May-15	MW6S Sep-15	MW6S May-16	MW6S Sep-16	MW6S May-17	MW6S Sep-17	MW6S May-18	MW6S Sep-18	MW6S May-19	MW6S Sep-19	MW6S May-20	MW6S Oct-20	MW6S May-21	MW6S Sep-21	MW6S May-22	MW6S Sep-22	MW6S May-23	MW6S Sep-23	MW6S May-24	MW6S Sep-24	MW6S May-25	MW6S Sep-25
Field Electrical Conductivity	uS/cm	NV		800	776	722	704	701	682	720	651	741	717	789	739	603	840	775	910	940	960	720	765	1030	1210	848	962	1300	1191	1212	1262	1304	1190	1464	1400	1305	1045	1301	1225
Total Hardness (as CaCO3)	mg/L	80-100	(OG)	**402**	**383**	**367**	**355**	**370**	**377**	**370**	**373**	**398**	**414**	**416**	**403**	**432**	**415**	**401**	**448**	**408**	**415**	**368**	**382**	**534**	**471**	**535**	**556**	**692**	**607**	**664**	**619**	**563**	**667**	**575**	**597**	**553**	**546**	**598**	**580**
pH	N/A	6.5-8.5	(OG)	8.35	8.13	8.25	8.17	8.21	8.1	8.05	8.02	8.03	8.06	8.01	7.26	7.78	7.49	7.77	7.63	7.75	7.59	7.78	7.6	7.64	7.8	7.25	7.16	7.25	7.18	7.44	7.05	7.30	7.31	7.37	7.35	7.58	7.48	7.34	7.42
Total Dissolved Solids	mg/L	500	(AO)	**512**	466	420	404	416	386	378	454	470	**548**	440	478	459	464	413	469	454	**574**	476	454	**675**	**630**	**634**	**669**	**751**	**711**	**908**	**838**	**716**	**805**	**693**	**790**	**662**	**680**	**709**	**706**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV		314	336	316	331	347	363	372	359	371	366	357	413	385	431	385	310	310	408	416	361	472	480	581	576	545	508	566	630	618	545	590	518	1260	1190	516	477
Alkalinity, Carbonate (as CaCO3)	mg/L	NV		9.000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500	(OG)	323	336	316	331	347	363	372	359	371	366	357	413	387	433	385	310	310	408	416	361	472	480	**581**	**576**	**545**	**508**	**566**	**630**	**618**	**545**	**590**	**518**	**1260**	**1190**	**516**	**477**
Ammonia, Total (as N)	mg/L	NV		0.060	<0.02	0.030	<0.02	<0.02	0.050	3.860	0.090	0.040	0.020	0.050	<0.02	<0.050	<0.050	<0.050	0.094	<0.020	<0.020	<0.020	0.079	0.166	0.054	<0.010	<0.010	0.013	0.035	<0.010	0.012	0.0065	0.0099	<0.0050	<0.0050	0.0124	0.0082	<0.0050	<0.0050
Bromide	mg/L	NV		0.170	0.120	<0.05	<0.05	0.120	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250	(AO)	35.8	33.0	29.3	26.0	28.3	20.3	20.6	18.6	21.9	21.3	17.7	14.7	12	16.1	16.4	19.7	16.9	20.5	15.2	14.8	16.6	19.1	26	50.8	130	125	159	160	117	111	125	132	92.3	68.8	108	83.5
Fluoride	mg/L	1.5	(MAC)	0.090	0.090	0.09	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.05	0.05	0.04	0.04	0.04	0.03	<0.10	0.03	0.034	0.024	<0.10	<0.10	<0.10	<0.10	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0	(MAC)	3.67	3.60	2.65	2.24	1.87	1.07	0.63	0.44	0.39	0.58	0.27	<0.07	<0.2	<0.2	0.249	0.346	0.187	0.177	0.093	0.340	5.530	4.460	1.26	1.74	0.64	0.23	0.21	<0.11	<0.100	<0.112	0.283	0.594	0.116	<0.112	<0.112	<0.112
Nitrate as N	mg/L	10.0	(MAC)	3.67	3.60	2.65	2.24	1.87	1.07	0.63	0.44	0.39	0.58	0.27	<0.25	0.18	0.150	0.249	0.346	0.187	0.177	0.093	0.340	5.530	4.460	1.26	1.74	0.64	0.23	0.21	<0.10	<0.112	<0.100	0.283	0.594	0.116	<0.100	<0.100	<0.100
Nitrite as N	mg/L	1.0	(MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15	(OG)	**2.39**	**0.55**	**0.45**	**0.38**	**0.24**	0.12	0.00	**0.16**	**0.21**	**0.59**	**0.37**	0.060	**0.26**	**0.19**	**0.2**	<0.15	**0.190**	**0.510**	**0.490**	0.143	**0.550**	**<1.5**	**0.670**	**0.270**	**0.250**	**0.265**	**0.250**	<0.50	**0.310**	**<0.500**	**0.159**	**0.310**	**0.736**	**0.338**	**0.153**	**0.232**
Orthophosphate as P	mg/L	NV		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.0035	<0.0030	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0012	<0.0040	<0.0010	<0.0010	0.0021
Sulphate	mg/L	500	(AO)	36	26	22	18	25	23	26	25	41	46	67	60	40.5	39	35	40	37	42	24	27	30	32	31	30.9	35.9	32.5	30.2	25.4	20.7	20.4	19.1	18.6	18.2	17.0	18.2	15.9
Dissolved Organic Carbon (DOC)	mg/L	5.0	(AO)	3.5	2.2	4.1	1.5	2.0	4.0	2.2	1.4	2.8	2.0	1.7	2.3	<1.0	1.4	2.7	2.3	3.4	1.9	<1.0	2.1	2.7	4.7	2.12	2.19	2.35	2.7	2.51	3.08	2.76	2.79	2.81	3.15	2.90	3.84	2.28	2.05
Chemical Oxygen Demand (COD)	mg/L	NV		<5	<5	<5	12.0	<5	<5	<5	<5	5.0	13.0		<5	<5	<10	<10	<10	<10	48.0	36.0	15.0	39.0	82.0	10	15	<10	<10	<10	11	13	18	<10	<10	14	80	21	<10	<10
Phenols	mg/L	NV		0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.0010	<0.0010	0.0034	0.0024	0.0018	0.0049	<0.0010	0.0032	0.0012	<0.0010	0.0042	0.0248	0.0054	0.0048	<0.0010	0.0069	0.0011	0.0031	<0.0010	<0.0010	0.0052	<0.0010	0.0028	0.0024
Aluminum	mg/L	0.1	(OG)	0.011	0.019	0.011	0.011	<0.004	0.009	<0.004	0.009	0.006	0.056	0.005	<0.004	0.034	<0.010	<0.010	0.008	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0028	0.0029	<0.0010	0.0010	0.0042	0.0163	<0.0010	<0.0010
Arsenic	mg/L	0.01	(IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00021	0.0002	0.00023	0.00021	0.00024	0.00022	0.00021	0.0002	0.00028	0.00017	0.00022	0.00016	0.00021	0.00016	0.00021	0.00019	0.00018	0.00017	0.00020	0.00016	0.00019
Barium	mg/L	1.0	(MAC)	0.017	0.016	0.017	0.016	0.017	0.019	0.021	0.027	0.023	0.026	0.018	0.027	0.0271	0.0349	0.0303	0.0342	0.0272	0.0308	0.026	0.0296	0.0368	0.0389	0.0395	0.0498	0.0639	0.0654	0.0575	0.0841	0.0667	0.08	0.0581	0.0644	0.0545	0.0794	0.0630	0.0545
Boron	mg/L	5.0	(MAC)	0.064	0.064	0.032	0.038	0.03	0.038	0.029	0.04	0.035	0.04	0.028	0.04	0.018	0.025	0.028	0.037	0.028	0.037	0.027	0.035	0.031	0.04	0.037	0.044	0.038	0.042	0.035	0.042	0.029	0.046	0.034	0.043	0.034	0.048	0.033	0.050
Cadmium	mg/L	0.005	(MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000066	0.0000055	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV		104	102	99.8	99.4	101	105	103	104	111	115	118	117	129	124	116	130	113	119	105	109	155	133	151	156	197	175	191	181	162	186	160	168	152	161	176	165
Chromium	mg/L	0.05	(MAC)	<0.003	0.006	0.005	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0050	<0.0050	<0.0050	0.00066	0.0008	0.00052	0.00068	0.00095	<0.00050	0.00051	<0.00050	<0.00050	<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)	0.006	0.011	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00041	0.0003	0.00029	0.00029	0.00028	0.00033	0.00032	0.00037	0.00039	0.00039	0.00047	0.00055	0.00051	0.00287	0.00269	0.00045	0.00216	0.00063	0.00196	0.00061	0.00076
Iron	mg/L	0.3	(AO)	0.138	<0.01	<0.01	<0.01	<0.01	0.012	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<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	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000103	0.000105	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV		34.6	31.1	28.6	28	28.7	27.8	27.4	27.4	29.3	30.7	29.5	26.9	28.4	25.5	26.8	30.1	30.2	28.8	25.4	26.7	35.9	33.4	38	40.6	48.3	41.4	45.3	40.3	38.6	49.1	42.6	43.2	42.2	35.0	38.5	40.9
Manganese	mg/L	0.05	(AO)	**0.087**	0.05	0.007	0.004	<0.002	0.046	<0.002	0.006	<0.002	0.006	<0.002	<0.002	0.0041	<0.0010	<0.0010	<0.00050	0.00102	<0.00050	0.00054	0.00055	<0.00050	0.00161	<0.00050	0.00063	0.0007	0.00083	0.0016	0.00292	0.00418	0.00132	0.00044	0.00056	0.00108	0.00665	0.00389	0.00116
Mercury	mg/L	0.001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV		4.81	3.51	1.98	1.8	1.77	1.78	1.3	1.5	1.07	1.52	0.96	0.92	<1.0	<1.0	<1.0	1.14	0.951	0.942	0.871	0.9	0.782	1.02	0.883	1.14	0.936	1.14	0.934	1.49	0.874	1.110	0.930	1.15	0.949	1.18	0.954	1.13
Selenium	mg/L	0.05	(MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000058	0.000086	0.000075	0.00018	0.000104	<0.00050	0.000088	0.000082	0.0001	<0.000050	0.000088	<0.000050	0.00009	0.000050	0.00009	0.00007	0.000056	0.000070	0.000059	<0.000050	0.000052
Silicon	mg/L	NV		6.36	6.82	5.38	5.72	5.33	5.71	5.51	5.71	5.97	5.94	5.76	4.89	4	4.5	4.4	5.86	4.86	5.68	4.59	5.32	5.06	5.93	5.52	6.85	6.12	6.01	6.03	5.85	5.17	7.13	5.70	6.86	6.10	5.97	5.49	6.61
Sodium	mg/L	200	(AO)	24.4	21.3	34.6	17.1	21	20	20.9	21.6	24.8	24.6	22.2	23.5	16.5	15.6	19.2	22.4	21.8	21.7	24.9	22.2	24.6	28	35.4	42.6	46.8	36.6	47	58.4	54.5	56.5	59.0	66.0	63.3	61.1	61.8	71.2
Zinc	mg/L	5.0	(AO)	0.015	0.035	0.007	0.028	0.004	<0.004	<0.004	0.016	<0.004	0.11	<0.005	<0.005	0.0902	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<0.0010	0.0031	0.0027	<0.0010	0.0026	0.0014	0.0012	<0.0010	0.0022

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW6D Jun-08	MW6D Sep-08	MW6D Jun-09	MW6D Sep-09	MW6D May-10	MW6D Sep-10	MW6D May-11	MW6D Sep-11	MW6D May-12	MW6D Sep-12	MW6D Apr-13	MW6D Sep-13	MW6D May-14	MW6D Sep-14	MW6D May-15	MW6D Sep-15	MW6D May-16	MW6D Sep-16	MW6D May-17	MW6D Sep-17	MW6D May-18	MW6D Sep-18	MW6D May-19	MW6D Sep-19	MW6D May-20	MW6D Oct-20	MW6D May-21	MW6D Sep-21	MW6D May-22	MW6D Sep-22	MW6D May-23	MW6D Sep-23	MW6D May-24	MW6D Sep-24	MW6D May-25	MW6D Sep-25
Field Electrical Conductivity	uS/cm	NV	846	850	886	844	788	793	807	723	762	723	816	790	574	850	879	1020	1070	1040	687	922	1030	1160	794	845	995	1020	1108	914	933	1028	1158	1196	1087	863	1089	1017
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**447**	**406**	**408**	**411**	**407**	**438**	**403**	**382**	**389**	**417**	**423**	**423**	**407**	**390**	**411**	**467**	**420**	**435**	**411**	**445**	**485**	**444**	**473**	**461**	**497**	**465**	**506**	**501**	**506**	**521**	**509**	**543**	**490**	**516**	**523**	**552**
pH	N/A	6.5-8.5 (OG)	8.34	8.15	8.13	8.11	8.18	8.16	8.03	8.05	8	8.05	8.08	7.57	7.81	7.74	7.78	7.81	7.77	7.73	7.86	7.63	7.83	7.85	7.38	7.54	7.44	7.47	7.66	7.53	7.46	7.63	7.69	7.49	7.53	7.55	7.56	7.44
Total Dissolved Solids	mg/L	500 (AO)	**592**	**546**	**544**	**538**	**506**	**512**	440	**526**	**524**	**568**	412	**508**	**517**	475	446	463	498	**574**	**487**	**593**	**614**	**564**	**595**	**633**	**589**	**531**	**674**	**712**	**678**	**612**	**613**	**676**	**572**	**654**	**616**	**650**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	293	310	327	301	316	310	318	321	326	311	317	348	341	375	407	305	315	362	388	388	394	335	441	362	441	380	382	446	461	386	359	439	432	500	433	413
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	9.000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	301	310	327	301	316	310	318	321	326	311	317	348	343	377	407	305	315	362	388	388	394	335	441	362	441	380	382	446	461	386	359	439	432	500	433	413
Ammonia, total (as N)	mg/L	NV	0.510	<0.02	<0.02	0.100	<0.02	0.150	<0.02	0.040	<0.02	<0.02	0.070	<0.02	<0.050	<0.050	<0.050	<0.050	0.064	0.060	0.036	0.048	0.049	0.064	0.014	<0.010	0.016	0.032	<0.010	<0.010	<0.0050	0.0082	0.00050	<0.00050	0.00091	0.00152	<0.00050	0.00135
Bromide	mg/L	NV	<0.05	0.090	0.610	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.100	<0.10	<0.10	<0.10	<0.10	0.1	0.19	<0.10	0.12	0.17	0.12	<0.50	0.15	<0.50	<0.50	0.2	0.19	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	72.3	69.6	76.8	77.8	61.6	71.3	71.8	64.7	57.2	62.4	63.2	71.1	57.8	54.0	63.4	76.2	66.2	70.1	49.8	71.6	70.5	98.5	81	88.7	94.1	118	121	155	107	96.3	115	108	87.5	102	97.4	93.3
Fluoride	mg/L	1.5 (MAC)	0.170	0.15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	0.11	0.11	0.09	0.11	0.09	0.08	0.059	0.088	0.088	0.085	0.071	0.085	<0.10	0.08	<0.10	<0.100	0.073	0.076	<0.100	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.32	0.60	0.32	0.44	0.97	1.35	0.33	0.26	0.22	0.95	0.85	0.52	<0.2	<0.2	<0.03	0.099	0.028	0.070	0.086	0.267	0.745	0.586	0.253	0.104	0.1	<0.11	0.026	<0.11	<0.100	<0.0224	<0.0224	<0.112	<0.112	<0.112	<0.112	<0.112
Nitrate as N	mg/L	10.0 (MAC)	0.20	0.60	0.32	0.44	0.97	1.35	0.33	0.26	0.22	0.95	0.85	0.52	<0.10	<0.10	<0.020	0.099	0.028	0.070	0.086	0.267	0.745	0.586	0.253	0.104	0.1	<0.10	0.026	<0.10	<0.112	<0.020	<0.020	<0.100	<0.100	<0.100	<0.100	<0.100
Nitrite as N	mg/L	1.0 (MAC)	0.120	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.050	<0.050	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**0.18**	**0.51**	**0.20**	**0.17**	**0.23**	0.08	**0.36**	0.08	0.08	**0.36**	0.09	0.08	**0.21**	<0.15	**0.210**	<0.15	**0.240**	<0.15	<0.15	<0.15	**0.430**	**<0.15**	**0.580**	**0.180**	<0.15	**0.348**	0.150	**<0.50**	<0.122	<0.120	<0.121	<0.121	0.133	**0.761**	0.102	0.124
Orthophosphate as P	mg/L	NV	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.004	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0097	<0.0030	0.0011	<0.0020	<0.0010	0.0022	<0.0010	0.0025
Sulphate	mg/L	500 (AO)	51	40	37	38	39	39	47	38	41	35.8	39	35	36	39	34	32	35	35	33	37.2	34.4	39.1	36	39	36.9	37.5	38.0	31.6	32.0	33.3	32.3	28.0	27.3	29.2	29.0	26.0
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	2.1	1.2	1.3	**6.2**	**6.2**	1.4	4.1	1.1	1.5	2.1	2.7	1.1	<1.0	<1.0	1.0	1.4	2.6	1.1	<1.0	1.8	1.2	**6.61**	1.2	1.17	1.27	1.22	1.71	1.85	1.58	2.6	1.18	2.05	2.03	2.35	1.29	1.07
Chemical Oxygen Demand (COD)	mg/L	NV	9.0	8.0	17.0	<5	15.0	<5	<5	<5	<5	<5	<5	<5	10.0	14.0	<10	<10	<10	24.0	16.0	<10	32.0	29.0	17	24	11	47	10	<10	11	<10	<10	10	24	85	<10	11
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0	0.0	0.0	0.0	0.0	0.0	<0.0010	0.0	0.022	0.023	0.005	0.004	0.0012	0.0057	0.0013	0.0026	<0.0010	<0.0010	<0.0010	<0.0010	0.0023
Aluminum	mg/L	0.1 (OG)	<0.0004	0.015	0.009	0.006	<0.004	<0.004	0.009	<0.004	0.011	0.006	0.012	0.01	<0.004	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00015	0.00015	0.00015	0.00013	0.00016	0.00015	0.00014	0.00013	0.00015	0.00015	0.00013	0.00012	0.00011	0.00013	0.00013	0.00013	0.00013	0.00015	0.00013	0.00013	0.00013
Barium	mg/L	1.0 (MAC)	0.041	0.049	0.055	0.05	0.051	0.049	0.052	0.053	0.052	0.051	0.041	0.052	0.0574	0.064	0.0577	0.0679	0.0618	0.0581	0.0539	0.0558	0.0606	0.0533	0.0521	0.0533	0.059	0.0546	0.0564	0.0591	0.0717	0.0676	0.0627	0.0645	0.0690	0.0693	0.0688	0.0704
Boron	mg/L	5.0 (MAC)	0.017	0.029	0.018	0.014	0.012	0.013	0.012	0.015	0.014	0.012	0.017	0.016	0.011	0.022	0.019	0.018	0.017	0.018	0.018	0.02	0.017	0.018	0.015	0.016	0.015	0.015	0.015	0.021	0.02	0.018	0.017	0.022	0.026	0.020	0.025	
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	0.00001	0.000011	0.000011	<0.000010	0.000015	<0.000010	0.00001	0.000011	0.000017	0.000011	0.000012	0.000016	0.000012	0.0000156	0.0000175	0.0000155	0.0000266	0.0000148	0.0000145	0.0000184	0.0000146
Calcium	mg/L	NV	111	103	106	107	102	111	105	96.2	101	111	110	113	101	94.3	103	115	101	111	106	116	133	112	120	115	126	117	126	120	132	131	126	135	125	136	139
Chromium	mg/L	0.05 (MAC)	0.004	0.006	0.006	<0.003	<0.003	<0.003	<0.003	0.005	<0.003	0.004	<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	<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	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.0010	0.00055	0.00065	0.00057	0.00052	0.00074	0.00047	0.00034	0.00042	0.00038	0.00045	0.00035	0.00055	0.00037	0.00296	0.00077	0.00082	0.00087	0.00087	0.00070	0.00045	0.00051
Iron	mg/L	0.3 (AO)	0.228	0.039	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011
Lead	mg/L	0.01 (IMAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000115	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium	mg/L	NV	41.2	38.2	34.8	35	37	39.1	34.2	34.5	33.2	33.9	36.1	34.2	37.5	37.5	37.7	43.9	40.5	38.6	35.7	37.9	37.3	40	41.9	42.2	44.1	42.2	46.8	48.7	42.8	47.2	47.2	50.0	43.3	42.9	44.6	49.7
Manganese	mg/L	0.05 (AO)	**0.295**	**0.126**	**0.082**	**0.06**	0.037	0.037	0.037	0.043	0.032	0.037	0.029	0.036	0.0111	0.0039	0.0144	0.0337	**0.052**	0.0403	0.0486	**0.0509**	0.034	0.0298	0.0404	0.0448	0.00932	0.00783	0.0367	0.0139	**0.0534**	**0.0540**	0.0194	0.0346	0.0427	**0.0535**	0.0354	**0.0571**
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Potassium	mg/L	NV	1.04	1.25	1.3	1.06	1.19	1.05	1.19	1	1.1	1.2	1.05	1.05	1.1	1.8	1.2	1.41	1.84	1.37	2.32	1.56	1.6	1.09	1.19	1.11	1.11	0.995	1.11	1.23	1.27	1.27	1.14	1.29	1.29	1.28	1.22	1.30
Selenium	mg/L	0.05 (IMAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silicon	mg/L	NV	5.83	6.38	6.57	6.36	6.38	6.48	6.58	6.37	6.61	6.44	7.68	6.5	7.5	6.6	8.7	7.73	6.87	6.8	6.53	6.96	6.98	6.61	7.03	7.19	7.06	6.45	7.32	7.57	7.04	7.51	8.01	8.00	7.42	7.41	8.34	7.90
Sodium	mg/L	200 (AO)	25.4	23.9	30.6	26.3	20.3	18.5	27.1	21.3	28.9	22.5	19.1	23.5	33.9	27.6	32.3	39.9	34.6	29.8	21.6	21.1	30.7	22.5	24.9	21.3	25.2	21	23.7	34.3	35.4	34.5	29.7	32.6	44.6	42.8	37.2	40.6
Zinc	mg/L	5.0 (AO)	0.006	0.027	0.018	<0.004	<0.004	0.006	<0.004	0.029	0.005	0.017	0.007	<0.005	<0.0030	<0.0030	<0.0030	0.0018	0.0018	0.0015	0.0013	0.0032	0.0014	0.0015	0.0012	0.0016	0.0016	0.0014	0.0018	0.0015	0.005	0.0022	0.0024	0.0026	0.0038	0.0026	0.0026	0.0022

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW7S Jun-08	MW7S Sep-08	MW7S Jun-09	MW7S Sep-09	MW7S May-10	MW7S Sep-10	MW7S Sep-11	MW7S May-12	MW7S Sep-12	MW7S Apr-13	MW7S Sep-13	MW7S May-14	MW7S Sep-14	MW7S May-15	MW7S Sep-15	MW7S May-16	MW7S Sep-16	MW7S May-17	MW7S Sep-17	MW7S May-18	MW7S Sep-18	MW7S May-19	MW7S Sep-19	MW7S May-20	MW7S Oct-20	MW7S May-21	MW7S Sep-21	MW7S May-22	MW7S Sep-22	MW7S May-23	MW7S Sep-23	MW7S May-24	MW7S Sep-24	MW7S May-25	MW7S Sep-25
Field Electrical Conductivity	uS/cm	NV	1380	1410	1340	1260	1150	1220	1090	1210	1040	1270	1160	697	1280	1212	1340	1370	1330	927	1084	1210	1450	931	1002	1116	1120	1082	1070	1261	1250	1207	1222	1163	1008	1155	1139
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	584	564	582	530	624	579	562	583	476	620	566	571	552	584	629	553	544	516	504	510	492	513	513	556	511	578	559	500	525	510	520	531	518	552	581
pH	N/A	6.5-8.5 (OG)	8.13	7.85	8.03	8.06	8.03	7.94	7.92	7.86	7.93	7.77	7.34	7.48	7.33	7.49	7.24	7.63	7.47	7.53	7.31	7.8	7.5	7.19	7.08	7.17	7.15	7.25	7.12	7.36	7.49	7.55	7.44	7.42	7.51	7.34	7.34
Total Dissolved Solids	mg/L	500 (AO)	842	860	814	774	790	768	756	714	808	686	794	789	747	651	621	687	759	761	709	708	699	670	737	665	624	665	697	643	683	618	668	631	640	562	666
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	659	676	611	580	593	624	598	640	542	636	682	591	660	616	210	456	552	576	560	524	553	682	650	641	591	593	747	630	553	588	613	552	1230	18200	540
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	757	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	659	676	611	580	593	624	598	640	542	636	682	593	662	616	210	456	552	576	560	524	553	662	650	641	591	593	747	630	553	588	613	552	1230	19000	540
Ammonia, Total (as N)	mg/L	NV	0.65	0.02	0.16	<0.02	<0.02	0.05	0.20	0.03	0.53	0.08	<0.02	0.058	0.060	0.051	0.069	0.072	0.076	<0.020	0.158	0.129	0.077	<0.010	<0.010	0.01	0.014	<0.010	<0.010	<0.0050	0.0071	<0.0050	0.0099	0.0055	0.0052	<0.0050	<0.0050
Bromide	mg/L	NV	0.29	0.21	0.46	0.32	0.33	<0.05	<0.05	<0.05	<0.05	<0.25	0.360	0.150	0.160	0.220	0.190	<0.50	0.130	<0.50	<0.10	0.15	0.17	0.11	0.15	<0.50	<0.50	<0.50	<0.50	<0.10	<0.50	<0.10	<0.50	<0.50	<0.50	<0.20	<0.50
Chloride	mg/L	250 (AO)	52.5	43.5	33.4	33.5	36.4	34.0	34.4	35.5	35.2	40.8	42.3	40.8	41.2	39.2	37.7	40.4	36.3	33.0	31.1	29.9	29.7	30.4	29.9	32.1	33.6	34	31.3	42.9	43.3	45	46.4	52.0	52.5	55.9	46.2
Fluoride	mg/L	1.5 (MAC)	0.29	0.19	<0.05	0.28	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.07	0.05	<0.10	0.07	<0.10	0.05	0.063	0.074	0.064	0.049	<0.10	<0.10	<0.10	<0.10	0.061	<0.100	0.066	<0.100	<0.100	<0.100	0.072	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	<0.05	0.000	<0.05	<0.05	<0.05	0.150	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	<0.03	<0.022	<0.11	<0.022	<0.11	<0.022	0.081	0.032	0.663	0.098	0.73	1.39	1.23	0.65	0.903	0.357	1.120	0.359	1.35	0.298	0.852	0.893
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.150	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.020	0.020	<0.10	<0.020	<0.10	<0.020	0.081	0.032	0.663	0.098	0.73	1.39	1.23	0.65	0.903	0.357	1.12	0.359	1.35	0.298	0.852	0.893
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.010	<0.050	<0.010	<0.050	<0.050	<0.050	<0.020	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	0.010	2.9	0.49	0.56	0.36	0.42	0.21	0.24	0.0	0.23	0.110	0.36	0.420	0.260	0.210	0.230	1.700	0.550	<1.5	0.390	0.280	0.520	0.240	0.500	0.486	0.460	0.640	0.324	<0.500	0.462	0.867	0.428	0.263	0.307	0.344
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.004	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0010	<0.0010	<0.0020	0.0031	<0.0010	<0.0010
Sulphate	mg/L	500 (AO)	68	71	109	104	93	81	67	65	58	53.9	58	67	65	64	45	52	44	41	35	35.5	29.9	33.9	26.9	23.8	24.8	22.4	23.1	25.1	26.6	24.0	21.1	20.3	20.7	17.9	16.9
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	5.8	5.2	5.0	5.2	6.0	3.8	4.7	4.8	4.0	3.1	4.1	2.6	3.9	3.8	4.6	5.3	3.6	3.4	4.6	6.1	6.1	3.88	3.19	3.55	3.31	3.75	7.17	2.9	3.44	3.6	3.34	3.66	3.56	2.70	2.42
Chemical Oxygen Demand (COD)	mg/L	NV	9.0	<5	22.0	9.0	14.0	6.0	10.0	<5		5.0	9.0	30.0	25.0	16.0	<10	68.0	46.0	28.0	42.0	57.0	36	20	17	17	14	18	15	<10	16	75	25	<10	<10	<10	<10
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	0.0014	0.0058	0.0024	0.0019	0.0047	0.0021	0.0051	0.0019	0.0072	0.0218	0.0011	0.0050	0.0052	<0.0010	0.0018	0.001	0.0013	<0.0010	0.0015	<0.0010	0.0031	<0.0010	0.0019
Aluminum	mg/L	0.1 (OG)	<0.004	0.015	<0.004	<0.004	<0.004	<0.004	0.006	0.012	0.012	0.004	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0040	0.0016	0.0356	0.0019	0.0023	<0.0010	<0.0010	0.0071
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.0002	0.00021	0.00021	0.00021	0.00022	0.00019	0.00017	0.0002	0.00025	0.00025	0.00023	0.00022	0.00027	0.00022	0.00021	0.00018	0.00020	0.00021	0.00018	0.00016	0.00021
Barium	mg/L	1.0 (MAC)	0.046	0.056	0.064	0.065	0.078	0.08	0.093	0.071	0.078	0.072	0.089	0.0833	0.0882	0.0871	0.0944	0.0804	0.0793	0.0779	0.0775	0.0748	0.0872	0.0787	0.0917	0.110	0.107	0.106	0.116	0.0976	0.094	0.0938	0.0924	0.104	0.0943	0.118	0.114
Boron	mg/L	5.0 (MAC)	0.07	0.089	0.084	0.066	0.058	0.068	0.068	0.053	0.063	0.063	0.088	0.065	0.062	0.069	0.069	0.062	0.065	0.071	0.067	0.059	0.06	0.061	0.058	0.054	0.060	0.053	0.049	0.052	0.059	0.055	0.057	0.056	0.059	0.051	0.053
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.00000050	0.000005	<0.00000050	<0.00000050	<0.00000050	0.0000051	<0.00000050	0.0000053
Calcium	mg/L	NV	135	145	157	143	170	158	153	159	106	168	156	156	158	173	149	151	140	134	141	136	140	139	152	144	161	152	135	140	135	137	139	139	152	156	
Chromium	mg/L	0.05 (MAC)	0.004	0.008	0.006	<0.003	<0.003	<0.003	0.007	0.005	0.004	<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	<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)	0.006	<0.003	<0.003	0.005	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0013	0.0018	0.0015	0.00189	0.00139	0.00159	0.00146	0.0018	0.00149	0.00165	0.00157	0.00159	0.00129	0.00124	0.00133	0.00106	0.00147	0.00134	0.00375	0.00142	0.00152	0.00178	0.00129	0.00124
Iron	mg/L	0.3 (AO)	0.927	0.904	1.79	0.306	0.211	0.071	0.061	0.091	0.041	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.034	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.01 (IMAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000353	0.000063	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000053	0.000065	<0.00050	0.00012	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium	mg/L	NV	59.9	49	46.2	42.1	48.5	44.8	43.7	45.1	51.3	48.8	42.8	43.9	41.4	45.6	48	43.9	40.4	40.2	40.8	38.5	37	39.7	40.4	42.6	37.1	42.4	41.6	39.7	42.6	41.9	43.3	44.6	41.8	41.8	46.4
Manganese	mg/L	0.05 (AO)	0.135	0.121	0.214	0.183	0.359	0.26	0.295	0.275	0.255	0.273	0.368	0.473	0.441	0.373	0.417	0.381	0.323	0.356	0.395	0.199	0.348	0.283	0.457	0.437	0.395	0.396	0.147	0.218	0.115	0.103	0.242	0.224	0.149	0.322	0.393
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	6.55	3.49	2.28	1.93	1.53	1.58	1.58	1.33	2.32	1.36	1.32	1.2	1.4	1.3	1.46	1.26	1.3	1.35	1.26	1.16	1.32	1.2	1.52	1.34	1.26	1.25	1.36	1.22	1.36	1.29	1.41	1.26	1.32	1.27	1.28
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.00050	0.000072	0.000077	0.000072	0.000086	<0.00050	0.000058	0.000095	0.000108	0.000078	0.000058	0.000052	0.000081	0.000067	0.000064	0.000064	0.000072	0.000074	0.000063	0.000068	0.000061
Silicon	mg/L	NV	9.16	10.8	7.57	7.62	7.79	8.93	7.46	9.01	8.78	7.5	8.49	8.9	8.2	8.4	9.62	8.15	8.29	8.38	9.07	8.18	8.09	8.51	8.89	8.47	8.61	8.71	8.98	8.11	8.65	8.64	8.84	8.53	8.54	8.96	9.05
Sodium	mg/L	200 (AO)	113	110	117	105	99.1	97	86.6	81	83.6	75.6	75.2	77.7	70.6	72.4	70.6	70.6	64	68.7	64.3	60.2	59.8	58.6	65.4	63.8	53.2	59.9	56.3	59.3	69.6	62.8	66.9	62.0	63.5	54.3	54.7
Zinc	mg/L	5.0 (AO)	0.008	0.004	0.005	0.008	<0.004	0.005	0.041	0.006	0.014	<0.005	<0.005	<0.0030	<0.0030	<0.0030	0.001	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	0.0059	<0.0010	0.0011	0.0012	0.0011	<0.0010	<0.0010	0.0012	0.0012	0.0068	0.0012	0.0022	0.0014	<0.0010	0.0012

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW7D Jun-08	MW7D Sep-08	MW7D Jun-09	MW7D Sep-09	MW7D May-10	MW7D Sep-10	MW7D Sep-11	MW7D Mar-12	MW7D Sep-12	MW7D Apr-13	MW7D Sep-13	MW7D May-14	MW7D Sep-14	MW7D May-15	MW7D Sep-15	MW7D May-16	MW7D Sep-16	MW7D May-17	MW7D Sep-17	MW7D May-18	MW7D Sep-18	MW7D May-19	MW7D Sep-19	MW7D May-20	MW7D Oct-20	MW7D May-21	MW7D Sep-21	MW7D May-22	MW7D Sep-22	MW7D May-23	MW7D Sep-23	MW7D May-24	MW7D Sep-24	MW7D May-25	MW7D Sep-25
Field Electrical Conductivity	uS/cm	NV	1060	1120	1100	1100	1010	1100	1060	1190	1090	1200	1120	708	1220	1182	1310	1450	1390	1238	1236	1330	1600	1960	1121	1112	1230	1198	1075	1143	1223	1172	1194	1209	1197	1272
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**495**	**519**	**543**	**508**	**541**	**517**	**552**	**541**	**530**	**574**	**544**	**528**	**517**	**489**	**542**	**437**	**426**	**429**	**436**	**459**	**460**	**490**	**526**	**542**	**487**	**536**	**543**	**512**	**549**	**650**	**526**	**524**	**545**	**550**	**584**
pH	N/A	6.5-8.5 (OG)	8.37	8.07	8.16	8.13	8.23	8.02	8.03	7.95	8.07	7.79	7.26	7.73	7.47	7.79	7.5	7.83	7.78	7.77	7.54	8.01	7.75	7.31	7.14	7.38	7.47	7.39	7.53	7.94	7.67	7.83	7.61	7.53	7.58	7.57	7.51
Total Dissolved Solids	mg/L	500 (AO)	**684**	**686**	**648**	**616**	**642**	**614**	**696**	**668**	**732**	**634**	**720**	**708**	**683**	**645**	**598**	**720**	**821**	**763**	**863**	**876**	**791**	**737**	**774**	**702**	**674**	**775**	**715**	**719**	**700**	**650**	**698**	**677**	**699**	**661**	**982**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	390	489	496	485	492	505	502	508	460	494	547	466	507	505	253	456	507	585	615	566	568	662	613	645	625	619	771	655	598	576	713	3470	2990	1210	8390
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	13.000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	611
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	403	489	496	485	492	**505**	**502**	**508**	460	494	**547**	469	**509**	**505**	253	456	**507**	**585**	**615**	**566**	**568**	**662**	**613**	**645**	**625**	**619**	**771**	**655**	**598**	**576**	**713**	**3470**	**2990**	**1210**	**9000**
Ammonia, Total (as N)	mg/L	NV	0.700	0.070	0.120	<0.02	<0.02	0.300	0.410	0.090	<0.02	0.08	<0.02	<0.050	<0.050	0.181	<0.050	<0.020	0.071	0.147	0.267	0.79	0.778	0.342	0.183	1.47	1.14	0.842	0.446	0.0425	0.563	<0.0050	0.182	0.478	0.0759	0.351	0.0324
Bromide	mg/L	NV	<0.05	0.280	0.280	0.220	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	0.100	0.110	0.160	<0.10	<0.50	0.140	<0.50	0.130	<0.50	<0.50	0.15	0.19	<0.50	<0.50	<0.50	<0.50	0.14	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	59.9	60.9	62.9	63.5	80.7	80.9	91.7	98.3	91.5	98.2	101.0	92.1	89.9	86.3	81.7	79.0	68.3	50.2	57.2	59.1	62.3	46.8	48.9	42.9	47.8	44.1	42.2	44.5	40.5	43.0	41.0	41.2	42.1	40.6	41.0
Fluoride	mg/L	1.5 (MAC)	0.730	0.64	0.58	0.26	0.54	0.53	0.48	0.42	0.39	0.58	<0.25	0.66	0.67	0.67	0.64	0.79	0.73	0.44	0.69	0.82	0.7	0.567	0.545	0.58	0.64	0.59	0.55	0.805	0.497	0.58	0.536	0.490	0.555	0.600	0.583
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.290	<0.05	0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.064	<0.2	<0.03	<0.022	<0.11	0.064	<0.11	0.128	0.325	0.388	0.687	0.691	<0.11	1.204	0.492	1.086	0.296	0.401	0.170	0.243	0.400	0.165	0.383	0.163
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	0.050	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.020	<0.020	<0.10	0.049	<0.10	0.128	0.17	0.27	0.375	0.508	<0.10	0.26	0.330	0.940	0.361	0.317	0.170	0.160	0.334	0.165	0.383	0.163
Nitrite as N	mg/L	1.0 (MAC)	0.290	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.050	0.015	<0.050	<0.010	0.155	0.118	0.312	0.183	0.077	0.944	0.162	0.146	0.065	0.084	<0.050	0.083	0.066	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**0.250**	**2.0**	**0.340**	**0.360**	**0.190**	0.0	0.0	0.010	**0.200**	0.020	0.080	**0.3**	**0.250**	<0.15	<0.15	**0.210**	**0.170**	0.141	**0.600**	**0.730**	**0.490**	**0.740**	**0.301**	<0.32	<0.28	**0.270**	**0.820**	**0.272**	**0.130**	**0.261**	**0.596**	**1.16**	**4.57**	**0.297**	**1.36**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.003	<0.0030	0.0044	<0.0030	0.015	<0.0030	<0.0030	<0.0030	<0.0030	0.0088	<0.0030	0.0053	<0.0010	<0.0010	0.0023	0.0010	0.0024
Sulphate	mg/L	500 (AO)	100	56	37	37	33	44	57	60	60	59.8	66	64	64	73	79	77	68	47	61	59	57.9	52.8	52.4	43.5	50	46.4	43.4	47.0	39.0	41.7	39.8	42.0	42.6	42.7	41.1
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	9.2	3.7	3.9	2.2	2.9	1.9	2.3	4.4	1.4	1.6	1.9	<1.0	1.4	1.9	3.0	3.8	2.2	2.2	3.3	2.9	5.98	2.71	2.79	2.87	2.85	3.19	6.04	2.66	3.56	2.55	3.11	2.69	3.70	2.04	1.95
Chemical Oxygen Demand (COD)	mg/L	NV	<5	<5	11.0	<5	<5	10.0	9.0	15.0	<5	<5	<5	28.0	32.0	18.0	<10	18.0	15.0	68.0	73.0	60.0	31	16	<10	<10	18	19	12	<10	12	35	118	741	<10	86
Phenols	mg/L	NV	0.0	0.0	<0.001	<0.001	<0.001	0.0	0.0	<0.001	<0.001	<0.001	<0.001	<0.0010	0.0017	0.0014	0.0023	0.0018	0.0060	0.0032	0.0047	<0.0010	0.0016	0.0134	0.0062	0.0041	0.0015	0.0024	<0.0010	0.0032	0.0011	0.0012	0.004	0.0028	0.0032	0.0028
Aluminum	mg/L	0.1 (OG)	0.04	<0.004	0.008	0.008	**0.104**	<0.004	0.014	0.067	0.018	0.014	0.004	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0016	0.0027	0.0080	0.0079	0.0012	0.0134	0.0035	0.0028
Arsenic	mg/L	0.01 (MAC)	0.003	0.003	0.005	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00017	0.00025	0.00021	0.00029	0.00029	0.00026	0.0002	0.00024	0.00039	0.00021	0.00025	0.00019	0.00019	0.00028	0.00029	0.00024	0.00024	0.00032	0.00019	0.00019	0.00015
Barium	mg/L	1.0 (MAC)	0.057	0.058	0.06	0.06	0.068	0.064	0.104	0.084	0.095	0.081	0.103	0.099	0.112	0.109	0.113	0.0971	0.0978	0.106	0.117	0.128	0.154	0.153	0.165	0.17	0.161	0.163	0.16	0.154	0.163	0.163	0.144	0.137	0.138	0.138	0.142	0.151
Boron	mg/L	5.0 (MAC)	0.063	0.073	0.04	0.033	0.028	0.028	0.025	0.019	0.018	0.019	0.021	0.021	0.02	0.032	0.032	0.051	0.053	0.065	0.058	0.057	0.061	0.067	0.046	0.056	0.052	0.051	0.047	0.036	0.042	0.037	0.036	0.036	0.042	0.042	0.037
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000021	0.000012	<0.000010	<0.000010	<0.000010	0.0000074	0.0000177	0.0000089	0.0000058	0.0000053	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	102	111	120	116	119	115	126	125	120	130	126	124	123	111	126	98	98.5	95	96.3	105	104	108	117	121	112	122	116	115	124	118	117	113	123	120	128
Chromium	mg/L	0.05 (MAC)	<0.003	0.006	0.004	<0.003	<0.003	<0.003	0.008	0.007	0.004	0.004	<0.003	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00074	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<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	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0011	<0.0010	0.00047	0.00044	0.00047	0.00044	0.00085	0.00102	0.0008	0.00066	0.00105	0.00086	0.00059	0.00123	0.0086	0.00733	0.00265	0.00082	0.00208	0.00040	0.00045	0.00040	0.00099
Iron	mg/L	0.3 (AO)	0.268	0.044	**0.522**	0.116	**4.99**	**5.6**	**9.937**	0.132	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.10	0.022	0.01	0.025	0.119	<0.010	0.025
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000104	0.000106	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	58.4	58.7	59.1	53.1	59.3	55.8	57.6	55.5	56	60.5	54.4	53.3	51.1	51.5	55.2	46.6	43.7	46.1	47.5	48	48.7	53.5	56.7	58.4	50.2	56.2	61.1	54.6	58.1	56.3	56.7	58.8	57.8	60.7	64.3
Manganese	mg/L	0.05 (AO)	**0.056**	**0.055**	0.042	**0.068**	**0.084**	0.05	0.036	0.014	0.027	0.007	0.0205	0.0339	0.0174	0.0108	0.014	0.00612	0.0279	0.00702	0.0324	0.0239	0.0303	0.0111	**0.0512**	**0.0556**	**0.06130**	0.02510	0.00317	0.0425	0.0480	0.0489	0.0480	0.038	0.0431	0.0205
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	7.42	58	3.6	2.98	3.44	2.98	2.71	2.39	2.14	2.3	2.1	2.1	2.2	2.1	2.46	2.23	2.17	3.18	4.28	6.04	9.14	9.99	10.7	11.8	9.90	9.82	9.65	8.66	7.61	6.45	6.05	5.69	6.30	5.70	5.10
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.00040	<0.00050	0.000068	<0.000050	0.000054	0.000107	<0.00050	0.00006	0.000086	0.000089	<0.000050	0.000168	<0.000050	0.000066	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Silicon	mg/L	NV	7.25	9.72	7.98	7.54	7.47	7.7	7.29	8.8	8.09	6.84	8.1	9.1	7.9	8.9	9.05	8.24	8.39	8.84	9.49	8.5	8.44	8.93	9.2	8.98	7.76	9.36	9.12	8.86	9.09	9.49	9.62	10.1	9.15	9.51	9.88
Sodium	mg/L	200 (AO)	56.4	5.8	59.6	49.2	56.9	53.9	65	69.4	55	63.7	66.7	66.1	65.3	78.3	88.3	128	126	133	120	116	114	106	92.5	98.6	80	86.8	88.0	72.2	80.4	73.7	77.5	82.4	81.6	81.5	79.8
Zinc	mg/L	5.0 (AO)	0.201	<0.004	<0.004	<0.004	0.246	0.04	0.141	0.142	0.075	0.024	0.02	0.0286	0.036	0.0292	0.0259	0.0113	0.0127	0.0534	0.0302	0.0261	0.0239	0.0177	0.01	0.0066	0.0058	0.0042	0.0046	0.0080	0.006	0.0076	0.0048	0.0053	0.0039	0.0025	0.0048

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW8S Jun-08	MW8S Sep-08	MW8S Jun-09	MW8S Sep-09	MW8S May-10	MW8S Sep-10	MW8S May-11	MW8S Sep-11	MW8S May-12	MW8S Sep-12	MW8S Apr-13	MW8S Sep-13	MW8S May-14	MW8S Sep-14	MW8S May-15	MW8S Sep-15	MW8S May-16	MW8S Sep-16	MW8S May-17	MW8S Sep-17	MW8S May-18	MW8S Sep-18	MW8S May-19	MW8S Sep-19	MW8S May-20	MW8S Oct-20	MW8S May-21	MW8S Sep-21	MW8S May-22	MW8S Sep-22	MW8S May-23	MW8S Sep-23	MW8S May-24	MW8S Sep-24	MW8S May-25	MW8S Sep-25
Field Electrical Conductivity	uS/cm	NV	960	980	912	946	923	989	847	895	942	951	834	894	772	980	918	1070	1010	1070	641	893	900	1230	737	818	910	962	930	884	895	969	819	942	954	875	900	997
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**591**	**567**	**563**	**528**	**563**	**608**	**476**	**564**	**552**	**595**	**495**	**542**	**467**	**584**	**541**	**599**	**494**	**535**	**434**	**539**	**476**	**519**	**452**	**520**	**539**	**524**	**546**	**551**	**510**	**716**	**540**	**617**	**522**	**579**	**508**	**594**
pH	N/A	6.5-8.5 (OG)	8.22	7.69	8.01	8.07	7.95	7.3	7.36	7.74	7.61	7.95	7.56	7.06	7.5	7.28	7.61	7.2	7.69	7.44	7.46	7.38	7.78	7.4	7.05	6.97	7.14	7.35	7.15	7.51	7.48	7.20	7.61	7.18	7.21	7.53	7.44	7.27
Total Dissolved Solids	mg/L	500 (AO)	**654**	**620**	**524**	**548**	**634**	**632**	**560**	**622**	**592**	**692**	**415**	**569**	**490**	**566**	**547**	**563**	**560**	**651**	**508**	**588**	**528**	**591**	**485**	**542**	**509**	**548**	**544**	**591**	**555**	**614**	**488**	**635**	**534**	**575**	**547**	**605**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	487	533	486	521	523	578	465	532	541	569	415	569	434	532	513	149	469	486	458	494	452	484	441	537	489	507	465	585	540	543	611	644	554	855	502	506
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	487	**533**	486	**521**	**523**	**578**	465	**532**	**541**	**569**	415	**569**	434	**533**	**513**	149	469	486	458	494	452	484	441	**537**	489	**507**	465	**585**	**540**	**543**	**611**	**644**	**554**	**855**	**502**	**506**
Ammonia, Total (as N)	mg/L	NV	0.200	<0.02	0.030	<0.02	<0.02	0.030	<0.02	0.230	0.030	0.02	0.080	<0.02	0.051	<0.050	<0.050	<0.050	<0.020	0.053	0.030	0.08	0.092	0.098	0.018	<0.010	0.069	<0.010	<0.010	0.042	0.0050	0.0105	0.0321	0.0086	<0.0050	0.0165	0.0150	0.0074
Bromide	mg/L	NV	0.130	<0.05	<0.05	0.110	<0.05	<0.05	<0.05	<0.05	<0.05	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<0.50	<0.50	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.50
Chloride	mg/L	250 (AO)	2.5	2.4	2.5	2.7	2.8	4.1	2.8	3.3	2.5	3.24	2.4	2.6	<2.0	2.7	3.6	3.5	1.6	4.6	1.2	4.01	1.82	2.64	1.67	3.22	2.82	5.50	2.14	4.00	2.19	5.20	2.2	12.3	1.82	2.59	2.47	3.49
Fluoride	mg/L	1.5 (MAC)	<0.05	0.06	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.06	0.04	0.04	0.06	0.04	0.033	0.047	0.038	0.04	0.05	0.051	<0.10	0.047	0.043	0.042	0.035	0.049	<0.100	0.036	0.038	0.051	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	3.98	3.64	2.76	1.76	8.90	4.59	**10.30**	6.84	6.17	4.21	**11.30**	7.35	7.56	4.44	6.28	4.23	5.760	4.390	4.970	4.04	5.2	3.72	3.6	3.72	3.79	3.20	6.55	6.06	2.19	2.35	2.67	0.781	1.30	1.70	5.05	3.53
Nitrate as N	mg/L	10.0 (MAC)	3.98	3.64	2.76	1.76	8.90	4.59	**10.30**	6.84	6.17	4.21	**11.30**	7.35	7.56	4.44	6.28	4.23	5.760	4.390	4.970	4.04	5.2	3.72	3.6	3.72	3.79	3.20	6.55	6.06	2.19	2.35	2.67	0.781	1.30	1.70	5.05	3.53
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**0.45**	**0.95**	**0.71**	**0.61**	**0.29**	**0.57**	**0.66**	**0.22**	0.07	**0.63**	**0.30**	**0.17**	**0.48**	**0.47**	**0.41**	**0.38**	**0.91**	**2.20**	**1.07**	**1.47**	**0.38**	<1.5	**0.49**	**1.23**	**0.67**	**0.73**	**0.62**	**1.33**	**0.618**	**0.714**	**2.52**	**0.705**	**0.571**	**1.11**	**0.698**	**0.906**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.25	0.003	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0019	<0.0010	0.0020	0.0032	0.0022	0.0037
Sulphate	mg/L	500 (AO)	58	27	21	27	26	28	18	22	21	27.6	19	25	16	19	18	19	16	20	18	24.6	17.2	21.2	20.8	23	25.5	26.6	29.8	23.7	21.3	22.3	23.7	25.0	21.8	24.6	26.1	24.3
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**7.5**	**5.4**	2.9	3.4	**10.6**	**5.9**	3.8	4.7	3.3	**10.8**	3.4	3.1	1.8	3.2	3.1	4.3	4.5	3.0	3.5	3.8	3.4	**7.3**	3.92	3.25	4.04	3.44	4.85	**7.85**	4.16	4.46	4.97	3.03	4.61	4.85	3.79	3.20
Chemical Oxygen Demand (COD)	mg/L	NV	12.0	<5	19.0	6.0	22.0	<5	<5	10.0	<5	<5	22.0	7.0	21.0	25.0	12.0	<10	22	79.0	32.0	56.0	29.0	82.0	20	45	20	52	14	24	14	13	73	54	19	55	22	23
Phenols	mg/L	NV	0.0010	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	0.0019	0.0021	0.0021	0.0012	0.0046	0.0029	0.0051	<0.0010	0.0024	0.076	0.013	0.0036	0.0031	0.0015	0.0026	<0.0010	0.0024	0.0014	0.002	0.0014	0.0045	0.0032	0.0029
Aluminum	mg/L	0.1 (OG)	0.01	0.004	0.010	0.008	<0.004	0.011	<0.004	0.026	0.004	**0.122**	<0.003	<0.003	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0188	**3.42**	**0.281**	<0.0010	0.0015	0.0011	<0.0010	0.0625
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.00021	0.00018	0.00025	0.00016	0.00022	0.00018	0.00024	0.00019	0.00026	0.00024	0.00026	0.0002	0.00029	0.00021	0.00158	0.00039	0.00020	0.00023	0.00026	0.00039
Barium	mg/L	1.0 (MAC)	0.036	0.045	0.051	0.048	0.059	0.059	0.037	0.076	0.055	0.073	0.036	0.05	0.0383	0.0535	0.0567	0.0702	0.0439	0.064	0.0351	0.0614	0.0482	0.0684	0.0397	0.0632	0.0492	0.0647	0.045	0.0579	0.0490	0.0964	0.0517	0.0980	0.0496	0.0672	0.0478	0.0662
Boron	mg/L	5.0 (MAC)	0.05	0.09	0.051	0.51	0.047	0.052	0.039	0.051	0.042	0.05	0.036	0.051	0.034	0.053	0.041	0.049	0.035	0.041	0.04	0.045	0.035	0.044	0.041	0.042	0.041	0.046	0.041	0.05	0.036	0.05	0.037	0.044	0.037	0.044	0.034	0.047
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	0.00011	<0.000010	0.000011	0.000015	<0.000010	0.000013	<0.000010	0.0001	<0.000019	<0.000010	0.000019	0.000026	0.0000165	0.0000541	0.0000173	0.0000086	0.0000153	0.0000107	0.0000106	0.0000121
Calcium	mg/L	NV	175	178	171	160	175	181	148	167	165	169	157	168	148	186	170	184	154	163	138	159	151	153	144	153	166	156	172	170	158	213	166	164	158	172	156	174
Chromium	mg/L	0.05 (MAC)	<0.003	0.007	0.006	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	<0.00050	<0.00050	<0.00050	0.00058	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00061	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	0.00589	0.000680	<0.00050	<0.00050	0.00061	<0.00050	0.00082
Copper	mg/L	1.0 (AO)	0.003	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0013	<0.0010	0.00092	0.0011	0.00083	0.0014	0.00097	0.001	0.00098	0.00109	0.00099	0.00125	0.0009	0.00118	0.00217	0.00256	0.00639	0.00152	0.00136	0.00140	0.00126	0.00117	0.00184
Iron	mg/L	0.3 (AO)	0.262	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.022	<0.01	<0.01	<0.050	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	**4.56**	0.286	<0.010	<0.010	<0.010	<0.010	0.051
Lead	mg/L	0.01 (IMAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.00050	<0.000050	<0.00050	<0.000050	<0.00050	<0.000050	<0.00050	<0.000050	<0.00050	<0.000050	<0.00050	<0.000050	0.000096	0.00257	0.000408	<0.000050	<0.000050	<0.000050	<0.000050	0.000074
Magnesium	mg/L	NV	37.5	29.7	33	31.3	30.7	37.8	25.9	35.8	34	41.9	25	29.8	23.7	29.1	28.4	33.8	26.2	33	21.5	34.4	24.1	33.5	22.6	33.2	30.1	32.6	28.4	30.6	28.0	44.6	30.5	59.3	31.0	36.4	28.8	38.8
Manganese	mg/L	0.05 (AO)	**0.08**	**0.058**	**0.057**	0.003	0.003	0.008	0.014	**0.055**	<0.002	0.01	<0.002	<0.002	<0.0010	0.0024	<0.0010	0.00124	0.00341	0.00083	0.00228	0.00501	0.00095	0.00097	0.00176	0.00164	0.00072	<0.00050	0.00458	0.00144	0.00194	**0.133**	0.0212	**0.0517**	0.00047	0.000	0.00017	0.00448
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.000010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	0.0000054	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Potassium	mg/L	NV	4.25	2.23	1.77	1.86	1.32	1.94	1.02	1.7	1.29	1.94	0.91	1.28	<1.0	1.2	1	1.46	0.961	1.25	0.91	1.27	0.852	1.25	0.834	1.31	1.04	1.15	0.892	1.09	0.824	2.08	0.902	2.32	0.846	1.22	0.808	1.21
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000995	0.000131	0.000167	0.000393	0.000214	<0.00050	0.000141	0.000133	0.000203	0.000203	0.000194	0.000151	0.00162	0.000161	0.000188	0.000294	0.000066	0.000173	0.000180	0.000378	0.000282
Silicon	mg/L	NV	8.45	8.59	6.54	7.51	6.39	8.14	3.81	7.08	6.28	8.17	3.52	5.57	4.2	5.6	4.4	7	4.02	6.59	4.06	7.06	4.17	6.49	4.03	6.56	4.94	6.01	4.48	6.04	4.40	12.9	5.21	9.49	4.78	6.69	4.56	6.82
Sodium	mg/L	200 (AO)	10	5.78	6.98	7.27	7.29	8.87	4.65	8.15	7.1	9.57	4.18	6.82	4.75	7.38	6.18	7.55	4.66	6.54	4	6.22	4.12	6.32	3.52	6.11	7.25	6.79	5.82	4.26	5.21	7.23	5.6	16.7	5.69	7.08	5.32	7.22
Zinc	mg/L	5.0 (AO)	0.011	<0.004	0.008	0.015	<0.004	<0.004	0.034	<0.004	0.018	0.237	<0.005	<0.005	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	0.0014	<0.0010	<0.0010	0.0012	0.0024	0.0164	0.002	0.0022	0.0011	<0.0010	<0.0010	0.0021

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW8D Jun-08	MW8D Sep-08	MW8D Jun-09	MW8D Sep-09	MW8D May-10	MW8D Sep-10	MW8D May-11	MW8D Sep-11	MW8D May-12	MW8D Sep-12	MW8D Apr-13	MW8D Sep-13	MW8D May-14	MW8D Sep-14	MW8D May-15	MW8D Sep-15	MW8D May-16	MW8D Sep-16	MW8D May-17	MW8D Sep-17	MW8D May-18	MW8D Sep-18	MW8D May-19	MW8D Sep-19	MW8D May-20	MW8D Oct-20	MW8D May-21	MW8D Sep-21	MW8D May-22	MW8D May-23	MW8D Sep-23	MW8D May-24	MW8D Sep-24	MW8D May-25	MW8D Sep-25
Field Electrical Conductivity	uS/cm	NV	1150	1150	1230	1010	1110	1070	1080	983	1010	1000	1130	1030	421	1120	1044	1140	1250	1210	1033	998	1180	1400	947	981	1060	1020	982	960	1038	1165	1159	1098	1080	1121	1175
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	632	624	627	583	543	542	509	549	554	581	620	564	565	583	554	626	589	566	563	504	592	560	583	571	613	556	626	599	585	610	527	611	618	669	656
pH	N/A	6.5-8.5 (OG)	8.09	7.85	8.03	8.02	8.14	7.83	7.96	7.94	7.96	7.92	7.86	7.17	7.49	7.42	7.6	7.31	7.69	7.6	7.48	7.39	7.77	7.51	7.12	7.02	7.07	7.11	7.23	7.48	7.27	7.56	6.98	7.21	7.39	7.40	7.41
Total Dissolved Solids	mg/L	500 (AO)	734	684	708	690	722	668	678	680	632	690	632	686	662	633	510	620	686	680	670	665	733	662	649	676	624	616	632	631	635	604	575	619	640	648	648
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	619	645	619	497	611	620	624	605	602	610	629	690	585	633	645	490	515	528	602	532	541	559	611	594	632	582	575	674	629	538	587	686	592	515	518
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	619	645	619	497	611	620	624	605	602	610	629	690	585	633	645	490	515	528	602	532	541	559	611	594	632	582	575	674	629	538	587	686	592	515	518
Ammonia, Total (as N)	mg/L	NV	0.150	<0.02	0.040	<0.02	0.020	<0.0012	0.040	0.510	0.080	0.14	0.060	<0.02	0.068	<0.050	0.208	0.105	0.028	0.055	<0.020	0.151	<0.020	0.175	<0.010	<0.010	0.014	<0.010	<0.010	0.032	<0.0050	<0.0050	0.0139	<0.0050	0.0204	0.0111	<0.0050
Bromide	mg/L	NV	<0.05	0.150	<0.05	0.130	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.14	0.12	<0.10	<0.10	<0.50	<0.50	<0.10	<0.50	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
Chloride	mg/L	250 (AO)	8.9	9.2	26.3	20.4	20.5	13.4	9.9	8.7	6.5	5.96	5.6	5.5	2.5	2.5	3.2	3.7	4.5	5.1	7.4	5.85	9.22	9.97	8.03	9.73	9.26	8.9	11.2	12.7	13.3	13.6	13.2	3.2	9.48	9.26	8.01
Fluoride	mg/L	1.5 (MAC)	0.110	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.07	0.06	0.06	0.08	0.03	0.049	0.05	0.049	0.043	0.044	<0.10	<0.10	0.048	<0.10	0.05	0.054	0.05	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.05	<0.05	0.126	<0.05	0.110	0.460	1.350	1.790	0.930	1.12	3.250	2.200	1.060	1.370	0.864	0.927	0.747	1.136	1.770	2.27	1.39	1.37	1.09	1.77	0.71	0.72	0.537	0.85	0.609	0.980	2.61	0.443	0.466	0.584	0.993
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.05	<0.05	0.110	0.460	1.350	1.790	0.930	1.12	3.250	2.200	1.060	1.370	0.864	0.927	0.747	1.110	1.770	2.27	1.39	1.37	1.09	1.77	0.71	0.72	0.537	0.85	0.609	0.980	2.61	0.443	0.466	0.584	0.993
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.050	<0.050	<0.010	<0.050	<0.010	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	0.10	0.93	0.31	0.38	0.33	0.23	0.63		0.04	0.23	0.14	0.08	0.38	0.34	<0.15	<0.15	0.19	0.53	0.36	0.57	0.24	0.62	0.340	0.320	0.380	0.830	0.230	0.510	0.324	0.604	1.46	0.465	0.513	2.49	0.376
Orthophosphate as P	mg/L	NV	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1	<0.1	0.830	<0.1	<0.1	<0.5	<0.25	0.004	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0035	<0.0030	<0.0030	<0.0030	0.0100	0.0192	0.0013	0.0031	0.0021	<0.0100
Sulphate	mg/L	500 (AO)	44	37	57	55	65	47	37	37	31	33.3	38	37	32	30	29	27	26	26	29	28.2	27.7	27.9	27.4	25.7	21.5	22.3	23.1	22.4	23.2	27.4	25.0	22.3	24.0	22.0	20.3
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	3.7	5.0	3.3	16.4	3.4	2.3	5.3	2.3	3.9	2.2	1.9	2.2	<1.0	1.9	2.2	3.1	3.3	2.2	2.0	3.8	3.7	4.72	2.6	2.69	4.81	2.88	3.58	7.84	2.68	2.88	3.89	4.09	3.74	2.76	2.45
Chemical Oxygen Demand (COD)	mg/L	NV	<5	<5	<5	13.0	<5	<5	<5	6.0	13.0	<5	<5	<5	14.0	14.0	12.0	<10	13	40.9	29.0	32.0	40.0	64.0	24	33	13	51	10	10	21	16	61	26	35	123	12	41
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	0.0040	0.0350	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	0.0061	0.0061	0.0018	0.0046	0.0047	0.0015	0.0050	<0.0010	<0.0010	<0.010	0.0043	0.0052	0.0028	<0.0010	0.0022	0.0014	<0.0010	0.0013	0.0025	0.0048	0.0050	0.0014
Aluminum	mg/L	0.1 (OG)	0.00	0.008	<0.004	0.010	<0.004	0.009	0.905	0.009	0.006	0.012	0.00	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0010	0.0012	0.0021	0.0055	0.101	0.0028
Arsenic	mg/L	0.01 (MAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00015	0.00012	0.00015	0.00013	0.00014	0.00015	0.00019	0.00017	0.00018	0.00015	0.00018	0.00019	0.00018	0.00024	0.00020	0.00018	0.00031	0.00221
Barium	mg/L	1.0 (MAC)	0.023	0.41	0.064	0.064	0.087	0.091	0.078	0.086	0.074	0.077	0.076	0.092	0.0904	0.0907	0.0941	0.104	0.0897	0.0934	0.1	0.0825	0.0939	0.1	0.0965	0.0975	0.108	0.101	0.108	0.115	0.107	0.104	0.0619	0.105	0.101	0.108	0.113
Boron	mg/L	5.0 (MAC)	0.044	0.063	0.055	0.044	0.052	0.057	0.065	0.067	0.051	0.056	0.068	0.065	0.052	0.058	0.056	0.055	0.051	0.050	0.055	0.047	0.047	0.047	0.048	0.044	0.048	0.046	0.048	0.044	0.043	0.045	0.041	0.044	0.044	0.045	0.048
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000017	<0.000010	<0.000010	<0.000010	<0.000010	<0.000069	0.0000091	0.0000118	0.0000089	0.0000075	0.0000094	0.0000053
Calcium	mg/L	NV	159	164	167	155	143	145	134	145	146	154	163	162	152	157	143	168	155	155	151	138	161	150	157	151	166	151	170	153	156	165	155	160	168	182	174
Chromium	mg/L	0.05 (MAC)	<0.003	0.006	0.008	<0.003	<0.003	<0.003	<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	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00072	<0.00050	<0.00050	<0.00050
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00068	0.00057	0.00054	0.00059	0.00062	0.00054	0.00068	0.00056	0.00064	0.00106	0.00059	0.00063	0.00056	0.00271	0.00089	0.00267	0.00087	0.00090	0.00110	0.00101
Iron	mg/L	0.3 (AO)	0.283	0.029	0.045	0.076	11.2	9.59	0.067	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	0.325	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.02	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000114	<0.000050	<0.000050	<0.000050	<0.000050	0.000367	<0.000050
Magnesium	mg/L	NV	57	52	51.1	47.6	45.1	43.7	42.3	45.4	45.9	47.8	51.7	44.8	44.9	46.2	47.8	49.8	49.4	43.7	45.2	38.4	46	45.1	46.3	46.7	48.1	43.3	49.1	53.1	47.4	48.0	33.9	51.3	48.2	52.1	53.9
Manganese	mg/L	0.05 (AO)	0.194	0.162	0.183	0.168	0.242	0.223	0.25	0.216	0.173	0.23	0.083	0.107	0.0775	0.0624	0.0136	0.115	0.12	0.149	0.00659	0.0342	0.0557	0.0594	0.0686	0.0987	0.0981	0.103	0.114	0.0837	0.0316	0.0229	0.0003	0.0319	0.063	0.114	0.0872
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Potassium	mg/L	NV	3.36	2.5	1.43	1.58	1.73	1.49	1.29	0.156	1.42	1.6	1.61	1.46	1.5	1.7	1.7	1.93	1.91	1.83	2.15	1.75	1.95	2.13	2.13	2.59	2.49	2.14	2.32	2.38	2.07	2.13	1.16	2.32	2.24	2.25	2.28
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.000050	0.00007	0.000066	0.000075	0.000072	<0.00050	<0.000050	0.000055	0.000079	0.000061	0.000109	<0.000050	0.000067	0.000058	0.000060	0.000285	<0.000050	0.000052	0.000051	0.000063
Silicon	mg/L	NV	9.21	10.9	8.76	8.89	8.25	9.07	8.02	8.49	8.43	8.84	7.92	8.82	9.8	9.7	9.3	10.2	9.06	8.93	9.27	9.42	8.93	8.72	9.84	9.33	9.1	8.33	9.83	9.61	9.04	9.36	6.23	10.1	9.24	10.6	9.56
Sodium	mg/L	200 (AO)	25.4	26.7	42.2	41.8	70.5	56	59	58.9	46.3	40	48.3	41.5	34.7	34.8	29.7	29.4	29	26.6	25.7	21.9	19.8	20.4	18.9	20.2	20	17.6	19.1	19.6	15.4	16.5	6.88	15.2	14.5	14.3	15.2
Zinc	mg/L	5.0 (AO)	0.004	<0.004	<0.004	0.026	0.528	0.034	0.176	0.182	0.079	0.088	0.024	0.01	0.0079	0.0069	0.0049	0.0069	0.0044	0.0044	0.0108	0.0078	0.0043	0.0057	0.0035	0.0029	0.0039	0.0018	0.0012	0.0016	0.0042	0.0027	0.0021	0.0032	0.0024	0.0043	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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

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

9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW9S Jun-08	MW9S Sep-08	MW9S Jun-09	MW9S Sep-09	MW9S May-10	MW9S Sep-10	MW9S May-11	MW9S Sep-11	MW9S May-12	MW9S Sep-12	MW9S Apr-13	MW9S Sep-13	MW9S May-14	MW9S Sep-14	MW9S May-15	MW9S Sep-15	MW9S May-16	MW9S Sep-16	MW9S May-17	MW9S Sep-17	MW9S May-18	MW9S Sep-18	MW9S May-19	MW9S Sep-19	MW9S May-20	MW9S Oct-20	MW9S May-21	MW9S Sep-21	MW9S May-22	MW9S Sep-22	MW9S May-23	MW9S Sep-23	MW9S May-24	MW9S Sep-24	MW9S May-25	MW9S Sep-25
Field Electrical Conductivity	uS/cm	NV	883	761	832	789	730	745	782	777	756	795	814	805	822	906	1080	1396	1515	1810	1210	1580	1740	1900	1321	721	1545	1433	1518	1318	1453	1487	1499	1660	1799	1593	1826	1754
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**481**	**398**	**535**	**471**	**518**	**461**	**450**	**473**	**537**	**521**	**365**	**420**	**554**	**605**	**733**	**733**	**782**	**821**	**763**	**670**	**689**	**585**	**708**	**677**	**720**	**597**	**715**	**633**	**642**	**703**	**671**	**684**	**730**	**760**	**786**	**734**
pH	N/A	6.5-8.5 (OG)	8.38	8.03	8.04	7.98	8.02	8.03	7.95	7.93	7.91	8.12	7.97	7.16	7.61	7.42	7.61	7.18	7.67	7.5	7.5	7.37	7.68	7.63	7.9	6.99	7.11	7.13	7.33	7.58	7.31	7.34	7.58	7.15	7.34	7.36	7.47	7.47
Total Dissolved Solids	mg/L	500 (AO)	**586**	478	496	476	468	492	474	**510**	**506**	**515**	**518**	**528**	**611**	**607**	**716**	**775**	**1030**	**1210**	**1110**	**1150**	**1160**	**930**	**1180**	**1250**	**1000**	**844**	**1120**	**937**	**1080**	**1210**	**980**	**1060**	**1150**	**1230**	**1240**	**1420**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	378	400	448	413	425	437	434	453	461	453	379	547	542	605	458	234	367	413	437	384	416	452	457	526	469	441	456	540	497	414	652	492	520	450	1180	418
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	13.000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	390	400	448	413	425	437	434	453	461	453	379	**547**	**545**	**606**	458	234	367	413	437	384	416	452	457	**526**	469	441	456	**540**	497	414	652	492	**520**	450	**1180**	418
Ammonia, Total (as N)	mg/L	NV	0.76	0.02	0.06	0.18	<0.02	<0.0012	<0.02	0.43	0.10	0.25	0.08	0.07	0.13	0.51	0.28	0.11	0.065	0.172	0.035	0.105	0.072	0.081	<0.010	<0.010	0.014	<0.010	<0.010	0.01	<0.0050	0.0111	0.236	0.0078	0.0060	0.0266	0.0738	0.0147
Bromide	mg/L	NV	0.16	0.12	0.19	0.29	0.16	<0.05	<0.05	0.23	<0.05	<0.05	<0.25	<0.25	0.13	0.14	<0.50	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<5.0	<0.50
Chloride	mg/L	250 (AO)	12.4	10.7	5.3	6.0	6.2	5.6	5.0	5.4	5.1	6.73	4.5	4.2	7.6	7.7	157	153	**298**	**318**	**334**	**279**	**304**	238	**284**	**291**	**276**	227	**286**	234	**273**	**309**	**306**	**308**	**336**	**339**	**367**	**361**
Fluoride	mg/L	(MAC) 1.5	0.17	0.14	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	0.05	<0.10	<0.10	<0.10	0.03	<0.10	<0.10	0.041	0.034	<0.10	<0.10	<0.10	<0.10	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.18	0.06	0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	<0.15	0.082	<0.11	0.120	0.180	<0.022	0.28	0.37	3.31	2.12	2.01	1.37	2.02	0.97	0.849	0.556	0.750	0.284	1.12	0.466	0.367	0.554
Nitrate as N	mg/L	10.0 (MAC)	0.18	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	0.110	0.140	0.071	<0.10	0.120	0.180	<0.020	0.28	0.37	3.31	2.12	2.01	1.37	2.02	0.97	0.849	0.556	0.750	0.284	1.12	0.466	0.367	0.554
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.050	0.011	<0.050	<0.050	<0.050	<0.010	<0.050	<0.050	<0.010	<0.010	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**0.19**	**3.6**	**0.42**	**0.24**	**0.25**	**0.20**	**0.24**	0.00	**0.37**	**0.28**	**0.25**	**0.20**	**0.46**	**0.58**	**0.18**	**0.330**	**0.400**	**3.400**	**0.860**		**0.290**	**0.560**	**0.360**	**0.370**	<1.5	**0.400**	**0.410**	<0.50	**0.368**	<0.500	**1.100**	**0.424**	**0.428**	**0.728**	**0.323**	**0.504**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.360	<0.1	<0.1	<0.5	<0.25	0.004	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.003	<0.0030	0.0033	0.0020	<0.0010	0.0022	<0.0010	0.0022
Sulphate	mg/L	500 (AD)	106	39	26	28	32	32	27	30	32	33.9	38	27	26	30	34	29	27	26	26	25.6	25.9	24.3	26.9	28.8	25.2	23.7	25.0	23.9	22.5	22.6	20.0	17.6	20.0	19.4	30.3	18.7
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	4.8	3.2	**11.4**	3.3	3.4	3.2	2.8	3.1	3.8	2	2.4	2.6	2.5	4.2	2.9	3.4	4.1	2.7	2.3	2.5	4.3	4.21	2.39	2.59	2.61	2.55	3.08	**5.15**	1.85	3.81	2.55	2.73	2.55	3.45	1.94	1.88
Chemical Oxygen Demand (COD)	mg/L	NV	<5	<5	12.0	14.0	5.0	<5	<5	6.0	9.0		<5	6.0	21.0	25.0	23.0	<10	300.0	38.0			38.0	61.0	21	14	18	<10	13	15	12	<10	50	25	12	93	<10	43
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.00101	<0.001	<0.001	<0.001		<0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<0.0010		<0.0010	<0.0010	0.0211	0.0061	0.0120	0.0016	0.0021	0.0034	0.0012	0.0025	0.00200	0.0019	0.0020	0.0136	0.0023	0.00915
Aluminum	mg/L	0.1 (OG)	0.01	0.006	0.004	<0.004	0.009	0.009	<0.004	0.005	0.007	**0.185**	0.01	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0018	0.0013	<0.0010	<0.0010	0.0020	<0.0010	0.0022	0.0025
Arsenic	mg/L	0.01 (IMAC)	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0016	<0.0010	<0.0010	0.00032	0.0002	0.00058	0.00021	0.00018	0.00016	0.00016	0.00017	0.00019	0.00016	0.00017	0.00014	0.0002	0.00015	0.00015	0.00015	0.00016	0.00019	0.00064	0.00041	0.00019
Barium	mg/L	1.0 (MAC)	0.019	0.023	0.033	0.033	0.043	0.041	0.057	0.049	0.055	0.041	0.058	0.0921	0.119	0.128	0.11	0.102	0.134	0.109	0.112	0.029	0.106	0.068	0.112	0.112	0.109	0.120	0.124	0.119	0.122	0.121	0.120	0.136	0.136	0.143	0.155	0.149
Boron	mg/L	5.0 (MAC)	0.068	0.05	0.014	0.016	0.012	0.017	0.012	0.014	0.011	0.014	0.01	0.031	0.02	0.029	0.022	0.03	0.017	0.024	0.018	0.025	0.016	0.025	0.017	0.022	0.017	0.025	0.018	0.023	0.016	0.022	0.016	0.022	0.017	0.024	0.016	0.025
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00090	<0.00090	<0.00090	0.000016	<0.000010	<0.000010	0.000012	0.000011	<0.000010	0.00001	<0.000010	0.000013	0.000011	0.000011	0.0000074	0.0000145	<0.0000050	0.0000073	0.0000108	<0.0000050	<0.0000050	0.0000105
Calcium	mg/L	NV	98	105	159	139	152	136	130	139	158	151	106	121	162	176	213	211	227	228	199	204	174	209	198	215	175	202	181	188	202	197	209	222	232	213	232	213
Chromium	mg/L	0.05 (MAC)	<0.003	0.005	0.003	<0.003	<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	<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)	0.005	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0029	0.0017	0.00141	0.00058	0.00051	0.00051	0.00106	0.00078	0.00098	0.00076	0.00101	0.00083	0.00106	0.00107	0.00113	0.00213	0.00139	0.00081	0.00139	0.00095	0.00085	0.00090	0.00112
Iron	mg/L	0.3 (AO)	0.056	0.152	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**1.54**	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.052	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium	mg/L	NV	57.5	33	33.5	30.1	33.7	29.5	30.5	30.5	34.6	35	24.4	28.5	36.6	40	49.2	46.5	51.5	49.3	47.1	42	43.5	36.7	45.5	44.5	44.7	38.9	44.9	44.2	41.9	48.2	43.4	44.9	50.6	50.0	50.1	49.0
Manganese	mg/L	0.05 (AO)	**0.057**	**0.052**	**0.058**	**0.056**	0.043	0.039	0.019	0.046	0.028	**0.113**	**0.011**	**0.044**	**0.375**	**0.312**	**0.335**	**0.409**	**0.25**	**0.55**	**0.104**	**0.149**	0.00496	**0.0583**	0.0166	**0.0737**	0.00285	0.0210	0.0252	0.0228	0.0345	0.0257	0.00476	0.00981	0.0245	**0.1600**	**0.117**	0.0318
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	11.7	4.1	1	1.2	1	1.08	1	1.12	0.84	1.37	0.96	1.43	<1.0	1.3	1.3	1.46	1.48	1.91	1.95	1.99	1.57	1.76	1.43	2.12	1.58	1.73	1.54	1.73	1.34	1.82	1.54	1.86	1.66	1.85	1.58	1.81
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.00006	0.000058	0.000061	0.000089	0.00007	<0.00050	0.000058	0.000066	0.000091	0.000088	0.00011	0.000079	0.000092	0.000076	0.000099	0.000068	0.000083	0.000082	0.000076	0.000086	0.000072
Silicon	mg/L	NV	7.09	8	5.45	5.91	5.33	5.83	5.28	5.34	4.92	6.66	4.93	5.75	5.9	6.9	5.2	6.72	5.37	5.92	5.11	5.78	5.12	5.49	5.67	6.22	5.25	5.95	5.92	6.55	5.34	6.14	5.55	6.10	5.85	6.28	5.81	6.13
Sodium	mg/L	200 (AO)	15.2	24.5	9.71	11.1	7.79	13.3	6.98	8.5	7.87	8.58	16.6	42.1	20.4	20.4	27	26.6	32.8	44.2	59.4	65.7	68.4	71.9	72.8	89.2	81.9	75.2	83.9	88.9	78.2	93.6	84.3	98.0	101	108	105	113
Zinc	mg/L	5.0 (AO)	0.027	<0.004	0.005	<0.004	<0.004	<0.004	0.032	<0.004	0.005	0.004	0.007	<0.005	<0.0030	<0.0030	<0.0030	<0.0030	0.0011	<0.0010	0.0011	0.0011	0.0014	<0.0010	<0.0010	<0.0010	0.0024	<0.0010	<0.0010	<0.0010	0.0026	0.0013	0.0012	0.0011	0.0021	0.0014	0.0022	0.0028

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D
			Jun-09	May-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	uS/cm	NV	1210	1050	1240	1000	513	1090	INS	1090	1150	1170	1094		1230		1252		1511				1492		1617	1896	1746	1605	1761	
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**558**	**457**	**398**	**422**	**385**	**396**	**363**	**366**	**304**	**329**	**353**		**448**		**539**		**615**				**574**		**596**	**633**	**604**	**641**	**696**	
pH	N/A	6.5-8.5 (OG)	8.15	8.12	8.1	7.46	7.87	7.92	7.98	7.76	8.02	7.89	7.91		7.98		7.42		7.64				**6.23**		7.84	7.37	7.61	7.65	7.52	
Total Dissolved Solids	mg/L	500 (AO)	**704**	**640**	**734**	**668**	**647**	**607**	493	**533**	**633**	**654**	**742**		**791**		**895**		**877**				**1000**		**884**	**1020**	**951**	**641**	**1020**	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	434	419	451	488	438	491	481	313	429	448	456		442		615		455				420		630	532	676	4140	491	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10		<10		<50		<2.0				<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	434	419	451	488	441	495	481	313	429	448	456		442		**615**		455				420		**630**	**532**	**676**	**4140**	491	
Ammonia, Total (as N)	mg/L	NV	0.24	0.05	<0.02	<0.02	<0.050	<0.050	0.165	<0.050	0.040	0.032	<0.020		0.242		0.015		0.019				0.0084		0.0174	0.0111	<0.0050	<0.0050	0.0172	
Bromide	mg/L	NV	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50		<0.50		<0.10		<0.50				<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloride	mg/L	250 (AO)	79.1	62.8	48.5	43.9	28.1	24.5	21.2	15.3	21.8	35.5	65.2		167.0		213		229				**257**		246	**260**	**266**	**290**	**295**	
Fluoride	mg/L	1.5 (MAC)	0.29	0.64	0.35	<0.25	0.85	0.89	0.88	0.87	0.89	0.904	0.650		0.77		0.711		0.67				0.682		0.696	0.669	0.493	0.728	0.654	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	0.031	<0.05	<0.07	<0.07	<0.2	<0.2	0.036	0.097	0.080	0.028	<0.11		<0.11		<0.022		0.18				0.165		0.244	0.327	0.292	0.144	0.294	
Nitrate as N	mg/L	10.0 (MAC)	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	0.036	0.097	0.080	0.028	<0.10		<0.10		<0.020		0.18				0.165		0.244	0.327	0.292	0.144	0.294	
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.050		<0.050		<0.010		<0.050				<0.050		<0.050	<0.050	<0.050	<0.050	<0.050	
Organic Nitrogen	mg/L	0.15 (OG)	0.1	0.1	**0.220**	0.080	**0.310**	<0.15	<0.15	<0.15	<0.15	**0.330**	**0.220**		**1.080**		**0.560**		**0.340**				**0.274**		**0.497**	**0.904**	**0.537**	**1.070**	**0.806**	
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.5	<0.25	0.004	0.005	<0.0030	<0.0030	0.004	0.0034	0.003		0.004		<0.0030		<0.0030				0.0038		0.0035	0.0039	0.0034	<0.0010	0.0038	
Sulphate	mg/L	500 (AO)	118	120	125	119	96	94	93	80	61	80.8	46		56.5		50		42.5				40.8		32.0	31.7	34.6	36.4	36.4	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	3.2	**11.5**	1.5	1.6	<1.0	<1.0	1.3	2.0	3.3	1.4	1.1	Insufficient volume for sample collection.	2.0	Insufficient volume for sample collection.	1.61	Insufficient volume for sample collection.	2.3	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	1.06	Insufficient volume for sample collection.	2.73	1.82	**5.26**	4.93	2.86	Insufficient volume for sample collection.
Chemical Oxygen Demand (COD)	mg/L	NV	<0.001	12.0	<5	5.0	12.0	12.0	25.0	<10		38.0	22.0		108.0		45		15				16		49	63	30	565	59	
Phenols	mg/L	NV	0.005	<0.001	<0.001	<0.001	<0.0010	<0.0010	<0.0010	0.0	0.0	0.0	0.0		0.0		0.002		0.004				<0.0010		0.0012	0.0014	0.0031	<0.0010	0.0017	
Aluminum	mg/L	0.1 (OG)	0.004	0.013	0.007	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050		<0.0050		0.005				0.0026		0.0137	0.0010	0.0712	0.0059	0.0225	
Arsenic	mg/L	0.01 (IMAC)	0.005	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00041	0.00042	0.00036	0.00036		0.00026		0.0002		0.00035				0.00027		0.00025	0.00032	0.00028	0.00034	0.00033	
Barium	mg/L	1.0 (MAC)	0.03	0.047	0.046	0.05	0.0531	0.0565	0.0496	0.059	0.0551	0.0563	0.0648		0.0651		0.0831		0.13				0.143		0.134	0.150	0.146	0.111	0.180	
Boron	mg/L	5.0 (MAC)	0.043	0.026	0.034	0.036	0.035	0.038	0.042	0.04	0.042	0.037	0.056		0.051		0.052		0.046				0.039		0.042	0.045	0.041	0.039	0.037	
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010		0.00001		<0.000010		<0.000010				0.0000058		<0.0000050	0.000027	0.0000101	<0.0000050	<0.0000050	
Calcium	mg/L	NV	129	111	98.5	104	95.8	97.5	87.7	89.7	73.8	80.6	87.3		110		128		147				137		140	146	143	152	168	
Chromium	mg/L	0.05 (MAC)	0.005	0.005	<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	<0.00050	<0.00050	<0.00050	<0.00050	
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00047	0.0003	0.00061	0.00026		0.00096		0.00074		0.00079				0.00247		0.00136	0.00062	0.00174	0.00238	0.00064	
Iron	mg/L	0.3 (AO)	**1.05**	0.193	<0.01	0.012	<0.050	0.151	<0.050	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010		<0.010				<0.010		0.018	<0.010	0.083	0.012	0.033	
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050		<0.000050				0.000084		<0.000050	<0.000050	0.000113	<0.000050	<0.000050	
Magnesium	mg/L	NV	57.3	43.6	37	39.4	35.5	36.9	35.1	34.6	29	31.1	32.9		42.4		60.3		56.3				56.3		59.9	65.2	59.9	63.5	67.2	
Manganese	mg/L	0.05 (AO)	0.004	**0.084**	0.007	0.005	0.002	0.0129	0.0106	0.00873	0.00113	0.00062	0.00435		0.0141		0.00911		<0.00050				0.00098		0.00251	0.00119	0.00588	0.01370	0.00268	
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010		<0.0000050				<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Potassium	mg/L	NV	4.71	2.37	2.26	1.91	1.9	2	2.2	1.96	1.7	1.66	1.91		2.08		2.49		2.92				2.88		3.48	3.70	3.88	4.14	3.94	
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004		<0.004	<0.00040	<0.00040	<0.00040	0.000143	0.000087	0.000165	0.000067		<0.00050		0.000147		0.000132				0.000145		0.000085	<0.000500	0.000115	0.000108	0.000106	
Silicon	mg/L	NV	7.17	6.51	7.13	6.82	7.9	8.6	6.4	7.57	7.73	7.7	7.96		7.84		7.38		8.76				8.64		8.74	8.72	8.48	8.04	9.89	
Sodium	mg/L	200 (AO)	71.6	77.2	95	85	89.4	95	92.6	108	116	97.5	123		119		112		110				97.2		108	121.0	97.4	109.0	103	
Zinc	mg/L	5.0 (AO)	0.005	0.1	0.04	0.038	0.0181	0.0102	0.0181	0.0116	0.0078	0.0109	0.0093		0.0115		0.0093		0.0072				0.01		0.0093	0.0104	0.0091	0.0113	0.0063	

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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

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

8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW10S Jun-09	MW10S Sep-09	MW10S May-10	MW10S Sep-10	MW10S May-11	MW10S Sep-11	MW10S May-12	MW10S Sep-12	MW10S Apr-13	MW10S Sep-13	MW10S May-14	MW10S Sep-14	MW10S May-15	MW10S Sep-15	MW10S May-16	MW10S Sep-16	MW10S Sep-17	MW10S May-18	MW10S Sep-18	MW10S May-20	MW10S Oct-20	MW10S May-21	MW10S Sep-21	MW10S May-22	MW10S Sep-22	MW10S May-23	MW10S Sep-23	MW10S May-24	MW10S Sep-24	MW10S May-25	MW10S Sep-25
Field Electrical Conductivity	uS/cm	NV																								959		741				1023	
Total Hardness (as CaCO3)	mg/L	80-100 (OG)																								**172**		**155**				**228**	
pH	N/A	6.5-8.5 (OG)																								8.21		**8.53**				8.29	
Total Dissolved Solids	mg/L	500 (AO)																								**663**		455				**830**	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV																								448		461				1070	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV																								<1.0		14				<5.0	
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)																								448		475				**1070**	
Ammonia, Total (as N)	mg/L	NV																								0.0129		0.0237				0.0245	
Bromide	mg/L	NV																								<0.10		<0.10				<0.20	
Chloride	mg/L	250 (AO)																								9.26		6.14				11.4	
Fluoride	mg/L	1.5 (MAC)																								0.378		0.637				0.497	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)																								8.02		5.09				**18.4**	
Nitrate as N	mg/L	10.0 (MAC)																								8.02		5.09				**18.4**	
Nitrite as N	mg/L	1.0 (MAC)																								<0.010		<0.010				<0.020	
Organic Nitrogen	mg/L	0.15 (OG)																								**1.65**		**1.18**				**2.86**	
Orthophosphate as P	mg/L	NV																								0.0517		0.0794				0.171	
Sulphate	mg/L	500 (AO)																								118		92.0				92.3	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	**7.47**	Insufficient volume for sample collection.	**9.17**	Insufficient volume for sample collection.	Insufficient volume for sample collection.	Insufficient volume for sample collection.	**7.42**	Insufficient volume for sample collection.
Chemical Oxygen Demand (COD)	mg/L	NV																								31		47				51	
Phenols	mg/L	NV																								<0.0010		0.0012				0.0039	
Aluminum	mg/L	0.1 (OG)																								0.0106		0.0146				0.0330	
Arsenic	mg/L	0.01 (IMAC)																								0.00151		0.00315				0.00295	
Barium	mg/L	1.0 (MAC)																								0.0138		0.00690				0.0161	
Boron	mg/L	5.0 (MAC)																								0.049		0.038				0.048	
Cadmium	mg/L	0.005 (MAC)																								0.0000140		0.0000055				0.0000123	
Calcium	mg/L	NV																								40.3		32.8				53.7	
Chromium	mg/L	0.05 (MAC)																								<0.00050		<0.00050				<0.00050	
Copper	mg/L	1.0 (AO)																								0.00829		0.0112				0.00868	
Iron	mg/L	0.3 (AO)																								0.014		0.021				0.035	
Lead	mg/L	0.01 (MAC)																								0.000149		0.000056				0.000131	
Magnesium	mg/L	NV																								17.4		17.8				22.8	
Manganese	mg/L	0.05 (AO)																								0.00175		0.00071				0.00206	
Mercury	mg/L	0.001																								<0.0000050		<0.0000050				<0.0000050	
Potassium	mg/L	NV																								1.85		2.18				3.01	
Selenium	mg/L	0.05 (MAC)																								0.000349		0.00068				0.000331	
Silicon	mg/L	NV																								4.30		4.45				5.22	
Sodium	mg/L	200 (AO)																								153		118				136	
Zinc	mg/L	5.0 (AO)																								0.0039		0.0031				0.0029	

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Unless otherwise stated, units are reported in mg/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS		MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D
				Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	uS/cm	NV		1140	1130	1060	1060	1100	939	1040	962	1180	947	688	1030	974	1130	1080	INS	INS			1350	1021	1101	1158	1123	1212	1045	1132	INS					1218	1256
Total Hardness (as CaCO3)	mg/L	80-100	(OG)	**572**	**555**	**635**	**587**	**574**	**576**	**557**	**537**	**494**	**498**	**505**	**497**	**444**	**482**	**440**	**418**	**436**			**503**	**580**	**589**	**604**	**544**	**639**	INS	**633**	**571**					**661**	INS
pH	N/A	6.5-8.5	(OG)	8.14	8.28	8.22	8.11	8.17	8.15	8.13	8.24	8.13	7.54	7.98	7.93	8.09	7.9	8.08	8.01	8.06			7.94	7.74	7.86	7.71	7.93	7.98	INS	7.88	**8.53**					7.95	7.76
Total Dissolved Solids	mg/L	500	(AO)	**806**	**748**	**812**	**742**	**690**	**780**	**706**	**726**	**778**	**676**	**657**	**623**	**605**	**632**	**644**	**614**	**608**			**743**	**881**	**875**	**772**	INS	**852**	INS	**806**	**723**					**940**	INS
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV		314	326	329	327	331	315	343	310	326	369	322	353	372	248	330	342	326			328	610	368	372	INS	406	INS	344	60.1					811	525
Alkalinity, Carbonate (as CaCO3)	mg/L	NV		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10			<10	<50	<10	<2.0	INS	<2.0	INS	<1.0	3.7					<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500	(OG)	314	326	329	327	331	<5	343	310	326	369	325	356	372	248	330	342	326			328	**610**	368	372	INS	406	INS	344	63.8					**811**	**525**
Ammonia, Total (as N)	mg/L	NV		<0.02	0.150	0.030	0.280	0.060	0.310	0.100	<0.02	0.030	<0.02	<0.050	<0.050	<0.050	0.084	0.050	0.045	0.086			0.049	0.045	<0.010	0.019	0.020	0.011	INS	0.446	0.0133					0.0105	INS
Bromide	mg/L	NV		0.450	0.260	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			<0.10	<0.10	<0.10	<0.50	<0.10	<0.50	INS	<0.50	<0.10					<0.50	INS
Chloride	mg/L	250	(AO)	41.2	39.9	39.9	42.1	36.1	42.3	32.7	34.1	33.2	34.7	37.6	37.6	38.5	38.8	35.8	40.2	41.0	38.1		36.5	37.2	37.1	38	35.4	37.5	INS	40.9	36					38.1	39.9
Fluoride	mg/L	1.5	(MAC)	0.440	0.35	0.68	0.64	<0.05	0.44	0.63	1.47	0.55	1.1	0.960	0.97	1.03	0.92	1.04	1.05	0.97			0.892	0.901	0.865	1.06	0.996	1.06	INS	1.14	0.861					1.12	INS
(Nitrate + Nitrite) as N	mg/L	10.0	(MAC)	0.000	<0.05	0.060	<0.05	0.410	<0.05	<0.05	<0.05	<0.07	<0.07	<0.2	<0.2	0.102	0.077	0.114	0.128	0.035			0.045	0.181	0.05	0.1	0.077	<0.10	INS	0.112	0.086					<0.112	INS
Nitrate as N	mg/L	10.0	(MAC)	<0.05	<0.05	0.060	<0.05	0.410	<0.05	<0.05	<0.05	<0.25	<0.25	0.120	0.120	0.102	0.077	0.114	0.128	0.035			0.045	0.181	0.05	0.1	0.077	<0.10	INS	0.112	0.086					0.108	INS
Nitrite as N	mg/L	1.0	(MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010			<0.010	<0.010	<0.010	<0.050	<0.010	<0.050	INS	<0.050	<0.010					<0.050	INS
Organic Nitrogen	mg/L	0.15	(OG)	**0.73**	**0.71**	**0.36**	**0.20**	**0.49**	0.00	0.13	**0.17**	**0.56**	0.08	<0.15	**0.37**	**0.44**	<0.15	**0.400**	**0.490**	**0.440**			**0.520**	**0.890**	**0.440**	**0.300**	**0.610**	**0.890**	INS	**3.76**	**0.838**					**0.478**	INS
Orthophosphate as P	mg/L	NV		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.25	0.005	0.003	<0.0030	<0.0030	0.003	0.005	<0.0030			0.0104	<0.0030	<0.0030	<0.0030	INS	0.0044	INS	0.0054	0.0110					0.0049	INS
Sulphate	mg/L	500	(AO)	276	269	297	276	296	264	248	240	247	218	191	180	189	201	143	139	152			250	285	284	286	270	345	INS	340	277					313	INS
Dissolved Organic Carbon (DOC)	mg/L	5.0	(AO)	**8.0**	5.0	3.2	2.7	2.0	2.4	**6.3**	1.4	2.2	1.6	<1.0	1.5	1.8	2.3	3.3	1.6	1.5			3.94	2.5	1.72	1.69	INS	2.00	INS	**7.43**	1.57					1.04	INS
Chemical Oxygen Demand (COD)	mg/L	NV		36.0	17.0	<5	<5	<5	9.0	11.0		<5	<5	12.0	14.0	<10	<10	<10	46.0	31.0			87.0	73	37	21	58	33	INS	79	15					30	INS
Phenols	mg/L	NV		0.004	0.002	<0.001	<0.00101	<0.001	<0.001	<0.001		<0.001	<0.001	0.0012	<0.0010	0.0018	0.0023	<0.0010	0.0025	<0.0010			0.0016	0.0026	0.0015	0.0051	0.0021	<0.0010	INS	<0.0010	0.0033					0.0027	INS
Aluminum	mg/L	0.1	(OG)	0.02	<0.004	<0.004	0.011	0.006	0.032	0.059	**0.127**	0.005	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050			<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	INS	**0.138**	0.0017					0.0014	0.0014
Arsenic	mg/L	0.01	(IMAC)	0.01	0.006	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00043	0.00048	0.00043	0.00046			0.0004	0.00031	0.00031	0.00038	0.00031	0.0003	INS	0.00038	0.0003					0.00029	0.00028
Barium	mg/L	1.0	(MAC)	0.022	0.027	0.037	0.041	0.031	0.053	0.044	0.044	0.045	0.038	0.0319	0.0386	0.0549	0.0599	0.0424	0.0448	0.0504			0.0679	0.0625	0.0653	0.0706	0.0582	0.0663	INS	0.0678	0.0559					0.0660	0.0544
Boron	mg/L	5.0	(MAC)	0.119	0.105	0.099	0.094	0.087	0.076	0.077	0.072	0.073	0.078	0.059	0.067	0.077	0.070	0.061	0.059	0.068			0.066	0.068	0.066	0.063	0.07	0.069	INS	0.065	0.066					0.061	0.064
Cadmium	mg/L	0.005	(MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010			<0.000010	0.000011	0.000015	<0.000010	<0.000010	<0.000010	INS	0.0000069	<0.0000050					0.0000083	<0.0000050
Calcium	mg/L	NV		99.3	96.1	114	106	110	107	107	96	96.9	101	109	107	83.8	95.1	86.9	84.7	85.6			98.8	112	114	121	106	128	INS	124	96.1					131	127
Chromium	mg/L	0.05	(MAC)	0.005	<0.003	<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	<0.00050	INS	<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	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00073	0.00026	0.0004	0.00027			0.00054	0.00172	0.00063	0.0007	0.00111	0.00073	INS	0.00195	0.0006					0.00069	0.00093
Iron	mg/L	0.3	(AO)	**5.71**	**1.86**	**0.739**	**0.56**	0.079	**0.362**	0.144	0.13	<0.01	0.045	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	INS	0.159	<0.010					<0.010	<0.010
Lead	mg/L	0.01	(MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.00050	<0.000050	<0.000050			<0.000050	0.000067	<0.000050	<0.000050	<0.000050	<0.000050	INS	0.000247	<0.000050					<0.000050	<0.000050
Magnesium	mg/L	NV		78.8	78.5	85	78.3	72.8	75	70.5	72.1	61.2	59.6	56.3	55.8	57	59.4	54.2	50.2	53.9			62.1	72.7	73.9	73.2	67.9	77.7	INS	78.5	80.4					81.0	85.0
Manganese	mg/L	0.05	(AO)	**0.071**	0.032	0.023	0.016	0.009	**0.093**	0.017	0.019	0.011	0.003	0.0037	0.001	0.0093	0.0122	0.0117	0.0125	0.0138			0.0142	0.00695	0.00755	<0.00050	0.00085	0.00175	INS	0.00912	<0.00010					0.00284	0.00112
Mercury	mg/L		0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010			<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000185					<0.0000050	INS
Potassium	mg/L	NV		8.3	7.82	7.63	6.72	5.74	6.17	5.44	5.26	4.52	4.03	4.1	4.1	5.1	5.62	3.9	3.76	3.91			4.3	4.76	5.06	4.47	4.58	4.88	INS	4.79	5.14					4.90	5.08
Selenium	mg/L	0.05	(MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	0.00049	0.00048	0.00082	0.00278	0.000464	0.000339	0.000464			0.000528	0.00171	0.00285	0.0023	0.00137	0.00236	INS	0.00216	0.0021					0.00242	0.00218
Silicon	mg/L	NV		6.07	5.83	5.54	5.32	4.94	4.79	4.82	5.09	5.24	4.65	4.8	4.8	4.4	4.31	4.64	4.63	4.78			4.24	4.05	4.25	4.54	3.89	4.42	INS	4.59	4.16					4.43	3.97
Sodium	mg/L	200	(AO)	32.4	33.4	32.4	32.2	39	37.8	43.3	36.7	30.5	35.2	42.6	46.7	45.8	47.6	46.1	41	41.9			35.8	35.2	34.6	32.7	27.8	31.3	INS	29.1	29					29.8	30.0
Zinc	mg/L	5.0	(AO)	0.012	0.005	0.008	0.007	0.013	0.014	0.105	0.027	<0.005	<0.005	0.0037	<0.0030	<0.0030	0.0011	<0.0010	<0.0010	<0.0010			<0.0010	0.002	<0.0010	0.0018	0.0013	0.0046	INS	0.0040	<0.0010					0.0014	<0.0010

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

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. INS denotes insufficient volume for sample parameter.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

10. As a result of limited groundwater within MW10D, pH reported was collected in the field and not provided by the laboratory in September 2025.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW11S May-10	MW11S Sep-10	MW11S May-11	MW11S May-12	MW11S Apr-13	MW11S Sep-13	MW11S May-14	MW11S Sep-14	MW11S May-15	MW11S Sep-15	MW11S May-16	MW11S Sep-16	MW11S May-17	MW11S Sep-17	MW11S May-18	MW11S Sep-18	MW11S May-19	MW11S Sep-19	MW11S May-20	MW11S Oct-20	MW11S May-21	MW11S Sep-21	MW11S May-22	MW11S Sep-22	MW11S May-23	MW11S Sep-23	MW11S May-24	MW11S Sep-24	MW11S May-25	MW11S Sep-25
Field Electrical Conductivity	uS/cm	NV	592	1220	582	602	492	909	330	640	653	780	700	910	469		750		656		774		777		812		844	936	836	799	860	
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**331**	**633**	**311**	**345**	**261**	**345**	**304**	**324**	**315**	**353**	**193**	**328**	**206**		**230**		**301**		**310**		**366**		**304**		**265**	**349**	**283**	**373**	**329**	
pH	N/A	6.5-8.5 (OG)	8.07	7.79	8	8.05	8.05	7.01	7.85	7.62	7.98	7.66	8.03	7.99	7.95		8.19		7.48		7.71		7.78		7.52		7.95	7.19	7.84	7.78	7.76	
Total Dissolved Solids	mg/L	500 (AO)	374	**1030**	306	332	244	362	356	325	352	338	342	487	328		381		446		388		460		463		425	**522**	434	**515**	480	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	315	575	290	325	244	388	274	330	352	345	192	213	257		232		351		311		355		304		279	431	331	386	278	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10		<10		<10		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	315	**575**	290	325	244	388	276	331	352	345	192	213	257		232		351		311		355		304		279	431	331	386	278	
Ammonia, Total (as N)	mg/L	NV	<0.02	0.760	<0.02	<0.02	0.080	<0.02	<0.050	<0.050	<0.050	0.051	0.033	<0.020	<0.020		0.092		<0.010		0.014		0.017		<0.0050		<0.0050	0.0058	<0.0050	0.0116	<0.0050	
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		<0.10	<0.10	<0.10	<0.10	<0.10	
Chloride	mg/L	250 (AO)	8.1	93.1	7.9	7.1	5.9	8.0	6.6	7.7	17.6	19.6	49.3	54.6	35.5		59.2		25.2		48.8		46.5		84.2		79.7	67.7	52.3	57.6	83.1	
Fluoride	mg/L	1.5 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.10	<0.10	0.07	0.06	0.102	0.08	0.09		0.08		0.061		0.070		0.055		0.064		0.078	0.065	0.048	0.059	0.062	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	1.89	<0.05	3.13	2.17	1.35	1.10	3.92	0.76	1.62	1.14	0.02	0.23	0.05		0.536		3.06		1.25		0.662		0.451		0.276	0.204	0.172	0.164	0.120	
Nitrate as N	mg/L	10.0 (MAC)	1.89	<0.05	3.13	2.17	1.35	1.10	3.92	0.76	1.62	1.14	0.02	0.23	0.05		0.536		3.06		1.25		0.662		0.451		0.276	0.204	0.172	0.164	0.120	
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010	<0.010	<0.010	<0.010	<0.010	
Organic Nitrogen	mg/L	0.15 (OG)	0.08	**3.06**	0.11	**0.18**	0.02	0.08	**0.32**	**0.42**	**0.29**	**0.20**	**0.29**	**0.29**	**0.33**		**0.250**		**0.650**		**0.380**		**0.283**		**0.200**		**0.278**	**0.512**	0.128	**0.208**	**0.254**	
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030		<0.0030		<0.0030		<0.0030		<0.0030		<0.0030		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Sulphate	mg/L	500 (AO)	18	12	18	17	15	16	11	13	22	18.3	27	31	18		22		17.5		17.5		19.4		18.1		20.9	20.6	17.4	22.1	23.8	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**5.6**	**14.3**	4.1	2.0	1.6	1.8	<1.0	2.4	1.4	2.4	**5.8**	2.7	3.1	Insufficient volume for sample collection.	3.9	Insufficient volume for sample collection.	1.79	Insufficient volume for sample collection.	1.75	Insufficient volume for sample collection.	2.21	Insufficient volume for sample collection.	1.85	Insufficient volume for sample collection.	2.25	2.25	1.99	4.13	1.53	Insufficient volume for sample collection.
Chemical Oxygen Demand (COD)	mg/L	NV	13.0	33.0	<5	7.0	<5	<5	<10	14.0	<10	<10		20.0	13.0		18.0		<10		11		<10		<10		10	15	14	<10	<10	
Phenols	mg/L	NV	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	0.0015	0.0020	0.0023	0.0016	0.0022	0.0012		<0.0010		0.0088		0.0076		0.0025		<0.0010		<0.0010	0.0032	0.0018	0.0012	0.0021	
Aluminum	mg/L	0.1 (OG)	0.01	0.015	<0.004	0.006	0.010	<0.004	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.0050	0.006		<0.0050		<0.0050		<0.0050		<0.0050		<0.0039		0.0243	0.0145	0.0013	0.0024	0.0016	
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00016	0.00037	0.00024	0.00016		0.00013		<0.00010		0.00013		<0.00010		<0.00010		0.00038	0.00013	<0.00010	0.0001	0.00012	
Barium	mg/L	1.0 (MAC)	0.027	0.061	0.022	0.02	0.015	0.025	0.0277	0.0467	0.0384	0.059	0.0334	0.0533	0.0358		0.0449		0.0536		0.0560		0.0583		0.0592		0.0479	0.0722	0.0560	0.0680	0.0603	
Boron	mg/L	5.0 (MAC)	0.012	0.02	0.015	<0.01	<0.01	0.017	0.012	0.022	0.014	0.021	<0.010	0.011	0.016		0.01		0.013		0.011		0.012		<0.010		0.011	0.014	<0.010	0.012	<0.010	
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.000090	<0.000090	0.000014	0.000014	0.000116	<0.000010		0.0000111		<0.000010		<0.00010		<0.00010		0.0000596		0.0000057	0.0000582	0.0000068	0.0000123	0.0000067	
Calcium	mg/L	NV	104	171	100	109	82.7	110	97.7	105	98.6	114	60.1	109	64.4		71.5		91.7		95.9		114		95.2		80.1	108	87.8	118	103	
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		0.00051		<0.00050		<0.00050		<0.00050	0.00051	<0.00050	<0.00050	0.00064	
Copper	mg/L	1.0 (AO)	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0012	<0.0010	0.00072	0.00103	0.00097	0.00133		0.00104		0.00056		0.00061		0.00061		0.00268		0.00162	0.00249	0.00064	0.00122	0.00093	
Iron	mg/L	0.3 (AO)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		0.027	0.013	<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	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		0.000107		0.000066	0.000141	<0.000050	<0.000050	<0.000050	
Magnesium	mg/L	NV	17.4	50	15	17.6	13.2	17.2	14.5	15.2	16.8	16.8	10.4	13.5	11.1		12.4		17.4		17.1		19.7		16		15.9	19.2	15.6	19.0	17.4	
Manganese	mg/L	0.05 (AO)	0.007	**0.866**	<0.002	<0.002	<0.002	<0.002	<0.0010	<0.0010	<0.0010	0.001	**0.0609**	**0.0021**	<0.00050		<0.00050		0.00083		<0.00050		0.00151		0.00054		0.00326	0.00407	<0.00010	0.00247	0.00072	
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010		<0.000010		<0.000010		<0.0000050		<0.0000050		<0.0000050		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	
Potassium	mg/L	NV	3.16	2.97	2.27	1.81	1.94	3.63	4.8	13.9	7.6	15.9	12.9	13	13.6		19		17.1		16.0		15.8		15.6		13.4	20.70	15.5	17.60	16.2	
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.000050	0.000084	0.000093	0.000089		<0.00050		<0.000050		<0.000050		<0.000050		<0.000050		0.000112	0.000053	<0.000050	<0.000050	<0.000050	
Silicon	mg/L	NV	2.66	6.87	2.71	2.69	2.43	2.91	2.3	2.7	2.3	3.3	1.47	2.27	1.91		1.7		2.53		2.29		2.75		2.28		2.38	3.11	2.3	3.08	2.47	
Sodium	mg/L	200 (AO)	7.02	59.1	11.1	11.3	10.1	14.7	11.3	13.7	16.1	20.4	39.4	34.7	35.1		40.2		38.6		38.6		37		44.6		54.0	54	38.8	44	47.5	
Zinc	mg/L	5.0 (AO)	<0.004	0.006	<0.004	<0.004	0.006	<0.005	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	0.0023	<0.0010		<0.0010		<0.0010		0.0023		<0.0010		0.0113		<0.0010	0.0036	0.0012	0.0013	0.0013	

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Unless otherwise stated, units are reported in mg/L.
8. NV denotes No Value.

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW11D May-10	MW11D Sep-10	MW11D May-11	MW11D Sep-11	MW11D May-12	MW11D Sep-12	MW11D Apr-13	MW11D Sep-13	MW11D May-14	MW11D Sep-14	MW11D May-15	MW11D Sep-15	MW11D May-16	MW11D Sep-16	MW11D May-17	MW11D Sep-17	MW11D May-18	MW11D Sep-18	MW11D May-19	MW11D Sep-19	MW11D May-20	MW11D Oct-20	MW11D May-21	MW11D Sep-21	MW11D May-22	MW11D Sep-22	MW11D May-23	MW11D Sep-23	MW11D May-24	MW11D Sep-24	MW11D May-25	MW11D Sep-25
Field Electrical Conductivity	uS/cm	NV	659	626	659	520	564	574	649	899	412	730	714	830	870	790	681	630	840	910	635	661	772	636	705	676	731	633	922	759	915	763	827	771
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	277	357	359	309	352	349	327	335	344	383	360	414	365	326	317	303	364	300	380	329	353	299	379	352	374	334	364	320	386	345	383	337
pH	N/A	6.5-8.5 (OG)	8.22	8.13	8.07	8.03	7.99	8.07	8	7.17	7.88	7.76	7.76	7.58	7.76	7.78	7.79	7.67	7.92	7.88	7.43	7.65	7.64	7.63	7.75	7.89	7.51	7.78	7.76	7.52	7.57	7.67	7.74	7.77
Total Dissolved Solids	mg/L	500 (AO)	416	378	346	364	364	438	344	354	391	397	351	383	453	427	402	386	535	358	444	450	425	289	471	410	510	426	468	436	476	418	482	424
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	356	306	329	273	289	277	293	350	331	372	387	364	316	294	333	290	332	290	375	317	348	296	331	340	402	310	341	352	410	369	370	266
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	356	306	329	273	289	277	293	350	334	374	387	364	316	294	333	290	332	290	375	317	348	296	331	340	402	310	341	352	410	369	370	266
Ammonia, Total (as N)	mg/L	NV	0.020	<0.0012	<0.02	<0.02	<0.02	0.040	0.030	0.030	<0.050	<0.050	<0.050	<0.050	0.038	0.020	<0.020	<0.020	0.148	0.130	0.012	<0.010	0.012	<0.010	<0.010	0.016	<0.0050	0.0089	<0.0050	<0.0050	<0.0050	0.0147	0.0157	0.0088
Bromide	mg/L	NV	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<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	<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)	11.0	17.3	15.4	9.7	12.7	23.3	18.3	13.3	9.4	11.1	15.3	26.3	22.4	27.4	33.9	39.8	43.4	43.3	47.6	47.7	40.0	38.9	48.9	46.4	43.9	44.0	66.0	48.8	56.5	49.3	65.9	48.6
Fluoride	mg/L	1.5 (MAC)	0.19	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.1	<0.10	<0.10	0.08	0.08	0.07	0.10	0.05	0.07	0.08	0.09	0.098	0.083	0.088	0.117	0.089	0.099	0.064	0.088	0.056	0.089	0.032	0.077	0.082	0.110
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	2.71	3.96	3.02	1.40	1.43	2.96	3.74	1.86	1.42	2.27	1.20	2.54	1.29	1.40	1.21	0.65	1.910	1.930	2.53	1.53	3.82	5.14	5.07	4.6	1.56	2.57	0.667	3.79	0.316	2.36	3.05	5.67
Nitrate as N	mg/L	10.0 (MAC)	2.71	3.96	3.02	1.40	1.43	2.96	3.74	1.86	1.42	2.27	1.20	2.54	1.29	1.40	1.21	0.65	1.910	1.930	2.53	1.53	3.82	5.14	5.07	4.6	1.56	2.57	0.667	3.79	0.316	2.36	3.05	5.67
Nitrite as N	mg/L	1.0 (MAC)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.1	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Organic Nitrogen	mg/L	0.15 (OG)	0.08	**0.21**	**0.46**	**0.19**	0.08	**0.25**	0.07	0.07	**0.19**	**0.36**	**0.18**	**0.18**	**0.16**	**0.25**	**0.32**		**0.580**	**0.198**	**0.40**	**0.29**	**0.19**	**0.35**	**0.46**	**0.35**	**0.322**	<0.500	**0.242**	**0.373**	**0.263**	**0.414**	**0.474**	**0.500**
Orthophosphate as P	mg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	0.011	0.0059	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0108	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	0.0010
Sulphate	mg/L	500 (AO)	25	20	23	26	23	20	24	24	18	17.2	17	15	17	14	16	19	20	14	18.6	18	18.2	15.5	17.3	15.5	18.2	14.1	18.7	15	20.4	19.1	22.6	17.8
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	5.3	3.0	1.9	2.5	2.7	1.4	1.5	1.6	<1.0	<1.0	1.2	1.7	3.5	1.4	1.2	3.0	1.8	4.6	1.76	1.58	1.59	1.67	2.11	4.1	1.04	1.65	2.50	2.06	1.88	3.95	1.42	1.55
Chemical Oxygen Demand (COD)	mg/L	NV	16.0	<5	<5	7.0	5.0		<5	<5	10.0	12.0	<10	<10	<10	<10	17.0	16.0		31.0	44.0	16	11	<10	<10	<10	<10	<10	<10	<10	17	<10	<10	<10	<10
Phenols	mg/L	NV	<0.001	0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.0010	<0.0010	0.0011	0.0015	<0.0010	<0.0010	<0.0010	0.0037	<0.0010	0.0076	0.0047	<0.0010	0.0045	<0.0010	<0.0010	<0.0010	0.0027	0.0022	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	0.0014
Aluminum	mg/L	0.1 (OG)	<0.004	0.019	0.008	0.005	0.006	0.010	0.005	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	0.0014	0.0064	<0.0010	0.0011	0.0021	0.0015	<0.0010
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	<0.0010	0.00011	0.0001	0.00011	0.00012	0.00012	0.00011	0.00011	0.00011	0.00011	0.00013	0.00014	0.00011	0.00013	<0.00010	0.00011	0.0001	0.00010	0.00010	0.00011	0.00016	0.00011
Barium	mg/L	1.0 (MAC)	0.026	0.031	0.025	0.029	0.027	0.033	0.023	0.025	0.024	0.031	0.0346	0.0405	0.0331	0.0315	0.0278	0.0313	0.0309	0.0317	0.0341	0.0374	0.0316	0.0308	0.0347	0.0369	0.0346	0.042	0.0392	0.0315	0.0381	0.0344	0.0366	0.0311
Boron	mg/L	5.0 (MAC)	0.033	0.014	0.018	0.014	0.019	0.017	0.024	0.013	0.016	0.016	0.019	0.017	0.016	0.015	0.024	0.024	0.017	0.012	0.019	0.012	0.016	0.013	0.023	0.015	0.013	0.011	0.014	0.012	0.014	0.011	0.016	0.012
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	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000060	<0.0000050
Calcium	mg/L	NV	79.2	105	105	90.3	104	103	95.2	98.6	103	113	107	124	108	98	94	90.6	109	88.1	111	95.3	104	87.5	112	98.8	108	94.8	104	93.9	106	102	114	98.9
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	<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	<0.003	<0.003	<0.0010	<0.0010	0.0011	<0.0010	0.00064	0.00071	0.00067	0.0007	0.00069	0.00071	0.0008	0.00076	0.00064	0.00074	0.00085	0.00086	0.00072	0.00203	0.00068	0.00112	0.00065	0.00089	0.00068	0.00080
Iron	mg/L	0.3 (AO)	<0.01	0.035	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<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	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.000082	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Magnesium	mg/L	NV	19.3	23	23.4	20.3	22.4	22.3	21.7	21.5	20.7	24.1	22.5	25.2	23.4	19.7	20.1	18.7	22.5	19.3	24.8	22.2	22.6	19.5	24.2	25.7	25.4	23.7	25.3	20.7	24.7	22.0	23.8	21.9
Manganese	mg/L	0.05 (AO)	<0.002	0.05	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0010	0.0012	<0.0010	<0.00050	0.0011	<0.00050	0.00082	<0.00050	<0.00050	<0.00050	0.00073	<0.00050	<0.00050	<0.00050	0.00108	<0.00050	0.00052	0.00024	0.00090	0.00012	0.00016	0.00046	0.00037	0.00043
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010		<0.000010	<0.000010	<0.000010	<0.000010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.0000050	0.0000055	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	1.68	1.47	1.14	1.29	1.24	1.58	1.21	1.41	<1.0	1.5	1.3	1.61	1.42	1.32	1.36	1.46	1.29	1.5	1.69	1.94	1.37	1.50	1.65	1.80	1.68	2.06	2.02	1.91	1.9	1.89	1.89	2.24
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	<0.00040	0.00015	0.0001	0.000263	0.000185	0.000179	<0.00050	0.000145	0.000232	0.000182	0.000152	0.000214	0.000274	0.000252	0.000093	0.000172	0.000189	0.000148	0.000118	0.000117	0.000320	0.000255
Silicon	mg/L	NV	3.82	3.91	4.06	3.59	3.84	3.88	4.35	3.61	3.9	4.2	3.8	4.5	3.83	3.68	3.54	3.65	3.63	3.43	3.82	3.74	3.89	3.18	3.79	3.96	4.04	3.65	3.77	3.72	3.83	3.94	4.12	3.60
Sodium	mg/L	200 (AO)	53.6	11.5	14.2	8.94	13.7	11.6	20.1	14.9	16.3	16	15.3	14.6	18.4	11.8	26.2	16	21.8	20	25.6	27.4	36.3	21.6	27.9	29.4	35.6	30.4	39.9	33	37.5	36.7	40.3	36.3
Zinc	mg/L	5.0 (AO)	<0.004	<0.004	0.019	0.004	<0.004	0.005	<0.005	<0.005	0.0129	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	0.0018	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	<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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Unless otherwise stated, units are reported in mg/L.
8. NV denotes No Value.
9. Unlined and shaded denotes detection limit exceeps ODWS

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S	MW12S
			Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Field Electrical Conductivity	uS/cm	NV	784		566	890	INS		950		668		870		675		889		859		878		894		862		887	
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**442**		**464**	**530**	**466**		**433**		**367**		**396**		**353**		**429**		**417**		**386**		**386**		**384**		**420**	
pH	N/A	6.5-8.5 (OG)	7.96		7.71	7.47	7.76		7.72		7.76		7.94		7.32		7.42		7.58		7.42		7.86		7.39		7.60	
Total Dissolved Solids	mg/L	500 (AO)	446		**509**	**513**	291		**502**		432		**503**		474		443		**526**		486		420		446		484	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	321		407	484	305		333		354		377		367		438		392		380		441		417		387	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5		<10	<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)	321		409	485	305		333		354		377		367		438		392		380		441		417		387	
Ammonia, Total (as N)	mg/L	NV	0.080		<0.050	<0.050	<0.050		0.046		0.053		0.080		<0.010		0.014		0.01		<0.0050		0.0142		<0.0050		<0.0050	
Bromide	mg/L	NV	<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		<0.10	
Chloride	mg/L	250 (AO)	11.4		8.1	4.0	3.0		4.2		16.3		24.0		25.5		17.5		41.8		24.4		40.4		33.1		46.4	
Fluoride	mg/L	1.5 (MAC)	<0.25		<0.10	<0.10	0.03		0.04		0.04		0.037		0.046		0.044		0.039		0.031		0.048		0.024		0.042	
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	5.920		6.49	5.89	3.97		7.48		7.20		5.24		4.99		3.37		2.59		5.66		3.94		2.50		2.90	
Nitrate as N	mg/L	10.0 (MAC)	5.920		6.49	5.89	3.97		7.48		7.20		5.24		4.99		3.37		2.59		5.66		3.94		2.50		2.90	
Nitrite as N	mg/L	1.0 (MAC)	<0.25		<0.10	<0.10	<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010	
Organic Nitrogen	mg/L	0.15 (OG)	0.030		**0.81**	**0.48**	**0.34**		**1.15**		**1.08**		**0.45**		**1.030**		**0.540**		**0.460**		**0.375**		**2.42**		**0.394**		**0.489**	
Orthophosphate as P	mg/L	NV	<0.5		0.01	0.00	<0.0030		<0.0030		<0.0030		<0.0030		<0.0030		<0.0030		0.0038		<0.0030		<0.0010		<0.0010		<0.0010	
Sulphate	mg/L	500 (AO)	79		19	22	19		16		13		12		15.5		9.96		11.6		12.7		12.4		10.1		15.7	
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	3.2		<1.0	1.2	1.8		3.6		1.1		2.1		3.95		2.03		2.17		0.99		3.03		1.88		1.42	
Chemical Oxygen Demand (COD)	mg/L	NV	<5	Dry	19.0	25.0	<10	Insufficient volume for sample collection.		Insufficient volume for sample collection.	31.0	Insufficient volume for sample collection.	33.0	Insufficient volume for sample collection.	50	Insufficient volume for sample collection.	23	Insufficient volume for sample collection.	<10	Insufficient volume for sample collection.	27	Insufficient volume for sample collection.	49	Insufficient volume for sample collection.	20	Insufficient volume for sample collection.	12	Insufficient volume for sample collection.
Phenols	mg/L	NV	<0.001		<0.0010	<0.0010	<0.0010		<0.0010		0.0014		<0.0010		0.0055		0.0078		<0.0010		<0.0010		<0.0010		0.0018		0.0013	
Aluminum	mg/L	0.1 (OG)	0.01		<0.010	<0.010	<0.010		<0.0050		<0.0050		<0.0050		0.0076		<0.0050		<0.0050		0.0015		0.0026		0.0018		0.0085	
Arsenic	mg/L	0.01 (IMAC)	<0.003		<0.0010	<0.0010	<0.0010		0.00011		0.00011		0.00011		0.00011		0.00013		<0.00010		<0.00010		<0.00010		<0.00010		0.00014	
Barium	mg/L	1.0 (MAC)	0.089		0.0608	0.0707	0.0396		0.0349		0.0259		0.027		0.0233		0.0311		0.0275		0.0284		0.0244		0.0258		0.0251	
Boron	mg/L	5.0 (MAC)	0.017		<0.010	0.023	0.019		0.01		<0.010		0.012		0.014		0.011		0.013		0.014		0.011		0.014		0.012	
Cadmium	mg/L	0.005 (MAC)	<0.002		<0.000090	<0.000090	<0.000090		<0.000010		<0.000010		<0.000016		<0.000010		<0.000010		0.000012		0.0000077		0.0000076		0.000059		0.000092	
Calcium	mg/L	NV	134		148	161	140		132		117		123		107		133		127		116		114		116		129	
Chromium	mg/L	0.05 (MAC)	<0.003		<0.00050	<0.00050	<0.00050		<0.00050		0.00069		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050		<0.00050	
Copper	mg/L	1.0 (AO)	<0.003		<0.0010	<0.0010	<0.0010		0.0003		0.00027		0.00034		0.131		0.00036		0.00047		0.00304		0.00138		0.00047		0.00045	
Iron	mg/L	0.3 (AO)	<0.01		<0.050	<0.050	<0.050		<0.010		<0.010		<0.010		0.019		<0.010		<0.010		<0.010		<0.010		<0.010		<0.010	
Lead	mg/L	0.01 (MAC)	<0.002		<0.00050	<0.00050	<0.00050		<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		<0.000050		0.000092		<0.000050		<0.000050		<0.000050	
Magnesium	mg/L	NV	26		22.8	30.9	28.2		24.9		18.1		21.8		20.7		23.5		24.3		23.4		24.5		22.9		23.7	
Manganese	mg/L	0.05 (AO)	0.039		0.0014	<0.0010	0.0022		0.00128		0.00074		<0.00050		0.00144		<0.00050		0.00715		0.00073		0.00093		0.00020		0.00040	
Mercury	mg/L	0.001	<0.0001		<0.00010	<0.00010	<0.000010		<0.000010		<0.000010		<0.000010		<0.000010		<0.0000050		<0.0000050		<0.0000050		<0.0000050		<0.0000050		<0.0000050	
Potassium	mg/L	NV	4.13		<1.0	1.6	1.3		0.796		0.519		0.508		0.547		0.701		0.427		0.453		0.267		0.400		0.267	
Selenium	mg/L	0.05 (MAC)	<0.004		<0.00040	<0.00040	<0.00040		0.000201		0.000594		<0.00050		0.000214		0.000279		0.000112		0.000062		0.000137		0.000115		0.000129	
Silicon	mg/L	NV	4.6		4.5	6.3	4.9		4.18		3.52		3.13		3.15		4.21		3.69		3.27		3.70		3.53		3.70	
Sodium	mg/L	200 (AO)	7.59		6.76	6.9	6.58		5.79		4.93		16.1		21.1		15.4		29.2		19.4		24.6		25.1		26.4	
Zinc	mg/L	5.0 (AO)	0.005		<0.0030	<0.0030	<0.0030		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		<0.0010		0.0037		0.0025		0.0015		<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. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

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

8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW12D Apr-13	MW12D Sep-13	MW12D May-14	MW12D Sep-14	MW12D May-15	MW12D Sep-15	MW12D May-16	MW12D Sep-16	MW12D May-17	MW12D Sep-17	MW12D May-18	MW12D Sep-18	MW12D May-19	MW12D Sep-19	MW12D May-20	MW12D Oct-20	MW12D May-21	MW12D Sep-21	MW12D May-22	MW12D Sep-22	MW12D May-23	MW12D Sep-23	MW12D May-24	MW12D Sep-24	MW12D May-25	MW12D Sep-25
Field Electrical Conductivity	uS/cm	NV	740	1020	547	710	727	860	900	910	612	726	830	1020	704	754	796	729	754	718	844	849	945	856	907	1605	897	693
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**427**	**440**	**241**	**328**	**405**	**471**	**434**	**417**	**415**	**405**	**391**	**399**	**405**	**403**	**396**	**380**	**406**	**401**	**411**	**436**	**408**	**404**	**412**	**422**	**456**	**480**
pH	N/A	6.5-8.5 (OG)	7.97	7.18	7.76	7.62	7.62	7.51	7.71	7.62	7.62	7.57	7.89	7.72	7.36	7.32	7.50	7.55	7.58	7.65	7.30	7.85	7.69	7.35	7.48	7.53	7.54	7.46
Total Dissolved Solids	mg/L	500 (AO)	380	418	425	408	353	410	488	**512**	**506**	439	**518**	497	**519**	**538**	479	353	**507**	445	**536**	**527**	432	**527**	494	489	**554**	**802**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	370	412	332	376	448	395	351	356	411	360	347	369	406	449	462	389	358	517	469	324	511	706	444	411	398	492
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	370	412	334	377	448	395	351	356	411	360	347	369	406	449	462	389	358	**517**	469	324	**511**	**706**	444	411	398	492
Ammonia, Total (as N)	mg/L	NV	0.050	0.220	0.053	<0.050	0.071	<0.050	0.024	0.067	<0.020	0.053	0.032	0.195	0.017	<0.010	0.111	<0.010	0.011	0.018	<0.0050	<0.005	<0.0050	<0.0050	<0.0050	0.0129	0.0088	<0.0050
Bromide	mg/L	NV	<0.25	<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	<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)	6.5	6.7	4.9	4.2	4.8	4.3	6.0	7.1	15.1	23.1	34.7	26.1	39.2	36.7	30.6	28.8	44.2	35.8	34.1	28.5	34.4	37.3	44.1	49.1	42.6	42.2
Fluoride	mg/L	1.5 (MAC)	<0.25	<0.1	<0.10	<0.10	0.03	0.02	<0.020	0.04	<0.020	<0.020	0.025	0.02	0.025	0.024	0.029	0.029	0.027	0.024	0.025	0.022	0.028	0.029	0.024	0.024	0.025	0.030
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	8.07	7.21	4.97	4.76	4.29	3.64	3.44	4.42	4.55	5.27	3.74	4.52	4.02	4.28	4.16	4.32	3.02	4.08	3.56	4.53	3.64	4.08	1.97	2.07	2.41	4.12
Nitrate as N	mg/L	10.0 (MAC)	8.07	7.21	4.97	4.76	4.29	3.64	3.44	4.42	4.55	5.27	3.74	4.52	4.02	4.28	4.16	4.32	3.02	4.08	3.56	4.53	3.64	4.08	1.97	2.07	2.41	4.12
Nitrite as N	mg/L	1.0 (MAC)	<0.25	<0.1	<0.10	<0.10	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Organic Nitrogen	mg/L	0.15 (OG)	**0.25**	0.00	**0.40**	**0.34**	**0.17**	<0.15	**0.87**	<1.5	**0.47**	**0.42**	**0.40**	<1.5	**0.34**	**0.26**	**0.37**	**0.32**	**0.259**	**1.570**	**0.585**	**0.565**	**0.391**	**0.36**	**0.324**	**0.339**	**0.629**	**0.457**
Orthophosphate as P	mg/L	NV	<0.05	<0.1	0.004	0.003	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	0.0014
Sulphate	mg/L	500 (AO)	18	20	24	21	19	16	14	13	12	13.1	15	17	16.7	15	15	14.4	15.7	14.4	14.2	12.4	12.6	12.4	11.6	12.5	14.8	14.1
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	0.7	1.4	1.3	1.4	<1.0	1.2	2.9	<1.0	1.1	2	1.3	3.3	1.53	1.48	1.89	1.35	1.89	3.53	0.98	1.53	1.77	1.62	1.48	1.96	1.30	0.88
Chemical Oxygen Demand (COD)	mg/L	NV	<5	<5	19.0	17.0	<10	<10		47.0	27.0	25.0	38.0	70.0	28	16	18	20	14	23	<10	<10	27	22	35	<10	32	<10
Phenols	mg/L	NV	<0.001	<0.001	<0.0010	0.0	0.0	0.0	<0.0010	0.0	0.0	0.0	<0.0010	0.0	0.0034	0.0058	0.0031	0.0012	<0.0010	0.0017	<0.0010	0.0036	<0.0010	<0.0010	0.0043	0.0276	0.0025	0.0015
Aluminum	mg/L	0.1 (OG)	0.02	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0030	0.0018	0.0034	0.0050	0.0554	0.0014	0.0012	0.0373
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.0010	<0.0010	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010
Barium	mg/L	1.0 (MAC)	0.016	0.017	0.024	0.0284	0.0216	0.0247	0.023	0.0218	0.021	0.0221	0.0198	0.0233	0.0217	0.025	0.0242	0.0244	0.0242	0.0256	0.0319	0.0365	0.0275	0.0269	0.0289	0.0282	0.0328	0.0279
Boron	mg/L	5.0 (MAC)	0.021	0.016	0.024	0.029	0.023	0.023	0.021	0.021	0.024	0.022	0.02	0.021	0.022	0.02	0.02	0.02	0.02	0.017	0.019	0.019	0.020	0.018	0.019	0.019	0.020	0.019
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.000090	<0.000090	<0.000090	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium	mg/L	NV	124	129	72	96.5	120	139	127	124	121	119	117	118	118	118	118	113	122	113	121	128	118	118	121	126	136	139
Chromium	mg/L	0.05 (MAC)	<0.003	<0.003	0.00067	0.00059	<0.00050	0.00056	0.00055	0.00053	0.00054	0.00058	0.00058	0.00064	0.00064	0.00066	0.0006	0.00063	0.00056	0.00079	0.00064	0.00075	0.00061	0.00079	0.00067	0.00066	0.00078	0.00084
Copper	mg/L	1.0 (AO)	<0.003	<0.003	0.0011	0.0011	<0.0010	0.00031	0.00031	0.00027	0.00041	0.00033	0.00032	0.0003	0.00034	0.00052	0.00031	0.00025	0.00032	0.00029	0.00226	0.00262	0.00140	0.00195	0.00049	0.00080	0.0019	0.00051
Iron	mg/L	0.3 (AO)	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	0.052	<0.010	0.033	0.030
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.000050	<0.00050	<0.00050	<0.00050	0.000101	0.0001	0.000078	<0.000050	0.000076	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	28.4	28.6	14.8	21.1	25.8	29.9	28.3	26	27.1	26	24.2	25.2	27	26.4	24.7	23.9	24.7	28.8	26.4	28.4	27.6	26.6	26.7	26.0	28.2	32.2
Manganese	mg/L	0.05 (AO)	0.011	<0.002	<0.0010	<0.0010	<0.0010	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00051	<0.00050	<0.00050	0.00064	<0.00050	0.00084	<0.00050	0.00037	0.0028	0.00038	0.00053	0.00547	0.00054	0.00043	0.00182
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	0.85	0.88	6	6	<1.0	0.877	0.711	0.696	0.732	0.679	0.613	0.675	0.661	0.811	0.692	0.666	0.725	0.737	0.756	0.774	0.763	0.834	0.801	0.814	0.932	0.888
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.00040	<0.00040	<0.00040	<0.00050	<0.00050	<0.00050	0.000055	0.000083	<0.00050	0.000054	0.000059	0.000088	0.000068	0.000102	<0.000050	0.000119	<0.000050	0.000066	0.000062	0.00009	0.000057	<0.000050	0.000060	0.000118
Silicon	mg/L	NV	5.23	4.16	5.2	5.6	4.2	4.81	4.29	4.42	4.38	4.25	3.95	3.98	4.27	4.39	3.91	4.02	4.16	4.37	4.24	4.3	4.38	4.30	4.22	4.42	4.54	4.71
Sodium	mg/L	200 (AO)	4.59	5.35	40.5	31.7	9.35	9.75	10.4	8.58	9.21	7.95	9.48	13.1	15.6	19.6	23.2	17.6	25.2	19.0	28.6	24.7	29.6	26.0	26.6	26.6	31.8	24.3
Zinc	mg/L	5.0 (AO)	<0.005	<0.005	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	0.0021	0.0058	0.0017	<0.0010	<0.0010	0.0020	0.0012

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Underlined and shaded indicates detection limit is above the ODWS.
8. Unless otherwise stated, units are reported in mg/L.
9. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3
GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW13S Apr-13	MW13S Sep-13	MW13S May-14	MW13S Sep-14	MW13S May-15	MW13S Sep-15	MW13S May-16	MW13S Sep-16	MW13S May-17	MW13S Sep-17	MW13S May-18	MW13S Sep-18	MW13S May-19	MW13S Sep-19	MW13S May-20	MW13S Oct-20	MW13S May-21	MW13S Sep-21	MW13S May-22	MW13S Sep-22	MW13S May-23	MW13S Sep-23	MW13S May-24	MW13S Sep-24	MW13S May-25	MW13S Sep-25
Field Electrical Conductivity	uS/cm	NV	1240	1660	712	1170	1146	1220	1520	1380	760	990	1190	1440	1065	1065	1079	1150	1114	1184	1012	960	1072	1167	1286	1044	1229	1258
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**640**	**596**	**708**	**580**	**592**	**557**	**648**	**565**	**391**	**439**	**512**	**468**	**636**	**495**	**515**	**446**	**485**	**489**	**393**	**484**	**344**	**438**	**541**	**395**	**571**	**576**
pH	N/A	6.5-8.5 (OG)	7.71	6.76	7.17	7.16	7.25	7.15	7.13	7.33	7.52	7.38	7.64	7.56	6.88	7.07	7.15	7.44	7.67	7.69	7.24	7.43	7.88	7.05	7.35	7.58	7.36	7.40
Total Dissolved Solids	mg/L	500 (AO)	**702**	**718**	**913**	**648**	**608**	**612**	**901**	**799**	**608**	**635**	**737**	**737**	**794**	**732**	**638**	**674**	**751**	**771**	**598**	**696**	**524**	**667**	**735**	**609**	**711**	**786**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	575	667	744	649	633	163	628	563	459	481	492	496	666	544	578	512	565	636	441	504	520	554	580	598	574	510
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	**575**	**667**	**745**	**649**	**633**	163	**628**	**563**	459	481	492	496	**666**	**544**	**578**	**512**	**565**	**636**	441	**504**	**520**	**554**	**580**	**598**	**574**	**510**
Ammonia, Total (as N)	mg/L	NV	0.290	2.350	6.980	2.030	3.730	2.110	6.460	3.720	0.422	0.639	1.440	0.872	2.73	1.86	1.99	0.338	0.266	0.078	0.364	0.772	0.0403	0.347	0.778	0.454	0.540	0.263
Bromide	mg/L	NV	<0.25	<0.25	0.160	0.100	0.150	<0.10	<0.50	0.110	<0.10	<0.10	<0.50	<0.50	<0.10	<0.10	<0.50	<0.50	<0.50	<0.50	<0.10	<0.50	<0.10	<0.50	<0.50	<0.10	<0.50	<0.50
Chloride	mg/L	250 (AO)	24.9	29.0	38.5	22.4	35.9	31.0	43.0	42.8	53.4	42.4	39.5	73.8	47.7	50.8	60.9	73.7	70.2	118	76.0	65.9	90.7	61.8	49.9	61.4	54.1	64.4
Fluoride	mg/L	1.5 (MAC)	<0.25	<0.25	0.18	<0.10	0.09	0.08	<0.10	0.07	0.06	0.055	<0.10	<0.10	0.051	0.064	<0.10	<0.10	<0.10	<0.10	0.092	<0.100	0.090	<0.100	<0.100	0.089	<0.100	0.107
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	9.78	<0.07	0.25	<0.2	0.05	0.30	<0.11	0.24	0.55	0.07	0.78	0.18	0.443	0.043	<0.11	0.254	<0.11	1.32	1.52	0.402	0.114	0.20	2.49	0.030	1.830	0.655
Nitrate as N	mg/L	10.0 (MAC)	9.78	<0.25	0.25	<0.10	0.05	0.27	<0.10	0.24	0.55	0.07	0.78	0.18	0.43	0.043	<0.10	0.18	<0.10	1.32	1.52	0.338	0.114	0.20	2.49	<0.020	1.83	0.655
Nitrite as N	mg/L	1.0 (MAC)	<0.25	<0.25	<0.10	<0.10	<0.010	0.04	<0.050	<0.010	<0.010	<0.010	<0.050	<0.050	0.013	<0.010	<0.050	0.074	<0.050	<0.050	<0.010	0.064	<0.010	<0.050	<0.050	0.030	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	**1.56**	**0.18**	**1.96**	**0.25**	**0.74**	**0.40**	**1.88**	**3.40**	**0.85**	**0.64**	**1.30**	**1.51**	**0.850**	**0.910**	**0.980**	**0.670**	**1.03**	**0.67**	**0.597**	<5.00	**0.537**	**0.591**	**0.972**	**1.70**	**0.870**	**0.897**
Orthophosphate as P	mg/L	NV	<0.5	<0.25	0.009	0.007	0.006	0.004	0.008	0.007	0.005	0.0066	0.008	0.005	0.009	0.0065	0.0034	0.005	0.0061	0.0066	0.0064	0.008	0.0033	0.0077	0.0089	0.0059	0.0074	0.0092
Sulphate	mg/L	500 (AO)	72	43	40	54	25	32	32	55	50	36	39.5	41	61	54	38.8	37.9	31.6	38.5	31.3	26.6	28.6	32.2	27.1	29.8	27.0	45.9	41.4
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**8.0**	**11.0**	**15.5**	**11.5**	**11.0**	**9.1**	**16.7**	**11.0**	**7.1**	**7**	**9.9**	**9.0**	**11.6**	**8.37**	**9.62**	**6.43**	**8.56**	**9.26**	**7.68**	**9.46**	**5.12**	**6.33**	**10.2**	**7.02**	**7.57**	**6.68**
Chemical Oxygen Demand (COD)	mg/L	NV	16.0	25.0	54.0	47.0	47.0	27.0		220.0	38.0	30.0	60.0	144.0	70	80	41	25	54	25	28	40	38	30	49	117	22	38
Phenols	mg/L	NV	<0.001	<0.001	0.0056	0.0077	0.0031	0.0018	0.0015	0.0044	0.0020	0.0051	<0.0010	0.0	0.0069	0.0120	0.0030	0.0026	<0.0010	0.0019	<0.0010	0.0036	<0.0010	0.0011	0.0049	0.0059	0.0016	0.0020
Aluminum	mg/L	0.1 (OG)	0.01	<0.004	<0.010	<0.010	<0.010	<0.0050	0.006	<0.0050	0.006	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0020	0.0024	0.0015	0.0018	0.0014	0.0016	0.0013	0.0086
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00034	0.00054	0.00043	0.00031	0.00029	0.00037	0.00024	0.00044	0.00038	0.00032	0.00025	0.00027	0.00024	0.00030	0.00033	0.00029	0.00028	0.00038	0.00026	0.00042	0.00027
Barium	mg/L	1.0 (MAC)	0.078	0.092	0.169	0.12	0.165	0.141	0.189	0.155	0.0786	0.1	0.106	0.119	0.138	0.117	0.118	0.0997	0.101	0.125	0.101	0.115	0.0765	0.0997	0.125	0.0967	0.135	0.113
Boron	mg/L	5.0 (MAC)	0.072	0.077	0.154	0.095	0.098	0.082	0.115	0.094	0.046	0.053	0.067	0.053	0.091	0.067	0.071	0.053	0.05	0.041	0.045	0.067	0.028	0.048	0.069	0.042	0.068	0.079
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	0.000117	<0.000090	0.000104	0.000074	0.000092	0.000074	0.000066	0.00089	0.000097	0.000057	0.00099	0.000083	0.000079	0.000074	0.000057	0.00053	0.000101	0.0000957	0.0000106	0.0000891	0.000120	0.0000913	0.000113	0.0000151
Calcium	mg/L	NV	195	182	212	180	180	174	194	173	123	137	163	147	197	152	160	141	154	144	122	150	106	136	169	126	179	178
Chromium	mg/L	0.05 (MAC)	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	<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)	0.004	0.004	0.0068	0.005	0.0104	0.0061	0.0078	0.00582	0.00313	0.00317	0.00468	0.00611	0.00416	0.00338	0.00331	0.00279	0.00295	0.00224	0.00521	0.00368	0.00216	0.00451	0.00311	0.00254	0.00304	0.00228
Iron	mg/L	0.3 (AO)	<0.01	<0.01	<0.050	<0.050	<0.050	<0.010	0.016	<0.010	0.016	<0.010	<0.010	<0.010	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000086	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium	mg/L	NV	37.1	34.3	43.2	31.5	34.4	29.9	39.5	32.3	20.6	23.7	25.7	24.5	35	28.1	27.9	23.0	24.3	31.2	21.4	26.6	19.2	24.0	28.9	19.5	30.1	32.0
Manganese	mg/L	0.05 (AO)	**0.661**	**1.14**	**3.97**	**3.59**	**3.5**	**3.46**	**3.85**	**2.54**	**0.365**	**1.21**	**1.9**	**1.41**	**0.82**	**0.896**	**0.340**	**0.909**	**0.323**	**0.105**	**2.00**	**1.18**	0.00776	**0.421**	**1.47**	**1.20**	**0.512**	0.0244
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.00010	<0.00010	<0.00010	<0.000010	<0.000010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0000052	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium	mg/L	NV	30.1	38.4	46.8	30.7	37.4	30.8	44.6	37.2	24.6	29.4	27.8	29	37	35.5	30.7	29.3	30.4	38.9	28.5	33.9	23.8	41.0	28.5	32.7	34.9	37.5
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000154	0.000365	0.000276	0.000191	0.000169	<0.00050	0.000145	0.000237	0.000233	0.000156	0.000170	0.000126	0.000163	0.000135	0.000184	0.000108	0.000129	0.000178	0.000108	0.000202	0.000150
Silicon	mg/L	NV	4.1	4.97	6	5.8	5.5	5.66	5.44	4.93	3.52	4.1	4.21	3.99	5	4.65	3.74	3.60	3.95	4.57	3.65	4.27	3.58	4.25	4.25	3.96	4.75	4.68
Sodium	mg/L	200 (AO)	27.7	29.5	31.6	26.5	33.3	30.9	31	30.5	46.7	37.5	32.8	53.5	41.8	47.1	47.8	57.1	49.2	91.3	56.2	55.10	65.9	60.9	35.7	53.6	43.2	52.3
Zinc	mg/L	5.0 (AO)	<0.005	<0.005	0.0047	<0.0030	0.0031	0.0021	0.0029	0.0029	0.0011	0.0021	0.002	0.0014	0.0018	0.0014	0.0017	0.0015	<0.0010	0.0012	0.0042	0.0023	0.0022	0.0023	0.0027	0.0018	0.0015	0.0019

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. INS denotes insufficient volume for sample.
6. Blank denotes data not available.
7. Unless otherwise stated, units are reported in mg/L.
8. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-3

GROUNDWATER ANALYTICAL RESULTS - GENERAL PARAMETERS

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW13D Apr-13	MW13D Sep-13	MW13D May-14	MW13D Sep-14	MW13D May-15	MW13D Sep-15	MW13D May-16	MW13D Sep-16	MW13D May-17	MW13D Sep-17	MW13D May-18	MW13D Sep-18	MW13D May-19	MW13D Sep-19	MW13D May-20	MW13D Oct-20	MW13D May-21	MW13D Sep-21	MW13D May-22	MW13D Sep-22	MW13D May-23	MW13D Sep-23	MW13D May-24	MW13D Sep-24	MW13D May-25	MW13D Sep-25
Field Electrical Conductivity	uS/cm	NV	879	1330	463	1120	999	1040	1080	1130	884	776	1010	1230	890	943	1051	982	1070	932	903	2569	1109	1099	1007	880	1120	1029
Total Hardness (as CaCO3)	mg/L	80-100 (OG)	**403**	**474**	**534**	**591**	**513**	**478**	**419**	**444**	**345**	**103**	**354**	**385**	**394**	**402**	**411**	**372**	**359**	**404**	**353**	**376**	**481**	**374**	**364**	**376**	**434**	**628**
pH	N/A	6.5-8.5 (OG)	7.84	6.97	7.45	7.2	7.35	7.24	7.61	7.49	7.73	8.32	7.95	7.67	7.26	7.15	7.4	7.63	7.72	7.68	7.29	7.53	7.83	7.18	7.65	7.62	7.65	7.58
Total Dissolved Solids	mg/L	500 (AO)	466	**532**	**649**	**643**	**567**	**515**	**622**	**722**	**657**	389	**653**	**662**	**644**	**728**	**574**	**560**	**683**	**639**	**612**	**623**	**665**	**570**	**564**	**569**	**631**	**676**
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	430	553	563	624	538	409	381	463	366	204	354	426	468	498	513	426	411	639	443	444	568	549	452	397	438	414
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	<5	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Alkalinity, Total (as CaCO3)	mg/L	30-500 (OG)	430	**553**	**564**	**625**	**538**	409	381	463	366	204	354	426	468	498	**513**	426	411	**639**	443	444	**568**	**549**	452	397	438	414
Ammonia, Total (as N)	mg/L	NV	0.130	<0.02	0.513	0.926	0.671	0.885	0.422	0.521	0.386	0.088	0.332	0.257	0.139	0.181	0.212	0.124	0.038	0.057	0.104	0.135	0.972	0.122	0.0169	0.031	0.0393	0.0273
Bromide	mg/L	NV	<0.25	<0.25	<0.10	<0.10	0.110	<0.10	<0.10	<0.10	<0.10	<0.10	0.100	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.50	<0.50
Chloride	mg/L	250 (AO)	24.8	23.8	21.8	20.6	33.3	31.0	46.5	42.2	84.8	3.06	79.6	63.5	86.9	73.9	81.5	76.7	115	101	91.4	83.6	43.0	75.0	68.8	71.8	104	90.1
Fluoride	mg/L	1.5 (MAC)	<0.25	<0.25	<0.10	<0.10	0.11	0.09	0.08	0.11	0.10	1.81	0.101	0.09	0.08	0.087	0.094	<0.10	0.093	<0.10	0.082	0.077	0.095	0.081	<0.100	0.070	<0.100	<0.100
(Nitrate + Nitrite) as N	mg/L	10.0 (MAC)	<0.07	<0.07	0.420	<0.2	<0.03	0.022	0.151	0.435	0.058	0.052	0.062	0.065	0.777	0.283	0.665	<0.11	0.148	0.11	0.050	0.113	0.0480	0.0460	0.234	0.259	0.306	0.318
Nitrate as N	mg/L	10.0 (MAC)	<0.25	<0.25	0.42	<0.10	0.03	0.02	0.15	0.39	0.06	0.05	0.06	0.07	0.765	0.272	0.645	<0.10	0.148	0.11	0.0600	0.113	0.0480	0.0460	0.234	0.259	0.306	0.318
Nitrite as N	mg/L	1.0 (MAC)	<0.25	<0.25	<0.10	<0.10	<0.010	<0.010	<0.010	0.04	<0.010	<0.010	<0.010	<0.010	0.012	0.011	0.02	<0.050	<0.010	<0.050	0.01	<0.010	<0.010	<0.010	<0.050	<0.010	<0.050	<0.050
Organic Nitrogen	mg/L	0.15 (OG)	0.14	**0.26**	**0.82**	**0.31**	**0.33**	<0.15	**1.04**	<1.5	**0.74**	<1.5	**0.51**	<1.5	**0.670**	**0.390**	**0.540**	**0.506**	**0.86**	**0.84**	**0.657**	<5.00	**0.648**	**0.495**	**0.282**	**0.363**	**1.06**	**0.506**
Orthophosphate as P	mg/L	NV	<0.5	<0.25	0.004	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0065	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0044	0.0016	0.0038	0.0068	<0.0010	0.0030
Sulphate	mg/L	500 (AO)	32	30	33	30	25	21	35	35	29	47.6	22	26	34.3	31.3	30.0	24.3	30.8	24.9	23.8	20.6	46.3	29.3	21.1	21.9	33.0	28.0
Dissolved Organic Carbon (DOC)	mg/L	5.0 (AO)	**5.2**	**6.6**	**5.9**	**7.5**	**6.3**	**6.1**	**7.9**	**6.6**	**6.8**	3.9	**5.7**	**7.5**	**5.54**	**5.4**	**6.60**	**5.82**	**5.67**	**8.44**	**4.95**	**6.6**	**9.84**	**5.68**	**5.20**	**5.01**	4.13	**5.77**
Chemical Oxygen Demand (COD)	mg/L	NV	<5	14.0	36.0	28.0	38.0	12.0	170.0	43.0	45.0	53.0	87.0	40	21	19	32	32	43	28	6.6	31	39	46	16	60	30
Phenols	mg/L	NV	<0.001	<0.001	<0.0010	0.0	<0.0010	0.0	<0.0010	0.0	0.0	0.0	<0.0010	<0.0010	0.0026	0.0057	<0.0010	0.0022	<0.0010	0.0023	<0.0010	0.0027	<0.0010	<0.0010	0.0048	<0.0010	0.0023	0.0017
Aluminum	mg/L	0.1 (OG)	0.01	<0.004	<0.010	<0.010	<0.010	<0.0050	<0.0050	<0.0050	<0.0050	0.0058	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0012	0.0073	0.0039	<0.0010	0.0018	0.0188	0.0159	**2.86**
Arsenic	mg/L	0.01 (IMAC)	<0.003	<0.003	<0.0010	<0.0010	<0.0010	0.00019	0.00025	0.00021	0.00026	0.00167	0.00016	0.00018	0.00016	0.00022	0.00019	0.00019	0.00015	0.00018	0.00017	0.0002	0.00029	0.00024	0.00018	0.00019	0.00027	0.00163
Barium	mg/L	1.0 (MAC)	0.054	0.071	0.106	0.108	0.113	0.101	0.0884	0.0978	0.0741	0.0252	0.074	0.0837	0.0908	0.0881	0.0892	0.0854	0.0818	0.11	0.0930	0.0916	0.110	0.0838	0.107	0.0810	0.110	0.132
Boron	mg/L	5.0 (MAC)	0.032	0.039	0.055	0.073	0.054	0.052	0.032	0.042	0.034	0.251	0.03	0.037	0.03	0.033	0.034	0.034	0.026	0.029	0.029	0.030	0.061	0.031	0.032	0.031	0.032	0.035
Cadmium	mg/L	0.005 (MAC)	<0.002	<0.002	<0.000090	<0.000090	<0.000090	0.000017	0.000018	0.000013	0.000011	<0.000010	0.000015	<0.000010	0.000016	0.000019	0.000048	0.000013	<0.000010	<0.000010	0.0000325	0.0000207	0.0000833	0.0000233	0.0000113	0.0000118	0.0000097	0.0000877
Calcium	mg/L	NV	122	146	167	183	158	152	132	141	109	24.1	112	121	124	126	129	117	114	122	110	116	148	116	114	119	138	190
Chromium	mg/L	0.05 (MAC)	<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	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00565
Copper	mg/L	1.0 (AO)	<0.003	<0.003	0.0022	0.0036	0.0031	0.00264	0.00247	0.00298	0.00126	0.00068	0.00249	0.00288	0.00215	0.00215	0.00236	0.00207	0.002	0.00217	0.00398	0.00199	0.00249	0.00249	0.00218	0.00217	0.00245	0.00923
Iron	mg/L	0.3 (AO)	<0.01	0.02	<0.050	<0.050	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.018	0.082	**4.70**
Lead	mg/L	0.01 (MAC)	<0.002	<0.002	<0.00050	<0.00050	<0.00050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000114	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.00306
Magnesium	mg/L	NV	23.8	26.6	28	32.4	28.5	24.3	21.9	22.2	17.6	10.3	17.9	20.1	20.8	21.1	21.5	19.1	18.3	24.3	19	21	27.0	20.6	19.4	19.2	21.6	37.2
Manganese	mg/L	0.05 (AO)	**0.366**	**0.25**	**0.544**	**0.621**	**0.988**	**0.849**	**0.811**	**0.946**	**0.472**	0.00072	**0.714**	**0.879**	**0.736**	**0.388**	**0.277**	**0.529**	**0.210**	**0.179**	**0.479**	**0.82**	**0.416**	**0.277**	**0.172**	**0.160**	**0.0846**	**1.91**
Mercury	mg/L	0.001	<0.0001	<0.0001	<0.00010	<0.00010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000053
Potassium	mg/L	NV	17.3	21.2	22.6	27.3	26.1	24.4	19.9	22.3	18.9	1.21	22.2	23.7	25	23.5	21.7	21.9	22.1	28.8	24.2	24.4	35.7	26.5	27.3	26.8	30.0	28.1
Selenium	mg/L	0.05 (MAC)	<0.004	<0.004	<0.00040	<0.00040	<0.00040	0.000084	0.000153	0.000128	0.000117	0.000207	<0.00050	0.00009	0.000099	0.000139	0.000099	0.000093	0.000112	0.00012	0.000091	0.000111	0.000149	0.000097	0.000089	0.000101	0.000120	0.000097
Silicon	mg/L	NV	3.6	4.02	4.5	5	4.6	4.93	3.75	4.13	3.36	4.18	3.48	3.6	3.59	4.26	3.73	3.38	3.54	3.83	3.66	3.74	4.15	3.89	3.73	3.90	4.14	8.90
Sodium	mg/L	200 (AO)	41.3	34.2	28.3	30	33.7	33.2	38	34.1	51.1	52.9	55.6	48.4	68.5	69.3	61.0	54.5	69.0	79.8	62.9	67.5	38.6	66.4	51.5	54.4	66.9	65.1
Zinc	mg/L	5.0 (AO)	<0.005	<0.005	<0.0030	<0.0030	<0.0030	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	0.001	0.0027	<0.0010	<0.0010	<0.0010	0.0039	0.0011	0.0016	0.0014	0.0014	0.0013	0.0044	0.0202

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.

concentration is below

4. Bold and Shaded denotes exceedances of the ODWS.

5. INS denotes insufficient volume for sample.

6. Blank denotes data not available.

7. Underlined and shaded indicates detection limit is above the ODWS.

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

9. NV denotes No Value.

Pinchin File: 333568.002

Table D-4

Groundwater Analytical Results – Volatile Organic Compounds

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW1 May-06	MW1 May-07	MW1 Sep-07	MW1 Jun-08	MW1 Sep-08	MW1 Jun-09	MW1 Sep-09	MW1 May-10	MW1 Sep-10	MW1 May-11	MW1 Sep-11	MW1 May-12	MW1 Sep-12	MW1 Apr-13	MW1 Sep-13	MW1 May-14	MW1 Sep-14	MW1 May-15	MW1 Sep-15	MW1 May-16	MW1 Sep-16	MW1 May-17	MW1 Sep-17	MW1 May-18	MW1 Sep-18	MW1 May-19	MW1 Sep-19	MW1 May-20	MW1 Oct-20	MW1 May-21	MW1 Sep-21	MW1 May-22	MW1 Sep-22	MW1 May-23	MW1 Sep-23	MW1 May-24	MW1 Sep-24	MW1 May-25	MW1 Sep-25
Acetone		NV	<25	<50	<0.5	<5	<5	<1	<1	<1	<2	<1	<1	<1	<4	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<10	<20	1.2	<2	<2	0.84	1.1	0.33	0.41	<0.2	0.3	1.3	<0.8	0.34	0.32	<0.50	<0.50	0.69	0.7	0.57	0.75	<0.50	0.87	<0.50	0.71	<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	<0.50
Bromodichloromethane	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.4	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<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)	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.4	<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	<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	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<10	65	35	25	33	26	23	4.9	10	<0.2	2.4	<0.2	<0.8	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	3	2.1	<1.0	<1.0	<1.0	1.4	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<20	<40	<0.4	<4	<4	<0.4	<0.4	<0.4	<0.8	<0.4	<0.4	<0.4	<1.6	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.1	<0.4	<0.1	<0.1	<0.50	<0.50	<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	<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)	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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)	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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								<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	260	580	350	380	400	530	280	51	130	21	100	100	79	66	84	51.1	36.5	76	78.6	65.5	63.6	20.8	64.1	22	56.8	41.4	49.9	33.1	31.3	15.8	24.5	9.57	28.1	5.16	12.2	6.77	10.5	4.09	9.86
1,2-Dichloroethane	µg/L	5 (MAC)	<10	<20	<0.2	<2	<2	<0.2	0.81	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<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)	52	170	92	180	160	39	93	12	20	2.6	7.4	25	8.8	3.4	6.5	2.51	2.48	5.28	5.92	6.78	6.89	2	5.62	1.93	5.11	3.86	3.04	1.91	2.52	0.99	1.69	0.73	1.47	<0.50	0.6	<0.50	<0.50	<0.50	0.56
cis-1,2-Dichloroethylene	µg/L	NV	1500	5100	2100	2400	1800	3900	2000	220	470	48	260	150	110	93	110	45.9	36	78	89.9	73.4	101	27.3	86	31.9	88.7	50.8	54.4	36.6	48.5	20.3	35.6	14.8	38.0	6.50	18.6	8.88	15.2	6.04	17.2
trans-1,2-dichloroethylene	µg/L	NV	<10	100	59	110	57	66	35	5.9	8.1	1.1	3.8	11	7.2	2.1	3.1	1.24	0.89	2.3	2.72	2.26	2.88	0.72	2.79	0.69	2.54	1.52	1.26	0.86	1.29	0.52	0.95	<0.50	0.78	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<15	<30	<0.3	<3	<3	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<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	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<15	<30	<0.3	<3	<3	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<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	<15	<30	<0.3	<3	<3	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<45	<90	<0.9	<9	<9	<1	<1	<1	<2	<1	<1	<1	<4	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<15	<30	<0.3	<3	<3	<1	<1	<1	<2	<1	<1	<1	<4	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<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	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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	<5	<10	<0.1	<1	<1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<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)	<5	<10	1.2	<1	<1	<0.2	1.1	0.46	<0.4	<0.2	<0.2	<0.2	3.6	<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	<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)	<10	<20	<0.2	<2	<2	<0.2	<0.2	0.21	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<15	<30	<0.3	<3	<3	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	630	2100	770	680	1200	2100	1100	110	300	21	110	53	48	31	40	25.4	18.5	38.1	52.3	61.6	70.7	22.4	68.4	20.3	58.6	45.1	41.8	29.2	33.6	13.2	21.9	8.09	22.8	6.86	11.7	5.26	8.34	8.04	9.55
1,1,2-Trichloroethane	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	6.7	0.98	1.5	<0.2	<0.2	<0.2	<0.8	<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	<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)	270	540	310	410	600	970	600	110	170	22	120	93	89	43	68	36	41.1	82.3	99.5	77.9	98	34.1	102	30.4	73.5	66.7	34.3	29.8	40.8	26.3	49.3	17.2	22.9	9.84	14.8	12.7	13.2	11.8	20.6
Trichlorofluoromethane	µg/L	NV	<20	<40	<0.4	<4	<4	<0.4	<0.4	<0.4	<0.8	<0.4	<0.4	<0.4	<1.6	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	220	410	180	200	180	230	200	12	100	12	48	100	53	23	28	9.89	6.55	15	16.6	13.5	13.8	2.63	10.6	3.15	9.04	4.23	4.79	2.84	3.68	1.07	1.86	0.74	1.56	<0.50	<0.50	<0.50	<0.50	<0.20	0.59
o-Xylene	µg/L	NV	<5	<10	<0.1	<1	<1	<0.1	0.69	0.13	<0.2	<0.1	<0.1	<0.1	<0.4	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<10	<20	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
Xylenes(Total)	µg/L	90 (AO)	<10	<20	<0.2	<2	<2	<0.2	0.69	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.2	<0.2	<1.0	<1.0	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2	MW2
			May-06	May-07	Sep-07	Jun-08	Sep-08	Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone		NV	<0.5	<0.5	<0.2	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	**0.48**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.50	<0.50	<0.50	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	**110**	**2.4**	<0.2	<0.2	**4.1**	**4.4**	**4.1**	**1.9**	**4.1**	**5.9**	**3.8**	**5.5**	**7**	**2.4**	**2.8**	**1.6**	**6**	**3.5**	**5.1**	**4.5**	**8.8**	**1.5**	**1.5**	**1.20**	**2.42**	**0.70**	**0.84**	**1.47**	**0.82**	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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								<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	**1.1**	**1.8**	**2.3**	**1.2**	<0.3	**2.2**	**2.2**	**0.66**	**3.8**	**2**	**4.9**	**15**	**10**	**6.5**	**28**	**13.4**	**11.3**	**10.2**	**10.1**	**9.48**	**17.2**	**5.78**	**18.4**	**1.28**	**18**	**3.1**	**11.7**	**7.56**	**16.7**	**5.63**	**7.34**	**6.29**	**24.3**	**6.46**	**15.3**	**7.90**	**10.7**	**5.56**	**10.8**
1,2-Dichloroethane	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	<0.3	<0.3	**0.32**	<0.3	**1.4**	<0.50	<0.50	<0.50	<0.50	**1.06**	**0.58**	**1.36**	<0.50	**2.3**	<0.50	**1.37**	**0.54**	**1.6**	<0.50	<0.50	**1.25**	<0.50	**0.93**	<0.50	**0.59**	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.66**	<0.2	**0.89**	<0.2	<0.2	**1.9**	**2.4**	**1.3**	**14**	**4.68**	**4.53**	**5.23**	**5.82**	**4.01**	**17.6**	**2.97**	**12.3**	**1.06**	**21.3**	**1.64**	**11**	**4.98**	**13.3**	**1.81**	**4.22**	**3.59**	**10.5**	**2.53**	**9.14**	**3.30**	**4.70**	**1.96**	**5.44**
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.33**	<0.50	<0.50	<0.50	<0.50	<0.50	**0.76**	<0.50	**0.66**	<0.50	**1.11**	<0.50	**0.64**	<0.50	**0.64**	<0.50	<0.50	<0.50	**0.68**	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<0.2	<0.2	<0.2	<0.50	**0.71**	<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	<0.50	**0.69**	<0.50	<0.50				
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<0.9	<0.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	**0.24**	<0.1	<0.1	<0.2	<0.2	<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	<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)	**0.68**	**0.35**	**0.89**	<0.2	**0.46**	<0.2	<0.2	<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	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	**3.3**	**6.3**	**7.8**	**3.7**	**11**	**7.8**	**14**	**1.5**	**22**	**3.3**	**14**	**23**	**20**	**7.3**	**27**	**19.4**	**18.4**	**18**	**12.8**	**12.9**	**31.7**	**8.62**	**41.3**	**4.07**	**78.2**	**8.45**	**51.7**	**22.6**	**58.0**	**9.1**	**22.0**	**14.0**	**47.5**	**11.6**	**29.6**	**14.9**	**20.3**	**12.0**	**15.1**
1,1,2-Trichloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	**0.22**	**0.61**	<0.2	**0.46**	<0.2	**0.97**	<0.2	**1.3**	<0.2	**0.7**	**1.6**	**1.1**	<0.2	**0.94**	**0.75**	**1.05**	**0.96**	**0.97**	**0.56**	**1.31**	**2.35**	**1.17**	<0.50	**3.09**	<0.50	**2.67**	**1.15**	**3.44**	**0.56**	**1.51**	**0.85**	**2.80**	**0.96**	**1.86**	**0.90**	**1.47**	**0.83**	**0.99**
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	**0.33**	<0.50	<0.50	<0.50	<0.50	**0.51**	**1.32**	<0.50	**0.54**	<0.50	**0.68**	<0.50	<0.50	<0.50	0.53	<0.50	<0.50	<0.50	<0.50	**0.57**	<0.50	<0.50	<0.50	**0.29**
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
m & p-Xylene	µg/L	NV	**0.26**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40
Xylenes(Total)	µg/L	90 (AO)	**0.26**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW3S May-06	MW3S May-07	MW3S Jun-08	MW3S Sep-08	MW3S Jun-09	MW3S Sep-09	MW3S May-10	MW3S Sep-10	MW3S May-11	MW3S Sep-11	MW3S May-12	MW3S Sep-12	MW3S Apr-13	MW3S Sep-13	MW3S May-14	MW3S Sep-14	MW3S May-15	MW3S Sep-15	MW3S May-16	MW3S Sep-16	MW3S May-17	MW3S Sep-17	MW3S May-18	MW3S Sep-18	MW3S May-19	MW3S Sep-19	MW3S May-20	MW3S Oct-20	MW3S May-21	MW3S Sep-21	MW3S May-22	MW3S Sep-22	MW3S May-23	MW3S Sep-23	MW3S May-24	MW3S Sep-24	MW3S May-25	MW3S Sep-25
Acetone		NV	<0.5	<0.5	<0.5	<1	<1	<1	<2	<1	<2	<1	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	<0.2	<0.4	0.2	<0.4	**0.53**	<0.4	**0.38**	<0.4	**1.5**	**0.86**	**0.49**	<0.8	**0.58**	**1.1**	**0.64**	**0.88**	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.8	<0.4	<0.4	<0.8	<0.4	<0.8	<0.4	<0.4	<0.4	<0.4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	**1.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.1	<0.1	<0.1	<0.4	<0.50	<0.50	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2						<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	**0.7**	<0.3	<0.3	<1.2	<0.50	**1.06**	<0.50	**0.84**	<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	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<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	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	**9.4**	**5**	<0.2	**0.93**	**0.67**	**1.4**	**1.43**	**6.1**	<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	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	Insufficient volume for sample collection.	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.4	<0.2	0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<0.50	<0.50	<0.50	<0.50	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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						<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<1.8	<1	<1	<2	<1	<2	<1	<1	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<1	<1	<2	<1	<2	<1	<1	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20		<20	<20	<20	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<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	<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	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	**5**	<0.2	**0.69**	<0.2	**1.1**	<0.4	**0.91**	<0.4	<0.2	<0.2	**0.6**	<0.2	**2**	<0.50	<0.50	<0.50	**0.51**	<0.50	<0.50	**9.5**		<0.50	<0.50	<0.50	<0.50	<0.40	**1.14**	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<10	<10	<10	<10	<10	<10	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.3	<0.3	<0.6	<0.2	<0.6	<0.3	<0.3	<0.3	<0.3	<1.2	<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	<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	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<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	<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	<0.4	<0.2	**0.2**	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.52**		<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	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.8	<0.4	<0.4	<0.8	<0.4	<0.8	<0.4	<0.4	<0.4	<0.4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.34	<0.17	<0.17	<0.34	<0.17	2.3	<0.17	18	7.1	<0.17	<0.68	**0.78**	**2.19**	<0.50	**3.17**	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.4	<0.2	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW3D May-06	MW3D May-07	MW3D Sep-07	MW3D Jun-08	MW3D Sep-08	MW3D Jun-09	MW3D Sep-09	MW3D May-10	MW3D Sep-10	MW3D May-11	MW3D Sep-11	MW3D May-12	MW3D Sep-12	MW3D Apr-13	MW3D Sep-13	MW3D May-14	MW3D Sep-14	MW3D May-15	MW3D Sep-15	MW3D May-16	MW3D Sep-16	MW3D May-17	MW3D Sep-17	MW3D May-18	MW3D Sep-18	MW3D May-19	MW3D Sep-19	MW3D May-20	MW3D Oct-20	MW3D May-21	MW3D Sep-21	MW3D May-22	MW3D Sep-22	MW3D May-23	MW3D Sep-23	MW3D May-24	MW3D Sep-24	MW3D May-25	MW3D Sep-25
Acetone	NV	<0.5	<0.5	<0.5	<1	<1	<1	<1	<2	<1	<1	<2	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20	<20	<20	Insufficient volume for sample collection.	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	**0.46**	**0.89**	**0.86**	<0.4	<0.4	**1.4**	0.55	**1.2**	**3.1**	**0.63**	**3.5**	**4.7**	**2.4**	**0.74**	**1.7**	**0.96**	**2.02**	**4.21**	**3.61**	**2.68**	**4.41**	<0.50		**0.96**	**2.98**	**1.11**	**2.74**	**2.45**	**3.18**	**2.43**	**1.13**	**1.29**	**2.62**	**0.95**	**2.0**	**1.40**	**1.31**	**1.02**	**1.71**
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<30	<1.0	<1.0	<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	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<0.4	<0.8	<0.8	<0.4	<0.4	<0.8	<0.4	<0.4	<0.8	<0.4	<0.4	<0.4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.1	<0.1	<0.1	<0.4	<0.50	<0.50	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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						<0.4	<0.4	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.2	<0.8	<1.0	<1.0	<1.0	<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	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	**0.53**	**0.36**	**0.49**	<0.6	<0.6	<0.3	<0.3	<0.6	**1.4**	<0.3	**2.3**	**2.3**	**0.83**	<0.3	<1.2	**0.89**	**3**	**14.8**	**9.23**	**3.1**	**6.4**	<0.50		<0.50	**1.9**	<0.50	**1.61**	**0.65**	**1.48**	**0.52**	<0.50	<0.50	**0.60**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (MAC)	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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	<0.2	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<0.50	<0.50	**1.87**	**0.86**	<0.50	<0.50	**0.81**	<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	<0.50	<0.50	<0.50
cis-1,2-Dichloroethylene	µg/L	NV	**0.59**	**0.49**	**0.79**	<0.4	<0.4	<0.2	**0.5**	**4.1**	**49**	**1.5**	**63**	**52**	**23**	**3.4**	**13**	**1.83**	**48.2**	**447**	**236**	**55.7**	**173**	**2.04**		**1.42**	**42.1**	**1.13**	**1.42**	**0.76**	**5.42**	<0.50	**0.51**	<0.50	**1.08**	<0.50	<0.50	<0.50	<0.50	<0.50	**0.52**
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	**0.74**	<0.2	**1.5**	**2.8**	**1**	**0.28**	**0.92**	<0.50	**1.37**	**6.29**	**4.74**	**2.16**	**5.39**	<0.50		<0.50	**2.48**	<0.50	**1.32**	<0.50	**0.87**	<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	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<4.6		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.60	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<0.50	<0.50	<0.50	<0.50	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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						<0.4	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.50	**0.52**	<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	<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	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<0.9	<0.9	<0.9	<1.8	<1.8	<1	<1	<2	<1	<1	<2	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.6	<1	<1	<2	<1	<1	<2	<1	<1	<1	<4	<20	<20	<20	<20	<20	<20	<20		<20	<20	<20	<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	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<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	<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	**0.11**	<0.2	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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	**0.38**	**0.89**	<0.4	<0.4	<0.2	<0.2	<0.4	0.24	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2		<10	<10	<10	<10	<10	<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.6	<0.6	<0.3	<0.3	<0.6	<0.2	<0.3	<0.6	<0.3	<0.3	<0.3	<1.2	<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	<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	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<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	<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)	**1.2**	**0.36**	**0.73**	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	1.4	<0.2	<0.2	<0.8	<0.50	<0.50	**3.64**	**1.4**	**0.72**	**0.79**	<0.50		<0.50	**0.74**	<0.50	**0.6**	<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	<0.8	<0.8	<0.4	<0.4	<0.8	<0.4	<0.4	<0.8	<0.4	<0.4	<0.4	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.17	<0.34	<0.34	<0.17	<0.17	**3.1**	**37**	**4.1**	**34**	**100**	**74**	**2.9**	**3.2**	**3.51**	**28.5**	**217**	**130**	**16.3**	**95.3**	<0.50		**0.61**	**9.96**	<0.50	**5.67**	**0.58**	**3.34**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.4	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.4	<0.2	<0.2	<0.2	<0.8	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW5S Jun-08	MW5S Sep-08	MW5S Jun-09	MW5S Sep-09	MW5S May-10	MW5S Sep-10	MW5S May-11	MW5S Sep-11	MW5S May-12	MW5S Apr-13	MW5S Sep-13	MW5S May-14	MW5S Sep-14	MW5S May-15	MW5S Sep-15	MW5S May-16	MW5S Sep-16	MW5S May-17	MW5S Sep-17	MW5S May-18	MW5S Sep-18	MW5S May-19	MW5S Sep-19	MW5S May-20	MW5S Oct-20	MW5S May-21	MW5S Sep-21	MW5S May-22	MW5S Sep-22	MW5S May-23	MW5S Sep-23	MW5S May-24	MW5S Sep-24	MW5S May-25	MW5S Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<0.2	**0.28**	<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	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**7.4**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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			<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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 (MAC)	<0.2	<0.2	<0.2	<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	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<0.1	**0.13**	<0.1	<0.1	<0.1	**0.19**	<0.1	<0.1	<0.1	<0.1	**0.13**	<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	<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	<0.2	<0.2	<0.2	<0.2	**1.6**	<0.50	**1.5**	**1.26**	**1.12**	<0.70	**1.09**	<0.50	<0.50	<0.50	**1.17**	**0.51**	**0.87**	**0.53**	<0.50	<0.50	<0.50	<0.50	<0.50	**0.57**	<0.50	**1.75**	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	**0.44**	<0.2	<0.2	<0.2	**0.61**	<0.2	<0.2	<0.2	<0.2	**0.54**	<0.50	<0.50	<0.50	**0.72**	**0.56**	<0.50	**0.66**	<0.50	<0.50	<0.50	**1.07**	<0.50	**0.58**	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	**0.94**	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	**0.11**	<0.1	<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	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	**0.53**	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	0.25	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<0.2	0.35	<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	<1.0	<1.0			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.53**	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW5D Jun-08	MW5D Sep-08	MW5D Jun-09	MW5D Sep-09	MW5D May-10	MW5D Sep-10	MW5D May-11	MW5D Sep-11	MW5D May-12	MW5D Sep-12	MW5D Apr-13	MW5D Sep-13	MW5D May-14	MW5D Sep-14	MW5D May-15	MW5D Sep-15	MW5D May-16	MW5D Sep-16	MW5D May-17	MW5D Sep-17	MW5D May-18	MW5D Sep-18	MW5D May-19	MW5D Sep-19	MW5D May-20	MW5D Oct-20	MW5D May-21	MW5D Sep-21	MW5D May-22	MW5D Sep-22	MW5D May-23	MW5D Sep-23	MW5D May-24	MW5D Sep-24	MW5D May-25	MW5D Sep-25
Acetone	µg/L	NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.27**	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.2	<0.1	<0.1	<0.1	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.50	<2.0
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<4				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	**4.6**	**2.8**	<0.2	**1.6**	**0.69**	**1.3**	**0.39**	<0.2	<0.2	<0.2	**0.68**	**1**	**0.74**	**0.5**	**0.66**	**0.65**	**1**	**0.76**	**0.75**	**0.63**	**0.72**	**0.56**	<0.80	**0.51**	**0.59**	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<4				<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	**0.7**	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.68	**0.56**
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<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	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	**1.41**	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	**0.43**	**0.5**	<0.3	<0.3	<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	<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	<0.2	<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	<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)	**6.7**	**6.4**	**5.6**	**6.7**	**4.2**	**6.7**	**2.7**	<0.2	<0.2	<0.2	**11**	**4.4**	**6.4**	**2.2**	**1.97**	**2.66**	**2.64**	**3.01**	**2.88**	**2.65**	**1.64**	**2.34**	**2.08**	**1.34**	**1.8**	**1.61**	**1.32**	**1.47**	**1.05**	**1.43**	**0.85**	**1.04**	**0.92**	**1.07**	**0.84**	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<0.17	**0.79**	**0.26**	<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	<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	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40	<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	<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	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.40	<0.40	<0.40
Xylenes(Total)	µg/L	90 (AO)	<4	<0.2	<0.2	<0.2	<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	<1.0	<1.0			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW6S Jun-08	MW6S Sep-08	MW6S Jun-09	MW6S Sep-09	MW6S May-10	MW6S Sep-10	MW6S May-11	MW6S Sep-11	MW6S May-12	MW6S Sep-12	MW6S Apr-13	MW6S Sep-13	MW6S May-14	MW6S Sep-14	MW6S May-15	MW6S Sep-15	MW6S May-16	MW6S Sep-16	MW6S May-17	MW6S Sep-17	MW6S May-18	MW6S Sep-18	MW6S May-19	MW6S Sep-19	MW6S May-20	MW6S Oct-20	MW6S May-21	MW6S Sep-21	MW6S May-22	MW6S Sep-22	MW6S May-23	MW6S Sep-23	MW6S May-24	MW6S Sep-24	MW6S May-25	MW6S Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	**3.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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				<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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		<0.2	<0.50	**0.62**	<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	<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	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<0.2	<0.2	**0.33**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<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	<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	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW6D Jun-08	MW6D Sep-08	MW6D Jun-09	MW6D Sep-09	MW6D May-10	MW6D Sep-10	MW6D May-11	MW6D Sep-11	MW6D May-12	MW6D May-12	MW6D Apr-13	MW6D Sep-13	MW6D May-14	MW6D Sep-14	MW6D May-15	MW6D Sep-15	MW6D May-16	MW6D Sep-16	MW6D May-17	MW6D Sep-17	MW6D May-18	MW6D Sep-18	MW6D May-19	MW6D Sep-19	MW6D May-20	MW6D Oct-20	MW6D May-21	MW6D Sep-21	MW6D May-22	MW6D Sep-22	MW6D May-23	MW6D Sep-23	MW6D May-24	MW6D Sep-24	MW6D May-25	MW6D Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	**6.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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			<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.3	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	**0.22**	<0.2	<0.2	<0.2	**0.47**	<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	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<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	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW7S Jun-08	MW7S Sep-08	MW7S Jun-09	MW7S Sep-09	MW7S May-10	MW7S Sep-10	MW7S Sep-11	MW7S May-12	MW7S Sep-12	MW7S Apr-13	MW7S Sep-12	MW7S May-14	MW7S Sep-14	MW7S May-15	MW7S Sep-15	MW7S May-16	MW7S Sep-16	MW7S May-17	MW7S Sep-17	MW7S May-18	MW7S Sep-18	MW7S May-19	MW7S Sep-19	MW7S May-20	MW7S Oct-20	MW7S May-21	MW7S Sep-21	MW7S May-22	MW7S Sep-22	MW7S May-23	MW7S Sep-23	MW7S May-24	MW7S Sep-24	MW7S May-25	MW7S Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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					<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	**0.31**	<0.2	<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	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40
Xylenes (Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW7D Jun-08	MW7D Sep-08	MW7D Jun-09	MW7D Jun-09	MW7D May-10	MW7D Sep-10	MW7D Sep-11	MW7D May-12	MW7D Sep-12	MW7D Apr-13	MW7D Sep-13	MW7D May-14	MW7D Sep-14	MW7D May-15	MW7D Sep-15	MW7D May-16	MW7D Sep-16	MW7D May-17	MW7D Sep-17	MW7D May-18	MW7D Sep-18	MW7D May-19	MW7D Sep-19	MW7D May-20	MW7D Oct-20	MW7D May-21	MW7D Sep-21	MW7D May-22	MW7D Sep-22	MW7D May-23	MW7D Sep-23	MW7D May-24	MW7D Sep-24	MW7D May-25	MW7D Sep-25
Acetone	µg/L	NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<0.1	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	**2.1**	**0.32**	<0.2	<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	<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	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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			<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.3	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	**0.58**	<0.50	<0.50	<0.50	<0.50	**0.5**	<0.50	<0.50	<0.50	<0.50	**0.63**	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	**0.32**	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.5**	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.4	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW8S Jun-08	MW8S Sep-08	MW8S Jun-09	MW8S Sep-09	MW8S May-10	MW8S Sep-10	MW8S May-11	MW8S Sep-11	MW8S May-12	MW8S Sep-12	MW8S Apr-13	MW8S Sep-13	MW8S May-14	MW8S Sep-14	MW8S May-15	MW8S Sep-15	MW8S May-16	MW8S Sep-16	MW8S May-17	MW8S Sep-17	MW8S May-18	MW8S Sep-18	MW8S May-19	MW8S Sep-19	MW8S May-20	MW8S Oct-20	MW8S May-21	MW8S Sep-21	MW8S May-22	MW8S Sep-22	MW8S May-23	MW8S Sep-23	MW8S May-24	MW8S Sep-24	MW8S May-25	MW8S Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	**4.8**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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					<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<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	<0.50	<0.50	**0.50**	<0.50	**0.57**	<0.50	<0.50				
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<0.2	<0.2	<0.2	**0.39**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	**0.47**	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW8D Jun-08	MW8D Sep-08	MW8D Jun-09	MW8D Sep-09	MW8D May-10	MW8D Sep-10	MW8D May-11	MW8D Sep-11	MW8D May-12	MW8D Sep-12	MW8D Apr-13	MW8D Sep-13	MW8D May-14	MW8D Sep-14	MW8D May-15	MW8D Sep-15	MW8D May-16	MW8D Sep-16	MW8D May-17	MW8D Sep-17	MW8D May-18	MW8D Sep-18	MW8D May-19	MW8D Sep-19	MW8D May-20	MW8D Oct-20	MW8D May-21	MW8D Sep-21	MW8D May-22	MW8D Sep-22	MW8D May-23	MW8D Sep-23	MW8D May-24	MW8D Sep-24	MW8D May-25	MW8D Sep-25
Acetone		NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bromoform	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<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	<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	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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				<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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	**0.24**	<0.2	<0.2	<0.2	**0.24**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.68**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	**0.57**	<0.40	<0.40	<0.50	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<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	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<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	<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	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit		ODWS	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S	MW9S
				Jun-08	Sep-08	Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone			NV	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1	(MAC)	**0.63**	<0.2	<0.2	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.2	<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	<0.20	<0.20	<0.20	<0.20	<0.20	<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	<0.1	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<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	**3.0**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<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	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dichlorodifluoromethane	µg/L		NV					<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L		NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	**2.5**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<0.1	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.2	<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	<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)	**0.89**	**0.24**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.27**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	**0.42**	<0.40	<0.40	<0.50	<0.50	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L		NV	<0.3	<0.3	<0.3	<0.3	<0.3	<0.2	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L		NV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30
m & p-Xylene	µg/L		NV	<0.2	<0.2	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<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	<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	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D	MW9D
			Jun-09	May-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone	µg/L	NV	<1	<1	<1	<1	<20	<20	<20	<20	<20	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Bromodichloromethane	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Bromoform	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Bromomethane	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	<0.50	<0.50	<0.50	<0.50	
Carbon Tetrachloride	µg/L	2 (MAC)	<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		<0.20		<0.20		<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Dibromochloromethane	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroethane	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroform	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloromethane	µg/L	NV	<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		<1.0		<1.0		<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	
Ethylene Dibromide	µg/L	NV	<0.2	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<0.20	<0.20	
1,2-Dichlorobenzene	µg/L	200 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	
1,3-Dichlorobenzene	µg/L	NV	<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	<0.50	<0.50	<0.50	<0.50	
1,4-Dichlorobenzene	µg/L	5 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	
Dichlorodifluoromethane	µg/L	NV		<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	<0.50	<0.50	
1,1-Dichloroethane	µg/L	NV	<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	<0.50	<0.50	<0.50	<0.50	
1,2-Dichloroethane	µg/L	5 (IMAC)	<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	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethene	µg/L	14 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	
cis-1,2-Dichloroethylene	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	<0.50	<0.50	<0.50	<0.50	
trans-1,2-dichloroethylene	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	<0.50	<0.50	<0.50	<0.50	
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichloropropane	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	<0.50	<0.50	<0.50	<0.50	
cis-1,3-Dichloropropene	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		<0.30		<0.30		<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	<0.50	<0.50	<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	<0.30	<0.30	
Ethylbenzene	µg/L	2.4 (AO)	<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	<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		<0.50	<0.50	<0.50	<0.50	<0.50	
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<1	<1	<20	<20	<20	<20	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Styrene	µg/L	NV	<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	<0.50	<0.50	<0.50	<0.50	
1,1,1,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2,2-Tetrachloroethane	µg/L	NV	<0.1	<0.1	<0.1	<0.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethene	µg/L	10 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	
Toluene	µg/L	24 (AO)	<0.2	<0.2	<0.2	**0.27**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.40		<0.40		<0.50		<0.50	<0.50	<0.50	<0.50	**0.55**	
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
1,1,2-Trichloroethane	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	<0.50	<0.50	<0.50	<0.50	
Trichloroethylene	µg/L	5 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	
Trichlorofluoromethane	µg/L	NV	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Vinyl Chloride	µg/L	1 (MAC)	<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		<0.50	<0.50	<0.50	<0.50	<0.20	
o-Xylene	µg/L	NV	<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		<0.30		<0.30		<0.40		<0.30	<0.30	<0.40	<0.40	<0.40	
m & p-Xylene	µg/L	NV	<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		<0.40		<0.40		<0.30		<0.40	<0.40	<0.30	<0.30	<0.30	
Xylenes(Total)	µg/L	90 (AO)	<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	<0.50	<0.50	<0.50	<0.50	

Insufficient volume for sample collection.

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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*	*MW10S*
			Jun-09	*Sep-09*	*May-10*	*Sep-10*	*May-11*	*Sep-11*	*May-12*	*Sep-12*	*Apr-13*	*Sep-13*	*May-14*	*Sep-14*	*May-15*	*Sep-15*	*May-16*	*Sep-16*	*May-17*	*Sep-17*	*May-18*	*Sep-18*	*May-19*	*Sep-19*	*May-20*	*Oct-20*	*May-21*	*Sep-21*	*May-22*	*Sep-22*	*May-23*	*Sep-23*	*May-24*	*Sep-23*	*May-25*	*Sep-25*
Acetone		NV																										<20		<20				<20	
Benzene	µg/L	1 (MAC)																										<0.50		<0.50				<0.50	
Bromodichloromethane	µg/L	NV																										<0.50		<0.50				<0.50	
Bromoform	µg/L	NV																										<0.50		<0.50				<0.50	
Bromomethane	µg/L	NV																										<0.50		<0.50				<0.50	
Carbon Tetrachloride	µg/L	2 (MAC)																										<0.20		<0.20				<0.20	
Chlorobenzene	µg/L	80 (MAC)																										<0.50		<0.50				<0.50	
Dibromochloromethane	µg/L	NV																										<0.50		<0.50				<0.50	
Chloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
Chloroform	µg/L	NV																										<0.50		<0.50				<0.50	
Chloromethane	µg/L	NV																										<2.0		<2.0				<2.0	
Ethylene Dibromide	µg/L	NV																										<0.20		<0.20				<0.20	
1,2-Dichlorobenzene	µg/L	200 (MAC)																										<0.50		<0.50				<0.50	
1,3-Dichlorobenzene	µg/L	NV																										<0.50		<0.50				<0.50	
1,4-Dichlorobenzene	µg/L	5 (MAC)																										<0.50		<0.50				<0.50	
Dichlorodifluoromethane	µg/L	NV																										<0.50		<0.50				<0.50	
1,1-Dichloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
1,2-Dichloroethane	µg/L	5 (IMAC)																										<0.50		<0.50				<0.50	
1,1-Dichloroethene	µg/L	14 (MAC)																										<0.50		<0.50				<0.50	
cis-1,2-Dichloroethylene	µg/L	NV																										<0.50		<0.50				<0.50	
trans-1,2-dichloroethylene	µg/L	NV																										<0.50		<0.50				<0.50	
Methylene Chloride	µg/L	50 (MAC)	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	<1.0	Insufficient volume to sample	<1.0	Insufficient volume to sample	Insufficient volume to sample	Insufficient volume to sample	<1.0	Insufficient volume to sample
1,2-Dichloropropane	µg/L	NV																										<0.50		<0.50				<0.50	
cis-1,3-Dichloropropene	µg/L	NV																										<0.30		<0.30				<0.30	
trans-1,3-Dichloropropene	µg/L	NV																										<0.30		<0.30				<0.30	
Ethylbenzene	µg/L	2.4 (AO)																										<0.50		<0.50				<0.50	
n-Hexane	µg/L	NV																										<0.50		<0.50				<0.50	
2-Hexanone	µg/L	NV																										<20		<20				<20	
Methyl Ethyl Ketone	µg/L	NV																										<20		<20				<20	
Methyl Isobutyl Ketone	µg/L	NV																										<20		<20				<20	
Methyl tert-butyl ether	µg/L	NV																										<0.50		<0.50				<0.50	
Styrene	µg/L	NV																										<0.50		<0.50				<0.50	
1,1,1,2-Tetrachloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
1,1,2,2-Tetrachloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
Tetrachloroethene	µg/L	10 (MAC)																										<0.50		<0.50				<0.50	
Toluene	µg/L	24 (AO)																										<0.50		<0.50				<0.50	
1,2,4-Trichlorobenzene	µg/L	NV																										<1.0		<1.0				<1.0	
1,1,1-Trichloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
1,1,2-Trichloroethane	µg/L	NV																										<0.50		<0.50				<0.50	
Trichloroethylene	µg/L	5 (MAC)																										<0.50		<0.50				<0.50	
Trichlorofluoromethane	µg/L	NV																										<0.50		<0.50				<0.50	
Vinyl Chloride	µg/L	1 (MAC)																										<0.50		<0.50				<0.20	
o-Xylene	µg/L	NV																										<0.40		<0.30				<0.30	
m & p-Xylene	µg/L	NV																										<0.30		<0.40				<0.40	
Xylenes(Total)	µg/L	90 (AO)																										<0.50		<0.50				<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D	MW10D
			Jun-09	Sep-09	May-10	Sep-10	May-11	Sep-11	May-12	Sep-12	Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone		NV	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<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	<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	<0.2	<0.2	<0.50	<0.50	<0.50	<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					<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	<0.1	<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	<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	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			**4.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<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	<0.1	<0.1	<0.50	<0.50	<0.50	<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					<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<0.50	<0.50	<0.50					<0.50	<0.50
Dichlorodifluoromethane	µg/L	NV			<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50					<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<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	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (MAC)	<0.2	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.2	<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	<0.50	<0.50	<0.50					<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<0.3	<0.2	<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	<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	<0.2	<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	<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	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50			<0.50	<0.50	<0.50	<0.30	<0.30	<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	<0.2	<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	<0.30	<0.30	<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	<0.1	<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	<0.50	<0.50	<0.50					<0.50	<0.50
n-Hexane	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	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<0.3	<0.2	<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	<20	<20	<20					<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20			<20	<20	<20	<20	<20	<20	<20	<20	<20					<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<0.1	<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	<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	<0.1	<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	<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	<0.1	<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	<0.50	<0.50	<0.50					<0.50	<0.50
Tetrachloroethene	µg/L	10 (MAC)	<0.2	<0.2	<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	<0.50	<0.50	<0.50	<0.50					<0.50	<0.50
Toluene	µg/L	24 (AO)	<0.2	<0.2	<0.26	<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	<0.40	**0.53**	<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	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<10	<10	<10	<10	<10	<10	<2.0			<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0					<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<0.3	<0.3	<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	<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	<0.2	<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	<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	<0.2	<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	<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	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<0.17	<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	<0.50	<0.50	<0.50	<0.50					<0.20	<0.20
o-Xylene	µg/L	NV	<0.1	<0.1	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30					<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<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	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.50	<0.30					<0.50	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<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	<0.50	<0.50					<0.50	<0.50

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume for sample collection.

Insufficient volume to sample

Insufficient volume to sample

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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW11S May-10	MW11S Sep-10	MW11S May-11	MW11S May-12	MW11S Apr-13	MW11S Sep-13	MW11S May-14	MW11S Sep-14	MW11S May-15	MW11S Sep-15	MW11S May-16	MW11S Sep-16	MW11S May-17	MW11S Sep-17	MW11S May-18	MW11S Sep-18	MW11S May-19	MW11S Sep-19	MW11S May-20	MW11S Oct-20	MW11S May-21	MW11S Sep-21	MW11S May-22	MW11S Sep-22	MW11S May-23	MW11S Sep-23	MW11S May-24	MW11S Sep-24	MW11S May-25	MW11S Sep-25
Acetone		NV	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<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		<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		<1.0		<1.0		<0.50		<0.50	<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		<1.0		<1.0		<0.50		<0.50	<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	<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		<0.50		<0.50		<0.20		<0.20		<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	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroethane	µg/L	NV	<0.2	**110**	<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		<1.0		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
Chloroform	µg/L	NV	<0.2	**3.7**	<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		<1.0		<1.0		<0.50		<0.50	<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		<1.0		<1.0		<2.0		<2.0	<2.0	<2.0	<2.0	<2.0	
Ethylene Dibromide	µg/L	NV	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.50	<0.50	<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	<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	<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	<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	<0.50	<0.50	<0.50	<0.50	
Dichlorodifluoromethane	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		<1.0		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethane	µg/L	NV	<0.3	**250**	<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	<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	<0.50	<0.50	<0.50	<0.50	
1,1-Dichloroethene	µg/L	14 (MAC)	<0.3	<0.2	<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		<0.50	<0.50	<0.50	<0.50	<0.50	
cis-1,2-Dichloroethylene	µg/L	NV	<0.2	**57**	<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	<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	<0.50	<0.50	<0.50	<0.50	
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.2	<0.3	<0.3	<0.3	<0.2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<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	<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	<0.50		<0.50		<0.50		<0.30		<0.30		<0.30		<0.30	<0.30	<0.30	<0.30	<0.30	
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<0.2	<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		<0.30		<0.30		<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	<0.50	<0.50	<0.50	<0.50	
n-Hexane	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	<0.50	<0.50	<0.50	<0.50	
2-Hexanone	µg/L	NV	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20		<20		<20		<20		<20		<20		<20	<20	<20	<20	<20	
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<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	<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	<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	<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	<0.50	<0.50	<0.50	<0.50	
Tetrachloroethene	µg/L	10 (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	<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	<0.50		<0.50		<0.50		<0.40		<0.40		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3		<10	<10	<10	<10	<10	<2.0		<2.0		<2.0		<2.0		<2.0		<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	
1,1,1-Trichloroethane	µg/L	NV	<0.3	**110**	<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	<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	<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	<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		<1.0		<1.0		<1.0		<0.50		<0.50	<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		<0.50	<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		<0.50		<0.50		<0.30		<0.30		<0.40		<0.30	<0.30	<0.40	<0.40	<0.40	
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		<1.0		<1.0		<0.40		<0.40		<0.30		<0.40	<0.40	<0.30	<0.30	<0.30	
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		<1.0				<0.50		<0.50		<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	

Insufficient volume for sample collection.

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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW11D May-10	MW11D Sep-10	MW11D May-11	MW11D Sep-11	MW11D May-12	MW11D Sep-12	MW11D Apr-13	MW11D Sep-13	MW11D May-14	MW11D Sep-14	MW11D May-15	MW11D Sep-15	MW11D May-16	MW11D Sep-16	MW11D May-17	MW11D Sep-17	MW11D May-18	MW11D Sep-18	MW11D May-19	MW11D Sep-19	MW11D May-20	MW11D Oct-20	MW11D May-21	MW11D Sep-21	MW11D May-22	MW11D Sep-22	MW11D May-23	MW11D Sep-23	MW11D May-24	MW11D Sep-24	MW11D May-25	MW11D Sep-25
Acetone		NV	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<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	<0.50	<0.50	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	**0.23**	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<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	<0.1	<0.50	<0.50	<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	<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	<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	<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	<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	<0.2	<0.2	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<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	<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	<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	<0.2	<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	<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	<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	<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	<0.2	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<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	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<0.3	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<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	<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	<0.2	<0.2	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.53**	<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	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.2	<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	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<1	<1	<1	<1	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<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	<0.2	<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	<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	<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	<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	<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	<0.2	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.2	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<10	<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<0.3	<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	<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	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<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	<0.50	<0.50	<0.50	<0.50	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<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	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.30	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<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	<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.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW12S Apr-13	MW12S Sep-13	MW12S May-14	MW12S Sep-14	MW12S May-15	MW12S Sep-15	MW12S May-16	MW12S Sep-16	MW12S May-17	MW12S Sep-17	MW12S May-18	MW12S Sep-18	MW12S May-19	MW12S Sep-19	MW12S May-20	MW12S Oct-20	MW12S May-21	MW12S Sep-21	MW12S May-22	MW12S Sep-22	MW12S May-23	MW12S Sep-23	MW12S May-24	MW12S Sep-24	MW12S May-25	MW12S Sep-25
Acetone		NV			<20	<20	<20		<20		<20		<20		<20		<20		<20		<20		<20		<20		<20	
Benzene	µg/L	1 (MAC)			<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	
Bromodichloromethane	µg/L	NV			<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			<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			<0.50	<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)			<0.50	<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)			<0.50	<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			<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			<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			<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			<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			<0.50	<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)			<0.50	<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			<0.50	<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)			<0.50	<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			<0.2	<0.2	<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<1.0		<0.50		<0.50		<0.50		<0.50	
1,1-Dichloroethane	µg/L	NV			<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	
1,2-Dichloroethane	µg/L	5 (IMAC)			<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)			<0.50	<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-1,2-Dichloroethylene	µg/L	NV			<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			<0.50	<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)			<2.0	<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	DRY	DRY	<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			<0.50	<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			<0.50	<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)			<0.50	<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			<0.50	<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			<20	<20	<20		<20		<20		<20		<20		<20		<20		<20		<20		<20		<20	
Methyl Ethyl Ketone	µg/L	NV			<20	<20	<20		<20		<20		<20		<20		<20		<20		<20		<20		<20		<20	
Methyl Isobutyl Ketone	µg/L	NV			<20	<20	<20		<20		<20		<20		<20		<20		<20		<20		<20		<20		<20	
Methyl tert-butyl ether	µg/L	NV			<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			<0.50	<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			<0.50	<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			<0.50	<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)			<0.50	<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)			<0.50	<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				<10	<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			<0.50	<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			<0.50	<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)			<0.50	<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			<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	
Vinyl Chloride	µg/L	1 (MAC)			<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			<0.50	<0.50	<0.50		<0.50		<0.50		<0.50		<0.50		<0.30		<0.30		<0.40		<0.30		<0.40		<0.40	
m & p-Xylene	µg/L	NV			<1.0	<1.0	<1.0		<1.0		<1.0		<1.0		<1.0		<0.40		<0.40		<0.30		<0.40		<0.30		<0.30	
Xylenes(Total)	µg/L	90 (AO)			<1.0	<1.0	<1.0		<1.0		<1.0		<1.0				<0.50		<0.50		<0.50		<0.50		<0.50		<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.

Insufficient volume for sample collection.

Pinchin File: 333568.002

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW12D Apr-13	MW12D Sep-13	MW12D May-14	MW12D Sep-14	MW12D May-15	MW12D Sep-15	MW12D May-16	MW12D Sep-16	MW12D May-17	MW12D Sep-17	MW12D May-18	MW12D Sep-18	MW12D May-19	MW12D Sep-19	MW12D May-20	MW12D Oct-20	MW12D May-21	MW12D Sep-21	MW12D May-22	MW12D Sep-22	MW12D May-23	MW12D Sep-23	MW12D May-24	MW12D Sep-24	MW12D May-25	MW12D Sep-25
Acetone		NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**2.1**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.9	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.70	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.60	<0.50	<0.50	<0.50	<0.50	**0.62**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.65	<0.50	**0.62**	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3		<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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.

TABLE D-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*	*MW13S*
			Apr-13	*Sep-13*	*May-14*	*Sep-14*	*May-15*	*Sep-15*	*May-16*	*Sep-16*	*May-17*	*Sep-17*	*May-18*	*Sep-18*	*May-19*	*Sep-19*	*May-20*	*Oct-20*	*May-21*	*Sep-21*	*May-22*	*Sep-22*	*May-23*	*Sep-23*	*May-24*	*Sep-24*	*May-25*	*Sep-25*
Acetone		NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<0.2	<0.2	**0.68**	<0.50	<0.50	<0.50	**0.58**	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromodichloromethane	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	**1.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<0.3	<0.3	**0.88**	<0.50	<0.50	<0.50	**1**	**0.57**	<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	<0.50	<0.50	<0.50	<0.50	<0.50
1,2-Dichloroethane	µg/L	5 (IMAC)	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	**0.49**	**0.73**	**11.9**	**1.64**	**1.04**	**0.99**	**16.3**	**11.3**	**0.91**	**0.83**	**0.69**	**0.81**	**0.87**	**0.82**	**0.76**	**0.55**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**1.08**	**0.71**
trans-1,2-dichloroethylene	µg/L	NV	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	**0.69**	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Methylene Chloride	µg/L	50 (MAC)	<0.3	<0.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.9	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.70	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<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	<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	<0.70	<0.50	<0.50	<0.50	<0.80	**0.61**	<0.50	<0.50	<0.50	**0.84**	**0.75**	**0.96**	**0.55**	<0.50	<0.65	<0.50	<0.50	**0.84**	<0.50	<0.50	<0.85	**0.86**	<0.50	**0.60**
2-Hexanone	µg/L	NV	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	**0.66**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.68**	<0.50	**0.6**	**0.4**	<0.40	<0.40	<0.40	<0.50	**0.61**	<0.50	<0.50	<0.50	**0.58**	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3		<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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)	**0.39**	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	**0.5**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.53**	<0.50	<0.50	<0.50	<0.50	<0.50
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	**10**	**1.36**	<0.50	<0.50	**17.2**	**6.77**	<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	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.40	<0.30	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-4
GROUNDWATER ANALYTICAL RESULTS - VOLATILE ORGANIC COMPOUNDS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	ODWS	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D	MW13D
			Apr-13	Sep-13	May-14	Sep-14	May-15	Sep-15	May-16	Sep-16	May-17	Sep-17	May-18	Sep-18	May-19	Sep-19	May-20	Oct-20	May-21	Sep-21	May-22	Sep-22	May-23	Sep-23	May-24	Sep-24	May-25	Sep-25
Acetone		NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Benzene	µg/L	1 (MAC)	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromoform	µg/L	NV	<0.1	<0.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bromomethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	80 (MAC)	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroethane	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloroform	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Chloromethane	µg/L	NV	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Ethylene Dibromide	µg/L	NV	<0.1	<0.1	<0.50	<0.50	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<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	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1-Dichloroethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	**0.38**	<0.50	**1.15**	<0.50	<0.50	**0.71**	**1.68**	**1.29**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.62**	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.9	<1.0	<1.0	<1.0
1,2-Dichloropropane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
trans-1,3-Dichloropropene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Ethylbenzene	µg/L	2.4 (AO)	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	**0.58**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.75	<0.50	<0.50	<0.50
2-Hexanone	µg/L	NV	<0.3	<0.3	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Ethyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Isobutyl Ketone	µg/L	NV	<1	<1	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl tert-butyl ether	µg/L	NV	<0.2	<0.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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	<0.2	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.40	<0.40	<0.40	<0.40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,2,4-Trichlorobenzene	µg/L	NV	<0.3	<0.3		<10	<10	<10	<10	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	µg/L	NV	<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	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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)	**0.61**	<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	**0.55**	<0.50	<0.50	**0.57**	**0.69**	<0.50	**0.67**	**0.68**	<0.50	**0.59**	**0.57**
Trichlorofluoromethane	µg/L	NV	<0.4	<0.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Vinyl Chloride	µg/L	1 (MAC)	<0.17	<0.17	<0.50	<0.50	<0.50	<0.50	**1.96**	**1.39**	<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	<0.50	<0.50	<0.50	<0.20	<0.20
o-Xylene	µg/L	NV	<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	<0.30	<0.30	<0.30	<0.30	<0.40	<0.30	<0.30	<0.30	<0.40	<0.40	<0.40	<0.30
m & p-Xylene	µg/L	NV	<0.2	<0.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.40	<0.40	<0.40	<0.40	<0.30	<0.30	<0.40	<0.40	<0.30	<0.30	<0.30	<0.40
Xylenes(Total)	µg/L	90 (AO)	<0.2	<0.2	<1.0	<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	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<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-5

Surface Water Analytical Results – General Parameters

TABLE D-5
SURFACE WATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	PWQO	*SW1*	*SW1*	*SW1*
			May-06	*May-07*	*Sep-07*
Field Electrical Conductivity	uS/cm	NV	447	556	541
Total Hardness (as CaCO3)	mg/L	NV	200	260	120
pH	N/A	6.5-8.5	8.5	**8.59**	7.67
Total Dissolved Solids	mg/L	NV	250	296	320
Turbidity	NTU	NV	2.5	0.9	1.5
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	145	186	109
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	11.7	28	<5
Alkalinity, Total (as CaCO3)	mg/L	>25% Decrease	157	214	109
Unionized Ammonia	mg/L	0.02			
Ammonia, Total (as N)	mg/L	NV	0.1	0.09	<0.02
Bromide	mg/L	NV	<0.05	<0.05	<0.05
Chloride	mg/L	NV	28.7	27.9	98.2
Fluoride	mg/L	NV			
Nitrate and Nitrite as N	mg/L	NV	2.8	6.28	<0.05
Nitrate as N	mg/L	NV	2.72	6.28	<0.05
Nitrite as N	mg/L	NV	0.08	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L	NV			
Orthophosphate as P	mg/L	NV	0.4	<0.1	<0.1
Total Phosphorus	mg/L	0.03	**0.37**	0.02	**0.07**
Sulphate	mg/L	NV	14.6	17.4	12.5
Dissolved Organic Carbon (DOC)	mg/L	NV	8	3.6	8.7
Chemical Oxygen Demand (COD)	mg/L	NV			
Phenols	mg/L	0.001	**0.003**	<0.001	**0.005**
Dissolved Aluminum	mg/L	0.075	0.025	0.035	**0.125**
Arsenic	mg/L	0.005	<0.003	<0.003	<0.003
Barium	mg/L	NV	0.016	0.027	0.03
Beryllium	mg/L	0.011	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.024	0.028	0.054
Cadmium	mg/L	0.0005	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NV	51.9	66.9	28.4
Chromium	mg/L	0.0089	<0.003	<0.003	<0.003
Cobalt	mg/L	0.0009	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.005	0.003	<0.002	<0.002
Iron	mg/L	0.3	0.15	0.236	0.138
Lead	mg/L	0.005	<0.001	<0.003	<0.003
Magnesium	mg/L	NV	17.2	22.6	12
Molybdenum	mg/L	0.04	0.005	<0.002	<0.002
Nickel	mg/L	0.025	<0.003	<0.003	<0.003
Potassium	mg/L	NV	2.32	2.28	4.75
Silver	mg/L	0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	NV	16	13.5	51.5
Zinc	mg/L	0.02	0.005	<0.004	0.016

Notes: 1. PWQO denotes Provincial Water Quality Objectives of the Ministry of the Environment and Energy, as revised February 19
2. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
3. Bold and shaded denotes exceedance of the PWQO.
4. Blank denotes data not available.

TABLE D-5

SURFACE WATER ANALYTICAL RESULTS - GENERAL PARAMETERS

Mitchell Industrial Landfill

Frank Street, Municipality of West Perth

Parameter	Unit	PWQO	*SW2*	*SW2*	*SW2*
			May-06	*May-07*	*Sep-07*
Field Electrical Conductivity	uS/cm	NV	437	553	575
Total Hardness (as CaCO3)	mg/L	NV	192	257	131
pH	N/A	6.5-8.5	8.43	**8.61**	7.24
Total Dissolved Solids	mg/L	NV	284	318	314
Turbidity	NTU	NV	2.8	0.9	2.2
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	139	176	123
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	9.53	32	<5
Alkalinity, Total (as CaCO3)	mg/L	>25% Decrease	149	208	123
Unionized Ammonia	mg/L	0.02			
Ammonia, Total (as N)	mg/L	NV	0.09	<0.02	<0.02
Bromide	mg/L	NV	<0.05	<0.05	<0.05
Chloride	mg/L	NV	28.6	27.1	100
Fluoride	mg/L	NV			
Nitrate and Nitrite as N	mg/L	NV	2.82	6.49	<0.05
Nitrate as N	mg/L	NV	2.74	6.47	<0.05
Nitrite as N	mg/L	NV	0.08	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L	NV			
Orthophosphate as P	mg/L	NV	0.39	<0.1	<0.1
Total Phosphorus	mg/L	0.03	**0.36**	0.02	**0.10**
Sulphate	mg/L	NV	14.8	17.4	12.7
Dissolved Organic Carbon (DOC)	mg/L	NV	8.4	3.7	9.6
Chemical Oxygen Demand (COD)	mg/L	NV			
Phenols	mg/L	0.001	**0.003**	<0.001	**0.006**
Dissolved Aluminum	mg/L	0.075	0.029	0.038	0.07
Arsenic	mg/L	0.005	<0.003	<0.003	<0.003
Barium	mg/L	NV	0.015	0.027	0.032
Beryllium	mg/L	0.011	<0.002	<0.002	<0.002
Boron	mg/L	0.2	0.021	0.02	0.059
Cadmium	mg/L	0.0005	<0.0002	<0.0002	<0.0002
Calcium	mg/L	NV	49.5	66.3	29.7
Chromium	mg/L	0.0089	<0.003	<0.003	<0.003
Cobalt	mg/L	0.0009	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.005	0.003	<0.002	0.002
Iron	mg/L	0.3	0.151	0.239	0.078
Lead	mg/L	0.005	<0.001	<0.003	<0.001
Magnesium	mg/L	NV	16.7	22.2	13.9
Molybdenum	mg/L	0.04	0.004	<0.002	<0.002
Nickel	mg/L	0.025	<0.003	<0.003	<0.003
Potassium	mg/L	NV	2.3	2.15	4.94
Silver	mg/L	0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	NV	15.5	13.2	56
Zinc	mg/L	0.02	0.007	0.004	**0.06**

Notes: 1. PWQO denotes Provincial Water Quality Objectives of the Ministry of the Environment and Energy, as revised February 1
2. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
3. Bold and shaded denotes exceedance of the PWQO.
4. Blank denotes data not available.
5. NV denotes No Value.

Pinchin File: 333568.002

TABLE D-5
SURFACE WATER ANALYTICAL RESULTS - GENERAL PARAMETERS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Parameter	Unit	PWQO	*Field Outlet*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*	*SWM Pond*
			May-11	*Apr-13*	*Sep-13*	*Nov-13*	*May-14*	*Sep-14*	*May-15*	*Sep-15*	*May-16*	*Sep-16*	*May-17*	*Sep-17*	*May-18*	*Sep-18*	*May-19*	*Sep-19*	*May-20*	*Oct-20*	*May-21*	*Sep-21*	*May-22*	*Sep-22*	*May-23*	*Sep-23*	*May-24*	*Sep-24*
Field Electrical Conductivity	uS/cm	NV	466	529	436	512	397	620					417		530				356	502		775			711	407	578	
Total Hardness (as CaCO3)	mg/L	NV	248	59.8	87.1	101	133	137					93		79				140	161		36.5			52.3	30.6	80.1	
pH	N/A	6.5-8.5	8.3	**10.2**	7.35	**8.7**	8.12	8.24					**9.74**		7.9				8.06	8.21		**9.53**			**9.56**	8.33	**10.3**	
Total Dissolved Solids	mg/L	NV	312	312	286	318	324	284					249		304				375	370		593			254	227	291	
Turbidity	NTU	NV	1.6		3.7	3.3	3.54	13.8					19.4		5.13				3.00	8.05		26.1			0.83	87.7	1.07	
Alkalinity, Bicarbonate (as CaCO3)	mg/L	NV	195	49	206	150	214	216					68		131				174	216		161			31.8	73.1	8.5	
Alkalinity, Carbonate (as CaCO3)	mg/L	NV	<5	96	<5	12	<10	<10					45		<10				<2.0	<2.0		167			17.0	2.9	50.0	
Alkalinity, Total (as CaCO3)	mg/L	>25% Decrease	196	145	206	163	217	220					114		131				174	216		328			48.8	76.0	58.5	
Unionized Ammonia	mg/L	0.02	0.003	**0.063**	0.001	0.014	0.00363	**0.153**					**0.11**		**0.096**				0.000526	0.00438		**0.153**			**0.0917**	0.0054	**0.112**	
Ammonia, Total (as N)	mg/L	NV	0.02	0.07	<0.02	0.17	0.193	1.19					0.098		0.136				0.104	0.292		0.339			0.0946	0.0107	0.113	
Bromide	mg/L	NV	<0.05	<0.25	0.06	<0.25	<0.10	<0.10					<0.10		<0.10				<0.10	<0.10		<0.10			0.16	0.10	<0.10	
Chloride	mg/L	NV	13.7	13.3	18.8	12.9	15.7	11.9					27.2		56.7				97	25.6		26.2			87.2	43.8	67.2	
Fluoride	mg/L	NV	<0.05	<0.25	0.08	<0.25	0.22	0.22					0.262		0.42				0.103	0.121		0.571			0.426	0.251	0.468	
Nitrate and Nitrite as N	mg/L	NV	<0.05	0.82	<0.07	0.29	<0.2	<0.2					0.089		0.065					0.024		<0.022			<0.0224	<0.0224	<0.0224	
Nitrate as N	mg/L	NV	<0.05	0.82	<0.05	0.29	<0.10	<0.10					0.072		0.035				<0.020	0.024		<0.020			<0.020	<0.020	<0.020	
Nitrite as N	mg/L	NV	<0.05	<0.25	<0.05	<0.25	<0.10	<0.10					0.017		0.03				<0.010	<0.010		<0.010			0.011	<0.010	<0.010	
Total Kjeldahl Nitrogen	mg/L	NV	0.84	1.07	0.78	0.94	1.07	2.29					1.09		1.44				0.99	1.7		4.00			0.953	1.21	0.937	
Total Organic Nitrogen	mg/L	NV																									0.824	
Orthophosphate as P	mg/L	NV	<0.1	<0.5	<0.1	<0.5	0.0041	0.036					<0.0030		<0.0030				<0.0030	0.0325		<0.0030			<0.0010	<0.0010	<0.0010	
Total Phosphorus	mg/L	0.03	**0.05**			<0.02	**0.0855**	**0.151**					0.0184		**0.0496**				0.0293	0.121		**0.211**			0.0098	**0.0552**	0.0166	
Sulphate	mg/L	NV	66.6	32.2	14.3	36	18.3	19.1					16.2		23.2				16.8	26.1		38.5			26.8	21.7	29.1	
Dissolved Organic Carbon (DOC)	mg/L	NV	12.7	21.1	13.4	39.3	21.6	26					30.8		21.3				10.7	13.9		69.5			18.2	3.19	24.1	
Chemical Oxygen Demand (COD)	mg/L	NV	8	108	33	103	76	91	No Flow from Outlet	No Flow from Outlet	No Flow from Outlet	No Flow from Outlet	90	No Flow from Outlet	77	No Flow from Outlet	No Flow from Outlet	No Flow from Outlet	35	44	No Flow from Outlet	278	No Flow from Outlet	No Flow from Outlet	57	66	65	No Flow from Outlet
Phenols	mg/L	0.001	<0.001	**0.036**	**0.002**	**0.044**	**0.0037**	**0.0101**					**0.0117**		**0.0051**				**0.0013**	**0.0019**		**0.019**			**0.0102**	**0.0026**	**0.0138**	
Aluminum	mg/L	0.075	**0.076**	0.005	**0.12**	0.072	**0.104**	**0.143**											0.046						0.0275		0.0332	
Arsenic	mg/L	0.005	<0.003	<0.003	<0.003	<0.003	<0.0010	0.0012					0.0005		0.00076				0.00113	0.00194		0.0012			0.00040	0.00089	<0.00100	
Barium	mg/L	NV	0.03	0.006	0.015	0.01	0.0259	0.0182					0.0179		0.0121				0.0215	0.0373		0.0106			0.0244	0.0158	0.0304	
Beryllium	mg/L	0.011	<0.002	<0.001	<0.001	<0.001	<0.00050	<0.00050					<0.00010		<0.00010				<0.0001	<0.00010		<0.0010			<0.000020	<0.000020	<0.000200	
Boron	mg/L	0.2	0.074	0.021	0.033	0.021	0.024	0.036					0.019		0.016				0.019	0.027		<0.10			<0.010	0.015	<0.100	
Cadmium	mg/L	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.000090	<0.000090					<0.000010		0.00002				0.0000073	0.0000277		0.0000920			0.0000072	0.000011	<0.0000500	
Calcium	mg/L	NV	64.6	8.6	25.8	17.3	33.5	37.1					23.2		13.9				36.1	50.4		10.7			28.9	12.7	31.2	
Chromium	mg/L	0.0089	<0.003	0.004	<0.003	<0.003	0.00051	0.00067					0.00079		0.00081				<0.0005	0.0008		<0.0050			<0.00050	<0.00050	<0.00500	
Cobalt	mg/L	0.0009	<0.0005	**0.001**	<0.0005	0.0007	0.00088	0.00067					0.00081		0.00078				0.00027	0.00074		**0.0023**			0.00046	0.00048	**<0.00100**	
Copper	mg/L	0.005	0.005	**0.01**	0.003	0.005	0.0038	0.0038					**0.0058**		0.0042				0.00201	0.0032		**0.0113**			0.00199	0.00131	<0.00500	
Iron	mg/L	0.3	0.02	<0.01	0.12	<0.01	0.214	0.172					<0.050		0.185				0.086	**0.844**		0.29			0.018	0.107	<0.100	
Lead	mg/L	0.005	<0.001	<0.001	<0.001	<0.001	<0.00050	<0.00050					<0.00010		0.00017				0.000073	0.000664		0.00076			<0.000050	0.000194	<0.000500	
Magnesium	mg/L	NV	21	9.3	5.5	14	12	10.7					8.61		10.8				12.1	8.48		2.35			0.448	1.18	0.54	
Mercury	mg/L	NV																									<0.0000050	
Molybdenum	mg/L	0.04	0.002	0.003	0.003	0.003	0.00206	0.0025					0.00254		0.00247				0.00205	0.00277		0.00623			0.00379	0.00439	0.00403	
Nickel	mg/L	0.025	<0.003	0.005	<0.003	0.005	0.0037	0.0042					0.00438		0.00441				0.00221	0.00268		0.0074			0.00360	0.00404	<0.00500	
Potassium	mg/L	NV	4.19	90	60.5	63.8	49.6	60.4					52.5		39.9				28.4	67		184			37.8	43.1	34.6	
Silver	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	0.00033					<0.000050		<0.000050				<0.000050	<0.000050		<0.00050			<0.000010	<0.000010	<0.000100	
Sodium	mg/L	NV	16.8	32.1	25.1	24.8	26.1	19.1					28.6		43.8				74.7	35.6		57			58.6	33.6	53.1	
Zinc	mg/L	0.02	<0.005	<0.005	<0.005	<0.005	<0.0030	0.0033					<0.0030		<0.0030				<0.003	0.0046		<0.030			<0.0030	0.0038	**<0.0300**	
Dissolved Aluminum	mg/L	0.075					0.039	0.058					0.022		0.02				0.0184	0.0595		**0.239**			0.0054	**0.116**	0.0086	
Dissolved Mercury	mg/L	0.0002		<0.0001	<0.0001	<0.0001	<0.00010	<0.00010					<0.000010		<0.000010				<0.0000050	<0.0000050		0.0000209			<0.0000050		<0.0000050	

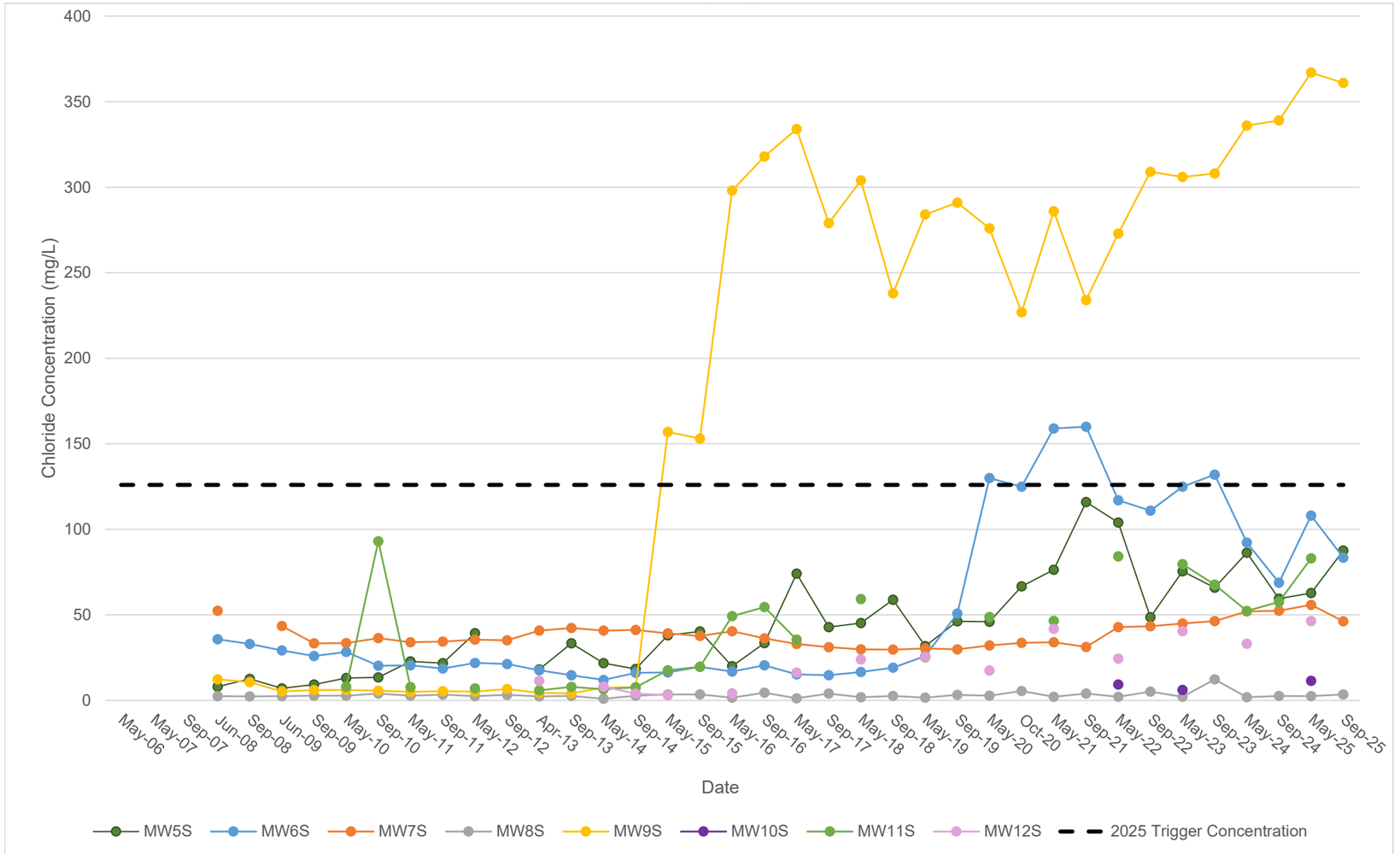
Notes: 1. PWQO denotes Provincial Water Quality Objectives of the Ministry of the Environment and Energy, as revised February 1999.
2. < denotes analyte concentration is below the reportable detection limit (RDL) or the method reporting limit (MRL).
3. Bold and shaded denotes exceedance of the PWQO.
4. Blank denotes data not available.
5. Underlined and shaded denotes detection level exceeds of the PWQO.
6. NV denotes No Value.

Pinchin File: 333568.002

Figure D-1

Concentration vs. Time Plot – Chloride – Shallow Flow System

FIGURE D-1: TIME VS. CONCENTRATION PLOT
CHLORIDE - SHALLOW FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

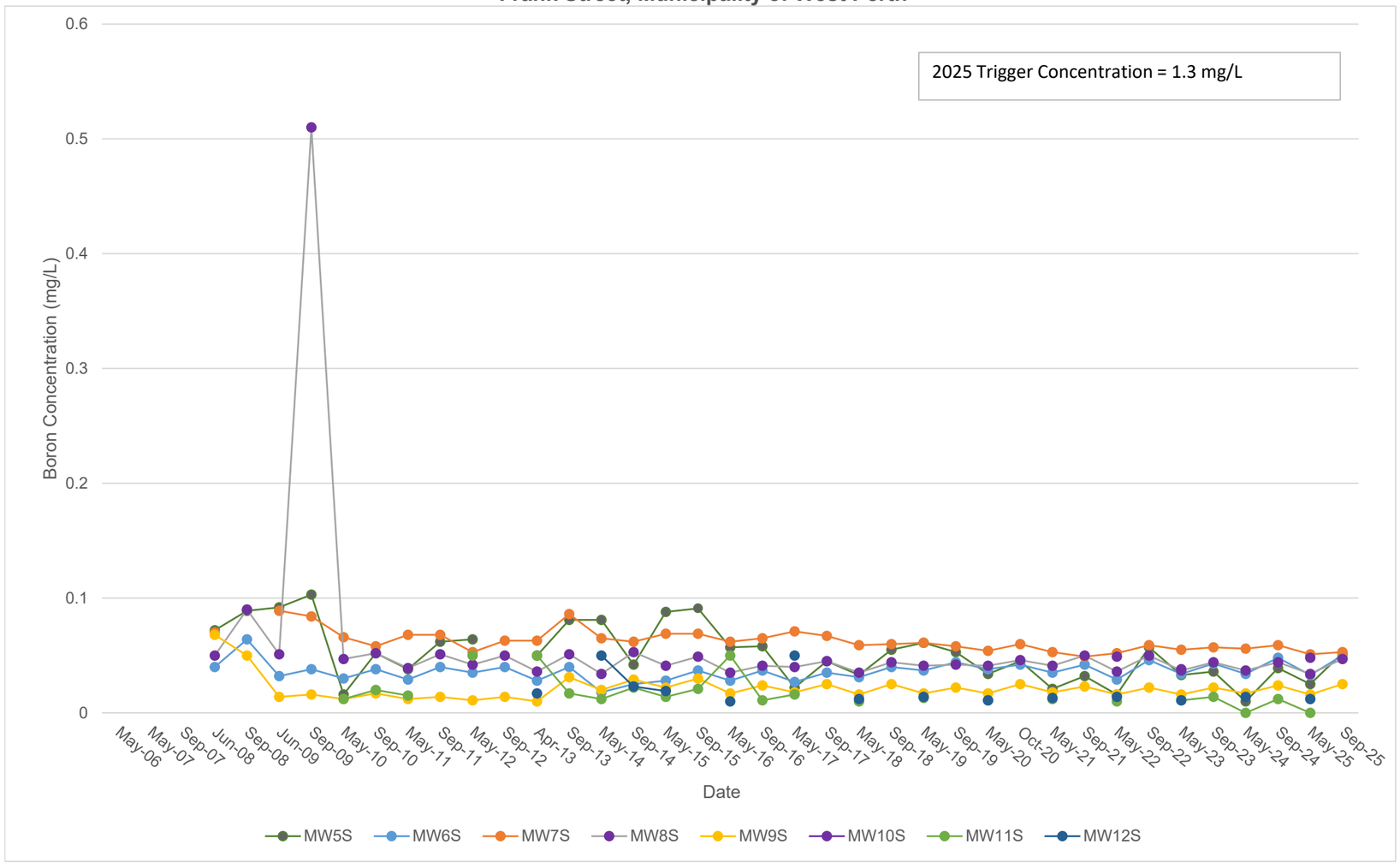


Pinchin File: 333568.002

Figure D-2

Concentration vs. Time Plot – Boron – Shallow Flow System

FIGURE D-2: TIME VS. CONCENTRATION PLOT
BORON - SHALLOW FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

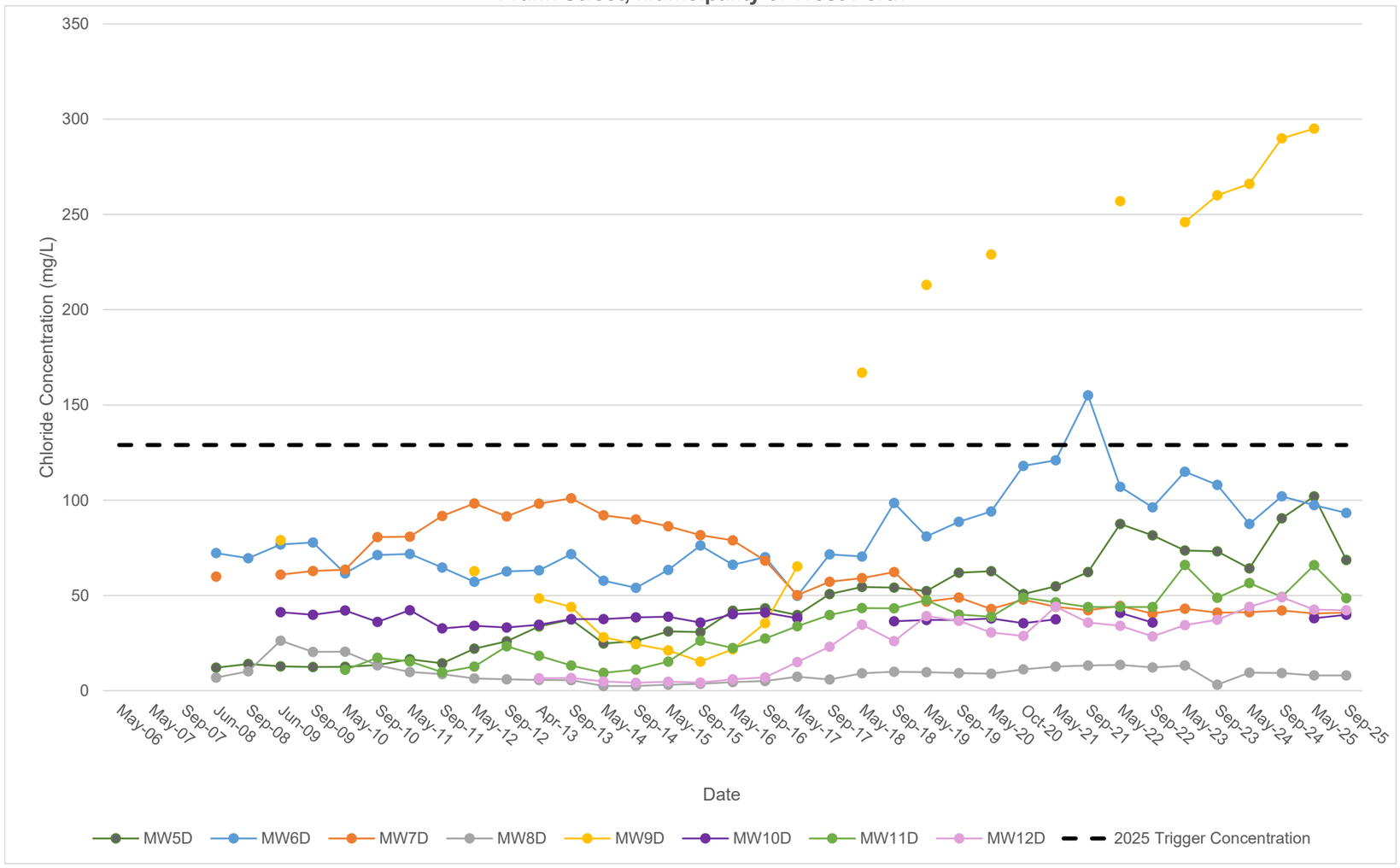


Pinchin File: 333568.002

Figure D-3

Concentration vs. Time Plot – Chloride – Deep Flow System

FIGURE D-3: TIME VS. CONCENTRATION PLOT
CHLORIDE - DEEP FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

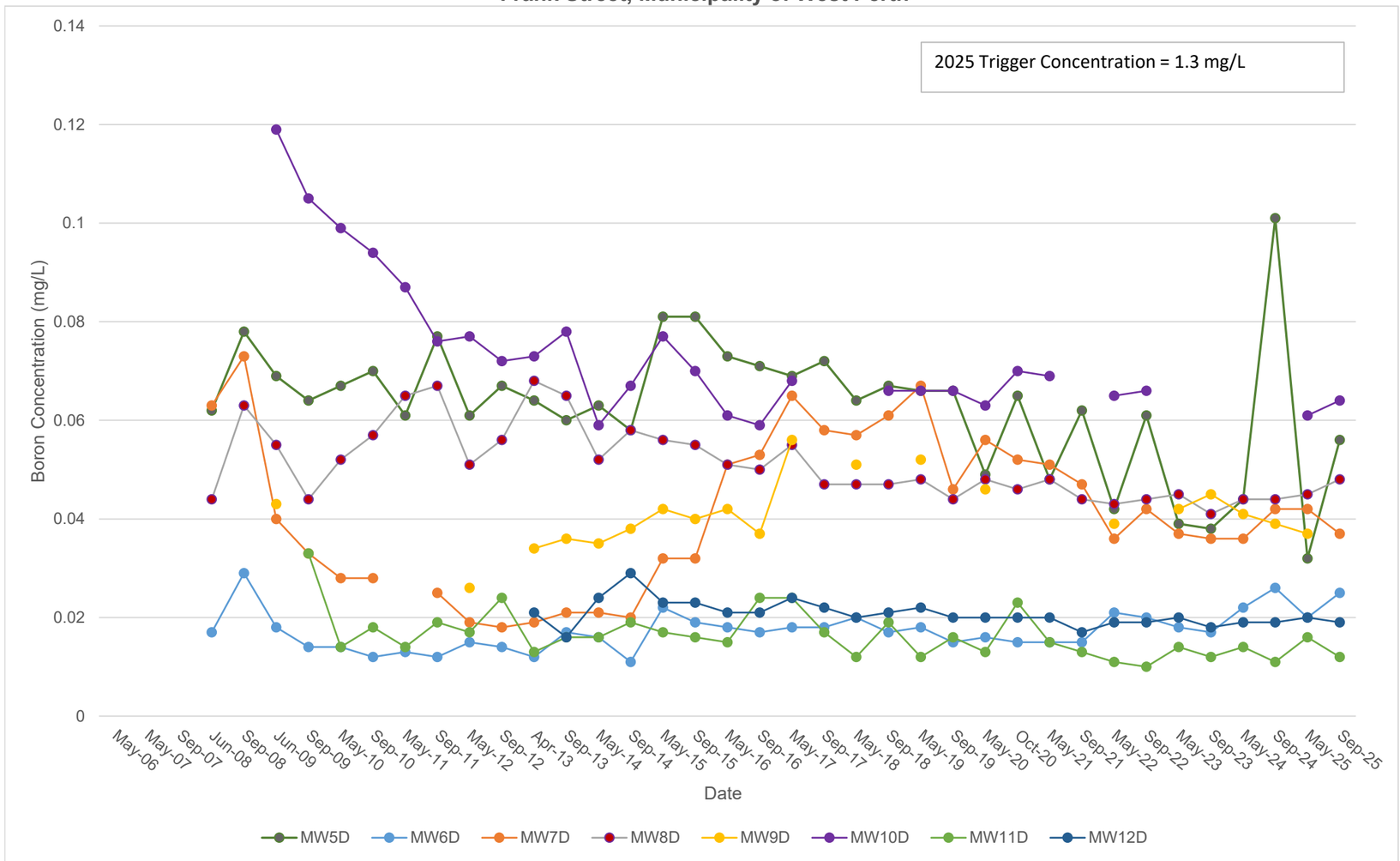


Pinchin File: 333568.002

Figure D-4

Concentration vs. Time Plot – Boron – Deep Flow System

FIGURE D-4: TIME VS. CONCENTRATION PLOT
BORON - DEEP FLOW SYSTEM
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth



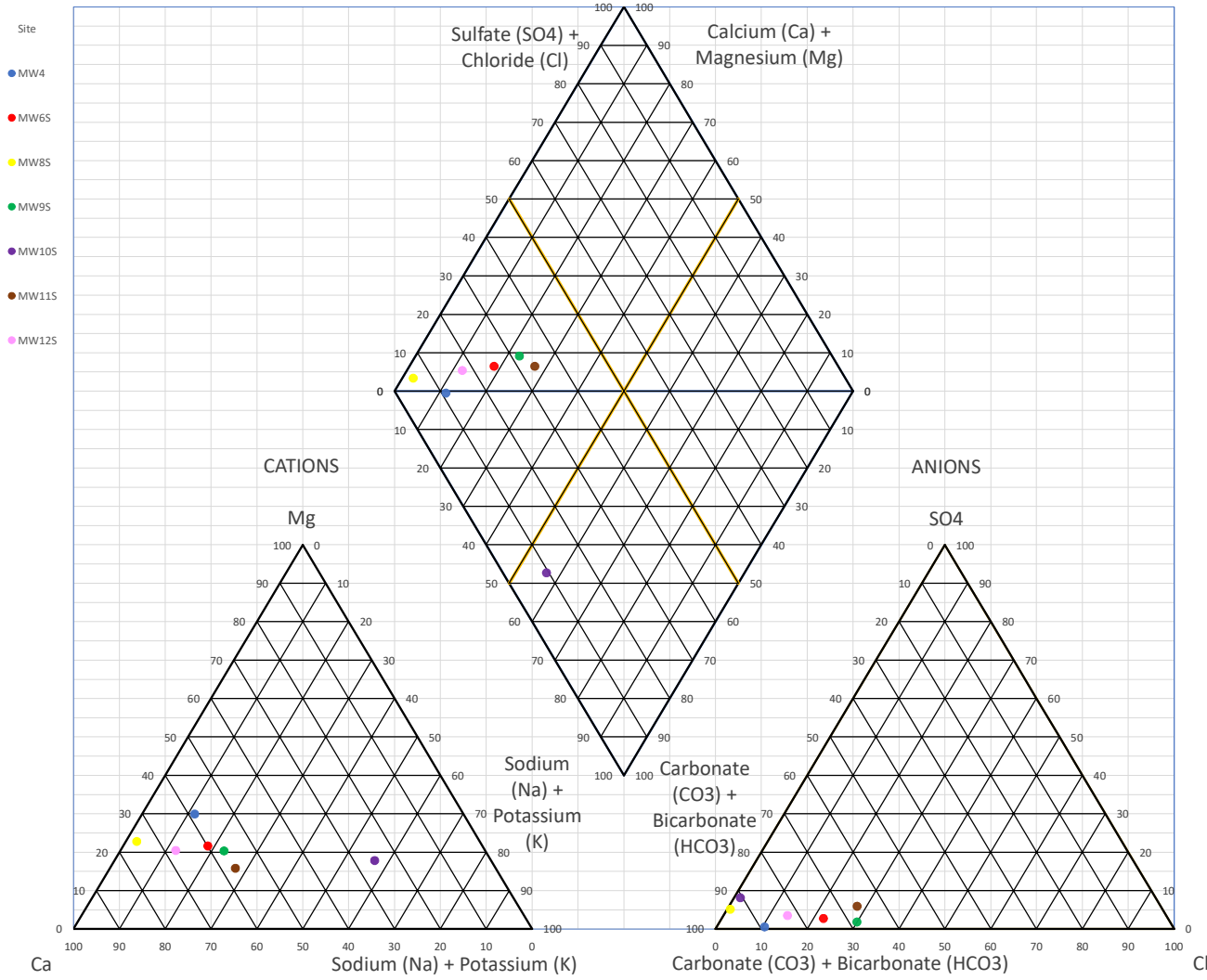
Pinchin File: 333568.002

APPENDIX E

Piper Plot Diagrams

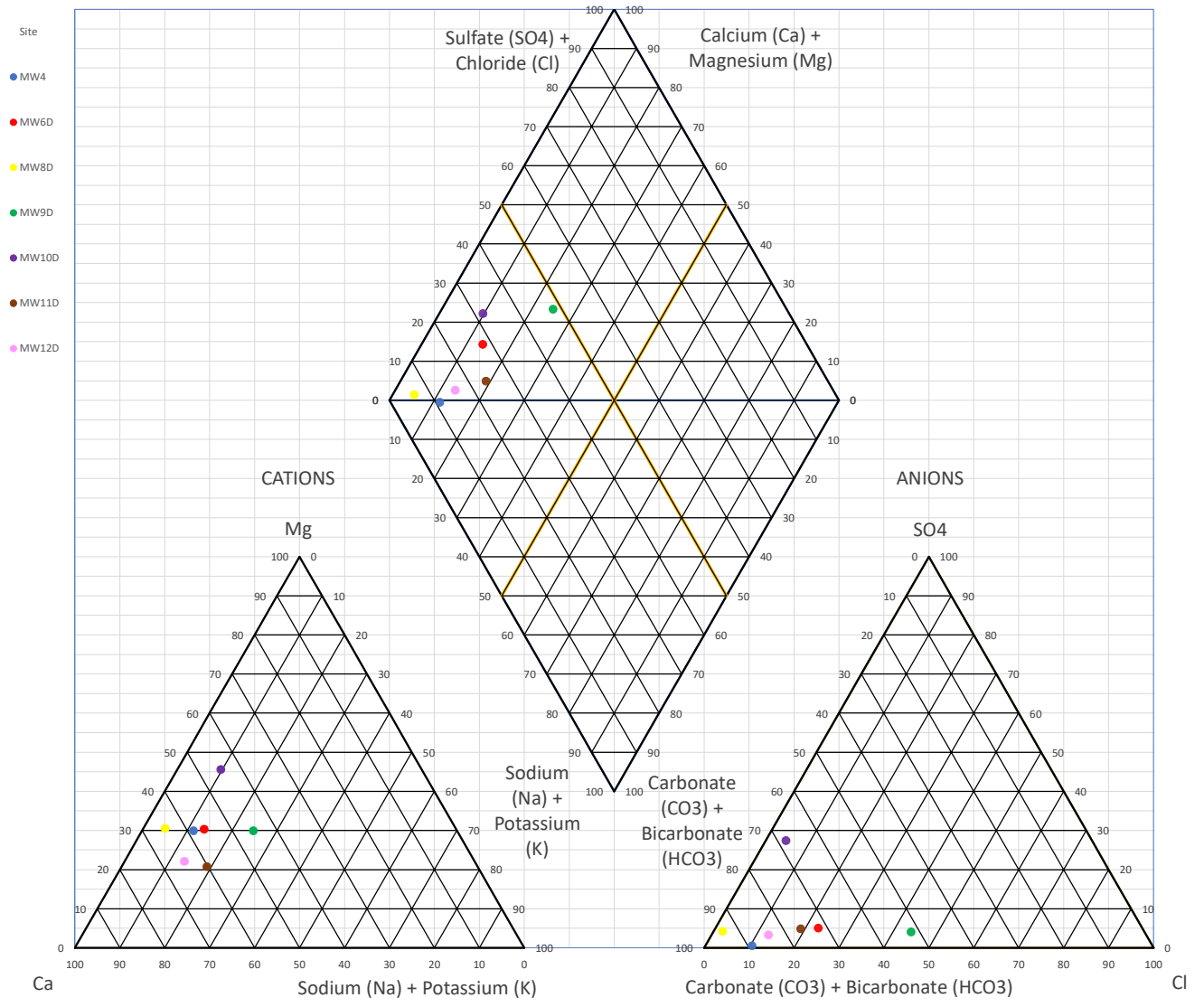
Piper Plot Diagram – Spring 2025 (Shallow)

Piper Plot Diagram - Spring 2025 (Shallow)

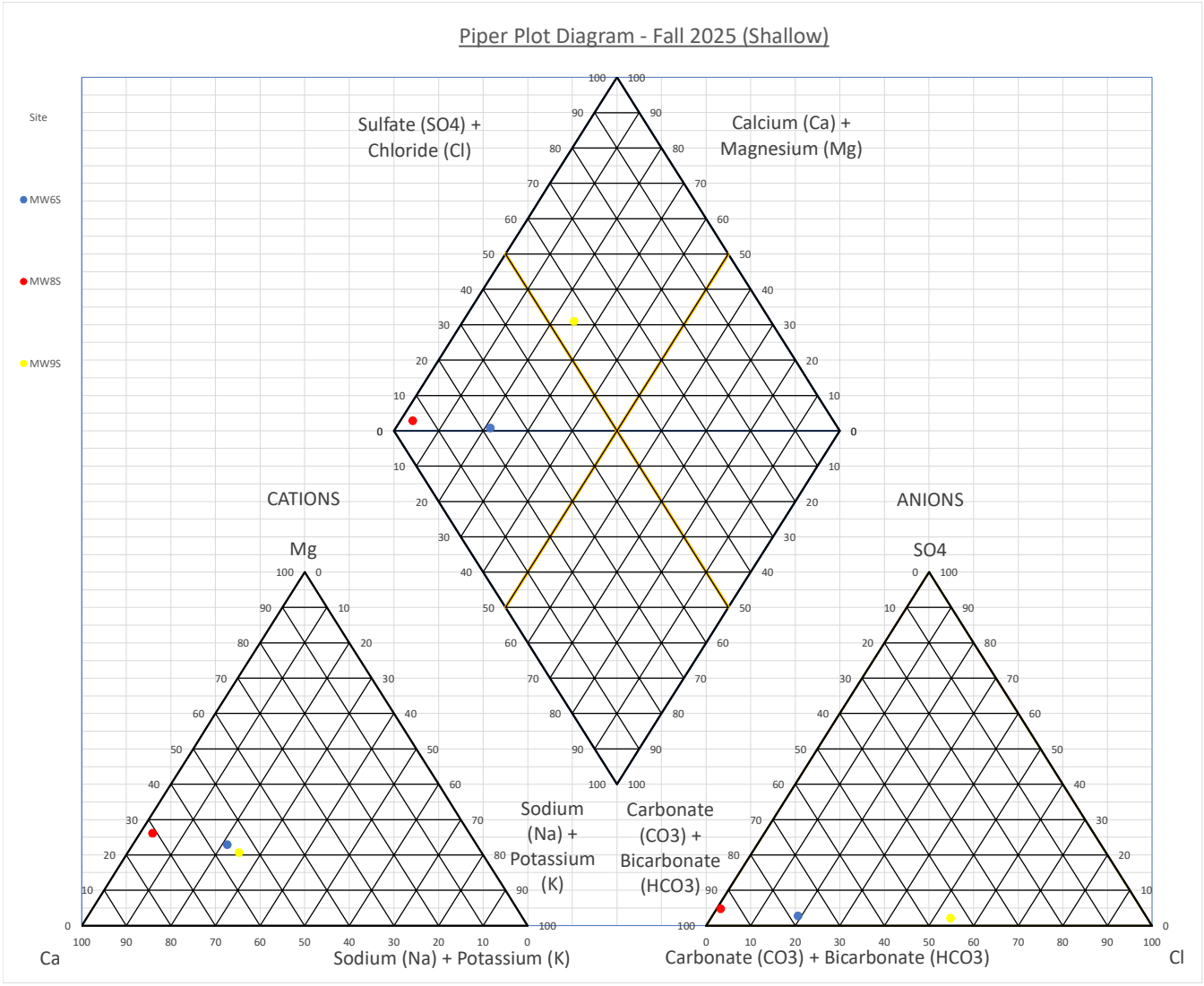


Piper Plot Diagram – Spring 2025 (Deep)

Piper Plot Diagram - Spring 2025 (Deep)

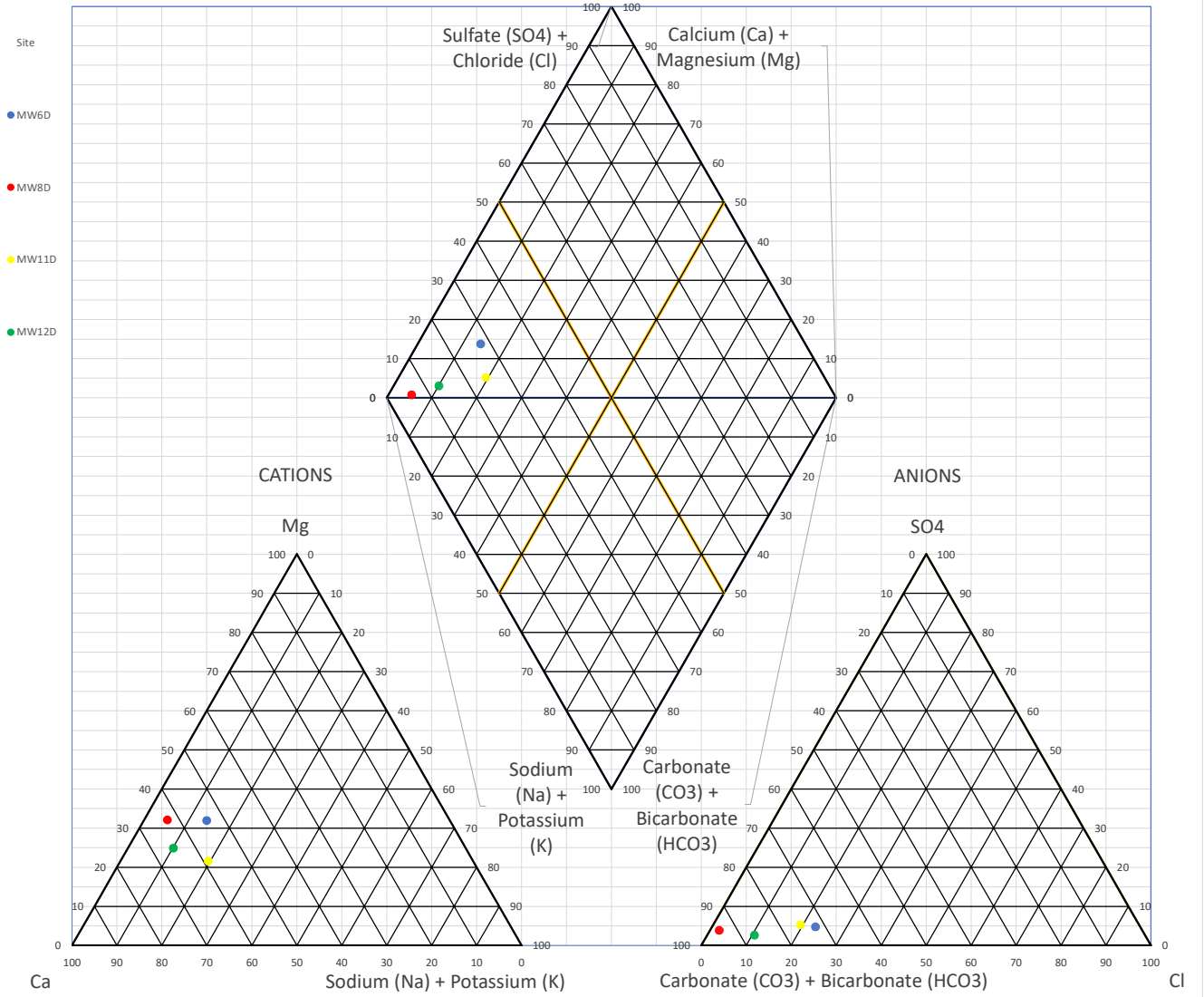


Piper Plot Diagram – Fall 2025 (Shallow)


Piper Plot Diagram - Fall 2025 (Shallow)
Site
MW6S
MW8S
MW9S
Sulfate (SO4) + Chloride (Cl)
Calcium (Ca) + Magnesium (Mg)
CATIONS
ANIONS
Mg
SO4
Sodium (Na) + Potassium (K)
Carbonate (CO3) + Bicarbonate (HCO3)
Ca
Cl

Piper Plot Diagram – Fall 2025 (Deep)

Piper Plot Diagram - Fall 2025 (Deep)



APPENDIX F

Laboratory Certificates of Analysis

CERTIFICATE OF ANALYSIS

Work Order	:	**WT2511728**			
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 MITCHELL INDUSTRIAL GROUNDWATER	Telephone	:	1 416 817 2944
PO	:	333568.002	Date Samples Received	:	15-May-2025 15:50
C-O-C number	:	----	Date Analysis Commenced	:	15-May-2025
Sampler	:	Client	Issue Date	:	10-Jul-2025 10:03
Site	:	West Perth			
Quote number	:	West Perth Landfill			
No. of samples received	:	25			
No. of samples analysed	:	25			

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
Nik Perkio		Metals, Waterloo, Ontario
Nik Perkio		Inorganics, Waterloo, Ontario
Nik Perkio		Centralized Prep, Waterloo, Ontario
Walt Kippenhuck		Inorganics, 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).
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.
RRV	Reported result verified by repeat analysis.
SP	Sample was preserved at the laboratory.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate -N is > 10x TKN.

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	MW4 ----
					Client sampling date / time	15-May-2025 09:50	15-May-2025 10:50	15-May-2025 10:10	15-May-2025 10:15	15-May-2025 10:00
						WT2511728-001	WT2511728-002	WT2511728-003	WT2511728-004	WT2511728-005
						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		2800	651	400	2570	667
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		2800	651	400	2570	667
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		482	622	410	965	648
pH	----	E108/WT	0.10	pH units		7.57	7.20	7.55	7.27	7.47
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		502 DLDS	716 DLDS	447 DLDS	1560 DLDS	692 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0119	<0.0050	3.08	19.3	2.11
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.50 DLDS	<0.10	<0.50 DLDS	<0.50 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		9.83	6.76 DLDS	4.07	57.6 DLDS	55.4 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.097	<0.100 DLDS	0.124	<0.100 DLDS	<0.100 DLDS
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		0.275	0.522	7.97	37.2	9.85
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.050 DLDS	<0.010	<0.050 DLDS	<0.050 DLDS
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.263	0.522	4.89	17.9	7.74
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0021	<0.0010	0.513	0.0034	<0.0010
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		26.9	15.9 DLDS	4.44	2.32 DLDS	3.67 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		0.034	2.63 DLDS	<0.020	<0.100 DLDS	<0.100 DLDS

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	MW4 ----
					Client sampling date / time	15-May-2025 09:50	15-May-2025 10:50	15-May-2025 10:10	15-May-2025 10:15	15-May-2025 10:00
						WT2511728-001	WT2511728-002	WT2511728-003	WT2511728-004	WT2511728-005
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		0.0340	2.63	<0.0224	<0.112	<0.112
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.05	3.64	10.3	31.3	14.1
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0016	0.0037	0.0122 DLM	<0.0100 DLHC	0.0028
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00019	0.00019	0.00118 DLM	0.0132 DLHC	0.00059
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0656	0.0666	0.0421 DLM	0.246 DLHC	0.0957
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.018	0.036	<0.100 DLM	0.807 DLHC	0.055
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000058	0.0000083	<0.0000500 DLM	<0.0000500 DLHC	0.0000283
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		126	187	141 DLM	192 DLHC	172
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00500 DLM	<0.00500 DLHC	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00043	0.00075	<0.00200 DLM	<0.00200 DLHC	0.00082
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		<0.010	<0.010	1.49 DLM	25.5 DLHC	0.750
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000500 DLM	<0.000500 DLHC	0.000113
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		40.7	37.8	14.1 DLM	118 DLHC	53.2
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.170	0.00125	0.474 DLM	0.612 DLHC	2.54
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.848	1.54	8.83 DLM	282 DLHC	2.96
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000108	0.000112	<0.000500 DLM	<0.000500 DLHC	0.000297
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		8.90	7.18	8.03 DLM	9.78 DLHC	7.26
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		12.1	11.2	8.27 DLM	105 DLHC	36.9

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	MW4 ----
					Client sampling date / time	15-May-2025 09:50	15-May-2025 10:50	15-May-2025 10:10	15-May-2025 10:15	15-May-2025 10:00
						WT2511728-001	WT2511728-002	WT2511728-003	WT2511728-004	WT2511728-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	<0.0010	<0.0100 DLM	<0.0100 DLHC	0.0035
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		11	13	110	415	138
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0022	0.0020	0.0025	0.0044 SP	0.0042
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	1.02 OWP	0.60
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	219
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	MW4 ----
					Client sampling date / time	15-May-2025 09:50	15-May-2025 10:50	15-May-2025 10:10	15-May-2025 10:15	15-May-2025 10:00
						WT2511728-001	WT2511728-002	WT2511728-003	WT2511728-004	WT2511728-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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		4.09	5.56	<0.50	<0.50	140
Dichloroethane, 1,2-	107-06-2	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	1.53
Dichloroethylene, 1,1-	75-35-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	12.6
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		6.04	1.96	<0.50	<0.50	138
Dichloroethylene, trans-1,2-	156-60-5	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	4.64
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		<0.50	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	MW4 ----
					Client sampling date / time	15-May-2025 09:50	15-May-2025 10:50	15-May-2025 10:10	15-May-2025 10:15	15-May-2025 10:00
						WT2511728-001	WT2511728-002	WT2511728-003	WT2511728-004	WT2511728-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
Tetrachloroethylene	127-18-4	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	0.67
Toluene	108-88-3	E611D/WT	0.50	µg/L		<0.50	<0.50	<0.50	<0.50	5.28
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		8.04	12.0	<0.50	<0.50	505
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		11.8	0.83	<0.50	<0.50	17.7
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	12.9
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	%		116	115	115	116	115
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		116	115	115	116	115
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		102	101	99.6	101	100
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		102	101	99.6	101	100

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	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	15-May-2025 11:25	15-May-2025 11:20	15-May-2025 09:20	15-May-2025 09:25	15-May-2025 09:00
						WT2511728-006	WT2511728-007	WT2511728-008	WT2511728-009	WT2511728-010
						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		538	3360	516	433	18200
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<5.0 DLM	<1.0	<1.0	757
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<5.0 DLM	<1.0	<1.0	<25.0 DLM
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<5.0 DLM	<1.0	<1.0	378
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		538	3360	516	433	19000
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		536	526	598	523	552
pH	----	E108/WT	0.10	pH units		7.55	7.53	7.34	7.56	7.34
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		756 DLDS	874 DLDS	709 DLDS	616 DLDS	562 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.162	0.209	<0.0050	<0.0050	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.20 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		62.8 DLDS	102 DLDS	108 DLDS	97.4 DLDS	55.9 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		<0.100 DLDS	0.107 DLDS	<0.100 DLDS	<0.100 DLDS	0.072 DLDS
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		1.06	26.1	0.153	0.102	0.307
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		0.352 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.020 DLDS
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.898	25.9	0.153	0.102	0.307
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0105	0.0019	<0.0010	<0.0010	<0.0010
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		27.2 DLDS	32.0 DLDS	18.2 DLDS	29.0 DLDS	17.9 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		10.1 DLDS	5.50 DLDS	<0.100 DLDS	<0.100 DLDS	0.852 DLDS

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	15-May-2025 11:25	15-May-2025 11:20	15-May-2025 09:20	15-May-2025 09:25	15-May-2025 09:00
						WT2511728-006	WT2511728-007	WT2511728-008	WT2511728-009	WT2511728-010
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		10.4	5.50	<0.112	<0.112	0.852
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		4.80	4.96	2.28	1.29	2.70
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0018	0.0151	<0.0010	<0.0010	<0.0010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00037	0.00050	0.00016	0.00013	0.00016
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.129	0.104	0.0630	0.0688	0.118
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.025	0.032	0.033	0.020	0.051
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000522	0.0000113	<0.0000050	0.0000184	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		171	167	176	136	152
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		0.00195	0.00192	0.00061	0.00045	0.00129
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.054	0.036	<0.010	<0.010	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	0.000060	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		26.6	26.5	38.5	44.6	41.8
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		1.46	0.949	0.00389	0.0354	0.322
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		25.4	26.4	0.954	1.22	1.27
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000112	0.000074	<0.000050	<0.000050	0.000068
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		3.91	4.76	5.49	8.34	8.96
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		55.7	68.5	61.8	37.2	54.3

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	15-May-2025 11:25	15-May-2025 11:20	15-May-2025 09:20	15-May-2025 09:25	15-May-2025 09:00
						WT2511728-006	WT2511728-007	WT2511728-008	WT2511728-009	WT2511728-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0010	0.0017	<0.0010	0.0026	<0.0010
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		20	158	<10	<10	<10
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0028	0.0022 SP	0.0026	0.0019	0.0031
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

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	15-May-2025 11:25	15-May-2025 11:20	15-May-2025 09:20	15-May-2025 09:25	15-May-2025 09:00
						WT2511728-006	WT2511728-007	WT2511728-008	WT2511728-009	WT2511728-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	0.68 OWP	<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

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	15-May-2025 11:25	15-May-2025 11:20	15-May-2025 09:20	15-May-2025 09:25	15-May-2025 09:00
						WT2511728-006	WT2511728-007	WT2511728-008	WT2511728-009	WT2511728-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	%		116	118	116	116	118
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		116	118	116	116	118
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		101	101	101	103	101
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		101	101	101	103	101

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 ----	MW8S ----	MW8D ----	MW9S ----	MW9D ----
					Client sampling date / time	15-May-2025 09:05	15-May-2025 10:30	15-May-2025 10:35	15-May-2025 09:40	15-May-2025 09:45
						WT2511728-011	WT2511728-012	WT2511728-013	WT2511728-014	WT2511728-015
						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		1210	502	515	1180	491
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		1210	502	515	1180	491
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		550	508	669	786	696
pH	----	E108/WT	0.10	pH units		7.57	7.44	7.40	7.47	7.52
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		661 DLDS	547 DLDS	648 DLDS	1240 DLDS	1020 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.351	0.0150	0.0111	0.0738	0.0172
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.50 DLDS	<0.10	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		40.6 DLDS	2.47	8.01 DLDS	367 DLDS	295 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.600 DLDS	0.051	<0.100 DLDS	<0.100 DLDS	0.654 DLDS
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		0.648	0.713	2.50 RRV	0.397	0.823
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.050 DLDS	<0.010	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.297	0.698	2.49	0.323	0.806
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0010	0.0022	0.0021	<0.0010	0.0038
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		42.7 DLDS	26.1	22.0 DLDS	30.3 DLDS	36.4 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		0.383 DLDS	5.05	0.584 DLDS	0.367 DLDS	0.294 DLDS

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW9D ----
					Client sampling date / time	15-May-2025 09:05	15-May-2025 10:30	15-May-2025 10:35	15-May-2025 09:40	15-May-2025 09:45
						WT2511728-011	WT2511728-012	WT2511728-013	WT2511728-014	WT2511728-015
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		0.383	5.05	0.584	0.367	0.294
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.04	3.79	2.76	1.94	2.86
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0035	<0.0010	0.101	0.0022	0.0225
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00019	0.00022	0.00031	0.00041	0.00033
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.142	0.0478	0.108	0.155	0.180
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.042	0.034	0.045	0.016	0.037
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	0.0000106	0.0000094	<0.0000050	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		120	156	182	232	168
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		0.00040	0.00117	0.00110	0.00090	0.00064
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.119	<0.010	0.325	0.052	0.033
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	0.000367	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		60.7	28.8	52.1	50.1	67.2
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0431	0.00017	0.114	0.117	0.00268
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		5.70	0.808	2.25	1.58	3.94
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	0.000378	0.000051	0.000086	0.000106
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		9.51	4.56	10.6	5.81	9.89
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		81.5	5.32	14.3	105	103

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW9D ----
					Client sampling date / time	15-May-2025 09:05	15-May-2025 10:30	15-May-2025 10:35	15-May-2025 09:40	15-May-2025 09:45
						WT2511728-011	WT2511728-012	WT2511728-013	WT2511728-014	WT2511728-015
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0025	<0.0010	0.0043	0.0022	0.0063
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		<10	22	123	<10	59
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0032	0.0032	0.0050 SP	0.0020	0.0017 SP
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW9D ----
					Client sampling date / time	15-May-2025 09:05	15-May-2025 10:30	15-May-2025 10:35	15-May-2025 09:40	15-May-2025 09:45
						WT2511728-011	WT2511728-012	WT2511728-013	WT2511728-014	WT2511728-015
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW9D ----
					Client sampling date / time	15-May-2025 09:05	15-May-2025 10:30	15-May-2025 10:35	15-May-2025 09:40	15-May-2025 09:45
						WT2511728-011	WT2511728-012	WT2511728-013	WT2511728-014	WT2511728-015
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	0.55 OWP
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	%		118	117	116	116	116
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		118	117	116	116	116
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		100	101	100	101	100
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		100	101	100	101	100

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	MW10S ----	MW10D ----	MW11S ----	MW11D ----	MW12S ----
					Client sampling date / time	15-May-2025 12:20	15-May-2025 12:25	15-May-2025 11:40	15-May-2025 11:45	15-May-2025 12:00
						WT2511728-016	WT2511728-017	WT2511728-018	WT2511728-019	WT2511728-020
						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		1070	811	278	370	387
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<5.0 DLM	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		1070	811	278	370	387
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		228	661	329	383	420
pH	----	E108/WT	0.10	pH units		8.29	7.95	7.76	7.74	7.60
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		830 DLDS	940 DLDS	480 DLDS	482 DLDS	484 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0245	0.0105	<0.0050	0.0157	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.20 DLDS	<0.50 DLDS	<0.10	<0.10	<0.10
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		11.4 DLDS	38.1 DLDS	83.1	65.9	46.4
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.497 DLDS	1.12 DLDS	0.062	0.082	0.042
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		2.88 RRV, TKNI	0.488	0.254	0.490	0.489
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.020 DLDS	<0.050 DLDS	<0.010	<0.010	<0.010
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		2.86	0.478	0.254	0.474	0.489
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.171	0.0049	<0.0010	<0.0010	<0.0010
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		92.3 DLDS	313 DLDS	23.8	22.6	15.7
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		18.4 DLDS	0.108 DLDS	0.120	3.05	2.90

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW10S ----	MW10D ----	MW11S ----	MW11D ----	MW12S ----
					Client sampling date / time	15-May-2025 12:20	15-May-2025 12:25	15-May-2025 11:40	15-May-2025 11:45	15-May-2025 12:00
						WT2511728-016	WT2511728-017	WT2511728-018	WT2511728-019	WT2511728-020
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		18.4	<0.112	0.120	3.05	2.90
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		7.42	1.04	1.53	1.42	1.42
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0330	0.0014	0.0016	0.0015	0.0085
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00295	0.00029	0.00012	0.00016	0.00014
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0161	0.0660	0.0603	0.0366	0.0251
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.048	0.061	<0.010	0.016	0.012
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000123	0.0000083	0.0000067	0.0000060	0.0000092
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		53.7	131	103	114	129
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	0.00064	<0.00050	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00868	0.00069	0.00093	0.00068	0.00045
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.035	<0.010	<0.010	<0.010	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		0.000131	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		22.8	81.0	17.4	23.8	23.7
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.00206	0.00284	0.00072	0.00037	0.00040
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		3.01	4.90	16.2	1.89	0.267
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000331	0.00242	<0.000050	0.000320	0.000129
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		5.22	4.43	2.47	4.12	3.70
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		136	29.8	47.5	40.3	26.4

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW10S ----	MW10D ----	MW11S ----	MW11D ----	MW12S ----
					Client sampling date / time	15-May-2025 12:20	15-May-2025 12:25	15-May-2025 11:40	15-May-2025 11:45	15-May-2025 12:00
						WT2511728-016	WT2511728-017	WT2511728-018	WT2511728-019	WT2511728-020
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0029	0.0014	0.0013	<0.0010	<0.0010
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		51	30	<10	<10	12
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0039	0.0027	0.0021	<0.0010	0.0013
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW10S ----	MW10D ----	MW11S ----	MW11D ----	MW12S ----
					Client sampling date / time	15-May-2025 12:20	15-May-2025 12:25	15-May-2025 11:40	15-May-2025 11:45	15-May-2025 12:00
						WT2511728-016	WT2511728-017	WT2511728-018	WT2511728-019	WT2511728-020
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW10S ----	MW10D ----	MW11S ----	MW11D ----	MW12S ----
					Client sampling date / time	15-May-2025 12:20	15-May-2025 12:25	15-May-2025 11:40	15-May-2025 11:45	15-May-2025 12:00
						WT2511728-016	WT2511728-017	WT2511728-018	WT2511728-019	WT2511728-020
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	%		115	116	116	116	116
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		115	116	116	116	116
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		103	100	100	103	100
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		103	100	100	103	100

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	MW12D ----	MW13S ----	MW13D ----	DUP-08 ----	DUP-09 ----
					Client sampling date / time	15-May-2025 12:05	15-May-2025 11:00	15-May-2025 11:05	15-May-2025 10:30	15-May-2025 10:30
						WT2511728-021	WT2511728-022	WT2511728-023	WT2511728-024	WT2511728-025
						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		398	574	438	532	456
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
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		398	574	438	532	456
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		456	571	434	534	516
pH	----	E108/WT	0.10	pH units		7.54	7.36	7.65	7.78	7.67
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		554 DLDS	711 DLDS	631 DLDS	747 DLDS	527 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0088	0.540	0.0393	0.0591	0.0150
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.10
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		42.6	54.1 DLDS	104 DLDS	64.3 DLDS	2.52
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.025	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	0.051
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		0.638	1.41	1.10	1.00	1.12
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.050 DLDS	<0.050 DLDS	0.333 DLDS	<0.010
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.629	0.870	1.06	0.941	1.10
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		<0.0010	0.0074	<0.0010	0.0102	0.0028
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		14.8	45.9 DLDS	33.0 DLDS	26.8 DLDS	26.5
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		2.41	1.83 DLDS	0.306 DLDS	9.25 DLDS	5.10

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW12D ----	MW13S ----	MW13D ----	DUP-08 ----	DUP-09 ----
					Client sampling date / time	15-May-2025 12:05	15-May-2025 11:00	15-May-2025 11:05	15-May-2025 10:30	15-May-2025 10:30
						WT2511728-021	WT2511728-022	WT2511728-023	WT2511728-024	WT2511728-025
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		2.41	1.83	0.306	9.58	5.10
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		1.30	7.57	4.13	4.97	3.43
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0012	0.0013	0.0159	<0.0010	<0.0010
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00011	0.00042	0.00027	0.00044	0.00026
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0328	0.135	0.110	0.124	0.0487
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.020	0.068	0.032	0.024	0.034
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	0.000113	0.0000097	0.0000559	0.0000094
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		136	179	138	171	160
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		0.00078	<0.00050	<0.00050	<0.00050	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00190	0.00304	0.00245	0.00211	0.00122
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.033	<0.010	0.082	0.038	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		28.2	30.1	21.6	26.1	28.4
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.00043	0.512	0.0846	1.58	0.00018
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.932	34.9	30.0	25.9	0.840
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000060	0.000202	0.000120	0.000128	0.000448
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		4.54	4.75	4.14	3.79	4.50
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		31.8	43.2	66.9	58.0	5.62

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW12D ----	MW13S ----	MW13D ----	DUP-08 ----	DUP-09 ----
					Client sampling date / time	15-May-2025 12:05	15-May-2025 11:00	15-May-2025 11:05	15-May-2025 10:30	15-May-2025 10:30
						WT2511728-021	WT2511728-022	WT2511728-023	WT2511728-024	WT2511728-025
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0020	0.0015	0.0044	0.0015	<0.0010
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		32	22	60	24	28
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0025 SP	0.0016	0.0023	0.0017	0.0013
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW12D ----	MW13S ----	MW13D ----	DUP-08 ----	DUP-09 ----
					Client sampling date / time	15-May-2025 12:05	15-May-2025 11:00	15-May-2025 11:05	15-May-2025 10:30	15-May-2025 10:30
						WT2511728-021	WT2511728-022	WT2511728-023	WT2511728-024	WT2511728-025
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	1.08	<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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		0.62	<0.50	<0.50	0.68	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	MW12D ----	MW13S ----	MW13D ----	DUP-08 ----	DUP-09 ----
					Client sampling date / time	15-May-2025 12:05	15-May-2025 11:00	15-May-2025 11:05	15-May-2025 10:30	15-May-2025 10:30
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2511728-021	WT2511728-022	WT2511728-023	WT2511728-024	WT2511728-025
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	0.59	<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	%		88.0	86.5	86.0	86.5	85.7
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		88.0	86.5	86.0	86.5	85.7
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		95.5	95.8	95.8	95.6	95.5
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		95.5	95.8	95.8	95.6	95.5

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	: **WT2511728**	Page	: 1 of 62
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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 15-May-2025 15:50
PO	: 333568.002	Issue Date	: 10-Jul-2025 10:00
C-O-C number	: ----		
Sampler	: Client		
Site	: West Perth		
Quote number	: West Perth Landfill		
No. of samples received	: 25		
No. of samples analysed	: 25		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Method Blank value 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
Method Blank (MB) Values								
Anions and Nutrients	QC-2008583-001	----	Ammonia, total (as N)	7664-41-7	E298	0.0126 mg/L B	0.005 mg/L	Blank result exceeds permitted value
Anions and Nutrients	QC-2007416-001	----	Kjeldahl nitrogen, total [TKN]	----	E318	0.073 mg/L B	0.05 mg/L	Blank result exceeds permitted value
Anions and Nutrients	QC-2004219-001	----	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0012 mg/L B	0.001 mg/L	Blank result exceeds permitted value

Result Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

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
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) DUP-08	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) DUP-09	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW1	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW10D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW10S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW11D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW11S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 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
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW12D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW12S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW13D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW13S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW2	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW3D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW3S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW4	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW5D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 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
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW5S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW6D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW6S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW7D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW7S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW8D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW8S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW9D	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW9S	E559-L	15-May-2025	----	----	----		21-May-2025	28 days	6 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	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW1	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW10D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW10S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW2	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW3D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW3S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW4	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW5D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW5S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 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	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW6D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW6S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW7D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW7S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW8D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW8S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW9D	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW9S	E562	15-May-2025	21-May-2025	28 days	6 days	✓	21-May-2025	28 days	6 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
DUP-08	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 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
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
DUP-09	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW11D	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW11S	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW12D	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW12S	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW13D	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW13S	E562	15-May-2025	22-May-2025	28 days	7 days	✓	23-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW1	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW10D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 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	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW10S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW2	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW3D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW3S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW4	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW5D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW5S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW6D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW6S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 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) MW7D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW7S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW8D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW8S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW9D	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW9S	E298	15-May-2025	21-May-2025	28 days	6 days	✓	23-May-2025	28 days	6 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-08	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) DUP-09	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) MW11D	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 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	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW11S	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW12D	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW12S	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW13D	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW13S	E298	15-May-2025	22-May-2025	28 days	7 days	✓	22-May-2025	28 days	7 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW7S	E235.Br	15-May-2025	20-May-2025	28 days	5 days	✓	22-May-2025	28 days	5 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
DUP-08	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
DUP-09	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW1	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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*	
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW10D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW10S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW11D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW11S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW12D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW12S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW13D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW13S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW2	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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] MW3D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW3S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW4	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW5D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW5S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW6D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW6S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW7D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW8D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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] MW8S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW9D	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW9S	E235.Br	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW7S	E235.Cl	15-May-2025	20-May-2025	28 days	5 days	✓	22-May-2025	28 days	5 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP-08	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] DUP-09	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW1	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW10D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW10S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW11D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW11S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW12D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW12S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW13D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW13S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW2	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW3D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW3S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW4	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW5D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW5S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW6D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW6S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW7D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW8D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW8S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW9D	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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*	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW9S	E235.Cl	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW7S	E378-U	15-May-2025	20-May-2025	7 days	5 days	✓	21-May-2025	7 days	5 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
DUP-08	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
DUP-09	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW1	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW10D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW10S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW11D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW11S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW12D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW12S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW13D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW13S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW2	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW3D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW3S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW4	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW5D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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]										
MW5S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW6D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW6S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW7D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW8D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW8S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW9D	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW9S	E378-U	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW7S	E235.F	15-May-2025	20-May-2025	28 days	5 days	✓	22-May-2025	28 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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-08	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-09	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW1	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW10D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW10S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW11D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW11S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW12D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW12S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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 : Fluoride in Water by IC										
HDPE [ON MECP] MW13D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW13S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW2	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW3D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW3S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW4	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW5D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW5S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP] MW6D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW6S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW7D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW8D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW8S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW9D	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW9S	E235.F	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW7S	E235.NO3	15-May-2025	20-May-2025	7 days	5 days	✓	22-May-2025	7 days	5 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP-08	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP-09	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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 : Nitrate in Water by IC										
HDPE [ON MECP] MW1	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW10D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW10S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW11D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW11S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW12D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW12S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW13D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW13S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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*	
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW2	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW4	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW7D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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 : Nitrate in Water by IC										
HDPE [ON MECP] MW8D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW8S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW9D	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW9S	E235.NO3	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW7S	E235.NO2	15-May-2025	20-May-2025	7 days	5 days	✓	22-May-2025	7 days	5 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP-08	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] DUP-09	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW1	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW10D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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 : Nitrite in Water by IC										
HDPE [ON MECP] MW10S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW11D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW11S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW12D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW12S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW13D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW13S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW2	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW3D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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 : Nitrite in Water by IC										
HDPE [ON MECP] MW3S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW4	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW5D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW5S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW6D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW6S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW7D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW8D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP] MW8S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 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	
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW9D	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW9S	E235.NO2	15-May-2025	21-May-2025	7 days	6 days	✓	22-May-2025	7 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW7S	E235.SO4	15-May-2025	20-May-2025	28 days	5 days	✓	22-May-2025	28 days	5 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-08	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-09	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW1	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW10D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW10S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW11D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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 : Sulfate in Water by IC										
HDPE [ON MECP] MW11S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW12D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW12S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW13D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW13S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW2	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW4	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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 : Sulfate in Water by IC										
HDPE [ON MECP] MW5D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW5S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW6D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW6S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW7D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW8D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW8S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW9D	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW9S	E235.SO4	15-May-2025	21-May-2025	28 days	6 days	✓	22-May-2025	28 days	6 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	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
DUP-08	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
DUP-09	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW1	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW10D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW10S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW11D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW11S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW12D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW12S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 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 : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW13D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW13S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW2	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW3D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW3S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW4	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW5D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW5S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) MW6D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 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 : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW6S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW7D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW7S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW8D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW8S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW9D	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW9S	E318	15-May-2025	23-May-2025	28 days	8 days	✓	23-May-2025	28 days	8 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
DUP-08	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
DUP-09	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 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
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW1	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW10D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW10S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW11D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW11S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW12D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW12S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW13D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid) MW13S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 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	
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW2	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW3D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW3S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW4	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW5D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW5S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW6D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW6S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW7D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 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
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW7S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW8D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW8S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW9D	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW9S	E509	15-May-2025	20-May-2025	28 days	5 days	✓	20-May-2025	28 days	5 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-08	E421	15-May-2025	16-May-2025	180 days	1 days	✓	16-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-09	E421	15-May-2025	16-May-2025	180 days	1 days	✓	16-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW1	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW10D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 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	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW10S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW11D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW11S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW12D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	16-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW12S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW13D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	16-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW13S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	16-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW2	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW3D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 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	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW3S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW4	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW5D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW5S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW6D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW6S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW7D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW7S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW8D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 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)										
MW8S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW9D	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW9S	E421	15-May-2025	16-May-2025	180 days	1 days	✓	20-May-2025	180 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW1	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW2	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW3D	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW3S	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW4	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW5D	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 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	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW5S	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW6D	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW6S	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW7D	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW7S	E358-L	15-May-2025	16-May-2025	28 days	1 days	✓	20-May-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
DUP-08	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
DUP-09	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW10D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW10S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 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	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW11D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW11S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW12D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW12S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW13D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW13S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW8D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW8S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW9D	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 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 (field filtered/sulfuric acid)										
MW9S	E358-L	15-May-2025	18-May-2025	28 days	3 days	✓	21-May-2025	28 days	3 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW7S	E290	15-May-2025	20-May-2025	14 days	5 days	✓	21-May-2025	14 days	5 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP-08	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
DUP-09	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW1	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW10D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW10S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW11D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP]										
MW11S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 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] MW12D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW12S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW13D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW13S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW2	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW4	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 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] MW5S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW7D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW8D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW8S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW9D	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW9S	E290	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7S	E108	15-May-2025	20-May-2025	14 days	5 days	✓	21-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
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-08	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-09	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW10D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW10S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW11D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW11S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW12D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW12S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 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 : pH by Meter										
HDPE [ON MECP] MW13D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW13S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW2	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW4	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 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 : pH by Meter										
HDPE [ON MECP] MW6S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW8D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW8S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW9D	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW9S	E108	15-May-2025	21-May-2025	14 days	6 days	✓	22-May-2025	14 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6D	E162	15-May-2025	----	----	----		21-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6S	E162	15-May-2025	----	----	----		21-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW7D	E162	15-May-2025	----	----	----		21-May-2025	7 days	6 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	15-May-2025	----	----	----		21-May-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-08	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-09	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW10D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW10S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW11D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW11S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW12D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 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] MW12S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW13D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW13S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW2	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW4	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 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] MW8D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW8S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW9D	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW9S	E162	15-May-2025	----	----	----		22-May-2025	7 days	7 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW10D	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW10S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11D	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW12S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 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 (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3D	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW4	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8D	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8S	E611D	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 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) MW6D	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7D	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9D	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9S	E611D	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-08	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-09	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW12D	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 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 (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13D	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13S	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW10D	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW10S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11D	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW12S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3D	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 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) MW3S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW4	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8D	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8S	E611E	15-May-2025	15-May-2025	14 days	0 days	✓	15-May-2025	14 days	0 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6D	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 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) MW7D	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9D	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9S	E611E	15-May-2025	15-May-2025	14 days	1 days	✓	15-May-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-08	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-09	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW12D	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13D	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13S	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 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	2004216	3	58	5.1	5.0	✓
TDS by Gravimetry	E162	2004838	4	79	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2004212	3	45	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	2004214	3	58	5.1	5.0	✓
Fluoride in Water by IC	E235.F	2004213	3	56	5.3	5.0	✓
Nitrite in Water by IC	E235.NO2	2004211	3	60	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	2004210	3	60	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2004215	3	58	5.1	5.0	✓
Alkalinity Species by Titration	E290	2004218	3	56	5.3	5.0	✓
Ammonia by Fluorescence	E298	2007257	2	37	5.4	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2007416	2	39	5.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2000643	3	60	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2004219	4	60	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2001181	2	40	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2001114	2	40	5.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2006306	2	38	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2007258	2	32	6.2	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1999777	3	44	6.8	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1999776	2	26	7.6	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter	E108	2004216	3	58	5.1	5.0	✓
TDS by Gravimetry	E162	2004838	4	79	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2004212	3	45	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	2004214	3	58	5.1	5.0	✓
Fluoride in Water by IC	E235.F	2004213	3	56	5.3	5.0	✓
Nitrite in Water by IC	E235.NO2	2004211	3	60	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	2004210	3	60	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2004215	3	58	5.1	5.0	✓
Alkalinity Species by Titration	E290	2004218	3	56	5.3	5.0	✓
Ammonia by Fluorescence	E298	2007257	3	37	8.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2007416	3	39	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2000643	3	60	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2004219	4	60	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2001181	2	40	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2001114	2	40	5.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2006306	2	38	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*
Laboratory Control Samples (LCS) - Continued							
Phenols (4AAP) in Water by Colorimetry	E562	2007258	2	32	6.2	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1999777	3	44	6.8	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1999776	2	26	7.6	5.0	✓
Method Blanks (MB)							
TDS by Gravimetry	E162	2004838	4	79	5.0	5.0	✓
Bromide in Water by IC	E235.Br	2004212	3	45	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	2004214	3	58	5.1	5.0	✓
Fluoride in Water by IC	E235.F	2004213	3	56	5.3	5.0	✓
Nitrite in Water by IC	E235.NO2	2004211	3	60	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	2004210	3	60	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2004215	3	58	5.1	5.0	✓
Alkalinity Species by Titration	E290	2004218	3	56	5.3	5.0	✓
Ammonia by Fluorescence	E298	2007257	3	37	8.1	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2007416	3	39	7.6	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2000643	3	60	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2004219	4	60	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2001181	2	40	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2001114	2	40	5.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2006306	2	38	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2007258	2	32	6.2	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1999777	3	44	6.8	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1999776	2	26	7.6	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC	E235.Br	2004212	3	45	6.6	5.0	✓
Chloride in Water by IC	E235.Cl	2004214	3	58	5.1	5.0	✓
Fluoride in Water by IC	E235.F	2004213	3	56	5.3	5.0	✓
Nitrite in Water by IC	E235.NO2	2004211	3	60	5.0	5.0	✓
Nitrate in Water by IC	E235.NO3	2004210	3	60	5.0	5.0	✓
Sulfate in Water by IC	E235.SO4	2004215	3	58	5.1	5.0	✓
Ammonia by Fluorescence	E298	2007257	2	37	5.4	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2007416	2	39	5.1	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2000643	3	60	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2004219	4	60	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2001181	2	40	5.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2001114	2	40	5.0	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2006306	2	38	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2007258	2	32	6.2	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1999777	3	44	6.8	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	1999776	2	26	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
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
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
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 Mercury in Water by CVAAS	E509 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Waterloo	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Waterloo	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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).
Total Organic Nitrogen (Calculation)	EC363 ALS Environmental - Waterloo	Water	APHA 4500-NORG (TKN)/NH3-NITROGEN (NH3)	Total Organic Nitrogen is a calculated parameter. Total Organic Nitrogen = Total Kjeldahl Nitrogen - Ammonia.

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.
Digestion for TKN in water	EP318 ALS Environmental - Waterloo	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for 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.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.
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	: **WT2511728**	Page	: 1 of 34
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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 15-May-2025 15:50
PO	: 333568.002	Date Analysis Commenced	: 15-May-2025
C-O-C number	: ----	Issue Date	: 10-Jul-2025 10:00
Sampler	: Client		
Site	: West Perth		
Quote number	: West Perth Landfill		
No. of samples received	: 25		
No. of samples analysed	: 25		

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 Inorganics, Waterloo, Ontario
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
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, 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: 2004216)											
WT2511722-002	Anonymous	pH	----	E108	0.10	pH units	8.45	8.39	0.712%	4%	----
Physical Tests (QC Lot: 2004218)											
WT2511722-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	145	144	0.872%	20%	----
Physical Tests (QC Lot: 2004838)											
WT2511440-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	898	896	0.223%	20%	----
Physical Tests (QC Lot: 2006259)											
WT2511722-005	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	148	143	3.35%	20%	----
Physical Tests (QC Lot: 2006260)											
WT2511722-005	Anonymous	pH	----	E108	0.10	pH units	8.38	8.37	0.119%	4%	----
Physical Tests (QC Lot: 2006275)											
WT2511821-002	Anonymous	pH	----	E108	0.10	pH units	7.88	7.87	0.127%	4%	----
Physical Tests (QC Lot: 2006276)											
WT2511821-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	330	344	4.31%	20%	----
Physical Tests (QC Lot: 2007354)											
WT2511768-002	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	234	232	0.859%	20%	----
Physical Tests (QC Lot: 2008693)											
WT2511663-002	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	176	180	4	Diff <2x LOR	----
Physical Tests (QC Lot: 2009552)											
WT2511766-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	182	174	8	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2004210)											
WT2511722-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.040	mg/L	0.183	0.183	0.0003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2004211)											
WT2511722-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2004212)											
WT2511722-002	Anonymous	Bromide	24959-67-9	E235.Br	0.20	mg/L	<0.20	0.29	0.09	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2004213)											
WT2511722-002	Anonymous	Fluoride	16984-48-8	E235.F	0.040	mg/L	0.219	0.219	0.000006	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2004214)											
WT2511722-002	Anonymous	Chloride	16887-00-6	E235.Cl	1.00	mg/L	93.0	93.4	0.338%	20%	----
Anions and Nutrients (QC Lot: 2004215)											

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: 2004215) - continued											
WT2511722-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.60	mg/L	241	242	0.446%	20%	----
Anions and Nutrients (QC Lot: 2004219)											
WT2511671-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0500	mg/L	2.64	2.67	0.858%	20%	----
Anions and Nutrients (QC Lot: 2006261)											
WT2511722-004	Anonymous	Bromide	24959-67-9	E235.Br	0.20	mg/L	<0.20	<0.20	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006262)											
WT2511722-004	Anonymous	Fluoride	16984-48-8	E235.F	0.040	mg/L	0.233	0.230	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006263)											
WT2511722-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.040	mg/L	0.149	0.146	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006264)											
WT2511722-004	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006265)											
WT2511722-004	Anonymous	Chloride	16887-00-6	E235.Cl	1.00	mg/L	86.8	86.8	0.00213%	20%	----
Anions and Nutrients (QC Lot: 2006266)											
WT2511722-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.60	mg/L	258	258	0.128%	20%	----
Anions and Nutrients (QC Lot: 2006267)											
WT2511722-004	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006269)											
WT2511728-017	MW10D	Bromide	24959-67-9	E235.Br	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006270)											
WT2511728-017	MW10D	Fluoride	16984-48-8	E235.F	0.100	mg/L	1.12	1.11	0.998%	20%	----
Anions and Nutrients (QC Lot: 2006271)											
WT2511728-017	MW10D	Nitrate (as N)	14797-55-8	E235.NO3	0.100	mg/L	0.108	0.107	0.0009	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2006272)											
WT2511728-017	MW10D	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: 2006273)											
WT2511728-017	MW10D	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	313	313	0.0975%	20%	----
Anions and Nutrients (QC Lot: 2006274)											
WT2511728-017	MW10D	Chloride	16887-00-6	E235.Cl	2.50	mg/L	38.1	38.0	0.227%	20%	----
Anions and Nutrients (QC Lot: 2006278)											
WT2511728-017	MW10D	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0049	0.0047	0.0002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2007257)											
WT2511728-002	MW2	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	<0.0050	<0.0050	0	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Anions and Nutrients (QC Lot: 2007296)											
WT2511722-003	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2007416)											
WT2511728-003	MW3S	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	7.97	9.62	18.7%	20%	----
Anions and Nutrients (QC Lot: 2008582)											
HA2501433-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	0.500	mg/L	11.8	11.5	2.49%	20%	----
Anions and Nutrients (QC Lot: 2008583)											
HA2501434-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.100	mg/L	4.05	4.14	2.41%	20%	----
Organic / Inorganic Carbon (QC Lot: 2000643)											
WT2511657-013	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	7.86	7.82	0.510%	20%	----
Organic / Inorganic Carbon (QC Lot: 2003082)											
WT2511472-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	3.17	3.03	0.14	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 2003083)											
WT2511701-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	9.10	9.04	0.667%	20%	----
Dissolved Metals (QC Lot: 2001114)											
WT2511657-013	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2001115)											
WT2511680-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2001181)											
WT2511728-001	MW1	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0016	0.0022	0.0006	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00019	0.00017	0.00002	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0656	0.0652	0.562%	20%	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.018	0.018	0.0002	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000058	<0.0000050	0.0000008	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	126	125	0.741%	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	0.00043	0.00052	0.00008	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	40.7	40.1	1.56%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.170	0.169	0.504%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.848	0.862	1.58%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000108	0.000111	0.000003	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.90	8.94	0.486%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	12.1	12.2	0.558%	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: 2001181) - continued											
WT2511728-001	MW1	Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	0.0011	0.0001	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2001427)											
WT2511449-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0011	0.0012	0.00006	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00162	0.00159	1.88%	20%	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0510	0.0510	0.0822%	20%	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.060	0.060	0.0006	Diff <2x LOR	----
		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	120	120	0.0507%	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	<0.00020	<0.00020	0	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	8.38	8.30	0.916%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	26.4	26.1	1.32%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	2.78	2.77	0.370%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.65	3.62	0.790%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000823	0.000824	0.194%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	15.1	15.0	0.881%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	7.78	7.66	1.56%	20%	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0010	0.0010	0.00005	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2006306)											
WT2511728-001	MW1	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	11	14	3	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2006311)											
HA2501436-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	<10	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2007258)											
WT2511728-001	MW1	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0022	0.0022	0.00002	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2008585)											
WT2511649-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0018	0.0017	0.00004	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 1999776)											
WT2511728-001	MW1	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: 1999777)											
WT2511728-001	MW1	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	----

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: 1999777) - continued											
WT2511728-001	MW1	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	4.09	3.86	5.79%	30%	----
		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	6.04	5.76	4.74%	30%	----
		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	8.04	7.57	6.02%	30%	----

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: 1999777) - continued											
WT2511728-001	MW1	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	11.8	11.3	5.11%	30%	----
		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: 2000231)											
WT2511561-023	Anonymous	Acetone	67-64-1	E611D	20	µg/L	25	28	3	Diff <2x LOR	----
		Benzene	71-43-2	E611D	0.50	µg/L	11.8	12.1	2.42%	30%	----
		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	1.10	µg/L	<1.08	<1.10	0.02	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	9.8	µg/L	<9.7	<9.8	0.1	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	148	150	0.819%	30%	----

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: 2000231) - continued											
WT2511561-023	Anonymous	Hexane, n-	110-54-3	E611D	0.50	µg/L	59.1	60.8	2.70%	30%	----
		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	0.55	µg/L	<0.55	<0.55	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	138	140	1.31%	30%	----
		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	390	394	0.938%	30%	----
		Xylene, o-	95-47-6	E611D	0.30	µg/L	117	118	1.53%	30%	----
Volatile Organic Compounds (QC Lot: 2007254)											
WT2511728-021	MW12D	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: 2007255)											
WT2511728-021	MW12D	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	----

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: 2007255) - continued											
WT2511728-021	MW12D	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	0.62	0.65	0.03	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: 2004218)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.4	----
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	1.4	----
Physical Tests (QCLot: 2004838)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 2006259)						
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: 2006276)						
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: 2007354)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 2008693)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 2009552)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 2004210)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2004211)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2004212)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2004213)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 2004213) - continued						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2004214)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2004215)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2004219)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	# 0.0012	B
Anions and Nutrients (QCLot: 2006261)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2006262)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2006263)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2006264)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2006265)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2006266)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2006267)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 2006269)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2006270)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2006271)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2006272)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2006273)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2006274)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2006278)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 2007257)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 2007296)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 2007416)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	# 0.073	B
Anions and Nutrients (QCLot: 2008582)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 2008583)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	# 0.0126	B
Anions and Nutrients (QCLot: 2016126)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 2016131)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Organic / Inorganic Carbon (QCLot: 2000643)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 2003082)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 2003083)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 2001114)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 2001115)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 2001181)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 2001181) - continued						
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	----
Dissolved Metals (QCLot: 2001427)						
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	----
Aggregate Organics (QCLot: 2006306)						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
Aggregate Organics (QCLot: 2006311)						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
Aggregate Organics (QCLot: 2007258)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Aggregate Organics (QCLot: 2008585)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 1999776)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 1999777)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 1999777) - continued						
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: 1999777) - 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: 2000231)						
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: 2000231) - 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: 2007254)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 2007255)						
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: 2007255) - 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	----

Qualifiers

Qualifier	Description
B	*Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.*

Laboratory Control Sample (LCS) Report

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

Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
Physical Tests (QCLot: 2004216)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2004218)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	99.8	85.0	115	----
Physical Tests (QCLot: 2004838)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	93.4	85.0	115	----
Physical Tests (QCLot: 2006259)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	100	85.0	115	----
Physical Tests (QCLot: 2006260)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2006275)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2006276)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	103	85.0	115	----
Physical Tests (QCLot: 2007354)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	85.3	85.0	115	----
Physical Tests (QCLot: 2008693)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	98.5	85.0	115	----
Physical Tests (QCLot: 2009552)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.5	85.0	115	----
Anions and Nutrients (QCLot: 2004210)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.8	90.0	110	----
Anions and Nutrients (QCLot: 2004211)									
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: 2004212)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 2004213)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2004214)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 2004215)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	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: 2004219)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.0	80.0	120	----
Anions and Nutrients (QCLot: 2006261)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	101	85.0	115	----
Anions and Nutrients (QCLot: 2006262)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2006263)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.3	90.0	110	----
Anions and Nutrients (QCLot: 2006264)									
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: 2006265)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.7	90.0	110	----
Anions and Nutrients (QCLot: 2006266)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2006267)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.8	80.0	120	----
Anions and Nutrients (QCLot: 2006269)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	99.2	85.0	115	----
Anions and Nutrients (QCLot: 2006270)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2006271)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	99.2	90.0	110	----
Anions and Nutrients (QCLot: 2006272)									
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: 2006273)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2006274)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
Anions and Nutrients (QCLot: 2006278)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.5	80.0	120	----
Anions and Nutrients (QCLot: 2007257)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	104	85.0	115	----
Anions and Nutrients (QCLot: 2007296)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.5	80.0	120	----
Anions and Nutrients (QCLot: 2007416)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	114	75.0	125	----

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: 2008582)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	113	75.0	125	----
Anions and Nutrients (QCLot: 2008583)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	105	85.0	115	----
Anions and Nutrients (QCLot: 2016126)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	107	75.0	125	----
Anions and Nutrients (QCLot: 2016131)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	94.0	85.0	115	----
Organic / Inorganic Carbon (QCLot: 2000643)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.8	80.0	120	----
Organic / Inorganic Carbon (QCLot: 2003082)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	95.0	80.0	120	----
Organic / Inorganic Carbon (QCLot: 2003083)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	95.2	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.7	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	97.4	80.0	120	----
Dissolved Metals (QCLot: 2001181)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	107	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	95.6	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	102	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	100	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	106	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	100	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	99.4	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	98.8	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	103	80.0	120	----
Dissolved Metals (QCLot: 2001427)									

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: 2001427) - continued									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	102	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	106	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	104	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	95.3	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	101	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	99.7	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	98.6	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	99.0	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	102	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	105	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	99.3	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	97.4	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	104	80.0	120	----
Aggregate Organics (QCLot: 2006306)									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	102	85.0	115	----
Aggregate Organics (QCLot: 2006311)									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	99.0	85.0	115	----
Aggregate Organics (QCLot: 2007258)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	98.6	85.0	115	----
Aggregate Organics (QCLot: 2008585)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	94.6	85.0	115	----
Volatile Organic Compounds (QCLot: 1999776)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	96.7	70.0	130	----
Volatile Organic Compounds (QCLot: 1999777)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	106	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	94.6	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	82.8	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	87.7	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	98.6	70.0	130	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Volatile Organic Compounds (QCLot: 1999777) - continued									
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	108	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	85.8	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	88.8	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	116	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	116	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	95.1	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	94.8	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	99.6	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	98.2	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	109	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	96.6	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	102	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	101	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	91.8	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	89.7	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	89.0	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	103	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	92.8	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	94.9	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	89.6	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	99.7	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	93.2	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	111	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	108	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	86.9	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: 1999777) - continued									
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	93.0	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	93.9	70.0	130	----
Volatile Organic Compounds (QCLot: 2000231)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	110	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	78.2	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	88.5	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	102	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	118	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	90.4	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	118	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	91.1	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	112	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	116	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	112	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	98.2	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	95.6	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	95.5	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	99.3	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	99.4	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	80.8	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	93.7	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	85.6	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	95.1	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	91.3	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: 2000231) - continued									
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	115	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	98.8	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	99.4	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	115	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	117	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	123	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	91.3	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	100	70.0	130	----
Volatile Organic Compounds (QCLot: 2007254)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	96.0	70.0	130	----
Volatile Organic Compounds (QCLot: 2007255)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	126	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	106	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	110	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	84.0	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	101	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	104	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	108	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	116	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	96.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	114	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	108	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: 2007255) - continued									
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	105	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	87.3	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	86.2	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	95.5	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	113	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	70.4	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	100.0	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	79.0	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	99.1	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	91.4	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	94.7	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	95.0	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	103	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	108	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	94.0	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	97.6	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: 2004210)										
WT2511722-002	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	4.92 mg/L	5 mg/L	98.5	75.0	125	----
Anions and Nutrients (QCLot: 2004211)										
WT2511722-002	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.996 mg/L	1 mg/L	99.6	75.0	125	----
Anions and Nutrients (QCLot: 2004212)										
WT2511722-002	Anonymous	Bromide	24959-67-9	E235.Br	0.96 mg/L	1 mg/L	95.9	75.0	125	----
Anions and Nutrients (QCLot: 2004213)										
WT2511722-002	Anonymous	Fluoride	16984-48-8	E235.F	2.05 mg/L	2 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2004214)										
WT2511722-002	Anonymous	Chloride	16887-00-6	E235.Cl	198 mg/L	200 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 2004215)										
WT2511722-002	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 2004219)										
WT2511671-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 2006261)										
WT2511722-004	Anonymous	Bromide	24959-67-9	E235.Br	1.06 mg/L	1 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 2006262)										
WT2511722-004	Anonymous	Fluoride	16984-48-8	E235.F	2.04 mg/L	2 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2006263)										
WT2511722-004	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	4.94 mg/L	5 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 2006264)										
WT2511722-004	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	1.00 mg/L	1 mg/L	100	75.0	125	----
Anions and Nutrients (QCLot: 2006265)										
WT2511722-004	Anonymous	Chloride	16887-00-6	E235.Cl	199 mg/L	200 mg/L	99.4	75.0	125	----
Anions and Nutrients (QCLot: 2006266)										
WT2511722-004	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 2006267)										
WT2511722-004	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0185 mg/L	0.02 mg/L	94.4	70.0	130	----
Anions and Nutrients (QCLot: 2006269)										
WT2511728-017	MW10D	Bromide	24959-67-9	E235.Br	2.33 mg/L	2.5 mg/L	93.3	75.0	125	----
Anions and Nutrients (QCLot: 2006270)										

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: 2006270) - continued										
WT2511728-017	MW10D	Fluoride	16984-48-8	E235.F	5.10 mg/L	5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2006271)										
WT2511728-017	MW10D	Nitrate (as N)	14797-55-8	E235.NO3	12.1 mg/L	12.5 mg/L	96.8	75.0	125	----
Anions and Nutrients (QCLot: 2006272)										
WT2511728-017	MW10D	Nitrite (as N)	14797-65-0	E235.NO2	2.47 mg/L	2.5 mg/L	99.0	75.0	125	----
Anions and Nutrients (QCLot: 2006273)										
WT2511728-017	MW10D	Sulfate (as SO4)	14808-79-8	E235.SO4	486 mg/L	500 mg/L	97.2	75.0	125	----
Anions and Nutrients (QCLot: 2006274)										
WT2511728-017	MW10D	Chloride	16887-00-6	E235.Cl	494 mg/L	500 mg/L	98.9	75.0	125	----
Anions and Nutrients (QCLot: 2006278)										
WT2511728-017	MW10D	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0189 mg/L	0.02 mg/L	96.2	70.0	130	----
Anions and Nutrients (QCLot: 2007257)										
WT2511728-002	MW2	Ammonia, total (as N)	7664-41-7	E298	0.0984 mg/L	0.1 mg/L	98.4	75.0	125	----
Anions and Nutrients (QCLot: 2007296)										
WT2511722-003	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0189 mg/L	0.02 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 2007416)										
WT2511728-003	MW3S	Kjeldahl nitrogen, total [TKN]	----	E318	ND mg/L	----	ND	70.0	130	----
Anions and Nutrients (QCLot: 2008582)										
HA2501433-002	Anonymous	Kjeldahl nitrogen, total [TKN]	----	E318	30.6 mg/L	25 mg/L	122	70.0	130	----
Anions and Nutrients (QCLot: 2008583)										
HA2501434-002	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
Organic / Inorganic Carbon (QCLot: 2000643)										
WT2511657-013	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 2003082)										
WT2511472-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	4.48 mg/L	5 mg/L	89.6	70.0	130	----
Organic / Inorganic Carbon (QCLot: 2003083)										
WT2511701-001	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 2001114)										
WT2511657-014	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000882 mg/L	0 mg/L	88.2	70.0	130	----
Dissolved Metals (QCLot: 2001115)										
WT2511680-002	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000920 mg/L	0 mg/L	92.0	70.0	130	----
Dissolved Metals (QCLot: 2001181)										
WT2511728-002	MW2	Aluminum, dissolved	7429-90-5	E421	0.105 mg/L	0.1 mg/L	105	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0587 mg/L	0.05 mg/L	117	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: 2001181) - continued										
WT2511728-002	MW2	Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	95.3	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00507 mg/L	0.005 mg/L	101	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0125 mg/L	0.012 mg/L	100	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0116 mg/L	0.012 mg/L	92.6	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.052 mg/L	0.05 mg/L	104	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0237 mg/L	0.025 mg/L	94.7	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0125 mg/L	0.012 mg/L	99.8	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.46 mg/L	2.5 mg/L	98.5	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0593 mg/L	0.05 mg/L	118	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	0.0253 mg/L	0.025 mg/L	101	70.0	130	----
Dissolved Metals (QCLot: 2001427)										
WT2511449-003	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.100 mg/L	0.1 mg/L	100	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0608 mg/L	0.05 mg/L	122	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	95.7	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00524 mg/L	0.005 mg/L	105	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0122 mg/L	0.012 mg/L	97.9	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0119 mg/L	0.012 mg/L	95.6	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.049 mg/L	0.05 mg/L	97.6	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0250 mg/L	0.025 mg/L	100	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0124 mg/L	0.012 mg/L	99.4	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.40 mg/L	2.5 mg/L	96.1	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0636 mg/L	0.05 mg/L	127	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	0.0265 mg/L	0.025 mg/L	106	70.0	130	----
Aggregate Organics (QCLot: 2006306)										
WT2511728-001	MW1	Chemical oxygen demand [COD]	----	E559-L	108 mg/L	100 mg/L	108	75.0	125	----
Aggregate Organics (QCLot: 2006311)										
HA2501436-001	Anonymous	Chemical oxygen demand [COD]	----	E559-L	108 mg/L	100 mg/L	108	75.0	125	----
Aggregate Organics (QCLot: 2007258)										
WT2511728-001	MW1	Phenols, total (4AAP)	----	E562	0.0210 mg/L	0.02 mg/L	105	75.0	125	----
Aggregate Organics (QCLot: 2008585)										
WT2511649-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0212 mg/L	0.02 mg/L	106	75.0	125	----

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Volatile Organic Compounds (QCLot: 1999776)										
WT2511728-001	MW1	Trichlorobenzene, 1,2,4-	120-82-1	E611E	98.5 µg/L	100 µg/L	98.5	60.0	140	----
Volatile Organic Compounds (QCLot: 1999777)										
WT2511728-001	MW1	Acetone	67-64-1	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Benzene	71-43-2	E611D	93.8 µg/L	100 µg/L	93.8	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Bromoform	75-25-2	E611D	81.2 µg/L	100 µg/L	81.2	60.0	140	----
		Bromomethane	74-83-9	E611D	84.0 µg/L	100 µg/L	84.0	60.0	140	----
		Carbon disulfide	75-15-0	E611D	95.3 µg/L	100 µg/L	95.3	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Chlorobenzene	108-90-7	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Chloroethane	75-00-3	E611D	82.2 µg/L	100 µg/L	82.2	60.0	140	----
		Chloroform	67-66-3	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Chloromethane	74-87-3	E611D	81.7 µg/L	100 µg/L	81.7	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	114 µg/L	100 µg/L	114	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	92.5 µg/L	100 µg/L	92.5	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	98.3 µg/L	100 µg/L	98.3	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	95.7 µg/L	100 µg/L	95.7	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	95.3 µg/L	100 µg/L	95.3	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	99.8 µg/L	100 µg/L	99.8	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	98.6 µg/L	100 µg/L	98.6	60.0	140	----
		Ethylbenzene	100-41-4	E611D	92.3 µg/L	100 µg/L	92.3	60.0	140	----
		Hexane, n-	110-54-3	E611D	87.8 µg/L	100 µg/L	87.8	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	86 µg/L	100 µg/L	86.0	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	99 µg/L	100 µg/L	98.9	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	90 µg/L	100 µg/L	89.6	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	91.5 µg/L	100 µg/L	91.5	60.0	140	----
		Styrene	100-42-5	E611D	88.7 µg/L	100 µg/L	88.7	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	98.5 µg/L	100 µg/L	98.5	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Toluene	108-88-3	E611D	93.4 µg/L	100 µg/L	93.4	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Trichloroethylene	79-01-6	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Vinyl chloride	75-01-4	E611D	81.2 µg/L	100 µg/L	81.2	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: 1999777) - continued										
WT2511728-001	MW1	Xylene, m+p-	179601-23-1	E611D	189 µg/L	200 µg/L	94.6	60.0	140	----
		Xylene, o-	95-47-6	E611D	94.6 µg/L	100 µg/L	94.6	60.0	140	----
Volatile Organic Compounds (QCLot: 2000231)										
WT2511561-023	Anonymous	Acetone	67-64-1	E611D	120 µg/L	100 µg/L	120	60.0	140	----
		Benzene	71-43-2	E611D	96.9 µg/L	100 µg/L	96.9	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	117 µg/L	100 µg/L	117	60.0	140	----
		Bromoform	75-25-2	E611D	85.8 µg/L	100 µg/L	85.8	60.0	140	----
		Bromomethane	74-83-9	E611D	84.4 µg/L	100 µg/L	84.4	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	105 µg/L	100 µg/L	105	60.0	140	----
		Chlorobenzene	108-90-7	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Chloroethane	75-00-3	E611D	85.1 µg/L	100 µg/L	85.1	60.0	140	----
		Chloroform	67-66-3	E611D	120 µg/L	100 µg/L	120	60.0	140	----
		Chloromethane	74-87-3	E611D	85.9 µg/L	100 µg/L	85.9	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	122 µg/L	100 µg/L	122	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	132 µg/L	100 µg/L	132	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	105 µg/L	100 µg/L	105	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	90.9 µg/L	100 µg/L	90.9	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	120 µg/L	100 µg/L	120	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	98.3 µg/L	100 µg/L	98.3	60.0	140	----
		Dichloromethane	75-09-2	E611D	113 µg/L	100 µg/L	113	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Ethylbenzene	100-41-4	E611D	ND µg/L	----	ND	60.0	140	----
		Hexane, n-	110-54-3	E611D	89.3 µg/L	100 µg/L	89.3	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	124 µg/L	100 µg/L	124	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	122 µg/L	100 µg/L	122	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	96.2 µg/L	100 µg/L	96.2	60.0	140	----
		Styrene	100-42-5	E611D	92.8 µg/L	100 µg/L	92.8	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	117 µg/L	100 µg/L	117	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	112 µg/L	100 µg/L	112	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	94.6 µg/L	100 µg/L	94.6	60.0	140	----
		Toluene	108-88-3	E611D	ND µg/L	----	ND	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Trichloroethylene	79-01-6	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	106 µg/L	100 µg/L	106	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: 2000231) - continued										
WT2511561-023	Anonymous	Vinyl chloride	75-01-4	E611D	81.0 µg/L	100 µg/L	81.0	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	ND µg/L	----	ND	60.0	140	----
		Xylene, o-	95-47-6	E611D	ND µg/L	----	ND	60.0	140	----
Volatile Organic Compounds (QCLot: 2007254)										
WT2511728-021	MW12D	Trichlorobenzene, 1,2,4-	120-82-1	E611E	97.8 µg/L	100 µg/L	97.8	60.0	140	----
Volatile Organic Compounds (QCLot: 2007255)										
WT2511728-021	MW12D	Acetone	67-64-1	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Benzene	71-43-2	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Bromoform	75-25-2	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Bromomethane	74-83-9	E611D	85.2 µg/L	100 µg/L	85.2	60.0	140	----
		Carbon disulfide	75-15-0	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Chlorobenzene	108-90-7	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Chloroethane	75-00-3	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Chloroform	67-66-3	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Chloromethane	74-87-3	E611D	115 µg/L	100 µg/L	115	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Dichloromethane	75-09-2	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	90.6 µg/L	100 µg/L	90.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	87.0 µg/L	100 µg/L	87.0	60.0	140	----
		Ethylbenzene	100-41-4	E611D	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Hexane, n-	110-54-3	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	71 µg/L	100 µg/L	70.7	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	80 µg/L	100 µg/L	80.0	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Styrene	100-42-5	E611D	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	99.7 µg/L	100 µg/L	99.7	60.0	140	----
		Toluene	108-88-3	E611D	96.6 µg/L	100 µg/L	96.6	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: 2007255) - continued										
WT2511728-021	MW12D	Trichloroethane, 1,1,1-	71-55-6	E611D	97.0 µg/L	100 µg/L	97.0	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	99.3 µg/L	100 µg/L	99.3	60.0	140	----
		Trichloroethylene	79-01-6	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Vinyl chloride	75-01-4	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	191 µg/L	200 µg/L	95.6	60.0	140	----
		Xylene, o-	95-47-6	E611D	98.9 µg/L	100 µg/L	98.9	60.0	140	----

GTC - 806/807
N - 801
MM - 901/902
VW - 189/191

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division
Waterloo
Work Order Reference
WT2511728

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 minin
	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 minin
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, Ontario	Email 2 dhagerman@Pinchin.com	☐ Same day [E2] if received by 10am M-S - 200% rush surcharge
Postal Code:	N2K 4M8	Email 3	☐ fees may apply to rush requests on weekends, statutory holidays
Invoice To	Same as Report To ☐ YES ☑ NO	**Invoice Recipients**	routine tests
	Copy of Invoice with Report ☑ YES ☐ NO	Select Invoice Distribution: ☑ EMAIL MAIL ☐ FAX	Date and Time Required for all E&P TATs:
Company:	Pinchin Ltd.	Email 1 or Fax dbettencourt@Pinchin.com	For all tests with rush TATs requested, plea
Contact:	Deana Bettencourt	Email 2 ap@pinchin.com	Analysis

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:	PINC100 / West Perth	AFE/Cost Center:	PO#
Job #:	West Perth Mitchell Industrial Groundwater	Major/Minor Code:	Routing Code:
PO / AFE:	333568.002	Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (ALS use only): WT2511728 | ALS Contact: Amanda Overholster | Sampler:

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	Indicate Filtered (F), Preserved (P) or Filtered	West Perth Mitchell Industrial Groundwater (includes DOC/Dis. Hg/Metals)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIR	SUSPECTED HAZARD (see notes)
						F/P				
	MW1	15-May-25	9:50	GW	7	R				
	MW2		10:50	GW		R				
	MW3S		10:10	GW		R				
	MW3D		10:15	GW		R				
	MW4		10:00	GW		R				
	MW5S		11:25	GW		R				
	MW5D		11:20	GW		R				
	MW6S		9:20	GW		R				
	MW6D		9:25	GW		R				
	MW7S		9:00	GW		R				
	MW7D		9:05	GW		R				
	MW8S		10:30	GW		R				

Drinking Water (DW) Samples[1] (client use)	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	GEL Planned Event
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		
				18.6	18.8	20.2

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Dave Hagerman	Date: May 15 2025	Time: 3:35	Received by:	Date:	Time:	Received by: AP	Date: 15-MAY-25	Time: 15:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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**.

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Page 2 of 3

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 — NO
	Copy of Invoice with Report — YES
Company:	Pinchin Ltd.
Contact:	Deana Bettencourt

Reports / Recipients

Select Report Format: PDF EXCEL EDD (DIGITAL)

Merge QC/QCI Reports with COA — NO

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: dhagerman@Pinchin.com

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

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.

AFFIX ALS BARCODE LABEL HERE (ALS use only)

Project Information

ALS Account # / Quote #:	PINC100 / West Perth
Job #:	West Perth Mitchell Industrial Groundwater
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:**

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 Mitchell Industrial Groundwater (includes Dissolved Metals/Hg/DOC)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MW8D	15-May-25	10:35	GW	7	R			
	MW9S		9:40	GW		R			
	MW9D		9:45	GW		R			
	MW10S		12:20	GW		R			
	MW10D		12:25	GW		R			
	MW11S		11:40	GW		R			
	MW11D		11:45	GW		R			
	MW12S		12:00	GW		R			
	MW12D		12:05	GW		R			
	MW13S		11:00	GW		R			
	MW13D		11:05	GW		R			
	DUP-08		11:25	GW		R			

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

Are samples taken from a Regulated DW System? — NO

Are samples for human consumption/ use? — NO

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

GEL 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			
				18.6	18.8	20.2	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Dave Hagerman	May 15, 2025	3:35

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AP	15-MAY-25	15:50

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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**.

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

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: dhagerman@Pinchin.com

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 Mitchell Industrial Groundwater
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:**

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 Mitchell Industrial Groundwater (includes DOC/Dis. Metals/HG)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	DUP-09	15-May-25	10:30	GW	7	R				
						R				
						R				
						R				
						R				
						R				
						R				
						R				
						R				
						R				
						R				
						R				

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)

GEL 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		
			18.6	18.8	20.2

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Dave Hagerman	May 15, 2025	3:35

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
AP	15-MAY-25	15:[illegible]

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	:	**WT2511731**			
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 Mitchell Industrial Landfill	Telephone	:	1 416 817 2944
PO	:	333568.002	Date Samples Received	:	15-May-2025 15:50
C-O-C number	:	23-1119774	Date Analysis Commenced	:	21-May-2025
Sampler	:	Client	Issue Date	:	23-May-2025 07:37
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	15-May-2025 09:00	----	----	----	----
						WT2511731-001	----	----	----	----
						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)

					Client sample ID	TRIP BLANK	----	----	----	----
					Client sampling date / time	15-May-2025 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2511731-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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, 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	----	----	----	----
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

					Client sample ID	TRIP BLANK	----	----	----	----
					Client sampling date / time	15-May-2025 09:00	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2511731-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%		85.7	----	----	----	----
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		85.7	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		96.1	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		96.1	----	----	----	----

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	: **WT2511731**	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 Mitchell Industrial Landfill	Date Samples Received	: 15-May-2025 15:50
PO	: 333568.002	Issue Date	: 23-May-2025 07:37
C-O-C number	: 23-1119774		
Sampler	: Client		
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 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*
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIP BLANK	E611D	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIP BLANK	E611E	15-May-2025	21-May-2025	14 days	6 days	✓	21-May-2025	14 days	6 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	2007255	1	6	16.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2007254	1	6	16.6	5.0	✓
Laboratory Control Samples (LCS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2007255	1	6	16.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2007254	1	6	16.6	5.0	✓
Method Blanks (MB)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2007255	1	6	16.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2007254	1	6	16.6	5.0	✓
Matrix Spikes (MS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2007255	1	6	16.6	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2007254	1	6	16.6	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	: **WT2511731**	Page	: 1 of 10
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 Mitchell Industrial Landfill	Date Samples Received	: 15-May-2025 15:50
PO	: 333568.002	Date Analysis Commenced	: 21-May-2025
C-O-C number	: 23-1119774	Issue Date	: 23-May-2025 07:35
Sampler	: Client		
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: 2007254)											
WT2511728-021	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: 2007255)											
WT2511728-021	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	0.62	0.65	0.03	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: 2007255) - continued											
WT2511728-021	Anonymous	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
Volatile Organic Compounds (QCLot: 2007254)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 2007255)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 2007255) - continued						
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
Volatile Organic Compounds (QCLot: 2007254)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	96.0	70.0	130	----
Volatile Organic Compounds (QCLot: 2007255)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	126	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	106	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	110	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	84.0	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	101	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	104	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	97.9	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	108	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	116	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	96.4	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	114	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	105	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	87.3	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	86.2	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	95.5	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	113	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	70.4	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	100.0	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	79.0	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: 2007255) - continued									
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	99.1	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	91.4	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	94.7	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	97.0	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	95.0	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	103	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	108	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	94.0	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	97.6	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
Volatile Organic Compounds (QCLot: 2007254)										
WT2511728-021	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	97.8 µg/L	100 µg/L	97.8	60.0	140	----
Volatile Organic Compounds (QCLot: 2007255)										
WT2511728-021	Anonymous	Acetone	67-64-1	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Benzene	71-43-2	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Bromoform	75-25-2	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Bromomethane	74-83-9	E611D	85.2 µg/L	100 µg/L	85.2	60.0	140	----
		Carbon disulfide	75-15-0	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Chlorobenzene	108-90-7	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Chloroethane	75-00-3	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Chloroform	67-66-3	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Chloromethane	74-87-3	E611D	115 µg/L	100 µg/L	115	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	97.6 µg/L	100 µg/L	97.6	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Dichloromethane	75-09-2	E611D	108 µg/L	100 µg/L	108	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	90.6 µg/L	100 µg/L	90.6	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	87.0 µg/L	100 µg/L	87.0	60.0	140	----
		Ethylbenzene	100-41-4	E611D	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Hexane, n-	110-54-3	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	71 µg/L	100 µg/L	70.7	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	80 µg/L	100 µg/L	80.0	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Styrene	100-42-5	E611D	91.2 µg/L	100 µg/L	91.2	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	99.7 µg/L	100 µg/L	99.7	60.0	140	----
		Toluene	108-88-3	E611D	96.6 µg/L	100 µg/L	96.6	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: 2007255) - continued										
WT2511728-021	Anonymous	Trichloroethane, 1,1,1-	71-55-6	E611D	97.0 µg/L	100 µg/L	97.0	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	99.3 µg/L	100 µg/L	99.3	60.0	140	----
		Trichloroethylene	79-01-6	E611D	105 µg/L	100 µg/L	105	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Vinyl chloride	75-01-4	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	191 µg/L	200 µg/L	95.6	60.0	140	----
		Xylene, o-	95-47-6	E611D	98.9 µg/L	100 µg/L	98.9	60.0	140	----

VW-191

Chain of Custody (COC) / Analytical Request Form

COC Number: 23 - 1119774

Page 1 of 1

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

Environmental Division Waterloo

Work Order Reference WT2511731

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 0789
	Company address below will appear on the final report
Street:	285 Labrador Drive unit #1
City/Province:	Waterloo, ON
Postal Code:	N2L 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	dhagerman@pinchin.com
Email 3	

Invoice Recipients	
Select Invoice Distribution:	☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax	ap@pinchin.com
Email 2	dbettencourt@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 mir
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge mi
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge mi
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge m
☐ Same day [E2] if received by 10am M-S - 200% rush surch
Additional fees may apply to rush requests on we
Date and Time Required for all E&P TATs:
For all tests with rush TATs requested, p

Project Information	
ALS Client Code / QUOTE #:	
Job / Project #:	West Perth Mitchell Industrial Landfill
PO / AFE:	333568 Rev2
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:	Sampler:

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	Analys: Indicate Filtered (F), Preserved (P) or Filte	SAMPLES ON HOLD	EXTENDED STORAGE REQUIR	SUSPECTED HAZARD (see notes)
	TRIP BLANK	15-May-25	9:00	GW	2	VOCs			

Drinking Water (DW) Samples[1] (client use)	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 DETALS (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			
				18.6	18.8	20.2	

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (ALS use only)			FINAL SHIPMENT RECEPTION (ALS use only)		
Released by: Dave Hagerman	Date: May 15, 2025	Time: 3:35	Received by:	Date:	Time:	Received by: AP	Date: 15 MAY 25	Time: 15:50

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	:	**WT2527691**			
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 MITCHELL INDUSTRIAL GROUNDWATER	Telephone	:	1 416 817 2944
PO	:	333568.002	Date Samples Received	:	30-Sep-2025 14:10
C-O-C number	:	----	Date Analysis Commenced	:	01-Oct-2025
Sampler	:	Client	Issue Date	:	08-Oct-2025 23:05
Site	:	----			
Quote number	:	West Perth Landfill			
No. of samples received	:	20			
No. of samples analysed	:	20			

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*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	VOC, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Inorganics, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Metals, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Centralized Prep, Waterloo, Ontario
Nik Perkio	Senior Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	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

Sample MW10D Mitchell Industrial GW: Insufficient Sample for given analysis. The requested analysis cannot be performed. Please confirm the testing with PM.

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).
OWP	Organic water sample contained visible sediment (must be included as part of analysis). Measured concentrations of organic substances in water can be biased high due to presence of sediment.
SP	Sample was preserved at the laboratory.
TKNI	TKN result may be biased low due to Nitrate interference. Nitrate -N is > 10x TKN.
VPDW	Visible particulate observed in Dissolved fraction of field preserved water sample (may represent post-sampling precipitation or filtration issue). Analyzed as submitted

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	DUP-106 ----
					Client sampling date / time	30-Sep-2025 10:30	30-Sep-2025 10:35	30-Sep-2025 11:00	30-Sep-2025 11:05	30-Sep-2025 11:15
						WT2527691-001	WT2527691-002	WT2527691-003	WT2527691-004	WT2527691-005
						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		396	595	539	1540	258
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		<1.0	<1.0	<1.0	<5.0 DLM	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		396	595	539	1540	258
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		505	684	553	894	332
pH	----	E108/WT	0.10	pH units		7.61	7.25	7.35	7.24	7.77
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		521 DLDS	797 DLDS	651 DLDS	1560 DLDS	448 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0141	0.0117	6.80	17.5	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.10
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		15.7	9.41 DLDS	10.4 DLDS	71.9 DLDS	48.4
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.088	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	0.110
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		0.540	0.699	11.1	24.3	0.495 TKNI
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.010
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.526	0.687	4.30	6.80	0.495
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		<0.0100 DLM	<0.0100 DLM	0.0082	0.0032	0.0019
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		25.0	14.6 DLDS	32.9 DLDS	2.34 DLDS	17.8
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		<0.020	2.11 DLDS	<0.100 DLDS	<0.100 DLDS	5.63

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	DUP-106 ----
					Client sampling date / time	30-Sep-2025 10:30	30-Sep-2025 10:35	30-Sep-2025 11:00	30-Sep-2025 11:05	30-Sep-2025 11:15
						WT2527691-001	WT2527691-002	WT2527691-003	WT2527691-004	WT2527691-005
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		<0.0224	2.11	<0.112	<0.112	5.63
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		2.45	3.90	15.1	33.9	1.38
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0026	0.0968	<0.0100 DLHC	0.114 DLHC	0.0016
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00015	0.00023	0.00481 DLHC	0.00461 DLHC	0.00010
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0513	0.0731	0.0658 DLHC	0.134 DLHC	0.0344
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.026	0.048	0.144 DLHC	0.853 DLHC	0.013
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000098	0.0000077	<0.0000500 DLHC	<0.0000500 DLHC	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		135	198	188 DLHC	147 DLHC	96.2
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	<0.00050	<0.00500 DLHC	<0.00500 DLHC	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00191	0.00119	<0.00200 DLHC	<0.00200 DLHC	0.00087
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		<0.010	0.076	8.09 DLHC	7.60 DLHC	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	0.000080	<0.000500 DLHC	<0.000500 DLHC	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		40.7	46.0	20.4 DLHC	128 DLHC	22.4
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.308	0.00952	0.801 DLHC	0.232 DLHC	0.00025
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		0.790	1.45	21.1 DLHC	325 DLHC	2.30
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	0.000107	<0.000500 DLHC	<0.000500 DLHC	0.000297
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		8.29	8.59	8.68 DLHC	8.86 DLHC	3.66
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		9.75	13.8	12.6 DLHC	116 DLHC	37.4

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	DUP-106 ----
					Client sampling date / time	30-Sep-2025 10:30	30-Sep-2025 10:35	30-Sep-2025 11:00	30-Sep-2025 11:05	30-Sep-2025 11:15
						WT2527691-001	WT2527691-002	WT2527691-003	WT2527691-004	WT2527691-005
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0015	0.0021	<0.0100 DLHC	<0.0100 DLHC	<0.0010
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		16	22	85	131	<10
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0013	0.0024	0.0020	0.0054	0.0010
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	1.71 OWP	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	DUP-106 ----
					Client sampling date / time	30-Sep-2025 10:30	30-Sep-2025 10:35	30-Sep-2025 11:00	30-Sep-2025 11:05	30-Sep-2025 11:15
						WT2527691-001	WT2527691-002	WT2527691-003	WT2527691-004	WT2527691-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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		9.86 OWP	10.8 OWP	<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		0.56	<0.50	<0.50	<0.50	<0.50
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		17.2 OWP	5.44 OWP	<0.50	0.52 OWP	<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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW1 ----	MW2 ----	MW3S ----	MW3D ----	DUP-106 ----
					Client sampling date / time	30-Sep-2025 10:30	30-Sep-2025 10:35	30-Sep-2025 11:00	30-Sep-2025 11:05	30-Sep-2025 11:15
						WT2527691-001	WT2527691-002	WT2527691-003	WT2527691-004	WT2527691-005
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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		9.55 OWP	15.1 OWP	<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		20.6 OWP	0.99 OWP	<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		0.59 OWP	0.29 OWP	<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	%		90.3	91.3	90.4	91.5	90.1
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		90.3	91.3	90.4	91.5	90.1
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		97.0	97.4	97.7	97.2	99.6
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		97.0	97.4	97.7	97.2	99.6

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	MW5S ----	MW5D ----	MW6S ----	MW6D ----	MW7S ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:20	30-Sep-2025 12:00	30-Sep-2025 12:05	30-Sep-2025 10:00
						WT2527691-006	WT2527691-007	WT2527691-008	WT2527691-009	WT2527691-010
						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		446	513	477	413	540
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
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		446	513	477	413	540
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		485	565	580	552	581
pH	----	E108/WT	0.10	pH units		7.80	7.45	7.42	7.44	7.34
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		690 DLDS	751 DLDS	706 DLDS	650 DLDS	666 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		1.27	0.212	<0.0050	0.0135	<0.0050
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		87.6 DLDS	68.6 DLDS	83.5 DLDS	93.3 DLDS	46.2 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		1.72	1.26	0.232	0.138	0.344
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.450	1.05	0.232	0.124	0.344
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0157	0.0016	0.0021	0.0025	<0.0010
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		23.2 DLDS	27.8 DLDS	15.9 DLDS	26.0 DLDS	16.9 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		0.444 DLDS	2.72 DLDS	<0.100 DLDS	<0.100 DLDS	0.893 DLDS

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	30-Sep-2025 11:25	30-Sep-2025 11:20	30-Sep-2025 12:00	30-Sep-2025 12:05	30-Sep-2025 10:00
						WT2527691-006	WT2527691-007	WT2527691-008	WT2527691-009	WT2527691-010
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		0.444	2.72	<0.112	<0.112	0.893
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		5.41	6.03	2.05	1.07	2.42
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0026	0.0354	<0.0010	<0.0010	0.0071
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00032	0.00027	0.00019	0.00013	0.00021
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.123	0.124	0.0645	0.0704	0.114
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.052	0.056	0.050	0.025	0.053
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		0.0000486	0.0000146	<0.0000050	0.0000146	0.0000053
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		150	176	165	139	156
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		0.00313	0.00321	0.00076	0.00051	0.00124
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		0.014	0.032	<0.010	0.011	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	0.000053	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		26.9	30.6	40.9	49.7	46.4
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		1.16	0.691	0.00116	0.0571	0.393
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		28.9	28.0	1.13	1.30	1.28
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000118	0.000119	0.000052	<0.000050	0.000061
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		4.56	4.84	6.61	7.90	9.05
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		80.6	59.9	71.2	40.6	54.7

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	30-Sep-2025 11:25	30-Sep-2025 11:20	30-Sep-2025 12:00	30-Sep-2025 12:05	30-Sep-2025 10:00
						WT2527691-006	WT2527691-007	WT2527691-008	WT2527691-009	WT2527691-010
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0026	0.0014	0.0022	0.0022	0.0012
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		19	33	<10	11	<10
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0014	0.0030 SP	0.0024	0.0023	0.0019
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

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	30-Sep-2025 11:25	30-Sep-2025 11:20	30-Sep-2025 12:00	30-Sep-2025 12:05	30-Sep-2025 10:00
						WT2527691-006	WT2527691-007	WT2527691-008	WT2527691-009	WT2527691-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	0.56 OWP	<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

alsglobal.com

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	30-Sep-2025 11:25	30-Sep-2025 11:20	30-Sep-2025 12:00	30-Sep-2025 12:05	30-Sep-2025 10:00
						WT2527691-006	WT2527691-007	WT2527691-008	WT2527691-009	WT2527691-010
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	%		90.1	91.7	90.3	91.3	90.2
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		90.1	91.7	90.3	91.3	90.2
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		97.9	97.4	97.1	97.7	97.3
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		97.9	97.4	97.1	97.7	97.3

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 ----	MW8S ----	MW8D ----	MW9S ----	MW10D ----
					Client sampling date / time	30-Sep-2025 10:05	30-Sep-2025 10:20	30-Sep-2025 10:25	30-Sep-2025 10:15	30-Sep-2025 11:45
						WT2527691-011	WT2527691-012	WT2527691-013	WT2527691-014	WT2527691-015
						Result	Result	Result	Result	Result
Sample Preparation										
Dissolved carbon filtration location	----	EP358/WT	-	-		field	field	field	field	----
Physical Tests										
Alkalinity, bicarbonate (as CaCO3)	----	E290/WT	1.0	mg/L		8390	506	518	418	525
Alkalinity, carbonate (as CaCO3)	----	E290/WT	1.0	mg/L		611	<1.0	<1.0	<1.0	<1.0
Alkalinity, hydroxide (as CaCO3)	----	E290/WT	1.0	mg/L		<25.0 DLM	<1.0	<1.0	<1.0	<1.0
Alkalinity, phenolphthalein (as CaCO3)	----	E290/WT	1.0	mg/L		306	<1.0	<1.0	<1.0	<1.0
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		9000	506	518	418	525
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		584	594	656	734	----
pH	----	E108/WT	0.10	pH units		7.51	7.27	7.41	7.47	----
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		982 DLM	605 DLDS	648 DLDS	1420 DLDS	----
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0324	0.0074	<0.0050	0.0147	----
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS	----
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		41.0 DLDS	3.49 DLDS	8.03 DLDS	361 DLDS	39.9 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.583 DLDS	<0.100 DLDS	<0.100 DLDS	<0.100 DLDS	----
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		1.39	0.913	0.376	0.519	----
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS	----
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		1.36	0.906	0.376	0.504	----
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0024	0.0037	<0.0100 DLM	0.0022	----
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		41.1 DLDS	24.3 DLDS	20.3 DLDS	18.7 DLDS	----
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		0.163 DLDS	3.53 DLDS	0.993 DLDS	0.554 DLDS	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW10D ----
					Client sampling date / time	30-Sep-2025 10:05	30-Sep-2025 10:20	30-Sep-2025 10:25	30-Sep-2025 10:15	30-Sep-2025 11:45
						WT2527691-011	WT2527691-012	WT2527691-013	WT2527691-014	WT2527691-015
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		0.163	3.53	0.993	0.554	----
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		1.95	3.20	2.45	1.88	----
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		0.0028	0.0625	0.0028	0.0025	0.0014
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00015	0.00030	0.00021	0.00019	0.00028
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.151	0.0662	0.113	0.149	0.0544
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.037	0.047	0.048	0.025	0.064
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	0.0000121	0.0000053	0.0000105	<0.0000050
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		128	174	174	213	127
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	0.00082	<0.00050	<0.00050	<0.00050
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00099	0.00184	0.00101	0.00112	0.00093
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		<0.010	0.051	<0.010	<0.010	<0.010
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	0.000074	<0.000050	<0.000050	<0.000050
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		64.3	38.8	53.9	49.0	85.0
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.0205	0.00448	0.0872	0.0318	0.00112
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	<0.0000050	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		5.10	1.21	2.28	1.81	5.06
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		<0.000050	0.000282	0.000063	0.000072	0.00218
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		9.88	6.82	9.56	6.13	3.97
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		79.8	7.22	15.2	111	30.0

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW10D ----
					Client sampling date / time	30-Sep-2025 10:05	30-Sep-2025 10:20	30-Sep-2025 10:25	30-Sep-2025 10:15	30-Sep-2025 11:45
						WT2527691-011	WT2527691-012	WT2527691-013	WT2527691-014	WT2527691-015
						Result	Result	Result	Result	Result
Dissolved Metals										
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		0.0048	0.0021	0.0040	0.0028	<0.0010
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	----
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	Field	Laboratory
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		86	23	12	43	----
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0028 SP	0.0029	0.0014	0.0015	----
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	2.6 OWP
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW10D ----
					Client sampling date / time	30-Sep-2025 10:05	30-Sep-2025 10:20	30-Sep-2025 10:25	30-Sep-2025 10:15	30-Sep-2025 11:45
						WT2527691-011	WT2527691-012	WT2527691-013	WT2527691-014	WT2527691-015
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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
Hexane, n-	110-54-3	E611D/WT	0.50	µg/L		<0.50	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW7D ----	MW8S ----	MW8D ----	MW9S ----	MW10D ----
					Client sampling date / time	30-Sep-2025 10:05	30-Sep-2025 10:20	30-Sep-2025 10:25	30-Sep-2025 10:15	30-Sep-2025 11:45
						WT2527691-011	WT2527691-012	WT2527691-013	WT2527691-014	WT2527691-015
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	%		89.9	91.0	89.3	89.3	90.5
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		89.9	91.0	89.3	89.3	90.5
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		97.5	97.1	97.2	97.2	98.1
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		97.5	97.1	97.2	97.2	98.1

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	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						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		266	492	510	414	616
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
Alkalinity, total (as CaCO3)	----	E290/WT	1.0	mg/L		266	492	510	414	616
Hardness (as CaCO3), dissolved	----	EC100/WT	0.50	mg/L		337	480	576	628	721
pH	----	E108/WT	0.10	pH units		7.77	7.46	7.40	7.58	7.17
Solids, total dissolved [TDS]	----	E162/WT	10	mg/L		424 DLDS	802 DLM	786 DLM	676 DLDS	798 DLDS
Anions and Nutrients										
Ammonia, total (as N)	7664-41-7	E298/WT	0.0050	mg/L		0.0088	<0.0050	0.263	0.0273	0.0073
Bromide	24959-67-9	E235.Br/WT	0.10	mg/L		<0.10	<0.10	<0.50 DLDS	<0.50 DLDS	<0.50 DLDS
Chloride	16887-00-6	E235.Cl/WT	0.50	mg/L		48.6	42.2	64.4 DLDS	90.1 DLDS	8.94 DLDS
Fluoride	16984-48-8	E235.F/WT	0.020	mg/L		0.110	0.030	0.107 DLDS	<0.100 DLDS	<0.100 DLDS
Kjeldahl nitrogen, total [TKN]	----	E318/WT	0.050	mg/L		0.509 TKNI	0.457	1.16	0.533	0.620
Nitrite (as N)	14797-65-0	E235.NO2/WT	0.010	mg/L		<0.010	<0.010	<0.050 DLDS	<0.050 DLDS	<0.050 DLDS
Nitrogen, total organic	----	EC363/WT	0.050	mg/L		0.500	0.457	0.897	0.506	0.613
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U/WT	0.0010	mg/L		0.0010	0.0014	0.0092	0.0030	0.0016
Sulfate (as SO4)	14808-79-8	E235.SO4/WT	0.30	mg/L		17.8	14.1	41.4 DLDS	28.0 DLDS	14.4 DLDS
Nitrate (as N)	14797-55-8	E235.NO3/WT	0.020	mg/L		5.67	4.12	0.655 DLDS	0.318 DLDS	2.21 DLDS

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Anions and Nutrients										
Nitrate + Nitrite (as N)	----	EC235.N+N/WT	0.0200	mg/L		5.67	4.12	0.655	0.318	2.21
Organic / Inorganic Carbon										
Carbon, dissolved organic [DOC]	----	E358-L/WT	0.50	mg/L		1.55	0.88	6.68	5.77	3.81 VPDW
Dissolved Metals										
Aluminum, dissolved	7429-90-5	E423A/WT	0.0030	mg/L		----	----	----	2.86	----
Aluminum, dissolved	7429-90-5	E421/WT	0.0010	mg/L		<0.0010	0.0373	0.0086	----	0.0885
Antimony, dissolved	7440-36-0	E423A/WT	0.00010	mg/L		----	----	----	0.00020	----
Arsenic, dissolved	7440-38-2	E423A/WT	0.00010	mg/L		----	----	----	0.00163	----
Arsenic, dissolved	7440-38-2	E421/WT	0.00010	mg/L		0.00011	<0.00010	0.00027	----	0.00020
Barium, dissolved	7440-39-3	E423A/WT	0.00010	mg/L		----	----	----	0.132	----
Barium, dissolved	7440-39-3	E421/WT	0.00010	mg/L		0.0311	0.0279	0.113	----	0.0666
Beryllium, dissolved	7440-41-7	E423A/WT	0.000020	mg/L		----	----	----	0.000122	----
Bismuth, dissolved	7440-69-9	E423A/WT	0.000050	mg/L		----	----	----	<0.000050	----
Boron, dissolved	7440-42-8	E423A/WT	0.010	mg/L		----	----	----	0.035	----
Boron, dissolved	7440-42-8	E421/WT	0.010	mg/L		0.012	0.019	0.079	----	0.052
Cadmium, dissolved	7440-43-9	E423A/WT	0.0000050	mg/L		----	----	----	0.0000877	----
Cadmium, dissolved	7440-43-9	E421/WT	0.0000050	mg/L		<0.0000050	<0.0000050	0.0000151	----	0.0000057
Calcium, dissolved	7440-70-2	E423A/WT	0.050	mg/L		----	----	----	190	----
Calcium, dissolved	7440-70-2	E421/WT	0.050	mg/L		98.9	139	178	----	212
Cesium, dissolved	7440-46-2	E423A/WT	0.000010	mg/L		----	----	----	0.000225	----
Chromium, dissolved	7440-47-3	E423A/WT	0.00010	mg/L		----	----	----	0.00565	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Dissolved Metals										
Chromium, dissolved	7440-47-3	E421/WT	0.00050	mg/L		<0.00050	0.00084	<0.00050	----	<0.00050
Cobalt, dissolved	7440-48-4	E423A/WT	0.00010	mg/L		----	----	----	0.00341	----
Copper, dissolved	7440-50-8	E423A/WT	0.00050	mg/L		----	----	----	0.00923	----
Copper, dissolved	7440-50-8	E421/WT	0.00020	mg/L		0.00080	0.00051	0.00228	----	0.00087
Iron, dissolved	7439-89-6	E423A/WT	0.010	mg/L		----	----	----	4.70	----
Iron, dissolved	7439-89-6	E421/WT	0.010	mg/L		<0.010	0.030	<0.010	----	0.066
Lead, dissolved	7439-92-1	E423A/WT	0.000050	mg/L		----	----	----	0.00306	----
Lead, dissolved	7439-92-1	E421/WT	0.000050	mg/L		<0.000050	<0.000050	<0.000050	----	0.000072
Lithium, dissolved	7439-93-2	E423A/WT	0.0010	mg/L		----	----	----	0.0066	----
Magnesium, dissolved	7439-95-4	E423A/WT	0.0050	mg/L		----	----	----	37.2	----
Magnesium, dissolved	7439-95-4	E421/WT	0.0050	mg/L		21.9	32.2	32.0	----	46.6
Manganese, dissolved	7439-96-5	E423A/WT	0.00010	mg/L		----	----	----	1.91	----
Manganese, dissolved	7439-96-5	E421/WT	0.00010	mg/L		0.00043	0.00182	0.0244	----	0.00874
Mercury, dissolved	7439-97-6	E509/WT	0.0000050	mg/L		<0.0000050	<0.0000050	<0.0000050	0.0000053 VPDW	<0.0000050 VPDW
Molybdenum, dissolved	7439-98-7	E423A/WT	0.000050	mg/L		----	----	----	0.00101	----
Nickel, dissolved	7440-02-0	E423A/WT	0.00050	mg/L		----	----	----	0.00830	----
Phosphorus, dissolved	7723-14-0	E423A/WT	0.050	mg/L		----	----	----	0.210	----
Potassium, dissolved	7440-09-7	E423A/WT	0.050	mg/L		----	----	----	28.1	----
Potassium, dissolved	7440-09-7	E421/WT	0.050	mg/L		2.24	0.888	37.5	----	1.47
Rubidium, dissolved	7440-17-7	E423A/WT	0.00020	mg/L		----	----	----	0.00402	----
Selenium, dissolved	7782-49-2	E423A/WT	0.000050	mg/L		----	----	----	0.000097	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Dissolved Metals										
Selenium, dissolved	7782-49-2	E421/WT	0.000050	mg/L		0.000255	0.000118	0.000150	----	0.000088
Silicon, dissolved	7440-21-3	E423A/WT	0.10	mg/L		----	----	----	8.90	----
Silicon, dissolved	7440-21-3	E421/WT	0.050	mg/L		3.60	4.71	4.68	----	8.84
Silver, dissolved	7440-22-4	E423A/WT	0.000010	mg/L		----	----	----	0.000016	----
Sodium, dissolved	7440-23-5	E423A/WT	0.050	mg/L		----	----	----	65.1	----
Sodium, dissolved	7440-23-5	E421/WT	0.050	mg/L		36.3	24.3	52.3	----	13.8
Strontium, dissolved	7440-24-6	E423A/WT	0.00020	mg/L		----	----	----	0.643	----
Sulfur, dissolved	7704-34-9	E423A/WT	0.50	mg/L		----	----	----	11.3	----
Tellurium, dissolved	13494-80-9	E423A/WT	0.00020	mg/L		----	----	----	<0.00020	----
Thallium, dissolved	7440-28-0	E423A/WT	0.000010	mg/L		----	----	----	0.000063	----
Thorium, dissolved	7440-29-1	E423A/WT	0.00010	mg/L		----	----	----	0.00087	----
Tin, dissolved	7440-31-5	E423A/WT	0.00010	mg/L		----	----	----	0.00026	----
Titanium, dissolved	7440-32-6	E423A/WT	0.00030	mg/L		----	----	----	0.102	----
Tungsten, dissolved	7440-33-7	E423A/WT	0.00010	mg/L		----	----	----	<0.00010	----
Uranium, dissolved	7440-61-1	E423A/WT	0.000010	mg/L		----	----	----	0.00127	----
Vanadium, dissolved	7440-62-2	E423A/WT	0.00050	mg/L		----	----	----	0.00661	----
Zinc, dissolved	7440-66-6	E423A/WT	0.0030	mg/L		----	----	----	0.0202	----
Zinc, dissolved	7440-66-6	E421/WT	0.0010	mg/L		<0.0010	0.0012	0.0019	----	0.0011
Zirconium, dissolved	7440-67-7	E423A/WT	0.00020	mg/L		----	----	----	0.00175	----
Dissolved mercury filtration location	----	EP509/WT	-	-		Field	Field	Field	Field	Field
Dissolved metals filtration location	----	EP423/WT	-	-		----	----	----	Field	----

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Dissolved Metals										
Dissolved metals filtration location	----	EP421/WT	-	-		Field	Field	Field	----	Field
Aggregate Organics										
Chemical oxygen demand [COD]	----	E559-L/WT	10	mg/L		<10	<10	38	30	19
Phenols, total (4AAP)	----	E562/WT	0.0010	mg/L		0.0014	0.0015	0.0020	0.0017	0.0020
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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	11.3 OWP
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 OWP
Dichloroethylene, cis-1,2-	156-59-2	E611D/WT	0.50	µg/L		<0.50	<0.50	0.71 OWP	<0.50	5.53 OWP
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		<0.50	<0.50	0.60 OWP	<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

Analytical Results

Sub-Matrix: Water
(Matrix: Water)

Analyte	CAS Number	Method/Lab	LOR	Unit	Client sample ID	MW11D ----	MW12D ----	MW13S ----	MW13D ----	DUP-105 ----
					Client sampling date / time	30-Sep-2025 11:25	30-Sep-2025 11:30	30-Sep-2025 11:35	30-Sep-2025 11:40	30-Sep-2025 10:20
						WT2527691-016	WT2527691-017	WT2527691-018	WT2527691-019	WT2527691-020
						Result	Result	Result	Result	Result
Volatile Organic Compounds										
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	15.8 OWP
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	0.57 OWP	1.01 OWP
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	0.29 OWP
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	%		89.6	89.7	90.8	90.5	89.8
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		89.6	89.7	90.8	90.5	89.8
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		97.4	96.9	97.3	97.4	96.8
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		97.4	96.9	97.3	97.4	96.8

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	: **WT2527691**	Page	: 1 of 50
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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 30-Sep-2025 14:10
PO	: 333568.002	Issue Date	: 08-Oct-2025 23:03
C-O-C number	: ----		
Sampler	: Client		
Site	:		
Quote number	: West Perth Landfill		
No. of samples received	: 20		
No. of samples analysed	: 20		

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

Key

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

Workorder Comments

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

Summary of Outliers

Outliers : Quality Control Samples

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

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

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

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

Analysis Holding Time Compliance

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

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

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

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

Matrix: **Water**

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

Analyte Group : 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
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] DUP-105	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) [ON MECP] DUP-106	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW1	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW11D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW12D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW13D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW13S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 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
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW2	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW3D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW3S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW5D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW5S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW6D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW6S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW7D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid) MW7S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 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	
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid)										
MW8D	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid)										
MW8S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Chemical Oxygen Demand by Colourimetry (Low Level)										
Amber glass total (sulfuric acid)										
MW9S	E559-L	30-Sep-2025	----	----	----		01-Oct-2025	28 days	1 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-105	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-106	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW1	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW11D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW12D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW13D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 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	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW13S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW2	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW3D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW3S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW5D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW5S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW6D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW6S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW7D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 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	
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW7S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW8D	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW8S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Aggregate Organics : Phenols (4AAP) in Water by Colorimetry										
Amber glass total (sulfuric acid)										
MW9S	E562	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-105	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-106	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW1	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW11D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW12D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 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	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW13D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW13S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW2	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW3D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW3S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW5D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW5S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW6D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW6S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 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	
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW7D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW7S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW8D	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW8S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Ammonia by Fluorescence										
Amber glass total (sulfuric acid)										
MW9S	E298	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.Br	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW7D	E235.Br	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW7S	E235.Br	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW8S	E235.Br	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-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		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW9S	E235.Br	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] DUP-106	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW1	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW11D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW12D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW13D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW13S	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW2	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP] MW3D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 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	
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW3S	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW5D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW5S	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW6D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW6S	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Bromide in Water by IC										
HDPE [ON MECP]										
MW8D	E235.Br	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW10D	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW7D	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-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		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW7S	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW8S	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW9S	E235.Cl	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
DUP-106	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW1	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW11D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW12D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW13D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP]										
MW13S	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 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
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW2	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW3D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW3S	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW5D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW5S	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW6D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW6S	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Chloride in Water by IC										
HDPE [ON MECP] MW8D	E235.Cl	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP] DUP-105	E378-U	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	03-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]										
MW7D	E378-U	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	03-Oct-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	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	03-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW8S	E378-U	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	03-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW9S	E378-U	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	03-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
DUP-106	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW1	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW11D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW12D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW13D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW13S	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW2	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW3D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW3S	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW5D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW5S	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW6D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW6S	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)										
HDPE [ON MECP]										
MW8D	E378-U	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.F	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW7D	E235.F	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW7S	E235.F	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW8S	E235.F	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW9S	E235.F	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
DUP-106	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW1	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW11D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW12D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW13D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW13S	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW2	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW3D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW3S	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW5D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW5S	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW6D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW6S	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 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	
Anions and Nutrients : Fluoride in Water by IC										
HDPE [ON MECP]										
MW8D	E235.F	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.NO3	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW7D	E235.NO3	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW7S	E235.NO3	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW8S	E235.NO3	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW9S	E235.NO3	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
DUP-106	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW1	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW11D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW12D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW13D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW13S	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW2	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW3S	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW5S	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP] MW6D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW6S	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrate in Water by IC										
HDPE [ON MECP]										
MW8D	E235.NO3	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.NO2	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW7D	E235.NO2	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW7S	E235.NO2	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW8S	E235.NO2	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW9S	E235.NO2	30-Sep-2025	02-Oct-2025	7 days	2 days	✓	06-Oct-2025	7 days	2 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
DUP-106	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW1	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW11D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW12D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW13D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW13S	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	07-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW2	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW3D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW3S	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW5D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW5S	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-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		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW6D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW6S	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Nitrite in Water by IC										
HDPE [ON MECP]										
MW8D	E235.NO2	30-Sep-2025	04-Oct-2025	7 days	4 days	✓	06-Oct-2025	7 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-105	E235.SO4	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW7D	E235.SO4	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW7S	E235.SO4	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW8S	E235.SO4	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW9S	E235.SO4	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
DUP-106	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 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	
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW1	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW11D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW12D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW13D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW13S	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	07-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW2	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW3S	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP] MW5D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 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
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW5S	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW6D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW6S	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Sulfate in Water by IC										
HDPE [ON MECP]										
MW8D	E235.SO4	30-Sep-2025	04-Oct-2025	28 days	4 days	✓	06-Oct-2025	28 days	4 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-105	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid) [ON MECP]										
DUP-106	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW1	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW11D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW12D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 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	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW13D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW13S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW2	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW3D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW3S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW5D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW5S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW6D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW6S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 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	
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW7D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW7S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW8D	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW8S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Anions and Nutrients : Total Kjeldahl Nitrogen by Fluorescence (Low Level)										
Amber glass total (sulfuric acid)										
MW9S	E318	30-Sep-2025	07-Oct-2025	28 days	7 days	✓	07-Oct-2025	28 days	7 days	✓
Dissolved Metals : Digested Dissolved Metals by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW13D	E423A	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
HDPE dissolved (nitric acid)										
DUP-106	E509	30-Sep-2025	01-Oct-2025	0 hrs	26 hrs	× UCP	01-Oct-2025	0 hrs	26 hrs	× UCP
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
DUP-105	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW1	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 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	
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW11D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW12D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW13D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW13S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	06-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW2	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW3D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW3S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW5D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW5S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 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 Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW6D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW6S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW7D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW7S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW8D	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW8S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Mercury in Water by CVAAS										
Glass vial dissolved (hydrochloric acid)										
MW9S	E509	30-Sep-2025	03-Oct-2025	28 days	3 days	✓	07-Oct-2025	28 days	3 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE - dissolved (lab filtered)										
MW10D	E421	30-Sep-2025	02-Oct-2025	0 hrs	46 hrs	× UCP	02-Oct-2025	0 hrs	46 hrs	× UCP
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-105	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 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	
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
DUP-106	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW1	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW11D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW12D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW13S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW2	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW3D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW3S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW5D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 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)										
MW5S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW6D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW6S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW7D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW7S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW8D	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW8S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Dissolved Metals : Dissolved Metals in Water by CRC ICPMS										
HDPE dissolved (nitric acid)										
MW9S	E421	30-Sep-2025	01-Oct-2025	180 days	1 days	✓	01-Oct-2025	180 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
DUP-106	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 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	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW1	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW11D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW12D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW2	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW3D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW3S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW5D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW5S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid) MW6D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 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	
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass dissolved (sulfuric acid) [ON MECP]										
MW6S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW7D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW7S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW8D	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW8S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW9S	E358-L	30-Sep-2025	01-Oct-2025	28 days	1 days	✓	06-Oct-2025	28 days	1 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
DUP-105	E358-L	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW13D	E358-L	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-Oct-2025	28 days	2 days	✓
Organic / Inorganic Carbon : Dissolved Organic Carbon by Combustion (Low Level)										
Amber glass - dissolved (field filtered/sulfuric acid)										
MW13S	E358-L	30-Sep-2025	02-Oct-2025	28 days	2 days	✓	06-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
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] DUP-105	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW10D	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW7D	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW7S	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW8S	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW9S	E290	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] DUP-106	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW1	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW11D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW12D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW13D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW13S	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW2	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW3S	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW5S	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW6S	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : Alkalinity Species by Titration										
HDPE [ON MECP] MW8D	E290	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-105	E108	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7D	E108	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW7S	E108	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW8S	E108	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW9S	E108	30-Sep-2025	02-Oct-2025	14 days	2 days	✓	04-Oct-2025	14 days	2 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] DUP-106	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW1	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MW11D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW12D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW13D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW13S	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW2	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW3S	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW5S	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-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 Rec	Holding Times Actual	Eval	Analysis Date	Holding Times Rec	Holding Times Actual	Eval
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW6S	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : pH by Meter										
HDPE [ON MECP] MW8D	E108	30-Sep-2025	04-Oct-2025	14 days	4 days	✓	07-Oct-2025	14 days	4 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-105	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW1	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW2	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3S	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW7D	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW7S	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 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] MW8D	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW8S	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW9S	E162	30-Sep-2025	----	----	----		06-Oct-2025	7 days	6 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] DUP-106	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW11D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW12D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW13D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW13S	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW3D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 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] MW5D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW5S	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6D	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Physical Tests : TDS by Gravimetry										
HDPE [ON MECP] MW6S	E162	30-Sep-2025	----	----	----		07-Oct-2025	7 days	7 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-105	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-106	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW10D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 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) MW12D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 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 (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8D	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9S	E611D	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-105	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) DUP-106	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW1	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 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) MW10D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW11D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW12D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW13S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW2	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW3S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW5D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 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) MW5S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW6S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW7S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8D	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW8S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) MW9S	E611E	30-Sep-2025	03-Oct-2025	14 days	3 days	✓	03-Oct-2025	14 days	3 days	✓

Legend & Qualifier Definitions

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

UCP: Unsuitable Container and/or Preservative used (invalidates standard hold time). Maximum hold time of zero applied. Test results may be biased low / unreliable, and may not meet regulatory requirements.

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	2254455	3	54	5.5	5.0	✓
TDS by Gravimetry	E162	2260463	2	38	5.2	5.0	✓
Bromide in Water by IC	E235.Br	2254452	3	35	8.5	5.0	✓
Chloride in Water by IC	E235.Cl	2254307	4	68	5.8	5.0	✓
Fluoride in Water by IC	E235.F	2254447	3	52	5.7	5.0	✓
Nitrite in Water by IC	E235.NO2	2254449	3	55	5.4	5.0	✓
Nitrate in Water by IC	E235.NO3	2254448	3	56	5.3	5.0	✓
Sulfate in Water by IC	E235.SO4	2254451	3	52	5.7	5.0	✓
Alkalinity Species by Titration	E290	2254317	4	52	7.6	5.0	✓
Ammonia by Fluorescence	E298	2257035	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2257034	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2252148	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2254453	3	43	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2250792	2	23	8.7	5.0	✓
Digested Dissolved Metals by CRC ICPMS	E423A	2251601	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2250927	3	53	5.6	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2252212	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2257033	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2255553	1	20	5.0	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2255552	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
pH by Meter	E108	2254455	3	54	5.5	5.0	✓
TDS by Gravimetry	E162	2260463	2	38	5.2	5.0	✓
Bromide in Water by IC	E235.Br	2254452	3	35	8.5	5.0	✓
Chloride in Water by IC	E235.Cl	2254307	4	68	5.8	5.0	✓
Fluoride in Water by IC	E235.F	2254447	3	52	5.7	5.0	✓
Nitrite in Water by IC	E235.NO2	2254449	3	55	5.4	5.0	✓
Nitrate in Water by IC	E235.NO3	2254448	3	56	5.3	5.0	✓
Sulfate in Water by IC	E235.SO4	2254451	3	52	5.7	5.0	✓
Alkalinity Species by Titration	E290	2254317	4	52	7.6	5.0	✓
Ammonia by Fluorescence	E298	2257035	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2257034	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2252148	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2254453	3	43	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2250792	2	23	8.7	5.0	✓
Digested Dissolved Metals by CRC ICPMS	E423A	2251601	1	1	100.0	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Laboratory Control Samples (LCS) - Continued							
Dissolved Mercury in Water by CVAAS	E509	2250927	3	53	5.6	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2252212	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2257033	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2255553	1	20	5.0	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2255552	1	20	5.0	5.0	✓
Method Blanks (MB)							
TDS by Gravimetry	E162	2260463	2	38	5.2	5.0	✓
Bromide in Water by IC	E235.Br	2254452	3	35	8.5	5.0	✓
Chloride in Water by IC	E235.Cl	2254307	4	68	5.8	5.0	✓
Fluoride in Water by IC	E235.F	2254447	3	52	5.7	5.0	✓
Nitrite in Water by IC	E235.NO2	2254449	3	55	5.4	5.0	✓
Nitrate in Water by IC	E235.NO3	2254448	3	56	5.3	5.0	✓
Sulfate in Water by IC	E235.SO4	2254451	3	52	5.7	5.0	✓
Alkalinity Species by Titration	E290	2254317	4	52	7.6	5.0	✓
Ammonia by Fluorescence	E298	2257035	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2257034	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2252148	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2254453	3	43	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2250792	2	23	8.7	5.0	✓
Digested Dissolved Metals by CRC ICPMS	E423A	2251601	2	1	200.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2250927	3	53	5.6	5.0	✓
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2252212	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2257033	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2255553	1	20	5.0	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2255552	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
Bromide in Water by IC	E235.Br	2254452	3	35	8.5	5.0	✓
Chloride in Water by IC	E235.Cl	2254307	4	68	5.8	5.0	✓
Fluoride in Water by IC	E235.F	2254447	3	52	5.7	5.0	✓
Nitrite in Water by IC	E235.NO2	2254449	3	55	5.4	5.0	✓
Nitrate in Water by IC	E235.NO3	2254448	3	56	5.3	5.0	✓
Sulfate in Water by IC	E235.SO4	2254451	3	52	5.7	5.0	✓
Ammonia by Fluorescence	E298	2257035	1	19	5.2	5.0	✓
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318	2257034	1	19	5.2	5.0	✓
Dissolved Organic Carbon by Combustion (Low Level)	E358-L	2252148	2	40	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	2254453	3	43	6.9	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	2250792	2	23	8.7	5.0	✓
Digested Dissolved Metals by CRC ICPMS	E423A	2251601	1	1	100.0	5.0	✓
Dissolved Mercury in Water by CVAAS	E509	2250927	3	53	5.6	5.0	✓

Matrix: **Water**

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

Quality Control Sample Type			Count		Frequency (%)		
Analytical Methods	*Method*	*QC Lot #*	*QC*	*Regular*	*Actual*	*Expected*	*Evaluation*
Matrix Spikes (MS) - Continued							
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L	2252212	1	19	5.2	5.0	✓
Phenols (4AAP) in Water by Colorimetry	E562	2257033	1	20	5.0	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2255553	1	20	5.0	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2255552	1	20	5.0	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
Total Kjeldahl Nitrogen by Fluorescence (Low Level)	E318 ALS Environmental - Waterloo	Water	Method Fialab 100, 2018	TKN in water is determined by automated continuous flow analysis with membrane diffusion and fluorescence detection, after reaction with OPA (ortho-phthalaldehyde). This method is approved under US EPA 40 CFR Part 136 (May 2021).
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.
Digested Dissolved Metals by CRC ICPMS	E423A ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45um), digested with nitric and hydrochloric acids, and analyzed by Collision/Reaction Cell ICPMS.
Dissolved Mercury in Water by CVAAS	E509 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 1631E (mod)	Water samples are filtered (0.45 um), preserved with HCl, then undergo a cold-oxidation using bromine monochloride prior to reduction with stannous chloride, and analyzed by CVAAS.
Chemical Oxygen Demand by Colourimetry (Low Level)	E559-L ALS Environmental - Waterloo	Water	APHA 5220 D (mod)	Samples are analyzed using the closed reflux colourimetric method.
Phenols (4AAP) in Water by Colorimetry	E562 ALS Environmental - Waterloo	Water	EPA 9066	This automated method is based on the distillation of phenol and subsequent reaction of the distillate with alkaline ferricyanide (K3Fe(CN)6) and 4-amino-antipyrine (4-AAP) to form a red complex which is measured colorimetrically.
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.

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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).
Total Organic Nitrogen (Calculation)	EC363 ALS Environmental - Waterloo	Water	APHA 4500-NORG (TKN)/NH3-NITROGEN (NH3)	Total Organic Nitrogen is a calculated parameter. Total Organic Nitrogen = Total Kjeldahl Nitrogen - Ammonia.

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.
Digestion for TKN in water	EP318 ALS Environmental - Waterloo	Water	APHA 4500-Norg D (mod)	Samples are digested at high temperature using Sulfuric Acid with Copper catalyst, which converts organic nitrogen sources to Ammonia, which is then quantified by the analytical method as TKN. This method is unsuitable for samples containing high levels of nitrate. If nitrate exceeds TKN concentration by ten times or more, results may be biased low.
Preparation for 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.
Dissolved Metals Water Digestion and Filtration	EP423 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um) and digested with nitric and hydrochloric acids.
Dissolved Mercury Water Filtration	EP509 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HCl.

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	: **WT2527691**	Page	: 1 of 28
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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 30-Sep-2025 14:10
PO	: 333568.002	Date Analysis Commenced	: 01-Oct-2025
C-O-C number	: ----	Issue Date	: 08-Oct-2025 23:03
Sampler	: Client		
Site	:		
Quote number	: West Perth Landfill		
No. of samples received	: 20		
No. of samples analysed	: 20		

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*
Andrea Armstrong	Department Manager - Air Quality and Volatiles	Waterloo VOC, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Waterloo Centralized Prep, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Waterloo Inorganics, Waterloo, Ontario
Jon Fisher	Laboratory Manager - Environmental	Waterloo Metals, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Inorganics, Waterloo, Ontario
Nik Perkio	Senior Analyst	Waterloo Metals, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Centralized Prep, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	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: 2254317)											
WT2527678-001	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	566	566	0.0283%	20%	----
Physical Tests (QC Lot: 2254455)											
WT2527670-039	Anonymous	pH	----	E108	0.10	pH units	5.85	5.73	2.07%	4%	----
Physical Tests (QC Lot: 2254457)											
WT2527670-039	Anonymous	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	<1.0	<1.0	0	Diff <2x LOR	----
Physical Tests (QC Lot: 2258218)											
WT2528023-005	Anonymous	Alkalinity, total (as CaCO3)	----	E290	10.0	mg/L	1310	1280	2.37%	20%	----
Physical Tests (QC Lot: 2258219)											
WT2528023-005	Anonymous	pH	----	E108	0.10	pH units	7.21	7.30	1.24%	4%	----
Physical Tests (QC Lot: 2258228)											
WT2527770-002	Anonymous	Alkalinity, total (as CaCO3)	----	E290	2.0	mg/L	210	210	0.209%	20%	----
Physical Tests (QC Lot: 2258229)											
WT2527770-002	Anonymous	pH	----	E108	0.10	pH units	9.49	9.56	0.735%	4%	----
Physical Tests (QC Lot: 2260463)											
WT2527360-001	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	512	510	0.293%	20%	----
Physical Tests (QC Lot: 2263358)											
WT2527691-005	DUP-106	Solids, total dissolved [TDS]	----	E162	20	mg/L	448	449	0.223%	20%	----
Anions and Nutrients (QC Lot: 2254307)											
WT2527750-003	Anonymous	Chloride	16887-00-6	E235.Cl	5.00	mg/L	2280	2230	2.13%	20%	----
Anions and Nutrients (QC Lot: 2254447)											
WT2527691-010	MW7S	Fluoride	16984-48-8	E235.F	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2254448)											
WT2527691-010	MW7S	Nitrate (as N)	14797-55-8	E235.NO3	0.100	mg/L	0.893	0.909	0.016	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2254449)											
WT2527691-010	MW7S	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: 2254450)											
WT2527691-010	MW7S	Chloride	16887-00-6	E235.Cl	2.50	mg/L	46.2	46.2	0.0799%	20%	----
Anions and Nutrients (QC Lot: 2254451)											
WT2527691-010	MW7S	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	16.9	16.9	0.0849%	20%	----
Anions and Nutrients (QC Lot: 2254452)											

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: 2254452) - continued											
WT2527691-010	MW7S	Bromide	24959-67-9	E235.Br	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2254453)											
WT2527670-039	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2257034)											
WT2527691-001	MW1	Kjeldahl nitrogen, total [TKN]	----	E318	0.050	mg/L	0.540	0.559	3.51%	20%	----
Anions and Nutrients (QC Lot: 2257035)											
WT2527691-002	MW2	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0117	0.0141	0.0024	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258211)											
WT2527691-001	MW1	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	<0.020	<0.020	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258212)											
WT2527691-001	MW1	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: 2258213)											
WT2527691-001	MW1	Chloride	16887-00-6	E235.Cl	0.50	mg/L	15.7	15.6	0.389%	20%	----
Anions and Nutrients (QC Lot: 2258214)											
WT2527691-001	MW1	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	25.0	24.7	1.11%	20%	----
Anions and Nutrients (QC Lot: 2258215)											
WT2527691-001	MW1	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.088	0.085	0.002	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258216)											
WT2527691-001	MW1	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	0	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258220)											
HA2503839-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0063	0.0062	0.0001	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258221)											
WT2527691-017	MW12D	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	4.12	4.14	0.271%	20%	----
Anions and Nutrients (QC Lot: 2258222)											
WT2527691-017	MW12D	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: 2258223)											
WT2527691-017	MW12D	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	14.1	14.1	0.161%	20%	----
Anions and Nutrients (QC Lot: 2258224)											
WT2527691-017	MW12D	Chloride	16887-00-6	E235.Cl	0.50	mg/L	42.2	42.2	0.0671%	20%	----
Anions and Nutrients (QC Lot: 2258225)											
WT2527691-017	MW12D	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.030	0.027	0.003	Diff <2x LOR	----
Anions and Nutrients (QC Lot: 2258226)											
WT2527691-017	MW12D	Bromide	24959-67-9	E235.Br	0.10	mg/L	<0.10	<0.10	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*
Anions and Nutrients (QC Lot: 2258230)											
WT2527691-017	MW12D	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0014	<0.0010	0.0004	Diff <2x LOR	----
Organic / Inorganic Carbon (QC Lot: 2252148)											
WT2527676-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	5.64	5.67	0.486%	20%	----
Organic / Inorganic Carbon (QC Lot: 2254446)											
WT2527691-018	MW13S	Carbon, dissolved organic [DOC]	----	E358-L	0.50	mg/L	6.68	6.80	1.71%	20%	----
Dissolved Metals (QC Lot: 2250792)											
WT2527691-001	MW1	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0026	0.0018	0.0008	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00015	0.00019	0.00004	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0513	0.0528	2.74%	20%	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.026	0.026	0.0002	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000098	0.0000106	0.0000008	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	135	134	0.243%	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	0.00191	0.00194	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	40.7	41.8	2.79%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.308	0.316	2.62%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	0.790	0.812	2.63%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.000050	0.000055	0.000005	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	8.29	8.28	0.156%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	9.75	10.0	2.83%	20%	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0015	0.0014	0.00007	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2250927)											
WT2527181-005	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2251601)											
WT2527691-019	MW13D	Aluminum, dissolved	7429-90-5	E423A	0.0030	mg/L	2.86	2.91	1.74%	20%	----
		Antimony, dissolved	7440-36-0	E423A	0.00010	mg/L	0.00020	0.00019	0.000004	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E423A	0.00010	mg/L	0.00163	0.00157	4.12%	20%	----
		Barium, dissolved	7440-39-3	E423A	0.00010	mg/L	0.132	0.137	4.20%	20%	----
		Beryllium, dissolved	7440-41-7	E423A	0.000020	mg/L	0.000122	0.000140	0.000018	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E423A	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E423A	0.010	mg/L	0.035	0.038	0.003	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E423A	0.0000050	mg/L	0.0000877	0.0000804	8.68%	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: 2251601) - continued											
WT2527691-019	MW13D	Calcium, dissolved	7440-70-2	E423A	0.050	mg/L	190	204	7.26%	20%	----
		Cesium, dissolved	7440-46-2	E423A	0.000010	mg/L	0.000225	0.000218	3.02%	20%	----
		Chromium, dissolved	7440-47-3	E423A	0.00010	mg/L	0.00565	0.00576	1.82%	20%	----
		Cobalt, dissolved	7440-48-4	E423A	0.00010	mg/L	0.00341	0.00346	1.44%	20%	----
		Copper, dissolved	7440-50-8	E423A	0.00050	mg/L	0.00923	0.00928	0.527%	20%	----
		Iron, dissolved	7439-89-6	E423A	0.010	mg/L	4.70	4.79	1.96%	20%	----
		Lead, dissolved	7439-92-1	E423A	0.000050	mg/L	0.00306	0.00306	0.121%	20%	----
		Lithium, dissolved	7439-93-2	E423A	0.0010	mg/L	0.0066	0.0066	0.00005	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E423A	0.0050	mg/L	37.2	38.4	3.26%	20%	----
		Manganese, dissolved	7439-96-5	E423A	0.00010	mg/L	1.91	1.99	4.10%	20%	----
		Molybdenum, dissolved	7439-98-7	E423A	0.000050	mg/L	0.00101	0.00107	5.80%	20%	----
		Nickel, dissolved	7440-02-0	E423A	0.00050	mg/L	0.00830	0.00854	2.91%	20%	----
		Phosphorus, dissolved	7723-14-0	E423A	0.050	mg/L	0.210	0.202	0.008	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E423A	0.050	mg/L	28.1	28.7	2.25%	20%	----
		Rubidium, dissolved	7440-17-7	E423A	0.00020	mg/L	0.00402	0.00394	2.15%	20%	----
		Selenium, dissolved	7782-49-2	E423A	0.000050	mg/L	0.000097	0.000105	0.000008	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E423A	0.10	mg/L	8.90	9.35	4.94%	20%	----
		Silver, dissolved	7440-22-4	E423A	0.000010	mg/L	0.000016	0.000016	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E423A	0.050	mg/L	65.1	65.7	0.915%	20%	----
		Strontium, dissolved	7440-24-6	E423A	0.00020	mg/L	0.643	0.653	1.58%	20%	----
		Sulfur, dissolved	7704-34-9	E423A	0.50	mg/L	11.3	11.5	1.57%	20%	----
		Tellurium, dissolved	13494-80-9	E423A	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E423A	0.000010	mg/L	0.000063	0.000061	0.000002	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E423A	0.00010	mg/L	0.00087	0.00085	0.00002	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E423A	0.00010	mg/L	0.00026	0.00027	0.00001	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E423A	0.00030	mg/L	0.102	0.101	0.0457%	20%	----
		Tungsten, dissolved	7440-33-7	E423A	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E423A	0.000010	mg/L	0.00127	0.00126	0.808%	20%	----
		Vanadium, dissolved	7440-62-2	E423A	0.00050	mg/L	0.00661	0.00682	3.22%	20%	----
		Zinc, dissolved	7440-66-6	E423A	0.0030	mg/L	0.0202	0.0197	0.0005	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E423A	0.00020	mg/L	0.00175	0.00190	0.00014	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2253237)											
WT2527741-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0032	0.0030	0.0002	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.92 µg/L	0.00094	0.00002	Diff <2x LOR	----

Sub-Matrix: **Water**

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	*Client sample ID*	*Analyte*	*CAS Number*	*Method*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD(%) or Difference*	*Duplicate Limits*	*Qualifier*
Dissolved Metals (QC Lot: 2253237) - continued											
WT2527741-001	Anonymous	Barium, dissolved	7440-39-3	E421	0.00010	mg/L	121 µg/L	0.122	1.10%	20%	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	171 µg/L	0.171	0.421%	20%	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0928 µg/L	0.0000837	10.3%	20%	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	133	132	1.19%	20%	----
		Chromium, dissolved	7440-47-3	E421	0.00050	mg/L	<0.50 µg/L	<0.00050	0	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.73 µg/L	0.00075	0.00002	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	----
		Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	44.8	45.5	1.48%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.167	0.170	1.69%	20%	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	13.0	13.3	1.90%	20%	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	9.25 µg/L	0.00918	0.792%	20%	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	7.99	7.92	0.907%	20%	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	51800 µg/L	52.7	1.63%	20%	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	3.4 µg/L	0.0036	0.0002	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2254109)											
BU2502716-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Dissolved Metals (QC Lot: 2256549)											
WT2527691-016	MW11D	Mercury, dissolved	7439-97-6	E509	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2252212)											
WT2527691-001	MW1	Chemical oxygen demand [COD]	----	E559-L	10	mg/L	16	15	1	Diff <2x LOR	----
Aggregate Organics (QC Lot: 2257033)											
WP2516907-001	Anonymous	Phenols, total (4AAP)	----	E562	0.0010	mg/L	0.0579	0.0589	1.73%	20%	----
Volatile Organic Compounds (QC Lot: 2255552)											
WT2527691-001	MW1	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: 2255553)											
WT2527691-001	MW1	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	----

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: 2255553) - continued											
WT2527691-001	MW1	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	9.86	9.83	0.264%	30%	----
		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	0.56	0.56	0.007	Diff <2x LOR	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	0.50	µg/L	17.2	17.0	1.25%	30%	----
		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	9.55	9.44	1.18%	30%	----
		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	20.6	20.5	0.389%	30%	----
		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	0.59	0.58	0.009	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: 2255553) - continued											
WT2527691-001	MW1	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: 2254317)						
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: 2254457)						
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: 2258218)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.1	----
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	1.1	----
Physical Tests (QCLot: 2258228)						
Alkalinity, bicarbonate (as CaCO3)	----	E290	1	mg/L	1.3	----
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	1.3	----
Physical Tests (QCLot: 2260463)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Physical Tests (QCLot: 2263358)						
Solids, total dissolved [TDS]	----	E162	10	mg/L	<10	----
Anions and Nutrients (QCLot: 2254307)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2254447)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2254448)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 2254448) - continued						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2254449)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2254450)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2254451)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2254452)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2254453)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 2257034)						
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	<0.050	----
Anions and Nutrients (QCLot: 2257035)						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	----
Anions and Nutrients (QCLot: 2258211)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2258212)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2258213)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2258214)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
Anions and Nutrients (QCLot: 2258215)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2258216)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2258220)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Anions and Nutrients (QCLot: 2258221)						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2258222)						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
Anions and Nutrients (QCLot: 2258223)						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Anions and Nutrients (QCLot: 2258224)						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
Anions and Nutrients (QCLot: 2258225)						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
Anions and Nutrients (QCLot: 2258226)						
Bromide	24959-67-9	E235.Br	0.1	mg/L	<0.10	----
Anions and Nutrients (QCLot: 2258230)						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
Organic / Inorganic Carbon (QCLot: 2252148)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Organic / Inorganic Carbon (QCLot: 2254446)						
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	<0.50	----
Dissolved Metals (QCLot: 2250792)						
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	----
Dissolved Metals (QCLot: 2250927)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 2251601)						
Aluminum, dissolved	7429-90-5	E423A	0.003	mg/L	<0.0030	----
Antimony, dissolved	7440-36-0	E423A	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E423A	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 2251601) - continued						
Barium, dissolved	7440-39-3	E423A	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E423A	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E423A	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E423A	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E423A	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E423A	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E423A	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E423A	0.0001	mg/L	<0.00010	----
Cobalt, dissolved	7440-48-4	E423A	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E423A	0.0005	mg/L	<0.00050	----
Iron, dissolved	7439-89-6	E423A	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E423A	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E423A	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E423A	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E423A	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E423A	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E423A	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E423A	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E423A	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E423A	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E423A	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E423A	0.1	mg/L	<0.10	----
Silver, dissolved	7440-22-4	E423A	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E423A	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E423A	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E423A	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E423A	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E423A	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E423A	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E423A	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E423A	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E423A	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E423A	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E423A	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E423A	0.003	mg/L	<0.0030	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 2251601) - continued						
Zirconium, dissolved	7440-67-7	E423A	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 2252943)						
Aluminum, dissolved	7429-90-5	E423A	0.003	mg/L	<0.0030	----
Antimony, dissolved	7440-36-0	E423A	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E423A	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E423A	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E423A	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E423A	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E423A	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E423A	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E423A	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E423A	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E423A	0.0001	mg/L	<0.00010	----
Cobalt, dissolved	7440-48-4	E423A	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E423A	0.0005	mg/L	<0.00050	----
Iron, dissolved	7439-89-6	E423A	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E423A	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E423A	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E423A	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E423A	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E423A	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E423A	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E423A	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E423A	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E423A	0.0002	mg/L	<0.00020	----
Selenium, dissolved	7782-49-2	E423A	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E423A	0.1	mg/L	<0.10	----
Silver, dissolved	7440-22-4	E423A	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E423A	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E423A	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E423A	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E423A	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E423A	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E423A	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E423A	0.0001	mg/L	<0.00010	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Dissolved Metals (QCLot: 2252943) - continued						
Titanium, dissolved	7440-32-6	E423A	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E423A	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E423A	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E423A	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E423A	0.003	mg/L	<0.0030	----
Zirconium, dissolved	7440-67-7	E423A	0.0002	mg/L	<0.00020	----
Dissolved Metals (QCLot: 2253237)						
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	----
Dissolved Metals (QCLot: 2254109)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Dissolved Metals (QCLot: 2256549)						
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	<0.0000050	----
Aggregate Organics (QCLot: 2252212)						
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	<10	----
Aggregate Organics (QCLot: 2257033)						
Phenols, total (4AAP)	----	E562	0.001	mg/L	<0.0010	----
Volatile Organic Compounds (QCLot: 2255552)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 2255553)						

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 2255553) - continued						
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: 2255553) - 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	----

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: 2254317)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	98.3	85.0	115	----
Physical Tests (QCLot: 2254455)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2254457)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	95.4	85.0	115	----
Physical Tests (QCLot: 2258218)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 2258219)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2258228)									
Alkalinity, total (as CaCO3)	----	E290	1	mg/L	150 mg/L	96.4	85.0	115	----
Physical Tests (QCLot: 2258229)									
pH	----	E108	----	pH units	7 pH units	101	98.0	102	----
Physical Tests (QCLot: 2260463)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	102	85.0	115	----
Physical Tests (QCLot: 2263358)									
Solids, total dissolved [TDS]	----	E162	10	mg/L	1000 mg/L	96.2	85.0	115	----
Anions and Nutrients (QCLot: 2254307)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 2254447)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	108	90.0	110	----
Anions and Nutrients (QCLot: 2254448)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.2	90.0	110	----
Anions and Nutrients (QCLot: 2254449)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	95.4	90.0	110	----
Anions and Nutrients (QCLot: 2254450)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.0	90.0	110	----
Anions and Nutrients (QCLot: 2254451)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2254452)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	98.2	85.0	115	----

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: 2254453)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 2257034)									
Kjeldahl nitrogen, total [TKN]	----	E318	0.05	mg/L	4 mg/L	106	75.0	125	----
Anions and Nutrients (QCLot: 2257035)									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	107	85.0	115	----
Anions and Nutrients (QCLot: 2258211)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	97.4	90.0	110	----
Anions and Nutrients (QCLot: 2258212)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	94.9	90.0	110	----
Anions and Nutrients (QCLot: 2258213)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	98.1	90.0	110	----
Anions and Nutrients (QCLot: 2258214)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.5	90.0	110	----
Anions and Nutrients (QCLot: 2258215)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2258216)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 2258220)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	101	80.0	120	----
Anions and Nutrients (QCLot: 2258221)									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	101	90.0	110	----
Anions and Nutrients (QCLot: 2258222)									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 2258223)									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	105	90.0	110	----
Anions and Nutrients (QCLot: 2258224)									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	102	90.0	110	----
Anions and Nutrients (QCLot: 2258225)									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100	90.0	110	----
Anions and Nutrients (QCLot: 2258226)									
Bromide	24959-67-9	E235.Br	0.1	mg/L	0.5 mg/L	102	85.0	115	----
Anions and Nutrients (QCLot: 2258230)									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	99.2	80.0	120	----
Organic / Inorganic Carbon (QCLot: 2252148)									

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Organic / Inorganic Carbon (QCLot: 2252148) - continued									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	97.1	80.0	120	----
Organic / Inorganic Carbon (QCLot: 2254446)									
Carbon, dissolved organic [DOC]	----	E358-L	0.5	mg/L	8.57 mg/L	99.2	80.0	120	----
Dissolved Metals (QCLot: 2250792)									
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	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	104	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	106	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	102	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	104	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	101	80.0	120	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	99.8	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	101	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	106	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	103	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	99.0	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	103	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	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	100	80.0	120	----
Dissolved Metals (QCLot: 2251601)									
Aluminum, dissolved	7429-90-5	E423A	0.003	mg/L	0.1 mg/L	94.1	80.0	120	----
Antimony, dissolved	7440-36-0	E423A	0.0001	mg/L	0.05 mg/L	88.6	80.0	120	----
Arsenic, dissolved	7440-38-2	E423A	0.0001	mg/L	0.05 mg/L	95.2	80.0	120	----
Barium, dissolved	7440-39-3	E423A	0.0001	mg/L	0.012 mg/L	90.3	80.0	120	----
Beryllium, dissolved	7440-41-7	E423A	0.00002	mg/L	0.005 mg/L	90.0	80.0	120	----
Bismuth, dissolved	7440-69-9	E423A	0.00005	mg/L	0.05 mg/L	87.9	80.0	120	----
Boron, dissolved	7440-42-8	E423A	0.01	mg/L	0.05 mg/L	90.4	80.0	120	----
Cadmium, dissolved	7440-43-9	E423A	0.000005	mg/L	0.005 mg/L	87.8	80.0	120	----
Calcium, dissolved	7440-70-2	E423A	0.05	mg/L	2.5 mg/L	90.2	80.0	120	----
Cesium, dissolved	7440-46-2	E423A	0.00001	mg/L	0.002 mg/L	88.5	80.0	120	----
Chromium, dissolved	7440-47-3	E423A	0.0001	mg/L	0.012 mg/L	92.8	80.0	120	----
Cobalt, dissolved	7440-48-4	E423A	0.0001	mg/L	0.012 mg/L	91.2	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
					Target Concentration	LCS	Low	High	Qualifier
Dissolved Metals (QCLot: 2251601) - continued									
Copper, dissolved	7440-50-8	E423A	0.0005	mg/L	0.012 mg/L	91.6	80.0	120	----
Iron, dissolved	7439-89-6	E423A	0.01	mg/L	0.05 mg/L	91.8	80.0	120	----
Lead, dissolved	7439-92-1	E423A	0.00005	mg/L	0.025 mg/L	90.0	80.0	120	----
Lithium, dissolved	7439-93-2	E423A	0.001	mg/L	0.012 mg/L	88.3	80.0	120	----
Magnesium, dissolved	7439-95-4	E423A	0.005	mg/L	2.5 mg/L	91.8	80.0	120	----
Manganese, dissolved	7439-96-5	E423A	0.0001	mg/L	0.012 mg/L	91.8	80.0	120	----
Molybdenum, dissolved	7439-98-7	E423A	0.00005	mg/L	0.012 mg/L	89.6	80.0	120	----
Nickel, dissolved	7440-02-0	E423A	0.0005	mg/L	0.025 mg/L	90.8	80.0	120	----
Phosphorus, dissolved	7723-14-0	E423A	0.05	mg/L	0.5 mg/L	90.3	80.0	120	----
Potassium, dissolved	7440-09-7	E423A	0.05	mg/L	2.5 mg/L	89.6	80.0	120	----
Rubidium, dissolved	7440-17-7	E423A	0.0002	mg/L	0.005 mg/L	90.4	80.0	120	----
Selenium, dissolved	7782-49-2	E423A	0.00005	mg/L	0.05 mg/L	91.8	80.0	120	----
Silicon, dissolved	7440-21-3	E423A	0.1	mg/L	0.5 mg/L	92.6	80.0	120	----
Silver, dissolved	7440-22-4	E423A	0.00001	mg/L	0.005 mg/L	91.0	80.0	120	----
Sodium, dissolved	7440-23-5	E423A	0.05	mg/L	2.5 mg/L	92.8	80.0	120	----
Strontium, dissolved	7440-24-6	E423A	0.0002	mg/L	0.012 mg/L	89.3	80.0	120	----
Sulfur, dissolved	7704-34-9	E423A	0.5	mg/L	2.5 mg/L	88.3	80.0	120	----
Tellurium, dissolved	13494-80-9	E423A	0.0002	mg/L	0.005 mg/L	86.0	80.0	120	----
Thallium, dissolved	7440-28-0	E423A	0.00001	mg/L	0.05 mg/L	90.5	80.0	120	----
Thorium, dissolved	7440-29-1	E423A	0.0001	mg/L	0.005 mg/L	90.8	80.0	120	----
Tin, dissolved	7440-31-5	E423A	0.0001	mg/L	0.025 mg/L	88.4	80.0	120	----
Titanium, dissolved	7440-32-6	E423A	0.0003	mg/L	0.012 mg/L	92.8	80.0	120	----
Tungsten, dissolved	7440-33-7	E423A	0.0001	mg/L	0.005 mg/L	91.5	80.0	120	----
Uranium, dissolved	7440-61-1	E423A	0.00001	mg/L	0 mg/L	93.1	80.0	120	----
Vanadium, dissolved	7440-62-2	E423A	0.0005	mg/L	0.025 mg/L	92.0	80.0	120	----
Zinc, dissolved	7440-66-6	E423A	0.003	mg/L	0.025 mg/L	90.5	80.0	120	----
Zirconium, dissolved	7440-67-7	E423A	0.0002	mg/L	0.005 mg/L	86.0	80.0	120	----
Dissolved Metals (QCLot: 2253237)									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	106	80.0	120	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	0.05 mg/L	103	80.0	120	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	0.012 mg/L	106	80.0	120	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	0.005 mg/L	94.7	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	99.0	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	97.2	80.0	120	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report: Spike: Target Concentration	Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High	Qualifier
Dissolved Metals (QCLot: 2253237) - continued									
Iron, dissolved	7439-89-6	E421	0.01	mg/L	0.05 mg/L	100	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	103	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	99.3	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	100	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	97.3	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	106	60.0	140	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	100	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	108	80.0	120	----
Mercury, dissolved	7439-97-6	E509	0.000005	mg/L	0 mg/L	93.4	80.0	120	----
Aggregate Organics (QCLot: 2252212)									
Chemical oxygen demand [COD]	----	E559-L	10	mg/L	100 mg/L	102	85.0	115	----
Aggregate Organics (QCLot: 2257033)									
Phenols, total (4AAP)	----	E562	0.001	mg/L	0.02 mg/L	103	85.0	115	----
Volatile Organic Compounds (QCLot: 2255552)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	98.4	70.0	130	----
Volatile Organic Compounds (QCLot: 2255553)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	107	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	100	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	73.9	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	91.0	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	99.3	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Chloroethane	75-00-3	E611D	0.5	µg/L	100 µg/L	92.9	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Chloromethane	74-87-3	E611D	2	µg/L	100 µg/L	96.8	60.0	140	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	101	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	104	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: 2255553) - continued									
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	76.8	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	107	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	91.0	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	98.2	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	97.9	70.0	130	----
Dichloropropane, 1,2-	78-87-5	E611D	0.5	µg/L	100 µg/L	99.4	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	102	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	105	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	99.9	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	114	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	125	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	118	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	98.0	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	97.1	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	85.6	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	91.9	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	95.0	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	85.5	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	90.6	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	103	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: 2254307)										
WT2527750-003	Anonymous	Chloride	16887-00-6	E235.Cl	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 2254447)										
WT2527691-010	MW7S	Fluoride	16984-48-8	E235.F	5.11 mg/L	5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2254448)										
WT2527691-010	MW7S	Nitrate (as N)	14797-55-8	E235.NO3	12.1 mg/L	12.5 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 2254449)										
WT2527691-010	MW7S	Nitrite (as N)	14797-65-0	E235.NO2	2.36 mg/L	2.5 mg/L	94.6	75.0	125	----
Anions and Nutrients (QCLot: 2254450)										
WT2527691-010	MW7S	Chloride	16887-00-6	E235.Cl	487 mg/L	500 mg/L	97.4	75.0	125	----
Anions and Nutrients (QCLot: 2254451)										
WT2527691-010	MW7S	Sulfate (as SO4)	14808-79-8	E235.SO4	484 mg/L	500 mg/L	96.9	75.0	125	----
Anions and Nutrients (QCLot: 2254452)										
WT2527691-010	MW7S	Bromide	24959-67-9	E235.Br	2.39 mg/L	2.5 mg/L	95.5	75.0	125	----
Anions and Nutrients (QCLot: 2254453)										
WT2527670-039	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0189 mg/L	0.02 mg/L	96.4	70.0	130	----
Anions and Nutrients (QCLot: 2257034)										
WT2527691-001	MW1	Kjeldahl nitrogen, total [TKN]	----	E318	3.12 mg/L	2.5 mg/L	125	70.0	130	----
Anions and Nutrients (QCLot: 2257035)										
WT2527691-002	MW2	Ammonia, total (as N)	7664-41-7	E298	0.101 mg/L	0.1 mg/L	101	75.0	125	----
Anions and Nutrients (QCLot: 2258211)										
WT2527691-001	MW1	Nitrate (as N)	14797-55-8	E235.NO3	2.21 mg/L	2.5 mg/L	88.5	75.0	125	----
Anions and Nutrients (QCLot: 2258212)										
WT2527691-001	MW1	Nitrite (as N)	14797-65-0	E235.NO2	0.463 mg/L	0.5 mg/L	92.6	75.0	125	----
Anions and Nutrients (QCLot: 2258213)										
WT2527691-001	MW1	Chloride	16887-00-6	E235.Cl	94.5 mg/L	100 mg/L	94.5	75.0	125	----
Anions and Nutrients (QCLot: 2258214)										
WT2527691-001	MW1	Sulfate (as SO4)	14808-79-8	E235.SO4	92.6 mg/L	100 mg/L	92.6	75.0	125	----
Anions and Nutrients (QCLot: 2258215)										
WT2527691-001	MW1	Fluoride	16984-48-8	E235.F	0.882 mg/L	1 mg/L	88.2	75.0	125	----
Anions and Nutrients (QCLot: 2258216)										

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: 2258216) - continued										
WT2527691-001	MW1	Bromide	24959-67-9	E235.Br	0.47 mg/L	0.5 mg/L	95.0	75.0	125	----
Anions and Nutrients (QCLot: 2258220)										
HA2503839-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0199 mg/L	0.02 mg/L	102	70.0	130	----
Anions and Nutrients (QCLot: 2258221)										
WT2527691-017	MW12D	Nitrate (as N)	14797-55-8	E235.NO3	ND mg/L	----	ND	75.0	125	----
Anions and Nutrients (QCLot: 2258222)										
WT2527691-017	MW12D	Nitrite (as N)	14797-65-0	E235.NO2	0.509 mg/L	0.5 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2258223)										
WT2527691-017	MW12D	Sulfate (as SO4)	14808-79-8	E235.SO4	99.9 mg/L	100 mg/L	99.9	75.0	125	----
Anions and Nutrients (QCLot: 2258224)										
WT2527691-017	MW12D	Chloride	16887-00-6	E235.Cl	102 mg/L	100 mg/L	102	75.0	125	----
Anions and Nutrients (QCLot: 2258225)										
WT2527691-017	MW12D	Fluoride	16984-48-8	E235.F	0.889 mg/L	1 mg/L	88.9	75.0	125	----
Anions and Nutrients (QCLot: 2258226)										
WT2527691-017	MW12D	Bromide	24959-67-9	E235.Br	0.49 mg/L	0.5 mg/L	98.0	75.0	125	----
Anions and Nutrients (QCLot: 2258230)										
WT2527691-017	MW12D	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0203 mg/L	0.02 mg/L	104	70.0	130	----
Organic / Inorganic Carbon (QCLot: 2252148)										
WT2527676-002	Anonymous	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Organic / Inorganic Carbon (QCLot: 2254446)										
WT2527691-018	MW13S	Carbon, dissolved organic [DOC]	----	E358-L	ND mg/L	----	ND	70.0	130	----
Dissolved Metals (QCLot: 2250792)										
WT2527691-002	MW2	Aluminum, dissolved	7429-90-5	E421	0.0951 mg/L	0.1 mg/L	95.1	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0566 mg/L	0.05 mg/L	113	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.048 mg/L	0.05 mg/L	96.4	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00457 mg/L	0.005 mg/L	91.4	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0116 mg/L	0.012 mg/L	93.0	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0105 mg/L	0.012 mg/L	84.1	70.0	130	----
		Iron, dissolved	7439-89-6	E421	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0212 mg/L	0.025 mg/L	84.9	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0112 mg/L	0.012 mg/L	89.5	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.34 mg/L	2.5 mg/L	93.4	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0621 mg/L	0.05 mg/L	124	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: 2250792) - continued										
WT2527691-002	MW2	Zinc, dissolved	7440-66-6	E421	0.0221 mg/L	0.025 mg/L	88.5	70.0	130	----
Dissolved Metals (QCLot: 2250927)										
WT2527290-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000115 mg/L	0 mg/L	115	70.0	130	----
Dissolved Metals (QCLot: 2251601)										
WT2527691-019	MW13D	Aluminum, dissolved	7429-90-5	E423A	ND mg/L	----	ND	70.0	130	----
		Antimony, dissolved	7440-36-0	E423A	0.0446 mg/L	0.05 mg/L	89.2	70.0	130	----
		Arsenic, dissolved	7440-38-2	E423A	0.0489 mg/L	0.05 mg/L	97.8	70.0	130	----
		Barium, dissolved	7440-39-3	E423A	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E423A	0.00486 mg/L	0.005 mg/L	97.1	70.0	130	----
		Bismuth, dissolved	7440-69-9	E423A	0.0408 mg/L	0.05 mg/L	81.7	70.0	130	----
		Boron, dissolved	7440-42-8	E423A	0.050 mg/L	0.05 mg/L	100	70.0	130	----
		Cadmium, dissolved	7440-43-9	E423A	0.00430 mg/L	0.005 mg/L	86.0	70.0	130	----
		Calcium, dissolved	7440-70-2	E423A	ND mg/L	----	ND	70.0	130	----
		Cesium, dissolved	7440-46-2	E423A	0.00235 mg/L	0.002 mg/L	94.2	70.0	130	----
		Chromium, dissolved	7440-47-3	E423A	0.0124 mg/L	0.012 mg/L	99.1	70.0	130	----
		Cobalt, dissolved	7440-48-4	E423A	0.0113 mg/L	0.012 mg/L	90.2	70.0	130	----
		Copper, dissolved	7440-50-8	E423A	0.0103 mg/L	0.012 mg/L	82.8	70.0	130	----
		Iron, dissolved	7439-89-6	E423A	ND mg/L	----	ND	70.0	130	----
		Lead, dissolved	7439-92-1	E423A	0.0208 mg/L	0.025 mg/L	83.0	70.0	130	----
		Lithium, dissolved	7439-93-2	E423A	0.0112 mg/L	0.012 mg/L	90.1	70.0	130	----
		Magnesium, dissolved	7439-95-4	E423A	ND mg/L	----	ND	70.0	130	----
		Manganese, dissolved	7439-96-5	E423A	ND mg/L	----	ND	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E423A	0.0124 mg/L	0.012 mg/L	99.5	70.0	130	----
		Nickel, dissolved	7440-02-0	E423A	0.0216 mg/L	0.025 mg/L	86.3	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E423A	0.450 mg/L	0.5 mg/L	89.9	70.0	130	----
		Potassium, dissolved	7440-09-7	E423A	ND mg/L	----	ND	70.0	130	----
		Rubidium, dissolved	7440-17-7	E423A	0.00505 mg/L	0.005 mg/L	101	70.0	130	----
		Selenium, dissolved	7782-49-2	E423A	0.0441 mg/L	0.05 mg/L	88.1	70.0	130	----
		Silicon, dissolved	7440-21-3	E423A	ND mg/L	----	ND	70.0	130	----
		Silver, dissolved	7440-22-4	E423A	0.00447 mg/L	0.005 mg/L	89.3	70.0	130	----
		Sodium, dissolved	7440-23-5	E423A	ND mg/L	----	ND	70.0	130	----
		Strontium, dissolved	7440-24-6	E423A	ND mg/L	----	ND	70.0	130	----
		Sulfur, dissolved	7704-34-9	E423A	ND mg/L	----	ND	70.0	130	----
		Tellurium, dissolved	13494-80-9	E423A	0.00395 mg/L	0.005 mg/L	79.1	70.0	130	----
		Thallium, dissolved	7440-28-0	E423A	0.0432 mg/L	0.05 mg/L	86.3	70.0	130	----
		Thorium, dissolved	7440-29-1	E423A	0.00465 mg/L	0.005 mg/L	93.0	70.0	130	----
		Tin, dissolved	7440-31-5	E423A	0.0222 mg/L	0.025 mg/L	88.6	70.0	130	----
		Titanium, dissolved	7440-32-6	E423A	ND mg/L	----	ND	70.0	130	----
		Tungsten, dissolved	7440-33-7	E423A	0.00395 mg/L	0.005 mg/L	79.0	70.0	130	----
		Uranium, dissolved	7440-61-1	E423A	ND mg/L	----	ND	70.0	130	----
		Vanadium, dissolved	7440-62-2	E423A	0.0250 mg/L	0.025 mg/L	99.8	70.0	130	----
		Zinc, dissolved	7440-66-6	E423A	0.0182 mg/L	0.025 mg/L	72.8	70.0	130	----
		Zirconium, dissolved	7440-67-7	E423A	0.00450 mg/L	0.005 mg/L	90.1	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: 2253237)										
WT2527741-002	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0919 mg/L	0.1 mg/L	91.9	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0489 mg/L	0.05 mg/L	97.8	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	0.00434 mg/L	0.005 mg/L	86.7	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	ND mg/L	----	ND	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0110 mg/L	0.012 mg/L	88.4	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0100 mg/L	0.012 mg/L	80.2	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.044 mg/L	0.05 mg/L	87.8	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0206 mg/L	0.025 mg/L	82.3	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	0.0464 mg/L	0.05 mg/L	92.8	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	0.0208 mg/L	0.025 mg/L	83.2	70.0	130	----
Dissolved Metals (QCLot: 2254109)										
WT2527628-001	Anonymous	Mercury, dissolved	7439-97-6	E509	0.000103 mg/L	0 mg/L	103	70.0	130	----
Dissolved Metals (QCLot: 2256549)										
WT2527691-017	MW12D	Mercury, dissolved	7439-97-6	E509	0.0000957 mg/L	0 mg/L	95.7	70.0	130	----
Aggregate Organics (QCLot: 2252212)										
WT2527691-001	MW1	Chemical oxygen demand [COD]	----	E559-L	110 mg/L	100 mg/L	110	75.0	125	----
Aggregate Organics (QCLot: 2257033)										
WP2516907-001	Anonymous	Phenols, total (4AAP)	----	E562	ND mg/L	----	ND	75.0	125	----
Volatile Organic Compounds (QCLot: 2255552)										
WT2527691-001	MW1	Trichlorobenzene, 1,2,4-	120-82-1	E611E	98.0 µg/L	100 µg/L	98.0	60.0	140	----
Volatile Organic Compounds (QCLot: 2255553)										
WT2527691-001	MW1	Acetone	67-64-1	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Benzene	71-43-2	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Bromodichloromethane	75-27-4	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Bromoform	75-25-2	E611D	110 µg/L	100 µg/L	110	60.0	140	----
		Bromomethane	74-83-9	E611D	73.2 µg/L	100 µg/L	73.2	60.0	140	----
		Carbon disulfide	75-15-0	E611D	89.2 µg/L	100 µg/L	89.2	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	99.2 µg/L	100 µg/L	99.2	60.0	140	----
		Chlorobenzene	108-90-7	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Chloroethane	75-00-3	E611D	91.4 µg/L	100 µg/L	91.4	60.0	140	----
		Chloroform	67-66-3	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Chloromethane	74-87-3	E611D	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	102 µg/L	100 µg/L	102	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: 2255553) - continued										
WT2527691-001	MW1	Dichlorobenzene, 1,2-	95-50-1	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	70.5 µg/L	100 µg/L	70.5	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	109 µg/L	100 µg/L	109	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	89.8 µg/L	100 µg/L	89.8	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	103 µg/L	100 µg/L	103	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	97.5 µg/L	100 µg/L	97.5	60.0	140	----
		Dichloromethane	75-09-2	E611D	98.1 µg/L	100 µg/L	98.1	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	104 µg/L	100 µg/L	104	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Ethylbenzene	100-41-4	E611D	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Hexane, n-	110-54-3	E611D	99.7 µg/L	100 µg/L	99.7	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	116 µg/L	100 µg/L	116	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	124 µg/L	100 µg/L	124	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	121 µg/L	100 µg/L	121	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	100 µg/L	100 µg/L	100	60.0	140	----
		Styrene	100-42-5	E611D	97.3 µg/L	100 µg/L	97.3	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	97.4 µg/L	100 µg/L	97.4	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	85.0 µg/L	100 µg/L	85.0	60.0	140	----
		Toluene	108-88-3	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	91.8 µg/L	100 µg/L	91.8	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Trichloroethylene	79-01-6	E611D	95.9 µg/L	100 µg/L	95.9	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	92.1 µg/L	100 µg/L	92.1	60.0	140	----
		Vinyl chloride	75-01-4	E611D	87.9 µg/L	100 µg/L	87.9	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	205 µg/L	200 µg/L	102	60.0	140	----
		Xylene, o-	95-47-6	E611D	103 µg/L	100 µg/L	103	60.0	140	----

GC - 906
MM - 523
N - 263
W - 105, 103

Chain of Custody (COC) / Analytical Request Form

COC Number: 20

Page

Environmental Division Waterloo

Work Order Reference WT2527691

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
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 Mitchell Industrial Groundwater
PO / AFE:	333568.002
LSD:	

ALS Lab Work Order # (ALS use only): WT2527691 NTB.

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:**

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

Date and Time Required for all E&P TATs:

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

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 Mitchell Industrial Groundwater (includes DOC/Dis. Hg/Metals)	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRE	SUSPECTED HAZARD (see notes
	MW1	30-Sep-25	10:20		7	R			
	MW2	30-Sep-25	10:35			R			
	MW3S	30-Sep-25	11:00			R			
	MW3D	30-Sep-25	11:05			R			
	~~MW4~~ DUP-106	30-Sep-25	11:15			R			
	MW5S	30-Sep-25	11:25			R			
	MW5D	30-Sep-25	11:20			R			
	MW6S	30-Sep-25	12:00			R			
	MW6D	30-Sep-25	12:05			R			
	MW7S	30-Sep-25	10:00			R			
	MW7D	30-Sep-25	10:05			R			
	MW8S	30-Sep-25	10:20		11	R			

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)

GEL 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			
				8.0	12.1	7.7	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
BM	30/09/25	14:16

ALS 2020 FRONT

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

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

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

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page 2 of 2

Canada Toll Free: 1 800 668 9878

ALS 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 mlaporte@pinchin.com

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 Mitchell Industrial Groundwater

PO / AFE: 333568.002

LSD:

ALS Lab Work Order # (ALS use only):

Oil and Gas Required Fields (client use)

AFE/Cost Center: PO#

Major/Minor Code: Routing Code:

Requisitioner:

Location:

ALS Contact: Amanda Overholster Sampler:

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 Mitchell Industrial Groundwater (includes Dissolved Metals/Hg/DOC)	Not preserved / filtered	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRED	SUSPECTED HAZARD (see notes)
	MW8D	30-Sep-25	10:25	GW	7	R				
	MW9S	30-Sep-25	10:15			R				
	~~MW9D~~					~~R~~				
	~~MW10S~~					~~R~~				
	MW10D	30-Sep-25	11:45	3		~~R~~	R			
	~~MW11S~~					~~R~~				
	MW11D	30-Sep-25	11:25			R				
	~~MW12S~~					~~R~~				
	MW12D	30-Sep-25	11:30			R				
	MW13S	30-Sep-25	11:35			R				
	MW13D	30-Sep-25	11:40			R				
	DUP-105	30-Sep-25	10:20			R				

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)

* MW10D - limited sample not filtered/ not preserved please prioritize GEL 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: 8.0 12.7 11.7

SHIPMENT RELEASE (client use)

Released by: [signature] Date: 29-Sep-25 Time: 12:15

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by: Date: Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by: BM Date: 30/09/25 Time: 14:10

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2020 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	:	**WT2527668**			
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 MITCHELL INDUSTRIAL GROUNDWATER	Telephone	:	1 416 817 2944
PO	:	333568.002	Date Samples Received	:	30-Sep-2025 14:10
C-O-C number	:	----	Date Analysis Commenced	:	01-Oct-2025
Sampler	:	DB	Issue Date	:	02-Oct-2025 12:22
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	TRIPBLANK-103 ----	----	----	----	----
					Client sampling date / time	30-Sep-2025 12:35	----	----	----	----
						WT2527668-001	----	----	----	----
						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	TRIPBLANK-103 ----	----	----	----	----
					Client sampling date / time	30-Sep-2025 12:35	----	----	----	----
						WT2527668-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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, 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	----	----	----	----
Trichloroethylene	79-01-6	E611D/WT	0.50	µg/L		<0.50	----	----	----	----
Trichlorofluoromethane	75-69-4	E611D/WT	0.50	µg/L		<0.50	----	----	----	----

Analytical Results

Sub-Matrix: Water (Matrix: Water)					Client sample ID	TRIPBLANK-103 ----	----	----	----	----
					Client sampling date / time	30-Sep-2025 12:35	----	----	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit		WT2527668-001	----	----	----	----
						Result	----	----	----	----
Volatile Organic Compounds										
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	----	----	----	----
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611E/WT	1.0	%		98.3	----	----	----	----
Bromofluorobenzene, 4-	460-00-4	E611D/WT	1.0	%		98.3	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611E/WT	1.0	%		97.9	----	----	----	----
Difluorobenzene, 1,4-	540-36-3	E611D/WT	1.0	%		97.9	----	----	----	----

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

alsglobal.com

ALS Canada Ltd.

right solutions.
right partner.

QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: **WT2527668**	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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 30-Sep-2025 14:10
PO	: 333568.002	Issue Date	: 02-Oct-2025 12:22
C-O-C number	: ----		
Sampler	: DB		
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 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*
Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIPBLANK-103	E611D	30-Sep-2025	01-Oct-2025	14 days	1 days	✓	01-Oct-2025	14 days	1 days	✓
Volatile Organic Compounds : VOCs (Prairies List) by Headspace GC-MS										
Glass vial (sodium bisulfate) TRIPBLANK-103	E611E	30-Sep-2025	01-Oct-2025	14 days	1 days	✓	01-Oct-2025	14 days	1 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	2252133	1	19	5.2	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2252132	1	4	25.0	5.0	✓
Laboratory Control Samples (LCS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2252133	1	19	5.2	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2252132	1	4	25.0	5.0	✓
Method Blanks (MB)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2252133	1	19	5.2	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2252132	1	4	25.0	5.0	✓
Matrix Spikes (MS)							
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	2252133	1	19	5.2	5.0	✓
VOCs (Prairies List) by Headspace GC-MS	E611E	2252132	1	4	25.0	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	: **WT2527668**	Page	: 1 of 10
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 MITCHELL INDUSTRIAL GROUNDWATER	Date Samples Received	: 30-Sep-2025 14:10
PO	: 333568.002	Date Analysis Commenced	: 01-Oct-2025
C-O-C number	: ----	Issue Date	: 02-Oct-2025 12:22
Sampler	: DB		
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: 2252132)											
WT2527390-001	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: 2252133)											
WT2527390-001	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	----

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: 2252133) - continued											
WT2527390-001	Anonymous	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
Volatile Organic Compounds (QCLot: 2252132)						
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	<1.0	----
Volatile Organic Compounds (QCLot: 2252133)						
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	----

Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 2252133) - continued						
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
Volatile Organic Compounds (QCLot: 2252132)									
Trichlorobenzene, 1,2,4-	120-82-1	E611E	1	µg/L	100 µg/L	103	70.0	130	----
Volatile Organic Compounds (QCLot: 2252133)									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	105	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	87.8	60.0	140	----
Carbon disulfide	75-15-0	E611D	1	µg/L	100 µg/L	105	70.0	130	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	106	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	104	60.0	140	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	105	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	99.5	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	98.6	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Dichlorobenzene, 1,3-	541-73-1	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichlorobenzene, 1,4-	106-46-7	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	128	60.0	140	----
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	109	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	108	70.0	130	----
Dichloromethane	75-09-2	E611D	1	µg/L	100 µg/L	98.2	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	104	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	102	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Hexanone, 2-	591-78-6	E611D	20	µg/L	100 µg/L	86.9	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	91.6	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	91.1	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: 2252133) - continued									
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	103	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	98.7	70.0	130	----
Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	96.4	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	105	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	98.4	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	111	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.2	µg/L	100 µg/L	108	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	106	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	105	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
Volatile Organic Compounds (QCLot: 2252132)										
WT2527390-001	Anonymous	Trichlorobenzene, 1,2,4-	120-82-1	E611E	97.5 µg/L	100 µg/L	97.5	60.0	140	----
Volatile Organic Compounds (QCLot: 2252133)										
WT2527390-001	Anonymous	Acetone	67-64-1	E611D	102 µg/L	100 µg/L	102	60.0	140	----
		Benzene	71-43-2	E611D	92.4 µg/L	100 µg/L	92.4	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	95.1 µg/L	100 µg/L	95.1	60.0	140	----
		Bromomethane	74-83-9	E611D	69.6 µg/L	100 µg/L	69.6	60.0	140	----
		Carbon disulfide	75-15-0	E611D	84.6 µg/L	100 µg/L	84.6	60.0	140	----
		Carbon tetrachloride	56-23-5	E611D	79.7 µg/L	100 µg/L	79.7	60.0	140	----
		Chlorobenzene	108-90-7	E611D	94.7 µg/L	100 µg/L	94.7	60.0	140	----
		Chloroethane	75-00-3	E611D	82.4 µg/L	100 µg/L	82.4	60.0	140	----
		Chloroform	67-66-3	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Chloromethane	74-87-3	E611D	83.8 µg/L	100 µg/L	83.8	60.0	140	----
		Dibromochloromethane	124-48-1	E611D	95.0 µg/L	100 µg/L	95.0	60.0	140	----
		Dibromoethane, 1,2-	106-93-4	E611D	95.2 µg/L	100 µg/L	95.2	60.0	140	----
		Dichlorobenzene, 1,2-	95-50-1	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorobenzene, 1,3-	541-73-1	E611D	96.1 µg/L	100 µg/L	96.1	60.0	140	----
		Dichlorobenzene, 1,4-	106-46-7	E611D	97.2 µg/L	100 µg/L	97.2	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	89.0 µg/L	100 µg/L	89.0	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	88.6 µg/L	100 µg/L	88.6	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	93.3 µg/L	100 µg/L	93.3	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	89.8 µg/L	100 µg/L	89.8	60.0	140	----
		Dichloroethylene, cis-1,2-	156-59-2	E611D	92.6 µg/L	100 µg/L	92.6	60.0	140	----
		Dichloroethylene, trans-1,2-	156-60-5	E611D	87.6 µg/L	100 µg/L	87.6	60.0	140	----
		Dichloromethane	75-09-2	E611D	85.8 µg/L	100 µg/L	85.8	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	98.7 µg/L	100 µg/L	98.7	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	98.8 µg/L	100 µg/L	98.8	60.0	140	----
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Ethylbenzene	100-41-4	E611D	94.7 µg/L	100 µg/L	94.7	60.0	140	----
		Hexane, n-	110-54-3	E611D	87.1 µg/L	100 µg/L	87.1	60.0	140	----
		Hexanone, 2-	591-78-6	E611D	93 µg/L	100 µg/L	93.2	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	95 µg/L	100 µg/L	95.2	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	98 µg/L	100 µg/L	98.2	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	94.2 µg/L	100 µg/L	94.2	60.0	140	----
		Styrene	100-42-5	E611D	92.2 µg/L	100 µg/L	92.2	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	91.3 µg/L	100 µg/L	91.3	60.0	140	----
		Tetrachloroethane, 1,1,2,2-	79-34-5	E611D	94.5 µg/L	100 µg/L	94.5	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	94.0 µg/L	100 µg/L	94.0	60.0	140	----
		Toluene	108-88-3	E611D	94.8 µg/L	100 µg/L	94.8	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: 2252133) - continued										
WT2527390-001	Anonymous	Trichloroethane, 1,1,1-	71-55-6	E611D	92.7 µg/L	100 µg/L	92.7	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	94.5 µg/L	100 µg/L	94.5	60.0	140	----
		Trichloroethylene	79-01-6	E611D	96.5 µg/L	100 µg/L	96.5	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	87.0 µg/L	100 µg/L	87.0	60.0	140	----
		Vinyl chloride	75-01-4	E611D	81.5 µg/L	100 µg/L	81.5	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	189 µg/L	200 µg/L	94.6	60.0	140	----
		Xylene, o-	95-47-6	E611D	94.0 µg/L	100 µg/L	94.0	60.0	140	----

WW-103 BM

Chain of Custody (COC) / Analytical Request Form

COC Number: 20 -

Page

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Waterloo

Work Order Reference

WT2527668

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 Mitchell Industrial Groundwater
PO / AFE:	333568.002
LSD:	

ALS Lab Work Order # (ALS use only): WT2527668 BM

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: mjaporte@pinchin.com

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:** DB

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

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please contact

Analysis Request

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	VOC	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRE	SUSPECTED HAZARD (see notes
	TRIPBLANK-103	30-Sep-25	12:35	BLANK	2	R			

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

F/P

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)

GEL 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			
				11.1			

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
	30-Sep-25	17:40

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
BM	30/09/25	14:15

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

AUG 2026 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**.

APPENDIX G

Landfill Gas Monitoring Results

TABLE G-1
LANDFILL GAS MONITORING RESULTS
Mitchell Industrial Landfill
Frank Street, Municipality of West Perth

Well	Top of Screen (masl)	Parameter	Monitoring Date																																			
			May-06	*May-07*	*Sep-07*	*Jun-08*	*Sep-08*	*Jun-09*	*May-10*	*Sep-10*	*May-11*	*Sep-11*	*May-12*	*Sep-12*	*Apr-13*	*Sep-13*	*May-14*	*Sep-14*	*May-15*	*Sep-15*	*May-16*	*Sep-16*	*May-17*	*Sep-17*	*May-18*	*Sep-18*	*May-19*	*Sep-19*	*May-20*	*Oct-20*	*May-21*	*Sep-21*	*May-22*	*Sep-22*	*May-23*	*Sep-23*	*May-24*	*Sep-24*	*May-25*	*Sep-25*
MW1	339.23	Liquid Elevation	**337.13**	**336.79**	**335.48**	**336.41**	**336.18**	**337.46**	**338.26**	**336.33**	**338.81**	**336.58**	**337.08**	**335.99**	**338.47**	**337.23**	**337.38**	**338.23**	**337.35**	**336.54**	**337.71**	**336.2**	**337.97**	**336.46**	**338.14**	**336.24**	**337.91**	**336.19**	**337.31**	**336.21**	**337.37**	**336.5**	**337.98**	**336.24**	**337.72**	**336.73**	**337.88**	**336.54**	**337.6**	**336.33**
		CH4 (%)	**0**	**0**	**0**	**0**	**0**	**0**	**0.1**	**0**	**0**	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MW2	336.73	Liquid Elevation	337.26	337.13	**335.4**	337.22	337.26	337.12	337.67	**336**	337.89	**335.99**	337.08	**335.73**	338.08	337.1	337.14	337.53	337.04	**336.38**	337.51	**335.89**	338.1	337.01	338.02	**336.33**	337.38	**336.07**	337.16	**336.13**	337.31	**336.43**	337.86	**336.22**	337.58	336.85	337.64	**336.64**	337.38	**336.47**
		CH4 (%)	6	0	**0**	0	0	0	0	**0**	0	**0**	0	**0**	0.2	0	0	0	0	**0**	0	**0**	0	0	0	**0**	0	**0**	0	**0**	0	**0**	0	0	0	0	0	**0**	0	**0**
MW3S	337.91	Liquid Elevation	**336.82**	**336.68**	**335**	**336.74**	**336.74**	**336.77**	**337.22**	**336.11**	**337.17**	**336.33**	**336.4**	**335.28**	**337.25**	**336.39**	**336.46**	**336.63**	**336.35**	**335.56**	**336.71**	**335.22**	**337.49**	Dry	**337.13**	**335.64**	**336.91**	**335.87**	**336.73**	**335.73**	**336.72**	**335.86**	**336.98**	**335.86**	**336.91**	**336.42**	**336.86**	**336.15**	**336.85**	**335.74**
		CH4 (%)	**15**	**0**	**0.2**	**17.7**	**0.1**	**31.6**	**0.1**	**41.2**	**0**	**20.9**	**0**	**25.9**	**0.1**	**26.5**	**1.12**	**0**	**0**	**0**	**> 5.0**	**0**	**0**	0	**0.9**	**0**	**2.5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**100.0**	**1.0**	**5.5**	**0**	**0**
MW3D	333.34	Liquid Elevation	335.81	336	333.67	336.43	336.5	336.64	337.14	335.58	337.11	336.32	336.32	334.82	337.16	336.26	336.34	336.58	336.32	335.41	336.85	334.93	337.4	Dry	337.03	335.38	336.88	335.66	336.68	335.58	336.71	335.56	336.92	335.49	336.90	336.34	336.85	336.11	336.80	335.41
		CH4 (%)	0	0.1	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0
MW4	344.76	Liquid Elevation	**338.04**	**337.84**	**337.21**	**337.71**	**337.59**	**337.97**	**338.4**	**337.38**	**339.07**	**337.44**	**337.75**	**337.27**	**339.36**	**337.71**	**337.67**	**338.23**	**337.83**	**337.41**	**338.22**	Dry	**339.19**	Dry	**339.02**	**337.24**	**338.58**	**337.28**	**337.97**	Dry	**338.04**	**337.23**	**338.75**	**337.21**	**338.43**	**337.48**	**338.52**	**337.49**	**338.25**	**337.22**
		CH4 (%)	**0**	**0**	**9.2**	**2**	**18.8**	**10.2**	**13.8**	**0**	**0**	**0.1**	**0**	**0**	**0.2**	**0**	**0**	**1**	**0**	**0**	**0**	0	**> 5.0**	> 5.0	**1**	**0**	**2**	**0**	**0**	0	**0**	**0**	**0**	**0**	**1.0**	**0.0**	**0.0**	**14.5**	**0**	**0**
MW5S	333.44	Liquid Elevation				**332.32**	**331.91**	**332.16**	**333.24**	**331.03**	**333.36**	**331.13**	**331.83**	Dry	333.54	**331.94**	**332**	**332.9**	**332.11**	**331.41**	**332.55**	**331.25**	335.02	**332.09**	**333.17**	**331.65**	**332.85**	**331.47**	**332.46**	**331.63**	**332.57**	333.68	**333.08**	**331.14**	**332.95**	**332.05**	**332.94**	**331.82**	**332.67**	**331.6**
		CH4 (%)				**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**	**0**
MW5D	328.47	Liquid Elevation				331.44	331.31	331.41	332.16	330.32	332.32	330.37	331.15	329.98	332.47	331.08	331.22	331.94	331.31	330.77	331.66	330.47	332.68	330.90	332.03	330.66	331.80	330.57	331.47	330.63	331.48	330.94	331.92	330.14	331.80	331.12	331.79	336.10	331.73	330.87
		CH4 (%)				0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW6S	335.33	Liquid Elevation				336.44	336.39	336.20	336.60	335.69	336.88	335.62	335.94	**333.02**	336.82	336.18	336.26	335.65	335.94	335.38	336.27	**333.87**	337.12	336.02	336.69	**334.74**	336.69	**334.80**	336.57	335.99	336.46	336.63	337.00	**335.00**	337.06	336.47	336.84	336.10	335.62	336.28
		CH4 (%)				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	0
MW6D	328.41	Liquid Elevation				330.46	330.78	330.53	330.83	330.02	331.04	330	330.29	329.96	331.21	330.19	330.31	330.74	330.31	330.17	330.52	329.98	331.35	330.19	330.64	329.83	330.5	329.84	330.29	329.764	330.18	329.925	330.53	329.67	330.46	330.08	330.4	329.89	330.31	329.81
		CH4 (%)				0	0	0	0	0	0	0	0	0	0.2	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
MW7S	338.26	Liquid Elevation				341.67	341.74	341.46	341.78	340.67		341.26	341.09	340.58	342.15	341.64	341.64	341.95	341.28	341.22	341.7	341.02	342.23	341.61	341.83	341.2	341.8	340.99	341.56	341.11	341.35	341.44	341.79	340.91	341.72	341.42	341.67	341.01	341.55	341.41
		CH4 (%)				0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW7D	332.09	Liquid Elevation				336.31	336.56	336.21	336.41	335.62		335.94	335.93	335.40	336.97	336.22	336.33	336.77	336.03	335.97	336.38	335.74	337.13	336.28	336.60	335.98	336.49	335.74	336.20	335.86	336.11	336.10	336.43	335.63	336.22	335.97	336.17	335.71	336.02	335.77
		CH4 (%)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MW8S	340.54	Liquid Elevation				340.61	341.00	**340.31**	341.22	**338.74**	341.49	**338.79**	**339.22**	**338.14**	341.83	**339.76**	**339.93**	340.98	**339.89**	**339.03**	**340.37**	**338.66**	341.83	**338.99**	341.21	**338.95**	341.01	**339.04**	**340.47**	**338.74**	**340.21**	**338.51**	341.22	**338.58**	341.05	**339.18**	340.89	**338.99**	340.54	**338.68**
		CH4 (%)				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	**0**
MW8D	335.2	Liquid Elevation				338.5	338.44	338.71	339.42	336.66	339.87	336.95	337.8	335.98	340.15	337.88	**338.12**	339.52	338.42	337.28	338.74	336.64	340.1	337.02	339.64	336.91	339.26	337.04	338.525	336.63	338.45	336.42	339.52	336.37	339.12	337.27	339.14	338.16	338.67	336.40
		CH4 (%)				0	0	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0
MW9S	338.12	Liquid Elevation				339.85	340.49	340.45	341.42	339.04	341.79	339.54	339.96	338.15	341.47	341.12	341.2	341.57	340.7	340.72	341.59	339.75	341.79	341.61	341.75	340.05	341.62	339.82	341.1	340.41	341.23	341.45	341.55	340.33	341.55	340.89	341.56	340.44	341.24	341.19
		CH4 (%)				0	0.1	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	0
MW9D	331.65	Liquid Elevation				Dry	**330.54**	**331.48**	**331.40**	Dry	331.79	**330.22**	**331.42**	Dry	331.94	**331.12**	**331.29**	332.00	**330.92**	**331.50**	332.02	**331.03**	332.39	**331.01**	**331.54**	Dry	**331.41**	Dry	**331.19**	Dry	**331.11**	Dry	**331.42**	Dry	**330.82**	Dry	**331.15**	**330.66**	**331.18**	Dry
		CH4 (%)				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	0
MW10S	338.29	Liquid Elevation				Dry	Dry	Dry	Dry	Dry	Dry	**335.24**	Dry	Dry	**335.26**	Dry	**335.99**	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	**335.47**		Dry	Dry	**335.37**	Dry	**337.61**	Dry	**336.66**	Dry	**335.74**	Dry	**336.62**	Dry
		CH4 (%)				0	0	1.5	0	0	0	**0**	0	0	**0.2**	0	**0**	0	0	0	0	0	0	0	0	0	**0**	0	0	0	**0**	0	**0**	0	**0**	0	**0**	0	**0**	0
MW10D	333.06	Liquid Elevation				Dry	**330.64**	**331.67**	**331.46**	**331.02**	**331.59**	**331.01**	**331.66**	**331.01**	**331.27**	**331.4**	**331.82**	**331.71**	**330.56**	**331.58**	**331.93**	**331.38**	**331.5**	Dry	**330.49**	**330.49**	**330.82**	**330.51**	**330.75**	**330.38**	**330.54**	**330.28**	**330.63**	**330.32**	Dry	Dry	Dry	Dry	**330.52**	**330.27**
		CH4 (%)				0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0	0	0	0	0
MW11S	332.4	Liquid Elevation							**332.34**	**329.69**	332.72	**329.64**	**330.30**	**329.58**	332.74	**330.39**	**330.63**	332.40	**330.45**	**329.95**	**331.18**	**329.60**	333.29	Dry	**332.07**	**329.54**	**331.47**	**329.53**	**330.04**	Dry	**330.49**	Dry	**332.20**	**329.53**	**331.73**	**330.31**	**331.59**	**329.70**	**330.80**	**329.55**
		CH4 (%)							**0**	**0**	0	**0**	**0**	**0**	0.2	**0**	**0**	0	**0**	**0**	**0**	**0**	0	0	**0**	**0**	**0.5**	**0**	**0**	0	**0**	0	**0**	**0**	**0**	**0**	0	**0**	0	**0**
MW11D	328.1	Liquid Elevation							331.47	330.58	331.68	330.57	330.09	329.59	330.89	329.89	330.06	330.45	330.07	329.9	330.27	329.62	331.04	329.79	330.29	329.35	330.17	329.4	329.91	329.16	329.79	329.45	330.14	329.07	330.03	328.86	330.01	329.47	329.93	329.34
		CH4 (%)							0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.5	0	0	0	0
MW12S	333.36	Liquid Elevation													**332.47**	**330.52**	**331.33**	**331.41**	**330.97**	**330.54**	**331.30**	**330.55**	**332.52**	Dry	**331.82**	**330.52**	**331.65**	**330.54**	**331.07**	Dry	**331.24**	Dry	**331.81**	**330.53**	**331.58**	Dry	**331.67**	**330.54**	**331.35**	**330.54**
		CH4 (%)													**0.1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	**0**	**0**	**7.5**	**0**	**0**	0	**0**	0	**0**	**0**	**0**	0	**0**	**0**	**0**	**0**
MW12D	327.87	Liquid Elevation													331.1	329.94	330.17	330.53	330.14	329.93	330.35	329.64	331.19	329.85	330.43	329.37	330.33	329.49	330.08	329.35	329.93	329.57	330.32	329.14	330.20	329.76	330.19	329.56	330.04	329.46
		CH4 (%)													0.2	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
MW13S	332.46	Liquid Elevation													333.36	**331.67**	**331.82**	332.58	**331.9**	**330.86**	**332.32**	**330.27**	333.51	**331.31**	332.82	**330.5**	332.59	**330.57**	**332.205**	**330.52**	**332.33**	**331.02**	332.77	**330.24**	332.59	**331.83**	332.59	**331.45**	**332.37**	**330.29**
		CH4 (%)													0.2	**0**	**0**	0	**0**	**0**	**0**	**0**	0	0	0	**0**	0	**0**	**0**	**0**	**0**	**0**	0.5	**0**	0	**0**	0	**0**	**0**	**0**
MW13D	327.01	Liquid Elevation													331.69	330.47	330.63	331.16	330.67	330.21	330.94	329.8	331.81	330.26	331.07	329.71	330.96	329.74	330.63	329.64	330.56	330.94	330.93	329.42	330.81	330.35	330.78	330.06	329.67	329.69
		CH4 (%)													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	0
GP9	341.6	Liquid Elevation								**341.1**	342.96	**341.05**			342.01			341.79	**341.17**	**341.39**	341.81	**340.67**		**340.82**	342.04	**340.75**	**340.65**						341.76	**340.97**	341.72	**341.38**	341.76	**340.56**	**341.51**	**341.56**
		CH4 (%)								**0**	0	**0**	0	0	0.1	0	0	0	**0**	**0**	0	**0**	0.05	**0**	0	**0**	**0.5**	0	0	0	0	0	0	**0**	0	**0**	0	**0**	**0**	**0**
GP10S	343.75	Liquid Elevation							344.54	344.52	346.04	344.52			345.08				**343.67**	**343.55**	**342.02**	**342.63**		**342.80**	342.04	344.74	**342.56**				344.17	**342.51**	344.73	**342.46**	344.76	343.75		**342.67**	344.22	**342.46**
		CH4 (%)							0.1	0	0	0	0	0	0.2	0	0	0	**0**	**0**	**0**	**0**	0	**0**	0	0	**0**	0	0	0	0	**0**	0	0	0	0	0	**0**	0	0
GP10D	340.7	Liquid Elevation							343.11	342.45	343.4	342.52	0	0	342.09				341.95	341.51	344.06	340.95	0	341.05	342.18	340.88							342.14	340.53	341.77	340.96	344.56	341.63	342.00	**340.58**
		CH4 (%)							0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

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 with the exception of 2019 to 2023 by which it is expressed in percent of lower explosive limit.
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.

APPENDIX H

Semi-annual Site Inspection Records

PINCHIN

Landfill Site Inspection Form

Site: Industrial

Project Number: 333568.000

Client: West Perth

Date: May 14, 2025

Type of Inspection: Semi-Annual

Time: 9:00

Weather Conditions: Sunny

Inspector(s): DH/ML

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.	☒	☐	
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.	☐	☒	Some groundhog holes present near MW5 wells on slope
Monitoring installations for the Site are competent and, where applicable, locked.	☒	☐	
Site is generally clear of litter.	☒	☐	

Additional Comments

© 2019 Pinchin Ltd.

PG THE PINCHIN GROUP

PINCHIN

Landfill Site Inspection Form

Site: Industrial

Client: Municipality of Wellington

Type of Inspection: Semi - Annual

Weather Conditions: Cloudy

Project Number: 33[illegible].002

Date: Sept. 29, 2025

Time: 9:00AM

Inspector(s): ML/DB

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.	☒	☐	
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

Fallen tree damage observed in vicinity of MW3D. Municipality notified

© 2019 Pinchin Ltd.

THE PINCHIN GROUP

APPENDIX I

MECP Monitoring and Screening Checklist

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	Mitchell Industrial Landfill
Location (e.g. street address, lot, concession)	Lot 24, Concession 2, in the former Township of Fullarton, Ontario, near the south boundary of the former Town of Mitchell, Ontario.
GPS Location (taken within the property boundary at front gate/ front entry)	NAD 83, Zone 17, 483804 m East, 4811728 m North
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.:	Waste ECA: A151202 Sewage ECA: 7228-88HS3R
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:		
Has the nature of the operations at the site changed during this monitoring period?	○ **Yes** ◉ **No**	
If yes, provide details:	Operations at the Site have been limited to the acceptance of cover material.	
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**	The monitoring wells at the Site are in satisfactory condition. The groundwater elevations within monitoring wells MW9D and MW10S/D are considered anomalous to the remainder of the respective shallow and deep groundwater flow system monitoring well groundwater elevations. Therefore, the groundwater elevations of MW9D and MW10S/D are excluded from the interpretations in the 2025 report. Measured groundwater elevations, as well as the subsurface conditions at and nearby the Site, should be evaluated to determine a potential cause of the anomalous groundwater elevations.
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**
MW9D, MW10S, MW11S and MW12S	Insufficient volume to collect groundwater sample.	September 2025
MW10D	Insufficient volume to collect complete groundwater sample resulting in limited parameter analysis.	September 2025

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**

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**	Monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D had trigger mechanism exceedance in 2025, which are not interpreted to be landfill related. Refer to Section 9.2.3 of 2025 Annual Monitoring Report.	
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**	Chloride concentrations at MW9S/D have shown an increasing trend. Additional investigations (Piper Plots)were conducted in 2025 using MW6S/D, MW8S/D, MW11S/D and MW12S/D as comparisons. Results indicate impacts in these wells may be impacted by former lagoons.	
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**	At least three parameters were greater than their trigger concentration within compliance monitoring wells MW6S, MW7S/D, MW9S/D, MW10S/D and MW12D which are not interpreted to be landfill related. No remedial actions are warranted at this time. Additional investigations (Piper Plots) conducted in 2025 indicate impacts may be a result of historical sewage lagoons as opposed to solely landfill derived leachate.	

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.

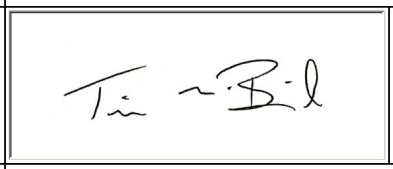
If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature and will be rectified for the next monitoring/reporting period. Where this is not the case, the circumstances 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:

10-Dec-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:**	The analyte list should include required parameters that will permit the completion of hydrochemical facies diagrams for the inclusion in future report to assist in the evaluation of landfill derived impacts versus those originating from other influences.
◉ **No Changes to site design and operation are recommended**	
○ **The following change(s) to the site design and operation is/ are recommended:**	

Name:	Tim McBride		
Seal:	Add Image		
Signature:		**Date:**	10-Dec-2025
CEP Contact Information:	Tim McBride		
Company:	Pinchin Ltd.		
Address:	662 Falconbridge Road, Suite #3 Sudbury, ON P3A 4S4		
Telephone No.:	705.521.0560	Fax No. :	
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)	North Thames River
Distance(s)	Flows southerly adjacent to the west boundary 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

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**	

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
Refer to Section 9.3 of the 2025 Pinchin Annual Monitoring Report.		
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**	Refer to Section 9.3 of the 2025 Pinchin Annual Monitoring Report.

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**	Refer to Section 9.3 of the 2025 Pinchin Annual Monitoring Report.
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	Groundwater quality naturally exceeds select PWQOs. Refer to Section 9.2 of the 2025 Pinchin Annual Monitoring Report .
9) Have trigger values for contingency plans or site remedial actions been exceeded (where they exist):	◉ **Yes** ◯ **No** ◯ **Not Applicable**	Refer to Section 9.3 of the 2025 Pinchin Annual Monitoring Report.

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.

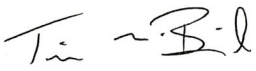
If any exceptions or potential concerns have been noted in the questions in the checklist attached to this declaration, it is my opinion that these exceptions and concerns are minor in nature or will be rectified for future monitoring events. Where this is not the case, the circumstances concerning the 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:

10-Dec-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:**	The 2018 RWDI Annual Monitoring Report indicated that a letter report (Stormwater Quality Monitoring and Evaluation Modifications, prepared by RWDI and dated March 4, 2016), which summarized proposed modifications to the monitoring and evaluation requirements for stormwater quality within the SWM Pond at the Site, was submitted to the MECP on March 23, 2016, for MECP review and approval of the proposed modifications. Within a Solid NonHazardous Waste Disposal Site Inspection Report for the Municipality's Mitchell Domestic Landfill, dated July 19, 2018, the MECP proposed that a meeting be held with the MECP and Municipality to discuss the surface water and stormwater quality at the Mitchell Domestic Landfill. The Municipality also wishes to discuss the stormwater quality at the Site during the proposed meeting. As of the date of this report the proposed meeting with the MECP is still pending.
◉ **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:	10-Dec-2025
CEP Contact Information:	Tim McBride
Company:	Pinchin Ltd.
Address:	662 Falconbridge Road, Sudbury , ON
Telephone No.:	705.561.0560
Fax No. :	
E-mail Address:	tmcbride@pinchin.com

Save As **Print Form**