



**TOWNSHIP OF MELANCTHON  
HYBRID COUNCIL MEETING  
THURSDAY, MARCH 20<sup>TH</sup>, 2025 - 5:00 P.M.**

***Council meetings are recorded and will be available on the Township website under Quick Links – Council Agendas and Minutes within 5 business days of the Council meeting.***

Join Zoom Meeting

<https://us02web.zoom.us/j/84510064568?pwd=XLrwG8pkZvULw6Og3UbYIorW1zq1md.>

1

Meeting ID: 845 1006 4568

Passcode: 370933

One tap mobile

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Dial by your location

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- +1 204 272 7920 Canada

Meeting ID: 845 1006 4568

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**AGENDA**

**1. Call to Order**

**2. Land Acknowledgement Statement**

*We will begin the meeting by sharing the Land Acknowledgement Statement:*

We would like to begin by acknowledging that Melancthon Township recognizes the ancestral lands and treaty territories of the Tionontati (Petun/Wyandot(te)), Haudenosaunee (Six Nations), and Anishinaabe Peoples. The Township of Melancthon resides within the lands named under the Haldimand Deed of 1784 and the Lake Simcoe-Nottawasaga Treaty (Treaty 18).

These territories upon which we live and learn, are steeped in rich Indigenous history and traditions. It is with this statement that we declare to honour and respect the past and present connection of Indigenous peoples with this land, its waterways and resources.

**3. Announcements**

- 4. Additions/Deletions/Approval of Agenda**
- 5. Declaration of Pecuniary Interest and the General Nature Thereof**
- 6. Approval of Draft Minutes – March 6<sup>th</sup>, 2025**
- 7. Business Arising from Minutes**
- 8. Point of Privilege or Personal Privilege**
- 9. Public Question Period** (Please visit our website under Agendas and Minutes for information on Public Question Period)
- 10. Public Works**
  1. Other
- 11. Planning**
  1. Applications to Permit
  2. Other
- 12. Climate Change Initiatives**
- 13. Dufferin OPP Detachment Board – Melancthon, Mono, Mulmur**
  1. Board Report from Al Blundell, Chair of the Melancthon, Mono, Mulmur OPP Detachment Board
- 14. County Council Update**
- 15. Correspondence**

**Board, Committee & Working Group Minutes**

1. Shelburne & District Fire Board – February 4<sup>th</sup>, 2025
2. Heritage Advisory Committee – February 10<sup>th</sup>, 2025
3. Centre Dufferin Recreation Complex – November 27<sup>th</sup>, 2024
4. Centre Dufferin Recreation Complex – December 4<sup>th</sup>, 2024
5. Centre Dufferin Recreation Complex – January 29<sup>th</sup>, 2025

**Items for Information Purposes**

1. Ontario Provincial Police – Melancthon Township October to December 2024 Detachment Revenues
2. Nottawasaga Valley Conservation Authority – Public Consultation on Draft Regulation Mapping
3. Nottawasaga Valley Conservation Authority – News Release NVCA Launches E-Permitting Platform for Permit Applications
4. Nottawasaga Valley Conservation Authority – Media Release NVCA Announces Interim CAO's Work Plan to Deliver Continuous Improvement
5. Nottawasaga Valley Conservation Authority – February 2025 Board Meeting Highlights
6. Grand River Conservation Authority – Summary of the General Meeting – February 28, 2025
7. Grand River Conservation Authority – Watershed Services 2024 Annual Report
8. Township of Mulmur – Information Report Campaign Cabinet February 2025 Summary
9. Bluewater Geoscience - 2024 Melancthon Township Landfill Monitoring Report

### **Items for Council Action**

1. Nottawasaga Valley Conservation Authority – NVCA Board of Directors Resolution Regarding Oro-Medonte’s Resolution Proposing the Amalgamation of the NVCA and the Lake Simcoe Region Conservation Authority (LSRCA)

### **16. General Business**

1. Notice of Intent to Pass By-law
  1. By-law to Authorize the Signing of an Access Agreement Between the Corporation of the Township of Melancthon and the Grand River Conservation Authority
  2. By-law to Adopt the Estimates of all Sums Required During the Year and to Strike the Rates of Taxation, and to Further Provide for Penalty and Interest in Default of Payment thereof for the Year 2025
2. New/Other Business/Additions
3. Unfinished Business
4. Reports/Updates from Members of Council & Administrative Staff

### **17. Delegations**

1. 5:30 p.m. – Statutory Public Meeting & Notice of Intent to Pass By-law for an Official Plan Amendment – Lot 24 and Part of Lot 23 and 25, Concession 7 SW – Manassa and Melinda Martin
2. 5:45 p.m. – Statutory Public Meeting & Notice of Intent to Pass By-law for a Zoning By-law Amendment on Part of Lot 291, Concession 1 SW – Colin and Kristi Way
3. 6:00 p.m. – Chris Johnston, Johnston Consulting Enforcement Services – Presentation on a Parking By-law Proposal

### **18. Closed Session**

1. Items for Discussion:
  1. 239(2)(b) – Application received for the Heritage Advisory Committee
  2. 239(2)(k) – Draft Agreement between Mulmur and Melancthon Township regarding the North Dufferin Community Centre
2. Approval of Draft Minutes – March 6<sup>th</sup>, 2025
3. Business Arising from Minutes
4. Rise With or Without Report from Closed Session

### **19. Third Reading of By-laws**

### **20. Notice of Motion**

### **21. Confirmation By-law**

### **22. Adjournment and Date of Next Meeting – Thursday, April 3<sup>rd</sup>, 2025 at 5:00 p.m.**

**APPLICATIONS TO PERMIT FOR APPROVAL  
March 20, 2025 COUNCIL MEETING**

<b>PROPERTY OWNER</b>	<b>PROPERTY DESCRIPTION</b>	<b>SIZE OF BUILDING</b>	<b>TYPE OF STRUCTURE</b>	<b>USE OF BUILDING</b>	<b>DOLLAR VALUE</b>	<b>D.C.'s</b>	<b>COMMENTS</b>
Matthew Silvaggio	Pt Lots 9 & 10, Con 2 OS 7R RP5363 Part 1 516548 County Road 124	78m2 (839.59sqft)	Quonset Hut	Carport/Storage	\$12,000	No	Approved
Israel Martin	Pt Lots 27 to 29, Con 11 NE RpP 7R542 Part 1 358097 10th Line NE	390m2 (4197.93sqft)	Barn Addition	Manure & Bail Storage	\$200,000	No	Approved
Ion Bauman Agent: Paul Bowman	Pt Lot 244 & 245, Con 3 SW 118342 2nd Line SW	49.73m2 (535.29sqft)	Farm Shed & Power Room	Agricultural	\$40,000	No	With Planner for Review



## Board Report

### OPP Detachment Board, Melancthon, Mono, Mulmur.

#### Q4 data

Due to increase on- site and Hospital calls, 14% decrease in Officer Patrol hours. however,

22% increase in all offences, 25% increase HTA

36% increase speed

14% increase Impaired

9% decrease in e-ticket ( warning)

24% increase in violent crime ( 78)

26% decrease in property crime

MCERT 351 calls, 134 requests for referral.

RIDE 475 hours ; charges 14 over 80%. 22 impaired

YTD 2024. 303 collision

4 fatal

53 injury

246 property damage.

Met with OPP, MTO, Mayor Creelman in regard to CMV safety

With the OPP CMVA Officer on extended leave,

MTO/OPP will work towards a Joint Presence in Dufferin County.

Including portable weigh stations for ½ load - also a request with townships / County and private concerns regarding areas to schedule CMV inspections / blitz for 2025

I will be looking to engage with

The Roads Committee regarding a Mennonite Safety follow up meeting.

Council and UGDSB regarding a Youth Townhall.

Meeting dates have been updated to best meet member schedules.

This will be updated on the website.

I have contacted the other Board chairs in regard to a Joint Board meeting for Q3.

March 30, Shelburne Fairgrounds. POLAR PLUNGE.

I am entered and am looking for donations.. even a dollar makes a difference.

<https://soopolarplunge.crowdchange.ca/91288/page/286807>

thank you

Al Blundell csu

Chair, OPP Detachment Board; Melancthon, Mono, Mulmur.

[blundellsja@gmail.com](mailto:blundellsja@gmail.com)



## **SHELburne & DISTRICT FIRE BOARD**

February 4, 2025

The Shelburne & District Fire Department **Board of Management** meeting was held in person at the Shelburne and District Fire Department on the above mentioned date at 7:00 P.M.

### **Present**

As per attendance record.

### 1. **Opening of Meeting**

1.1 Vice-Chair, Gail Little, called meeting to order at 7:00 pm.

### 1.2 **Land Acknowledgement**

We would like to begin by respectfully acknowledging that the Town of Shelburne resides within the traditional territory and ancestral lands of the Anishinaabe, including the Ojibway, Potawatomi, Chippewa and the People of the Three Fires Confederacy.

These traditional territories upon which we live, work, play and learn are steeped in rich Indigenous history and traditions. It is with this statement that we declare to honour and respect the past and present connection of Indigenous peoples with this land, its waterways and resources.

### 2. **Additions or Deletions**

None.

3. **Approval of Agenda**

3.1 **Resolution # 1**

Moved by M. Davie – Seconded by B. Neilson

**BE IT RESOLVED THAT:**

The Board of Management approves the agenda as presented.

**Carried**

4. **Approval of Minutes**

4.1 **Resolution # 2**

Moved by A. Stirk – Seconded by E. Hawkins

**BE IT RESOLVED THAT:**

The Board of Management adopt the minutes under the dates of January 7, 2025 as circulated.

**Carried**

5. **Pecuniary Interest**

5.1 No pecuniary interest declared.

6. **Public Question Period**

6.1 No questions.

7. **Delegations / Deputations**

7.1 No delegations present.

8. **Unfinished Business**

8.1 **Radio Project Fire Services Report**

Chief advised that after discussion with Five9 and County Chief's the plan will move forward status quo.

**Resolution # 3**

Moved by E. Hawkins – Seconded by A. Stirk

BE IT RESOLVED THAT:

The Shelburne & District Fire Board of Management receives the Chief's Radio Project Fire Services Report.

**Carried**

8.2 **Service Models Report**

The Board discussed the various models.

**Resolution # 4**

Moved by J. Horner – Seconded by M. Davie

BE IT RESOLVED THAT:

The Shelburne & District Fire Board of Management receives the Chief's Service Models report.

**Carried**

8.3 **Fire Services Review Update**

Discussed under item 8.2

9. **New Business**

9.1 **Wage Differential Report**

**Resolution # 5**

Moved by M. Davie – Seconded by F. Nix

BE IT RESOLVED THAT:

The Shelburne & District Fire Board of Management receives the Chief's Wage Differential report;

**Carried**

10. **Chief's Report**

10.1 **Monthly Reports (January 2025)**

There was a total of 23 incidents for the month of January.

10.2 **Update from the Fire Chief**

The Chief advised that we were successful in receiving a provincial grant in the amount of approximately \$8200.00. We also received a grant from the Royal Canadian Legion for the purchase of two new defibrillators.

We've will have the Mobile Life Fire Training Unit for 4 days in July and our neighbours will be invited as well.

The contract with the Town of Tillsonburg for our dispatch services expires in July 2025.

11. **Future Business:**

11.1 None.

12. **Accounts & Payroll – January 2025**

12.1 **Resolution # 6**

Moved by M. Davie – Seconded by E. Hawkins

**BE IT RESOLVED THAT:**

The bills and accounts in the amount of \$23,928.09 for the period of January 1, 2025 to January 31, 2025 as presented and attached be approved for payment.

**Carried**

13. **Confirming and Adjournment**

13.1 **Resolution # 7**

Moved by F. Nix – Seconded by J. McLean

**BE IT RESOLVED THAT:**

All actions of the Board Members and Officers of the Shelburne and District Fire Board of Management, with respect to every matter addressed and/or adopted by the Board on the above date are hereby adopted, ratified and confirmed; And each motion, resolution and other actions taken by the Board Members and Officers at the meeting held on the above date are hereby adopted, ratified and confirmed.

**Carried**

13.2 **Resolution # 8**

Moved by F. Nix – Seconded by J. McLean

**BE IT RESOLVED THAT:**

The Board of Management do now adjourn at 8:50 pm to meet again on March 4, 2025 at 7:00 pm or at the call of the Chair.

**Carried**

Respectfully submitted by:

Approved:

\_\_\_\_\_

\_\_\_\_\_

Nicole Hill  
Secretary-Treasurer

Gail Little  
Vice-Chairperson

## SHELBURNE & DISTRICT FIRE BOARD MEMBERS

Meeting Attendance Record Under Date of February 4, 2025

<b>Municipality / Member</b>	<b>Present</b>	<b>Absent</b>
<b>Township of Amaranth</b>		
Andrew Stirk	X	
Gail Little	X	
<b>Town of Mono</b>		
Melinda Davie	X	
Fred Nix	X	
<b>Township of Melancthon</b>		
James McLean	X	
Bill Neilson	X	
<b>Town of Shelburne</b>		
Wade Mills		X
Shane Hall		X
<b>Township of Mulmur</b>		
Earl Hawkins	X	
Janet Horner	X	
<b>Staff</b>		
Ralph Snyder – Fire Chief	X	
Jeff Clayton – Deputy Chief	X	
Nicole Hill – Sec/Treas.	X	



## **CORPORATION OF THE TOWNSHIP OF MELANCTHON**

The Township of Melancthon Heritage Advisory Committee held an electronic meeting on February 10, 2025, at 6:30 p.m. The following members were present: Chair Kristine Pedicone, Vice-Chair Todd McIntosh, Members James McLean, David Thwaites and Dennis Scace, also present was Becky Cunnington, Heritage Advisory Committee Secretary. Chair Pedicone called the meeting to order at 6:32 p.m. Chair Pedicone advised that the meeting was being recorded and would be posted to the Township website.

### **Land Acknowledgement**

Chair Pedicone shared the Land Acknowledgement Statement.

### **Additions/Deletions/Approval of Amended Agenda**

#### **Additions**

None

#### **Deletions**

None

#### **Approval of Amended Agenda**

Moved by Thwaites, Seconded by McLean that the agenda be approved as presented. Carried.

#### **Approval of Draft Minutes**

Moved by McIntosh, Seconded by Scace that the minutes of the Heritage Advisory Committee Meeting held on January 13, 2025, be approved as circulated. Carried.

#### **Business Arising from Minutes**

None

#### **Declaration of Pecuniary Interest or Conflict of Interest**

No declaration declared at this time.

#### **General Business**

##### **1. New**

- 1) Book Publications – Party Boys by Lon Ballinger & Remarkable – The Journey of Alice Porter Medical Missionary by Joseph Driskill**

**2) Other/Addition**

None

**2. Unfinished Business**

**1) One Room Schoolhouse Project**

The Committee discussed extending the submission deadline to March 15<sup>th</sup>, 2025 and all were in agreement. A discussion followed as to next steps for the project and direction to Township staff was given.

**2) Photos from Centennial Hylands**

Chair Pedicone will bring the photos to the Township Office and give direction as to how to display them.

**3) Heritage Week 2025 (February 17<sup>th</sup>-23<sup>rd</sup>)**

Photos of Horning's Mills, Redickville, Riverview and Jessopville to be provided to Township Staff no later than February 12, 2025

**4) Remembrance Day Project/Student Bursary**

Member McLean circulated a revised outline prior to the meeting with the details of this year's Bursary criteria. The Committee discussed and some changes were suggested and Member McLean was going to update and re-circulate to the Committee.

**5) Budget For 2025**

The Committee has not yet obtained a quote on the Schoolhouse Project for production/publishing costing.

**6) Vacancies on the Committee**

No applications were received at the Township so the Committee discussed encouraging members of the Public to participate that may not meet the criteria to be official members but could help with current and proposed projects moving forward with the understanding they would not have a vote in any motions or recommendations coming forward from the Committee to Council.

**7) Heritage Secretary – Date for Transition**

No date has been set yet however Township staff will continue to support until the other Board is up and running.

**8) 2025 Meeting Dates**

Meetings will continue to be held the 2<sup>nd</sup> Monday of the month mostly via zoom however some in person meetings may be scheduled.

### **3. Brainstorming Roundtable**

None

#### **Recommendations to Council**

None

#### **Public Question Period**

None.

#### **Confirmation Motion**

Moved by McIntosh, Seconded by Thwaites that all actions of the Members and Officers of the Heritage Advisory Committee with respect to every matter addressed and/or adopted by the Board on the above date are hereby adopted, ratified and confirmed; and each motion, resolution and other actions taken by the Board Members at the meeting held on the above date are hereby adopted, ratified and confirmed. Carried.

#### **Adjournment**

7:20 p.m. - Moved by Scace, Seconded by McLean be it resolved that we adjourn this Heritage Advisory Committee meeting to meet again on Monday, March 10, 2025 at 6:30 p.m. or at the call of the Chair. Carried.

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CHAIR

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SECRETARY

**CENTRE DUFFERIN RECREATION COMPLEX**  
**BOARD OF MANAGEMENT**

**Minutes of the Regular meeting held November 27, 2024 at 5:30pm in person**

Attendance:	Dan Sample	Shelburne
	Robb Stinson	Shelburne
	Melinda Davie	Mono
	Andrew Stirk	Amaranth
	Chris Gerrits	Amaranth
	Kim Fraser	Facility Administration Manager
	Marty Lamers	Facility Maintenance Manager
	Emily Francis	Recreation Program Coordinator

Absent: S. Hall, R. Plowright and R. Moore

Meeting called to order by Board Chair, Melinda Davie at 5:34pm.  
A quorum was present.

**Land Acknowledgement:**

Board Chair, Melinda Davie read the land acknowledgement.

**Declaration of Pecuniary Interests:**

Board Chair, Melinda Davie stated that if any member of the board had a disclosure of pecuniary interest that they could declare the nature thereof now or at any time during the meeting.

**Agenda:**

**MOTION #1** – Moved by C. Gerrits seconded by R. Stinson. Be it resolved we approve the agenda dated November 27, 2024 as circulated and presented. Carried

**Discussion & Approval of Minutes of Previous Meetings held October 23, 2024:**

**MOTION #2** – Moved by A. Stirk seconded by R. Stinson. That the minutes of the CDRC Board of Management previous board meetings held on October 23, 2024 be approved as circulated and presented. Carried

**Correspondence:**

- Shelburne EV Charger Funding – contact Town of Shelburne regarding operations and maintenance.

**MOTION #3** – Moved by C. Gerrits seconded by D. Sample. That correspondence is received and placed on file. Carried

**Financial Report:**

**CDRC 2025 Draft Budget**

Staff presented a second draft of the CDRC 2025 budget. After review and discussion the following motion was presented.

**MOTION #4** – Moved by C. Gerrits seconded by D. Sample. Be it resolved that the 2025 CDRC draft budget distributed at the November 27, 2024 board meeting with an operating and capital deficit of \$2,214.00 and a municipal contribution of \$559,330.00 be adopted. And that a copy of the budget be sent to all member municipalities.

Carried

After reviewing the CDRC financial reports and accounts the following motion was presented.

**MOTION #5** – Moved by A. Stirk seconded by D. Sample. That the CDRC Board of Management receive the financial reports and paid accounts in the amount of \$81,213.46, as presented by the Facility Administration Manager. Carried

**Facility Administration Manager and Recreation Program Coordinator Reports:**

See Schedule A

See Schedule B

See Schedule D – 2024 End of Season Report

See Schedule E – Seasonal Summer Employment Report

**MOTION #6** – Moved by R. Stinson seconded by A. Stirk. That we receive the reports from the Facility Administration Manager and the Recreation Program Coordinator.

Carried

**MOTION #7** – Moved by C. Gerrits seconded by D. Sample. That we receive the Seasonal Summer Employment report from the Recreation Program Coordinator and proceed with the recommended changes.

Carried

**Facility Maintenance Manager's Report:**

See Schedule C

**MOTION #8** - Moved by A. Stirk seconded by R. Stinson. That we receive the report from the Facility Maintenance Manager. Carried

**Old Business:**

**Hall of Fame Update:**

On behalf of R. Plowright staff presented a verbal report on her findings. After researching various facilities, it was determined that there was no real rules or associations are doing the Hall of Fame.

**New Business:**

**Hockey Training Institute (HTI):**

After review and discussion the board suggested inviting J. Feldman to a future board meeting to discuss his project ideas further.

**SMHA Ice Usages:**

Recently a number of SMHA games have exceeded the allotted scheduled ice time and rolled into other scheduled user groups. Staff has communicated with SMHA and they will address their schedule where needed to avoid overages.

**Polar Plunge Request:**

The CDRC will be open for a Sponsored Family Day skate from 1:00-3:00pm. After discussion the board suggested inviting J. Feldman to a future board meeting to discuss his project ideas further.

**Confirmation by By-law:**

**MOTION #9** – Moved by C. Gerrits seconded by D. Sample. Be it resolved that leave be given for the reading and enacting of by-law #08-2024 being a by-law to confirm certain proceedings of the CDRC Board of Management for its regular board meeting held November 27, 2024. Carried

**Adjournment:**

**MOTION #10**- Moved by A. Stirk seconded by R. Stinson. That we now adjourn at 7:00pm to meet again on Wednesday, January 22, 2025 at 5:30pm or at the call of the chair. Carried

\_\_\_\_\_  
Secretary - Treasurer

\_\_\_\_\_  
Chairperson

\_\_\_\_\_  
Dated

SCHEDULE 'A'

Facility Administration Managers Report – November 27, 2024

**General Overview/Information:**

- Continual day-to-day administrative duties that include phone calls and walk-in inquiries, invoicing and collections, process payables and disbursements, bank deposits, rental contracts, bookings, monitoring the rental schedule, monthly account reconciliations and payroll administration.
- Ongoing, receiving and responding to numerous and various facility rental booking requests and walk-ins. Some site visits requested. Preparing rental contracts and insurance requirement.
- Below is a snapshot of facility rentals

Week	Ice Rental Hrs	Event/Room Oth Rentals	SMHA portion
Week: Oct 21-27	54	5	24.5
Week: Oct 28-Nov 3	52.5	2	25.5
Week: Nov 4-10	54	4	23.5
Week: Nov 11-17	69	2	32
Week: Nov 18-24	71	5	30

- Attended development charge meeting virtually with reps from the Town of Shelburne and the consultants. It was suggested the CDRC do a facility assessment for a growth and needs study.
- Prepared two offers of employment for seasonal operations and maintenance positions
- Elections Ontario conducted inspection and site visit of voting locations on November 5th
- Executing new rental opportunities that were noted in October report
- Completed and submitted insurance renewal application/questionnaire as requested by Town of Shelburne
- Attended a COFCA (Central Ontario Facility Coordinators Assoc) meeting with Emily in Barrie on November 21<sup>st</sup>
- CDRC 2025 draft budget preparation
- Wightmans completed internet installation on Nov 25<sup>th</sup>. Dufferin County IT is scheduled to complete the hook up

**New Business**

- Met with Jenya Feldman on Nov 5<sup>th</sup> to discuss the opportunity for HTI to return to Shelburne
- CSJ (Canada Summer Jobs) 2025 application process closes December 19<sup>th</sup>
- Invoice annual wall signs and rink board advertising for Dec 1<sup>st</sup>
- Program concession booth cash register for the holiday GST/HST cut beginning December 14<sup>th</sup>

Kim Fraser,  
Facility Administration Manager

SCHEDULE 'B'

Submitted By: Recreation Program Coordinator Emily Francis  
 To: CDRC Board of Management  
 Date: Wednesday November 27, 2024  
 Subject: Recreation Program Coordinator Report

**November Overview**

- Continuing to assist with day-to-day operations including phone inquiries, email inquiries, walk in inquiries.
- Continuing to update the CDRC information on the Town of Shelburne website and actively creating graphics and posting on the CDRC social media. Creating posts for our lobby tv playlist.
- Beginning to put all rentals on our Active Net Events Calendar to allow the community to see when there is ice available for rent. Eventually, we would like to move forward with bookings online.
- Communication with Honeywood Minor Hockey to share information regarding CDRC programs (Power Skating and Glow Skate).
- Writing Letter of Reference for staff members applying for scholarships with universities highlighting their impact at the CDRC.
- Creating graphics for the local LED Boards to help promote our program offerings.
- Attended a COFCA Meeting in Barrie, on Thursday November 21, 2024.
- Preparing for upcoming winter programs including creating promotional material, scheduling staff, preparing day plans etc.
- Holiday Family Skate sponsored by Main Street Family Dental, Shelburne Family Chiropractic and Shelburne Optometry scheduled for Friday December 6, 2024 from 6:00-8:00pm.
- Preparing and updating Seasonal Employment Opportunities. The 2025 Seasonal Summer Employment Opportunities will be posted early December.
- Beginning of preparation and collection of content for the Summer 2025 Recreation Guide.

**Snapshot of Drop in Program Attendance**

Below is a snapshot of the attendees for drop in CDRC programs.

<b># of participants on each date</b>						
<b>Program</b>	<b>Oct.16/24</b>	<b>Oct.23</b>	<b>Oct.30</b>	<b>Nov.6</b>	<b>Nov.13</b>	<b>Nov.19</b>
Adult Skate	2	0	0	0	Cancelled	Cancelled
Parent/Tot	2	0	0	0	Cancelled	Cancelled
Drop In Pickleball	0	0	0	0	4	5

<b># of participants on each date</b>					
<b>Program</b>	<b>Oct.18/24</b>	<b>Nov.1/24</b>	<b>Nov.8/24</b>	<b>Nov.15/24</b>	<b>Nov. 22/24</b>
Public Skate	10	30	48	51	17
55+ Shinny	14	20	19	19	17
Drop In Pickleball	0	0	0	0	0



**Snapshot of upcoming Registered programs**

<b>Program</b>	<b>Date</b>	<b># of registrations</b>
PA Day Camp	Friday November 29, 2024	15
PA Day Power Skating Clinics	Friday November 29, 2024	45
Youth Night Out: Holiday Party	Friday December 13, 2024	3
Youth Night Out: Glow Skate	Monday December 23, 2024	6
Red Cross Standard First Aid Course	Monday December 30, 2024	3
Home Alone Safety for Kids	Friday December 27, 2024	4
Holiday Break Camp	Friday December 27, 2024	3
Holiday Break Camp	Monday December 30, 2024	9
Hockey and Sports Fun Camp	Monday December 30, 2024	0
Skate and Swim Camp	Thursday January 2, 2024	5
Holiday Break Camp	Thursday January 2, 2024	5
Holiday Break Camp	Friday January 3, 2024	3
Youth Learn to Play Pickleball	Begins Wednesday January 22, 2024	2
Adult Learn to Play Pickleball	Begins Wednesday January 22, 2024	3
Adult Advanced Beginner/ Early Intermediate Pickleball	Begins Wednesday January 22, 2024	0
Youth Night Out: Beads and Bracelets	Friday January 17, 2024	1

SCHEDULE 'C'

Facility Maintenance Managers Report –November 27, 2024

GENERAL INFORMATION

Working on Budget and capital planning

Daily cleaning

Had some large events all went well SMHA hockey, Yuk Yuks and KTH Kida Xmas day went well.

Regular ice maintenance edging, flooding and scraps. 6 days of sledge hockey went well

Wall advertising install

Arena boiler transfer pump replaced by staff

SMHA scheduling adjustments made as time was running long

Replaced heat exchange roof top unit was red flagged cracked

1 Boiler replacement complete dressing room.

1 boiler circulating pump was replaced as well due to flow issues.

Arena dehumidifier not working properly troubleshot, change out filters, check belts called service tech topped up with freon made some adjustments. Still not functioning properly. Monitoring daily due to heat swings and found a faulty humidity sensor part to be replaced.

Teams meeting with Town of Shelburne regarding Development Charges we discuss some of our needs we discussed things like playground equipment a gymnasium the age of the building and that we would like to continue to grow. The consultants for the town had penciled in a number for CDRC as possible funding in the towns study but had no direction what it would be used for, after the meeting, they decided to leave the money in their plan and thought it would be prudent that like the fire hall and library we do a usage study to drive the direction of growth and programs. They suggested we do the study in 2025. I have made an adjustment in the capital for this purpose if we would like to proceed with that.

Dressing room hockey wall boards installed

2 new hires to help fill gaps operator and youth.

Sourcing parts pot lights for old lights Looking to be more cost effective to replace

Front door repaired November 22, 2024, complete

Saturday Morning overhead door for Olympia to enter ice broken spring broke in half middle of the night

7:49 am operator notified me service tech on site 9 am reached out to Kim to notify SMHA no floods until fix is in place

A large chain hoist Provided by Josh was put in place, and operational at 10:40 am to be replaced to begin Wednesday Nov. 27, 2024, 3:15 pm.

New business

**SCHEDULE 'D'**

**Centre Dufferin Recreation Complex**

**Summer 2024 End of Season Report**

**Prepared by Emily Francis (Recreation Program Coordinator)**

**with input from Co Head Counsellors Alexa Dempster and Heidi Bennington**

# Centre Dufferin Recreation Complex



The CDRC summer day camp and outdoor pool were in operation for the 2024 summer season. The seasonal outdoor pool began operations on Friday June 7, 2024, and concluded on Friday August 30, 2024. The summer day camp began programming on Tuesday July 2, 2024, and concluded on Thursday August 29, 2024.

## Registration

Registration for all summer programming was conducted using our Active Net Software. Summer registration opened on Tuesday April 2, 2024. All registrants were required to pay for their programs at the time of registration using a Credit Card. Registrants also had the option to complete the registration at the CDRC where they could pay debit or credit.

## Program Registration Numbers

Below is a snapshot of our registration numbers for 2024.

### **Outdoor Pool Participant Numbers**

<b>Swim Program</b>	<b># Of Participants in 2023</b>	<b># of participants in 2024</b>
June Bronze Star	7 participants	6 participants
June Bronze Medallion	8 participants	6 participants
June Bronze Cross	3 participants	5 participants
June Group Lessons	55 swimmers	56 swimmers
June Private/Semi-Private Lessons	16 swimmers	20 swimmers
Session 1 Group Lessons	174 swimmers	215 swimmers
Session 1 Private/Semiprivate Lessons		
Session 2 Group Lessons	190 swimmers	195 swimmers
Session 2 Private/Semi-Private Lessons		
Session 3 Group Lessons	166 swimmers	182 swimmers
Session 3 Private/Semi-Private Lessons		
Session 4 Group Lessons	175 swimmers	161 swimmers
Session 4 Private/Semi-Private Lessons		
August Bronze Star	3 participants	4 participants
August Bronze Medallion	10 participants	9 participants
August Bronze Cross	9 participants	4 participants
Adult Lessons	17 participants	15 swimmers
Teen Small Group	9 participants	11 swimmers

# Centre Dufferin Recreation Complex



## Summer Day Camp Participant Numbers

Day Camp Week/Theme	# of Campers 2023	# of participants in 2024
Week One	64	64
Week Two (General + Specialty Camp)	64	77
Week Three (General + Soccer Camp)	63	72
Week Four (General + Junior Leaders)	80	82
Week Five (General + Basketball Camp)	58	66
Week Six	62	65
Week Seven (General + Ball Hockey)	58	76
Week Eight (General + Junior Lifeguard)	80	77
Week Nine (General + Junior Lifeguard)	52	53
Leaders in Training	10 campers	2 (program was cancelled due to low registration)

## Outdoor Pool

### Overview of 2024 Programs

1. Outdoor Pool Entrance
  - a. The CDRC pool continued to utilize the side pool gates for entrance and exit onto the pool deck. Fees for all drop-in programs are also collected at the side gate. Maintenance staff installed a permanent gazebo for shelter at the entrance to prevent the need to take the structure down during inclement weather.
2. June Swimming Lessons
  - a. Afterschool swimming lessons were offered in a 9 day session from Monday June 17 – Thursday June 28, 2024. Lessons were scheduled between 4:00-6:30pm. It is recommended that this session of swimming lessons continue moving forward. If there are staff available, the lessons could begin earlier to accommodate those who are at home with children. Lessons could begin at 3 or 3:30pm as well as an earlier morning session from 10:00-12:00pm. In the summer of 2024, we had minimal staff available for daytime work, therefore if there were more available we can expand our June daytime programming.
3. Weekly Adult/Teen Group Swimming Lessons

## Centre Dufferin Recreation Complex



- a. The weekly Adult/Teen Group lessons continued this summer expanding to 2 sessions. Lessons were run weekly on Tuesdays and Thursdays from 8:00-8:45pm and then participants had the option to stay and practice from 8:45-9:00pm. These lessons were a huge success and can be expanded for the summer of 2025 with more private lesson offerings. Separate classes were offered for Teens ages 12-17 and Adults ages 18+.
4. July/August Swimming Lessons
  - a. Throughout the months of July and August, swimming lessons began each session at 8:00 am and concluded at 12:30pm. Our 8:00am start has received positive feedback from the registrants, as it allows them to get there lessons done early before work and their day. These lessons are offered during the last half of the morning lane swim.
5. Drop in swim offerings
  - a. Weekday Public Swim
    - 2:30-4:30pm and 7:00-8:00pm
  - b. Weekend Public Swims
    - 2:30-4:30pm
  - c. Lane Swim
    - 7:15-8:30am (Monday-Friday)
    - 8:00-9:00pm (Monday, Wednesday)
  - d. Adult/Senior Swim
    - Monday, Wednesday, Friday 1:30-2:30pm
6. New in 2024: The CDRC partnered with Trainer Games Fitness Centre to bring Aquafit to the CDRC! There were 3, 4-week sessions that were offered throughout July and August in both the mornings and afternoons.

### **Outdoor Pool: Considerations for 2024**

1. Continue with using the weekends for Advanced Aquatic courses
  - a. In order to utilize the weekends more, we moved our advanced leadership courses (Bronze Star: 10 hour course, Bronze Medallion: 28 hour course and Bronze Cross: 20 hour course) to the weekends. This provided the participants with the chance to get the course done over 1-2 weekend instead of everyday for 1-2 weeks. Instructors had access to the whole pool, therefore we were able to expand our numbers as well. It is recommended that their courses continue to be offered on the weekends and if there is more demand expand to offer 1 option throughout the week days.
2. Weekly Lessons

# Centre Dufferin Recreation Complex



- a. If staffing allows, it is recommended that we explore the option of weekly swimming lessons to accommodate families that cannot commit to everyday for the 2 weeks.
3. Weekly Junior Lifeguard Club
  - a. Since we have added the Junior Lifeguard Camp, we have removed the Junior Lifeguard Club. For the summer of 2025, this club could be brought back once a week. It is an hour slot for swimmers to come and participant in lifeguard related activities. This program would run in a quiet portion of the day.
4. On Deck Monitor (During swimming lessons)
  - a. In 2022, we made the adjustment to add in an on-deck monitor. This individual is a qualified lifeguard on staff who is responsible for checking in all swimmers for lessons, ensuring they find their instructor/class and monitoring the pool deck throughout lessons. This person tidies up the pool deck, completes necessary cleaning/pool tests and monitors swimming lessons assisting where need be. On Wednesdays, this individual is responsible for guarding the Early On Words n Water program for 30 minutes. It is recommended that we continue to move forward with an on-deck monitor to ensure there is efficiency on the pool deck during programs.

## Overview of 2024 Summer Day Camp

1. Use of E Pact Software
  - a. The CDRC day camp, continues to utilize the Epact Emergency Management Software. Prior to attending camp, all families were required to create a profile on their camper. This profile included all information regarding allergies, medical, interests, pick up contacts eliminating the use of paper camper information forms. CDRC Staff used facility iPads to view this information. The use of the epact software and iPad have streamlined the sign in and out process making mornings and evenings significantly more efficient. This program is user friendly and efficient for our summer staff to view information needed for a day at camp.
2. Sign in and sign out:
  - a. Sign in and sign out was conducted inside the front doors of the facility between 8:00-9:00am and 4:00-5:00pm. This summer, we had 1 of our Head Camp Counsellors greeting all families at the entrance. Once campers had been signed in on the EPact software, they were walked to their camp headquarters. The use of one main sign in/out area allowed for parents to build connections with our Head Camp Counsellors.

# Centre Dufferin Recreation Complex



3. Before care 7:00-8:00am After care 5:00-6:00pm
  - a. Before care from 7:00-8:00am and aftercare from 5:00-6:00pm was offered for the summer of 2024. This addition was a huge success and appreciated by many families. Campers attending before and after care entered and exited the facility through the back staircase near the pool entrance gates. This process made it easy for staff to sign in and out campers rather than needing additional staff in the front lobby.
4. Group sizes
  - a. The campers were split into 3 groups based on age: Green Gators (4-5 years), Blue Badgers (6-8 years), and Red Rhinos (9-12 years).
  - b. Groups sizes were adjusted based on the space they were utilizing and ratios.
  - c. Each group was assigned to a space within the facility as their “home base”, utilizing all 3 room spaces in the CDRC.
5. Outdoor space
  - a. We were fortunate to have access to a variety of outdoor spaces for day camp operations. The following spaces were used for outdoor activities:
    1. Glenbrook tarmac and field
    2. CDRC Parking Lot: barricades were put up to block the parking lot off between the facility and the berm for the duration of the summer season. An outdoor lunch space was set up for campers with picnic tables to allow for distancing.
6. Daily Private Camp Swim
  - a. The CDRC summer day campers swim daily from 12:30-1:30pm. This swim time is designated for the CDRC day camp only and is a highlight of our program.
7. Camp Swimming Lessons from 12:00-12:30pm
  - a. In the past summers, we have had various families register for swimming lessons after camp. Camp staff were required to bring campers down to their lesson after the camp program. This summer we added in “Camp Swimming Lessons” that were offered from 12:00-12:30pm. Campers were required to be registered for the 2 weeks of camp in which the lessons aligned with and then they had the option to add the Camp Swimming Lessons. Campers were gathered up at 11:50 and brought down to the pool deck to attend their swimming lessons. Once the lessons were over, they would stay at the pool deck for our private camp swim. This addition was very well received from parents, they were happy that they did not have to stay around after camp and the campers had their lessons done during the day.



# Centre Dufferin Recreation Complex



## Highlight of camp activities

1. Morning Circle: Morning circle is a key component to our program year-round. This 30 minute is an opportunity for our campers and staff to come together as a whole and participate in songs and games. The morning circle was run by the 2 head camp counsellors. Some activities that took place in the morning circle include the following:
  - a. Opportunity to review camp rules and expectations.
  - b. Sing songs, play games, and participate in challenges that match with the week's themes.
  - c. Conduct Leader Challenges (i.e races, musical chairs etc): this was a huge hit with the campers, they really enjoyed cheering on their leaders.
  - d. Question of the day: campers loved to share their thoughts and ideas in the morning with the group.
2. Outdoor Activities
  - a. Active games, cool down games, use of equipment, obstacle courses, trips to the park, large group games, scavenger hunts
  - b. Trips to the park: the little campers enjoyed trips to the park just down the street and our older campers enjoyed their trek to Hyland Park for picnics.
3. Indoor Activities
  - a. Art activities, colouring, story time, jeopardy, puzzles, dance activities, stem-based activities
4. Specialty Activities
  - a. Library Visits: Our campers visited the library every Tuesday for 1 hour throughout the summer. This was an excellent opportunity for campers to visit the facility and see what the library has to offer. Campers walked to and from the library every Tuesday.
  - b. Dufferin County Ambulance Visit: Our camp had a visit from the Dufferin County Paramedics. Campers had the opportunity to tour the ambulance and check out the stretcher. Following the presentation, campers received tattoos and colouring pages from the paramedics. This was a great experience for our campers, and we look forward to bringing them back in the future.
  - c. OPP Visit: Our Day Camp was lucky to have several visits from the OPP throughout the summer. Campers had the opportunity to ask questions, tour the car and test out some of their equipment.
  - d. Party Safari Visit
    - i. Campers had the chance to interact with a variety of animals.
  - e. Splash Pad Visits: Our campers visited the splash pad several times throughout the summer months. Visits to the splash pad were planned for the morning of the camp day in hopes that it would be a quieter time as

# Centre Dufferin Recreation Complex



opposed to the hot afternoons. This also allowed us to get campers back for swimming lessons and the private camp swim in the afternoons.

- f. Visit to the FireHall: All of our campers from 4 years to our Junior Leaders up to 12 years visited the Fire Hall this summer.

## Summer Day Camp: Considerations for 2024

1. Reduce or limit the number on consecutive weeks a camper is able to register
  - a. We have found over the last 2 years that we have a large majority of campers who register for all 9 weeks of camp. We have found in some cases, that by week 7-8 those campers have had enough of the program. It is recommended that we look into how other camps structure their registration to ensure that everyone gets the opportunity to attend camp throughout the summer.
2. Additional Behaviour Management Training
  - a. Campers and their needs are becoming more diverse and camp staff require more training to meet those needs. It is recommended that we explore how other camps are training their staff on managing behaviour.
3. Weekly Hot Lunches
  - a. Introduction of weekly hot lunches for campers at camp. Parents will be required to purchase the hot lunch at the time of registration or prior to the week of camp. This lunch could be prepared in the CDRC concession booth and include a juice box for each camper. Examples of lunch ideas include:
    - i. Chicken Tenders and Fries
    - ii. Hot Dog
    - iii. Hamburger
4. Explore trip-based camps: Opening up a weekly camp trip or trip based camp would draw in a different crowd of campers who are looking for something different to do.
5. Implementation of a camp staff level between the Head Camp Counsellor and Camp Counsellor
  - a. Introduction of a “Assistant Supervisor or Group Lead” position that is the leader per group. This position will be the go-to head leader of the group
6. Review Specialty Camps
  - a. In the summer of 2024, we explored the option of adding in 4 new specialty camps. There is a need for programming for the 10-13 year old age group that is not the general day camp program.
7. Explore the Camp module in Active Net: compare the features and cost. Explore if it is an option to move from Epack all into Active Net to make things more efficient.
8. Staff Appreciation/Team Building Activities:
  - a. Introduce a mid-summer staff appreciation event. We did many impromptu ice cream sundae days and slushies for staff. It would be beneficial to arrange

## Centre Dufferin Recreation Complex



an offsite staff appreciation/team building activity in the middle of the summer to reconnect all staff.

- b. Introduce a bi weekly or weekly staff meeting.

### **Concluding Remarks**

Overall, the CDRC was a busy place throughout the summer of 2024 with the operations of the outdoor pool and summer day camp. We received very positive feedback from the community about all programs that were operating and the hard work off our CDRC staff team. We were very fortunate to have such a dedicated, hardworking staff team.

### **Next Steps**

- Increase advertising for better promotion of all programs. A logo would be helpful to unify our programs and facility.
- Explore the costs of busing to confirm how it would impact the pricing of our programs. We are planning to test out a Bus trip over the Christmas break to the Orangeville pool in the afternoon.
- Begin brainstorming for the 2025 season.

*Centre Dufferin Recreation Complex*

***REPORT***

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**Meeting Date:** November 27, 2024  
**To:** CDRC Board of Management  
**From:** Emily Francis  
**Subject:** Seasonal Summer Employment

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**Recommendation**

The Centre Dufferin Recreation Complex make the following adjustments to our current Seasonal Summer Employment Opportunities.

1. Change job title of Head Day Camp Counsellor to Summer Camp Supervisor.
2. Add level in camp staff pyramid to include Summer Camp Assistant Supervisor position.

**Background/Analysis**

Change Head Day Camp Counsellor to Summer Camp Supervisor: The current name is outdated; the Head Day Camp Counsellor is responsible for the supervision of a staff team and the overview of the day camp program. The job duties will not be changed for this position; however, the title will better reflect their duties.

After researching and reviewing the staffing structure within the day camps of other municipalities, it is recommended that the CDRC add level in camp staff pyramid to include Summer Camp Assistant Supervisor. This position will fall between the Summer Camp Supervisor and Day Camp Counsellor.

As our camp program continues to grow and expand it is important that our staffing model also reflects this growth.

With the introduction of Summer Camp Assistant Supervisor this will provide each of our camp groups with a designated leader who is responsible for the specific group they are assigned to. This position will be trained to fill in when the Summer Camp Supervisor is away or sick.

## Financial Impact

1. Summer Camp Supervisor – no financial impact, budgeted for 2025.
2. Assistant Camp Supervisor - These individuals will move from a Level 1 to a Level 2 (In line with our Lifeguard/Instructors). This position will be added onto our Canada Summer Jobs Application in hopes to receive funds to cover 50% of the wages. Has been budgeted for 2025.

## Supporting Documentation and Information

Appendix 1: Copies of all Camp Job Postings

Respectfully Submitted: Emily Francis



**EMPLOYMENT OPPORTUNITY**  
CENTRE DUFFERIN RECREATION COMPLEX  
Applications are being received for the position of:

## **SUMMER CAMP – Camp Supervisor**

**Posted:** Monday December 2, 2024

**Closing:** Friday January 31, 2025 at 4:00pm

**Job Category:** Seasonal Summer Employment

**Wage Range:** Under review

Dependent on experience and qualifications

**Work week:** Mid May-June: Approx. 20-30 hours per week

July and August: Approx. 35-40 hours per week

The CDRC Board of Management is seeking positive, team-oriented individual(s) to join the 2025 summer staff team. Under the direction of the Recreation Program Coordinator, the successful candidate(s) will be involved in a diverse range of job activities to provide successful summer day camp programs. This position takes place in a physically active environment requiring running, walking, lifting, standing etc. A background in child supervision and recreation an asset.

### **Employment period:**

The successful candidates must be available to work scheduled weekdays and attend weeknight/weekend scheduled training sessions. Hours may start as early as 6:30am and end as late as 6:30pm depending upon program registrations. Accommodating multiple days' vacation may not be possible. All time off requests are required to be submitted at the start of the season or at minimum two (2) weeks in advance.

**Position start date:** Mid May 2025

**Position end date:** Friday August 29, 2025

### **Duties & Responsibilities:**

- Plans, assists, coordinates, and implements the delivery of safe camp programming with assistance of the Recreation Program Coordinator. Duties include daily camp and parent management, preparation of program plans, completion of program documentation, overseeing camper pick up and drop off etc.
- Observes and manages camp programs to ensure safe and effective delivery of programming and ensures all CDRC policies and procedures are always followed.
- Responds to emergency situations including performing minor first aid and/or arranging for medical assistance, completion of accident/incident forms.
- Assist with the planning and facilitation of camp staff training and attend all staff meetings prior to and during the summer season. Attend all scheduled staff meetings and trainings.
- As the on-site lead, assists with overseeing and support of staff. Provide continuous direction and leadership to summer day camp staff.
- Work closely with parents/guardians, campers, staff, and management to ensure a quality summer camp experience.

- Ensure the continuing safety of all participants and staff while at the program. Lead EAP (Emergency Action Plan) when required. Provide first aid when needed and ensure incident reports are completed when necessary.
- Provide direction to camp staff to ensure proper maintenance and cleanliness of camp area.
- Performs administrative duties related to summer day camp program.
- Provide a comprehensive report to supervisor on camp activities after the close of the season along with performance evaluation of camp staff for employee files.
- Actively participate in the pool setting assisting with supervision during camp swim time.
- Other duties as assigned by Recreation Program Coordinator.

### **Qualifications/Skills & Abilities:**

If you have not yet taken the course, but intend to, please note the course on your application.

- Currently completing college or university level studies in Education, Recreation, Early Childhood Education, or related program is considered an asset.
- Current Standard First Aid with CPR-C certification (must be obtained prior to June 6, 2025). Other qualifications and certifications an asset.
- Completed High Five Principles of Healthy Childhood Development certification or willing to obtain prior to June 6, 2025.
- Previous experience working with children, including one (1) to two (2) years in a camp/recreation/program or similar setting considered an asset.
- Microsoft applications & computer skills required.
- Strong customer service & interpersonal communication skills both verbally & written to ensure positive interaction with campers, counsellors, parents/guardians etc.
- Various skills that may relate to crafts, sports, aquatics, arts etc. for camp programming
- Successful candidates will be required to complete a background check, including but not limited to a Vulnerable Sector Check/Criminal Record Check in accordance with the duties of this position.

**Hiring Day** will be held on Saturday February 22, 2025 (time to be confirmed) for successful applicants. You will be contacted if you are invited to attend this day. This day requires mandatory attendance to be considered for the position.

### **Standard First Aid with CPR-C/AED Certification (Blended Learning)**

- To register for upcoming full course and recertification course at the CDRC, visit the link below:
  - <https://anc.ca.apm.activecommunities.com/cdrc>
- Upcoming course dates:
  - Monday December 30, 2024

### **High Five Principles of Healthy Childhood Development (PHCD)**

- To register for upcoming High Five Principles of Health Childhood Development (PHCD) Certification at the link below.
  - <https://www.highfive.org/events>

Qualified candidates are invited to submit their resume to Emily Francis, Recreation Program Coordinator no later than Friday January 31, 2025, at 4:00pm. Applications may be submitted via **email or in person** addressed to:

**Emily Francis, Recreation Program Coordinator**  
 Centre Dufferin Recreation Complex  
 200 Fiddle Park Lane, Shelburne, ON L9V 3C9

Centre Dufferin Recreation Complex, 200 Fiddle Park Lane, Shelburne, ON L9V 3C9  
 Phone: (519) 925-2400

[cdrc@shelburne.ca](mailto:cdrc@shelburne.ca)

Please note the position you are applying for in the subject line. We thank all those applicants who apply and advise that only those selected for an interview will be contacted.

The Centre Dufferin Recreation Complex promotes the principles of diversity and inclusion and adheres to the tenets of the Canadian Human Rights Act and the Ontario Human Rights Code. The CDRC encourages applications from women, aboriginal peoples. Persons of all races, ethnic origins, religions, abilities, sexual orientations and gender identities and expressions. The CDRC will provide accommodation during all parts of the hiring process, upon request, to applicants with disabilities. If contacted to proceed to the selection process, please advise us if you require any accommodation. Personal information is being collected pursuant to the Municipal Freedom of Information and Protection of Privacy Act and will be used only for candidate selection.

DRAFT





**EMPLOYMENT OPPORTUNITY**  
CENTRE DUFFERIN RECREATION COMPLEX  
Applications are being received for the position of:

## **SUMMER CAMP - Assistant Supervisor**

**Posted:** Monday December 2, 2024

**Closing:** Friday January 31, 2025 at 4:00pm

**Job Category:** Seasonal Summer Employment

**Wage Range:** Under review

Dependent on experience and qualifications

**Work week:** Mid May-June: Approx. 20-30 hours per week

July and August: Approx. 35-40 hours per week

The CDRC Board of Management is seeking positive, team-oriented individual(s) to join the 2025 summer staff team. Under the direction of the Recreation Program Coordinator and Summer Camp Supervisor, the successful candidate(s) will be involved in a diverse range of job activities to provide successful summer day camp programs.

The Summer Camp Assistant Supervisor serves as an onsite coordinator of the Summer Day Camp Group, managing day to day operations, providing supervision to summer camp counsellors, assisting with leading activities, supporting the overall camp environment. This position takes place in a physically active environment requiring running, walking, lifting, standing etc. A background in child supervision and recreation an asset.

### **Employment period:**

The successful candidates must be available to work scheduled weekdays and attend weeknight/weekend scheduled training sessions. Rotating shift schedules, may start as early as 6:30am and end as late as 6:30pm depending upon program registrations. Accommodating multiple days' vacation may not be possible. All time off requests are required to be submitted at the start of the season or at minimum two (2) weeks in advance.

**Position start date:** Friday June 27, 2025

**Position end date:** Friday August 29, 2025

### **Duties & Responsibilities:**

- Directly supervises Summer Day Camp Counsellors, acting as a leader role model, fostering positive, creative and open learning environments where people feel included as members of a team and are motivated toward common goals.
  - Ensure Summer Day Camp Counsellors initiate, develop and maintain positive relationships with campers and are always engaged and interacting with campers.
  - Assist with mentoring and providing direction to all day camp volunteers.
- Assists with planning, facilitating and delivery of camp programming. Ensure activities are fun, safe, diverse and age appropriate. Modify daily and special activities as directed by the Summer Camp Supervisors. Provides feedback to assist with the evaluation of various programs. Assists with camp wide events, day trips and offsite walking trips.

Centre Dufferin Recreation Complex, 200 Fiddle Park Lane, Shelburne, ON L9V 3C9  
Phone: (519) 925-2400

- Prioritizes participant wellbeing, safety and protection throughout the program. Evaluate situations for potential risks to the safety, protection and well being of participants and staff, proactively taking mitigating actions to address such risks.
  - Responsible for administering medications to the campers at appropriate time.
  - Demonstrates the confidence and ability to make decisions independently of peers and supervisors in the best interests of the program participants. Resolves problems and conflicts effectively as they arise.
  - Attend all staff meetings, training to ensure understanding of the organization and program policies, emergency procedures and their application.
  - Be aware of all participant needs (dietary, medical, behavioral) and all relevant action plans.
  - Maintain accurate records and reports of all incidents promptly and thoroughly, using incident report forms and processes.
  - Responsible for ensuring program attendance is completed and submitted to Recreation Program Coordinator.
  - Supervising and being visible in the camp setting, ensuring program supplies and equipment are set up and put away daily
  - Actively participating in camp with the daily delivery of programming
- Ensure cleanliness and safety of the program area and proper use of program facilities and equipment. Evaluating situations for potential risks and proactively taking action to address such risks and reporting all incidents/concerns/actions or sit to supervisor.
- Performs other related duties as assigned by Recreation Program Coordinator. May be required to perform tasks assigned to other seasonal staff.

#### **Qualifications/Skills & Abilities:**

If you have not yet taken the course, but intend to, please note the course on your application.

- Previous experience in a day camp setting and working with children ages 4-13 years.
- Strong customer service & interpersonal communication skills both verbally & written to ensure positive interaction with campers, counsellors, parents/guardians etc.
- Able to problem solve effectively.
- Strong teamwork skills.
- Various skills that may relate to crafts, sports, aquatics, arts etc. for camp programming
- Current Standard First Aid with CPR-C/AED certification (must be obtained prior to June 6, 2025).
- Completed High Five Principles of Healthy Childhood Development certification or willing to obtain prior to June 6, 2025.
- Microsoft applications & computer skills required.
- Successful candidates will be required to complete a background check, including but not limited to a Vulnerable Sector Check/Criminal Record Check in accordance with the duties of this position.

**Hiring Day** will be held on Saturday February 22, 2025 (time to be confirmed) for successful applicants. You will be contacted if you are invited to attend this day. This day requires mandatory attendance to be considered for the position.

#### **Standard First Aid with CPR-C/AED Certification (Blended Learning)**

- To register for upcoming full course and recertification course at the CDRC, visit the link below:
  - <https://anc.ca.apm.activecommunities.com/cdrc>
- Upcoming course dates:
  - Monday December 30, 2024

#### **High Five Principles of Healthy Childhood Development (PHCD)**

Centre Dufferin Recreation Complex, 200 Fiddle Park Lane, Shelburne, ON L9V 3C9  
Phone: (519) 925-2400

- To register for upcoming High Five Principles of Health Childhood Development (PHCD) Certification at the link below.
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Qualified candidates are invited to submit their resume to Emily Francis, Recreation Program Coordinator no later than Friday January 31, 2025, at 4:00pm. Applications may be submitted via **email or in person** addressed to:

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Centre Dufferin Recreation Complex  
200 Fiddle Park Lane, Shelburne, ON L9V 3C9  
[cdrc@shelburne.ca](mailto:cdrc@shelburne.ca)

Please note the position you are applying for in the subject line. We thank all those applicants who apply and advise that only those selected for an interview will be contacted.

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## **EMPLOYMENT OPPORTUNITY**

### **CENTRE DUFFERIN RECREATION COMPLEX**

Applications are being received for the position of:

## **SUMMER DAY CAMP COUNSELLOR**

**Posted:** Monday December 2, 2025

**Status:** Seasonal Summer Employment

**Closing:** Friday February 7, 2025 at 4:00pm

**Wage Range:** Under review

Dependent on experience and qualifications

**Work week:** July and August: Approx. 15-40 hours per week (dependent on registration numbers)

The CDRC Board of Management is seeking positive, team-oriented individuals to join our 2025 summer staff team. Under the direction of the Recreation Program Coordinator and Summer Camp Supervisor, the successful candidates will be involved in a diverse range of job activities to provide successful summer day camp programs. This position takes place in a physically active environment requiring running, walking, lifting, standing etc. A background in child supervision and recreation considered an asset.

### **Employment period:**

The successful candidates must be available to work scheduled weekday shifts and attend weeknight/weekend scheduled trainings. Hours may start as early as 6:30am and end as late as 6:30pm dependent on day camp registrations. Accommodating multiple day vacation may not be possible. All time off requests must be submitted at the start of the season or at minimum two (2) weeks in advance.

**Position start date:** Monday June 30, 2025 (with meetings and trainings scheduled prior to June 2025)

**Position end date:** Friday August 29, 2025

### **Duties & Responsibilities:**

- Attend and participate in all staff meetings and trainings prior to and throughout the 2025 summer season. Staff training is considered MANDATORY. Demonstrate and maintain all skills relevant to the position. Read, acknowledge, and abide by the current CDRC Day Camp Manual
- Ensure the safety, enjoyment, and care of registered participants in the CDRC Day Camp program. Actively lead, engage, and participate in all program activities. Facilitates daily camp activities such as sports, games, crafts, swimming, and special events. Help ensure programming is inclusive and adapted to camper needs with regards to safety, hygiene, weather, etc.
- Closely monitor camper conduct and provide in-water supervision during swim times. Camp staff are required to be in the water with campers. Ensure safe practice and policies of the camp areas are adhered to by all participants.
- Prepare and organize program equipment and supplies, reporting any inventory shortages/damages to the Summer Camp Supervisor/Assistant Camp Supervisor.
- Maintain positive, constructive relationship with staff and volunteers with the goal of meeting camper needs.
- Provides regular updates and feedback to the Summer Camp Supervisor and Recreation Program Coordinator.

Centre Dufferin Recreation Complex, 200 Fiddle Park Lane, Shelburne, ON L9V 3C9

Phone: (519) 925-2400

- Ensure prompt attendance and decorum including dress code. Arrive at the facility on time for the start of shifts to prepare for the day and start the program according to schedule.
- Maintain a clean and safe environment of the camp facility, change rooms and washrooms on a regular basis.
- Work co-operatively as a part of a team with all CDRC staff, campers, volunteers, and general public.
- Actively participate in the pool setting assisting with supervision during camp swim time.
- Other duties as assigned by the Summer Camp Supervisor/Assistant Supervisor and Recreation Program Coordinator.

### **Qualifications/Skills Requirements**

If you have not yet taken the course, but intend to, please note the course on your application.

- Experience in child supervision and/or volunteer experience in a camp or similar recreational setting is an asset.
- High energy, self starter, strong teamwork skills.
- Strong customer service & interpersonal communication skills both verbally & written with patrons, supervisors, and colleagues.
- Current Standard First Aid with CPR-C certification required.
- Completed High Five Principles of Healthy Childhood Development certification required.
- Successful candidates will be required to complete a background check, including but not limited to a Vulnerable Sector Check/Criminal Record Check in accordance with the duties of this position.

**Hiring Day** will be held on Saturday February 22, 2025 (time to be confirmed) for successful applicants. You will be contacted if you are invited to attend this day. This day requires mandatory attendance to be considered for the position.

### **Standard First Aid with CPR-C/AED Certification (Blended Learning)**

- To register for upcoming full course and recertification course at the CDRC, visit the link below:
  - <https://anc.ca.apm.activecommunities.com/cdrc>
- Upcoming course dates:
  - Monday December 30, 2024

### **High Five Principles of Healthy Childhood Development (PHCD)**

- To register for the upcoming High Five Principles of Health Childhood Development (PHCD) Certification, visit the link below:
  - <https://www.highfive.org/events>

Eligible candidates are invited to submit their resume to Emily Francis, Recreation Program Coordinator no later than Friday February 7, 2025, at 4:00pm by **email or in person** addressed to:

#### **Emily Francis, Recreation Program Coordinator**

Centre Dufferin Recreation Complex  
 200 Fiddle Park Lane, Shelburne, ON L9V 3C9  
 (519) 925-2400  
[cdrc@shelburne.ca](mailto:cdrc@shelburne.ca)

Please note the position you are applying for in the subject line. We thank all those applicants who apply and advise that only those selected for an interview will be contacted.

The Centre Dufferin Recreation Complex promotes the principles of diversity and inclusion and adheres to the tenets of the Canadian Human Rights Act and the Ontario Human Rights Code. The CDRC encourages applications from women, aboriginal peoples, persons of all races, ethnic origins, religions, abilities, sexual orientations and gender identities and expressions. The CDRC will provide accommodation during all parts of the hiring process, upon request, to applicants with disabilities. If contacted to proceed to the selection process, please advise us if you require any accommodation. Personal information is being collected pursuant to the Municipal Freedom of Information and Protection of Privacy Act and will be used only for candidate selection.

DRAFT

**CENTRE DUFFERIN RECREATION COMPLEX**

**BOARD OF MANAGEMENT**

**Minutes of Special Meeting held December 4, 2024 at 4:30pm via Zoom**

Attendance: Dan Sample Shelburne  
Chris Gerrits Amaranth  
Andrew Stirk Amaranth  
Ruth Plowright Melancthon  
Ralph Moore Melancthon  
Melinda Davie Mono

Absent: Shane Hall and Robb Stinson

Meeting called to order by Board Chair, Melinda Davie at 16:31pm.  
A quorum was present.

**Land Acknowledgement:**

Board Chair, Melinda Davie read the land acknowledgement.

**Declaration of Pecuniary Interests:**

Board Chair, Melinda Davie stated that if any member of the board had a disclosure of pecuniary interest that they could declare the nature thereof now or at any time during the meeting.

**Agenda:**

**MOTION #1** – Moved by D. Sample seconded by A. Stirk. Be it resolved we approve the agenda dated December 4, 2024 as circulated and presented. Carried

**Resolution to Enter a Closed Session:**

**MOTION #2** – Moved by C. Gerrits seconded by R. Moore. That the CDRC Board of Management move into a closed session at 16:34pm in accordance with subsection 239(2) of the Municipal Act to discuss personal matters about identifiable persons.  
Carried

**Resolution to Rise from a Closed Session:**

**MOTION #3** – Moved by D. Sample seconded by A. Stirk. That we rise and report at 17:30pm. The board chair will communicate with the individuals as directed.  
Carried

**Confirmation by By-law:**

**MOTION #4** – Moved by D. Sample seconded by A. Stirk. Be it resolved that leave be given for the reading and enacting of by-law #08-2024 being a by-law to confirm certain proceedings of the CDRC Board of Management for its special board meeting held December 4, 2024. Carried

**Adjournment:**

**MOTION #5**- Moved by D. Sample seconded by R. Moore. That we now adjourn at 17:33pm. Carried

\_\_\_\_\_  
Secretary - Treasurer

\_\_\_\_\_  
Chairperson

\_\_\_\_\_  
Dated



**CENTRE DUFFERIN RECREATION COMPLEX**  
**BOARD OF MANAGEMENT**

**Minutes of the Regular meeting held January 29, 2025 at 5:30pm held virtually**

Attendance:	Dan Sample	Shelburne
	Robb Stinson	Shelburne
	Melinda Davie	Mono
	Andrew Stirk	Amaranth
	Chris Gerrits	Amaranth
	Kim Fraser	Facility Administration Manager
	Marty Lamers	Facility Maintenance Manager
	Emily Francis	Recreation Program Coordinator

Absent: S. Hall, R. Plowright and R. Moore

Meeting called to order by Facility Administration Manager, Kim Fraser at 5:30pm.  
A quorum was present.

Kim Fraser welcomes all board members

**Land Acknowledgement:**

Land Acknowledgement read by Administration Manager, Kim Fraser

**Elections:**

The floor is opened to nominations for Board Chair

Chair: Moved by C. Gerrits, seconded by R. Stinson to nominate Melinda Davie for CDRC Board Chair. Carried

Melinda Davie accepts nomination.

Hearing no further nominations:

Moved by A. Stirk, seconded by D. Sample to close nominations for CDRC Board Chair. Carried

Melinda Davie accepts the position of CDRC Board Chair.

Chair, M. Davie assumes chair of the meeting. M. Davie thanks the members and continues with the meeting.

The floor is opened to nominations for Vice-Chair.

Vice-Chair: Moved by C. Gerrits, seconded by M. Davie to nominate Andrew Stirk for CDRC Board Vice-Chair. Carried

Andrew Stirk accepts the nomination.

Hearing no further nominations:

Moved by D. Sample, seconded by R. Stinson to close nominations for CDRC Board Vice-Chair. Carried

Andrew Stirk accepts the position of CDRC Board Vice-Chair.

**Committees for 2025:**

The group agreed to keep the same appointments of the subcommittees for 2025.

**Declaration of Pecuniary Interests:**

Board Chair, Melinda Davie stated that if any member of the board had a disclosure of pecuniary interest that they could declare the nature thereof now or at any time during the meeting.

**Agenda:**

**MOTION #1** – Moved by D. Sample seconded by R. Stinson. Be it resolved we approve the agenda dated January 29, 2025 as circulated and presented. Carried

**Discussion & Approval of Minutes of Previous Meetings held November 24, 2024:**

**MOTION #2** – Moved by A. Stirk seconded by D. Sample. That the minutes of the CDRC Board of Management previous board meeting held on November 27, 2024 be approved as circulated and presented. Carried

**Correspondence:**

- Pickin in the Park-request to use CDRC entrance to access Fair Grounds for event July 21-28, 2025.

**MOTION #3** – Moved by C. Gerrits seconded by A. Stirk. That correspondence is received and placed on file. Carried

**Financial Report:**

After reviewing the CDRC financial reports and accounts the following motion was presented.

**MOTION #4** – Moved by C. Gerrits seconded by A. Stirk. That the CDRC Board of Management receive the financial reports and paid accounts in the amount of \$165,921.16, as presented by the Facility Administration Manager. Carried

Review 2025 Capital Budget Option A or B. After discussion, the Board agrees and gives direction to select Option B.

Short term investment options. The board discussed possible investment options. D. Sample will have a conversation with the Town of Shelburne Treasurer and report back.

**Facility Administration Manager and Recreation Program Coordinator Reports:**

See Schedule A

See Schedule B – H&S: D. Sample will speak with Town of Shelburne reps and report back.

**MOTION #5** – Moved by D. Sample seconded by R. Stinson. That we receive the reports from the Facility Administration Manager and the Recreation Program Coordinator. Carried

**Facility Maintenance Manager's Report:**

See Schedule C

**MOTION #6** - Moved by R. Stinson seconded by A. Stirk. That we receive the report from the Facility Maintenance Manager. Carried

**New Business:**

**Dufferin Country request to host an EV test drive event at CDRC:**

Members were all in favor of following up with the request

**Change of CDRC Bank Authorities:**

**MOTION #7** – Moved by R. Stinson seconded by D. Sample. Be it resolved that the signing authorities for all CDRC bank accounts be Administration Manager-Kim Fraser; Board Chair-Melinda Davie and Vice-Chair-Andrew Stirk.

Carried

**CDRC 2025 Board Meetings:**

The CDRC regular Board Meetings will continue to be scheduled the fourth Wednesday of the month.

February 26, 2025	March 26, 2025	April 23, 2025	May 28, 2025
June 25, 2025	July 23, 2025	August 27, 2025	September 24, 2025
October 22, 2025	November 26, 2025		

**Confirmation by By-law:**

**MOTION #8** – Moved by D. Sample seconded by C. Gerrits. Be it resolved that leave be given for the reading and enacting of by-law #01-2025 being a by-law to confirm certain proceedings of the CDRC Board of Management for its regular board meeting held January 29, 2025.

Carried

**Adjournment:**

**MOTION #9-** Moved by A. Stirk seconded by D. Sample. That we now adjourn at 6:35pm to meet again on Wednesday, February 26, 2025 at 5:30pm or at the call of the chair.

Carried

\_\_\_\_\_  
Secretary - Treasurer

\_\_\_\_\_  
Chairperson

\_\_\_\_\_  
Dated

SCHEDULE 'A'

Facility Administration Managers Report – January 29, 2025

**General Overview/Information:**

- Continual day-to-day administrative duties that include phone calls and walk-in inquiries, invoicing and collections, process payables and disbursements, bank deposits, rental contracts, bookings, monitoring the rental schedule, monthly account reconciliations and payroll administration.
- Working at closing 2024 financial year end and reconciling year end reports to HST, source deductions, 2024 t-4's, OMERS, WSIB, etc.
- 2025 Canada Summer Job application completed and submitted though the GCOS (Grants and Contributions Online Services) account on December 19, 2024.
- Ongoing, receiving and responding to numerous and various facility rental booking requests and walk-ins. Some site visits requested. Preparing rental contracts and insurance requirement.
- Below is a snapshot of facility rentals

Week	Ice Rental Hrs	Event/Room Oth Rentals	SMHA portion
Week: Nov 25-Dec 1	60.5	4	25.5
Week: Dec 2-8	53	6	26.5
Week: Dec 9-15	53.5	4	27.5
Week: Dec 16-22	50	-	26.5
Week: Dec 23-29	12	1	1
Week: Dec 30-Jan 5	37	-	17
Week: Jan 6-12	54	5	29
Week: Jan 13-19	56	2	27.5

- Invited Jenya Feldman to an upcoming meeting, he has requested to attend February 26, 2025 meeting
- Met with Dufferin Country Community Services (DCCS) staff to review childcare fee subsidy program
- Invoice received for the final 2% warranty holdback on the roof project. Grant reports will be submitted one the cheques clear.
- KTH confirmed reimbursement for annual cost of the new fibre internet
- Seasonal summer employment opportunities posted and will soon close.
- Telephone system went down December 16<sup>th</sup>. Technician set up 2 temporary phones until the system is restored.
- Outlook was not working on my computer the week of December 30<sup>th</sup>, until Dufferin Country IT was available on January 3rd.
- Orangeville Girls Tigers – tournament held Jan 24, 25 & 26 with 23 games played

- Continuing to communicate with seasonal ice user groups and potential new rentals:
  - o SMHA – ongoing schedule changes and accommodating private ice rental requests
  - o SMHA – beginning to schedule playoffs
  - o CDDHS boys varsity – 1 regular season home game remaining
  - o Skate Canada Shelburne (SCS)-confirmed Bring On the Fun (BOTF) event for end of March, dates to be confirmed
  - o Hyland Heights ES – scheduled 3 skating rentals (Jan/Feb)
  - o Glenbrook ES – scheduled 12 kindergarten and primary skating rentals (Jan/Feb/Mar)
  
- Upcoming event rentals:
  - o Free Yoga (sponsored) on Monday nights in T&C room to resume February 24<sup>th</sup>.
  - o Orangeville Blitz – home game scheduled February 15<sup>th</sup> and T&C room
  - o Shelburne Skating Club (SCS) – carnival March 1<sup>st</sup>
  - o MacDougall Hockey skills - skills clinics March 10-14 from 10am-12pm each day
  - o Town of Shelburne – Job Fair scheduled April 24<sup>th</sup>
  - o Scheduling facility rentals into 2026

**New Business**

- As there is a demand and need for any additional ice, next season I would like to consider starting Sunday mornings rentals 30 minutes earlier, from 8:30am to 8:00am. This will affect the 2-Sunday morning men’s groups and ladies broomball.
- I would like to look into setting up EFT payments and move away from cheques
- Will submit community use application to UGDSB for summer use of Glenbrook outdoor space once it the application process is open
- Dufferin County IT requesting a review of the MOU for services

Kim Fraser,  
Facility Administration Manager

## SCHEDULE 'B'

Submitted By: Recreation Program Coordinator Emily Francis

To: CDRC Board of Management

Date: Wednesday January 29, 2025

Subject: Recreation Program Coordinator Report

### December/January Overview

- Continuing to assist with day-to-day operations including phone inquiries, email inquiries, walk in inquiries.
- Continuing to update the CDRC information on the Town of Shelburne website and actively creating graphics and posting on the CDRC social media. Creating posts for our lobby tv playlist.
- Planned our first CDRC Staff Holiday Party on Monday December 30, 2024. Staff were invited for a Glow in the Dark Skate followed by dinner in the Town and Country Room.
- Preparation for the upcoming summer 2025 season. Collecting and preparing content for the 2025 Spring and Summer Recreation Guide.
- Beginning to build all our summer programs into the Active Net Software,
- **2025 Seasonal Summer Employment Opportunities**
  - The CDRC is currently hiring to fill the following positions:
    - Summer Day Camp Supervisor
    - Assistant Camp Supervisor
    - Summer Day Camp Counsellor
    - Deck Supervisor
    - Lifeguard/Instructors
  - Applications close between Friday January 24, 2025 – Friday February 7, 2025.
- Attended a meeting at the Mount Forest Community Complex with 3 fellow municipalities to discuss upcoming recreation programs. We spent the duration of the meeting reviewing camp programming, sharing ideas, reviewing policies and procedures etc.
- Joined a group called the SCRA (Simcoe County Recreation Alliance) that meets virtually once a month. The first meeting attended on Thursday January 16, 2025.
- Met with Aimee and Jenna in the Community Services department at the County of Dufferin to discuss the upcoming 2025 summer and the process for families utilizing the childcare fee subsidy program.
- Communicating with the County of Dufferin Health and Safety Advisor regarding training for the CDRC staff.

### Programming Updates

- **Camp Offsite Bus Trip:** On Thursday January 2, 2025, our Day Camp took the first offsite trip via bus. Campers and staff visited the Alder Street pool for a 1-hour swim. Campers had access to both the leisure pool, splash pad and water slide. This was a test run to explore if it is something to add into our summer day camp program. The trip went amazing, both staff and campers are excited about offsite bus trips in the future. I have been contacting local trip options to explore any opportunities we may have for the summer.
- **New drop-in schedule published for the remainder of the ice season.**
  - Parent and Tot/Adult Skate has been combined and is now Leisure Skate on Wednesday's from 9:30-11:00am. Due to lack of participation, we have combined this skate and extended it in hopes to get some skaters out.
  - Public skating continues Friday afternoons from 4:30-5:50pm. Additional skates will be offered when there is availability.

- Drop in pickleball continues Wednesday's weekly from 9:30-11:30am. Those interested in booking the pickleball court can do so online. Bookings available based on facility availability.
- **4 Week Pickleball Sessions** in partnership with Taylored Pickleball Academy have been rescheduled due to lack of registration. Sessions will be held in April on the arena floor. Participants will be offered a refund if they prefer not to join the April session.
- **Registration is now open for:**
  - March Break Camp
  - PA Days (April and June)
  - Upcoming Youth Nights
  - Babysitter Training Course
- **Summer Day Camp and Outdoor Pool Program registration set to open for viewing the week of March 18.**
  - Camp registration opens Tuesday March 25, 2025 online at 8:00am
  - Outdoor pool registration opens April 1, 2025 online at 8:00am

SCHEDULE 'C'

Facility Maintenance Managers Report –Jan 2025

GENERAL INFORMATION

Working on Facility managers job description

Updating details in capital

Staff schedule updates

Dressing rooms cold had come by went over system air lock and pump bearing assembly failure. Also gain further understanding of the heating system.

Compressor failure over heating trouble shoot called tech found electric contactor faulty for pump replaced contact.

Dehumidifier # 1 sensor replaced

Dehumidifier # 2 stopped working trouble shoot replace fuse

New fibre installed and running.

Memorial program found an individual seeking the same information will be following up if he has had better luck from the town of Caledon.

Water flow issues dressing rooms tech to help troubleshoot

Semiannual fire snack bar inspection

Information webinar ORFA

Auxiliary heaters motors have quit waiting on quote.

Overhead door repair \$625.00 emergency repair day, replace parts 1658.00 total

EV charger I have not made any inquiry yet, as the town was going to pass on information as they received it. But I will ask shortly.

Phone system down quick fix, seeking prices and options after viewing options have decided to repair system that is in place.

Modulating gas valve has failed roof top unit waiting on price

Certificate of final acceptance and payment of holdback for roof was completed.

Capital details

2500 Marketing Agency develop a logo design

5000 Bring hydro to road sign and check MTO needs produce a tender for the project.

10000 Get a quote for all doors to be replaced that need replacing.

4250 Cost of a Sea can and the location that it would be placed at and what would go into it.

4500 Replacement of the overhead door mechanism to electric for safety and convenience.

3000 Walking track around the arena need to redesign the layout of the player bench area different mating side modifications to timekeepers' box, etcetera.

3000 T&C kitchen updates cupboard hardware to basic supplies knives & forks.

12000 boiler replacement #2 dressing room  
pipe reworking

5000 Arena sound system determine needs what upgrades do we want.

2500 basketball nets, balls and line markings, court side to side.

6000 install brine pumps

12000 new 100 folding and 100 stackable chairs T&C

6000 pool program replacement items wear and UV

5000 landscape pool outside of gate to remove mud

2000 additional deep fryer speed up orders



5000 roller skates 100 rentals @ \$20.00 per pair (see detail note)  
2000 lighting for arena special events  
1200 Table replacement T&C  
1200 staff fridge with water ice dispenser hydrate lifeguard's  
2000 Phone system up grade

Draft roller skate plan

### Roller Skating CDRC

Like public skating

Helmets highly recommended above certain age bring your own.

Any helmet

Separate line item to follow all cost for equipment, space and all staffing requirements to support.

Furniture — storage units for skates

Equipment — skates to rent, digital waivers, online registration, regarding helmets, extra floor cleaning, staff to monitor, maintenance cost,

In house Marketing

Old-school-style nostalgic - skating birthday parties, scripted for DJ style for staff to use can be computer.

Arena floor may move up to T&C for special occasions.

Copyright license to play music for events.

Guest feedback collection tools

Teens and young adults — book a DJ on Saturday after 8 pm. Play top 40 hits and alter the lighting to feel more like a nightclub

Nostalgia seekers — host a “classics” or “oldies” night, where the music represents the most popular songs from particular eras

Families with children — keep the lights bright on weekend afternoons through early evenings. Play modern songs mixed with classic hits that are appropriate for all ages. Mix in fun songs encouraging participation on the skating floor, like the Chicken Dance and the Hokey Pokey

Beginners — offer skating lessons on weekend mornings for those looking to brush up on their skating skills

Toddlers — block times that are exclusive for toddlers and young kids to skate without having to worry about older kids who may be more aggressive

Like public skating

Helmets recommended above certain age

Any helmet

100 Plus rental skates purchase through the global market? Verses \$100.00 plus Canadian cost.

## Denise Holmes

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**From:** OPP MPB Financial Services Unit (OPP) <OPP.MPB.Financial.Services.Unit@opp.ca>  
**Sent:** Monday, March 10, 2025 12:11 PM  
**To:** Denise Holmes; Sarah Culshaw  
**Subject:** Melancthon Tp - October to December 2024 Detachment Revenues

Good afternoon,

Revenues collected for worked performed by detachment staff is credited to municipalities quarterly throughout the year.

We are pleased to advise October to December 2024 revenue credits have been sent to Ontario Shared Services (OSS) for processing and will be issued within the week. Your municipality will be receiving a credit memo in the amount of \$631.52.

The breakdown of the October to December revenue credit is as follows:

Security Checks = \$574  
Reports = \$0  
Fingerprints = \$57.52  
Other = \$0

We have been advised by OSS a call to 1-877-535-0554 is required to apply the credit to an outstanding invoice.

Should you have any questions please email [OPP.MPB.Financial.Services.Unit@opp.ca](mailto:OPP.MPB.Financial.Services.Unit@opp.ca).

Respectfully,

MPB Financial Services Unit



## Nottawasaga Valley Conservation Authority

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Dear municipal partners,

Thank you for reviewing the Nottawasaga Valley Conservation Authority (NVCA)'s draft regulation mapping and submitting comments. All comments have been considered and have been incorporated into the mapping where appropriate.

As part of the draft regulation mapping update, NVCA will launch a 30-day public consultation on March 11, 2025 for property owners in the Nottawasaga Watershed to provide comments.

### **Submitting Comments**

NVCA invites residents of our watershed to [review our draft regulation mapping updates](#) and learn more about what it may mean for them and their properties. If there are inconsistencies between the features on their property and our mapping, residents are invited to submit comments through our website at [nvca.on.ca/regulationmapping](http://nvca.on.ca/regulationmapping).

### **Public Open House**

NVCA will host a public open house on April 1, 2025 to from 5:30 p.m. – 8:30 p.m. at the Tiffin Centre for Conservation.

If residents are not able to come to the public open house, they are welcome to schedule an appointment on April 1 from 8:30 – 4:30 with NVCA's Planning staff to review their questions and concerns. To schedule an appointment, please email [planning@nvca.on.ca](mailto:planning@nvca.on.ca).

For help navigating the map or submitting comments, please contact NVCA at [regulationmapping@nvca.on.ca](mailto:regulationmapping@nvca.on.ca) or call 705-424-1479.

Enclosed with this letter are some brochures for your residents so they can easily access our draft regulation mapping.

Best regards,

A handwritten signature in black ink, appearing to read "Ben Krul".

Ben Krul,

Manager, Development Planning & Permits

Nottawasaga Valley Conservation Authority

# Public Consultation

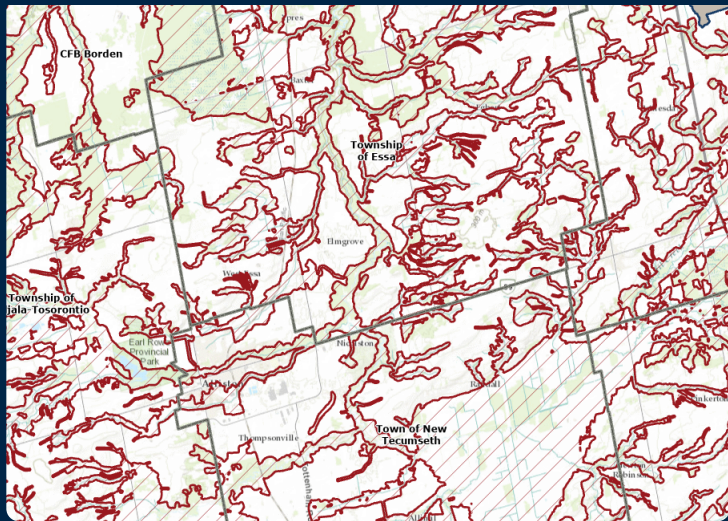
## NVCA Draft Regulation Mapping

NVCA is looking for your feedback about our draft regulation mapping!

Regulation mapping is a tool that shows where natural hazards may occur in the Nottawasaga Watershed. These natural hazards include flooding and erosion.

If your property is in a regulated area, you may require approval from NVCA before starting your project.

Visit [nvca.on.ca/regulationmapping](http://nvca.on.ca/regulationmapping) to learn what it may mean for you!



# Public Consultation

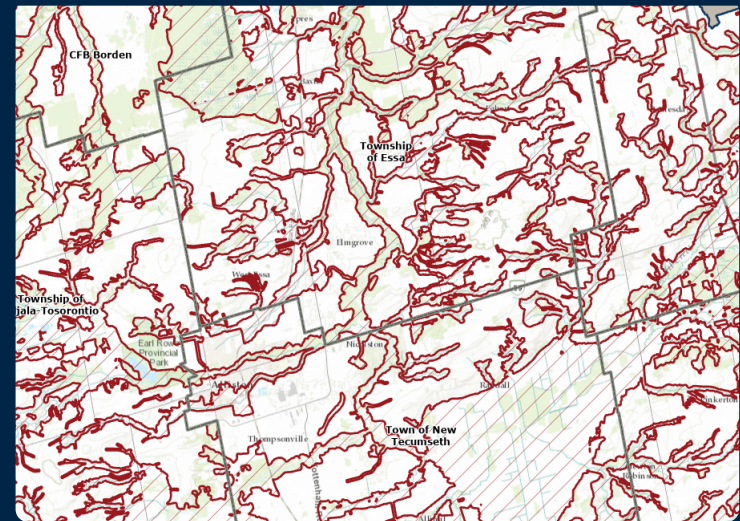
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If your property is in a regulated area, you may require approval from NVCA before starting your project.

Visit [nvca.on.ca/regulationmapping](http://nvca.on.ca/regulationmapping) to learn what it may mean for you!



## Public Open House

### Location:

Tiffin Centre for Conservation  
8195 8th Line, Utopia ON

### Date & Time

April 1, 2025  
5:30 pm - 8:00 pm

**As part of the draft regulation mapping public consultation, NVCA will be hosting a public open house.**

Come to the public open house to learn about:

- What the NVCA's draft regulation mapping means for you and your property
- The types of natural hazards that exist on your property
- NVCA's permit application process

Can't make it to the public consultation, schedule an appointment with NVCA staff. Email [planning@nvca.on.ca](mailto:planning@nvca.on.ca) to schedule an appointment.



## Public Open House

### Location:

Tiffin Centre for Conservation  
8195 8th Line, Utopia ON

### Date & Time

April 1, 2025  
5:30 pm - 8:00 pm

**As part of the draft regulation mapping public consultation, NVCA will be hosting a public open house.**

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Can't make it to the public consultation, schedule an appointment with NVCA staff. Email [planning@nvca.on.ca](mailto:planning@nvca.on.ca) to schedule an appointment.



**From:** Maria Leung <mleung@nvca.on.ca>  
**Sent:** Wednesday, February 26, 2025 11:07 AM  
**To:** Maria Leung  
**Subject:** NVCA Media Release - NVCA launches e-permitting platform for permit applications

## **MEDIA RELEASE**

FOR IMMEDIATE RELEASE

### **NVCA launches e-permitting platform for permit applications**

UTOPIA, Ontario (February 25, 2025) – The Nottawasaga Valley Conservation Authority (NVCA) is pleased to announce the launch of a new e-permitting platform! Through this new tool, property owners in the Nottawasaga Watershed can easily submit inquiries about their property or proposed development, book pre-consultations and submit permit applications.

“In the last few years, NVCA has made changes to our operations to improve efficiency and permit review timelines,” said Ben Krul, NVCA’s Manager of Development Planning & Permits. “We hope this platform will help us deliver continuous improvement by reducing manual administration work, allowing staff to focus on processing permit applications and responding to requests.”

The e-permitting platform can be accessed on [NVCA’s website](#). To assist users, information about submitting general inquiries, pre-consultations and the permitting process is available on the landing page before they begin their formal request.

NVCA is responsible for regulating activities in natural and hazardous areas to avoid the loss of life and damage to property caused by flooding and erosion. Property owners looking to develop near a watercourse, river, stream, pond, wetland, steep slope, floodplain or the Georgian Bay shoreline may need a permit from NVCA before they start their project.

To save time and money, NVCA advises property owners to book a pre-consultation with NVCA’s Regulations and Planning staff before submitting. Staff will let property owners know if they are in a regulated area, review project plans, and outline the information required to submit a complete permit application.

Property owners are encouraged to use the e-permitting platform to submit inquiries about their property or proposed development, book pre-consultations and submit permit applications for a more streamlined experience.

“Since this a new system, we are looking for user feedback to improve usability for everyone in the watershed,” continued Krul. “It is important that property owners of all abilities can navigate and efficiently use this platform.”

To access NVCA’s e-permitting platform or submit feedback, please visit [nvca.on.ca](http://nvca.on.ca).

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**About NVCA:** The Nottawasaga Valley Conservation Authority is a public agency dedicated to the preservation of a healthy environment through specialized programs to protect, conserve and enhance our water, wetlands, forests and lands.

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**Maria Leung (she/her/hers)**  
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**Nottawasaga Valley Conservation Authority**

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## **MEDIA RELEASE**

FOR IMMEDIATE RELEASE

### **NVCA announces Interim CAO's work plan to deliver continuous improvement**

UTOPIA, Ontario (March 3, 2025) – Sheryl Flannagan, the Nottawasaga Valley Conservation Authority's (NVCA) Interim CAO, shared a [work plan to improve operations](#) with the NVCA Board of Directors at its recent meeting.

The plan consists of four key priorities and commitments:

1. Strengthening Municipal Relationships;
2. Restoring and Enforcing Customer Service Standards;
3. Improving Planning, Permitting and Engineering Processes; and
4. Developing a Strategy for Planning, Permitting and Engineering to Complete Existing Files.

"NVCA is going through a transformative time with the upcoming recruitment of a new CAO," said Flannagan. "To ensure stability and continuity of our organization, we have implemented a focused work plan that addresses feedback from our stakeholders and member municipalities, while positioning the organization for success under new leadership."

To date, NVCA has engaged with several municipalities to discuss development priorities and address concerns. The organization reinstated a customer service strategy that lapsed in practice due to the COVID-19 pandemic. Last week, NVCA also launched a new e-permitting system, to help residents and businesses better navigate NVCA approval processes. Further, NVCA is initiating an external review to evaluate the planning, permitting and engineering processes in order to identify efficiencies and improvements.

"Conservation authorities do important work to protect people, property and our environment, but we also must ensure this work is efficient, expeditious and meets the high standards of our customers," added Jonathan Scott, Chair of NVCA. "Our goal is to ensure concerns raised in recent months are addressed and the



organization meets its commitments to our member municipalities. I am confident this plan represents a thorough approach to achieve these important goals.”

Staff at NVCA works with many partners across the Nottawasaga Watershed to avoid the loss of life and damage to property due to flooding and erosion. They restore rivers, streams, wetlands and forests, and provide environmental education opportunities to watershed residents to help them connect with our natural world and become the future stewards of our watershed. NVCA staff ensure visitors have a safe and enjoyable experience at NVCA’s 11 conservation areas, and also identify stressors that are impacting the local environment.

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**About NVCA:** The Nottawasaga Valley Conservation Authority is a public agency dedicated to the preservation of a healthy environment through specialized programs to protect, conserve and enhance our water, wetlands, forests and lands.

**Media contact:** Chris Parker, Communications Assistant, 705-424-1479,  
[cparker@nvca.on.ca](mailto:cparker@nvca.on.ca)



# NVCA February 2025 Board Meeting Highlights

**Next Meeting: March 28, 2025, held virtually**

*For the full meeting agenda, including documents and reports, visit [NVCA's website](#).*

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## **Presentation regarding NVCA's Environmental Education program**

Naomi Saunders, NVCA's Manager, Environmental Education presented to the Board of Directors regarding the history, successes, challenges, and financial management of the Environmental Education program.

### **Program Objectives**

This program's objectives are to connect watershed residents to nature, inspire sustainability, promote physical and mental health, and increase environmental awareness and understanding of local ecosystems.

Through NVCA's environmental education program, environmental stewardship, community health, and well-being are improved. Residents tend to engage more in their communities, contributing to sustainability and cost savings over the long-term.

### **Revenue sources**

NVCA's Environmental Education Program is a "Category 3" activity and currently receives approximately \$17,000 in municipal levy, averaging to \$0.08 per watershed resident per year.

The majority of program revenues are self-generated, which is directly linked to the number of program participants.

### **Program challenges**

As current revenues only allow for staff to be present for teaching hours, and not for preparation time, program development, or fundraising, it is challenging for the team to develop and maintain current and culturally

sensitive program content. It is also a challenge to be able to expand services to offer programs in all corners of the watershed.

Looking forward, NVCA is investigating opportunities for business expansion to ensure financial sustainability and program increased watershed reach.

During the meeting, the Board of Directors recommended that this presentation be brought to councils for information and that a board committee be formed to assist in finding solutions to the challenges.

## **Update on NVCA's Planning and Regulations Program**

Chris Hibberd, NVCA's Director, Watershed Management Services, updated the Board of Directors on the Planning and Regulations Program.

With a commitment to continuous improvement, NVCA's Planning and Regulations program implemented procedures such as providing courtesy calls, improving timeline tracking, and updating standard operating procedures to streamline the permit review process in 2024. They also continued to encourage pre-consultations for permit applications and began pre-screening applications with technical staff.

Some action items they are currently focused on include:

- Re-examine the use of peer reviewers to fast-track reviews and help address the review backlog
- Prioritize older submissions with an emphasis on risk management

- Launched an e-permitting system to streamline permit application processes and to allow staff to focus on permit reviews rather than manual work

Other actions in 2025, include:

- Modernize NVCA guidelines/procedures
- Enhance communications with municipalities, applicants and stakeholders
- Review of program processes
- Develop a program-specific customer service strategy

### Permits Approvals under the CA Act

Between January 1, 2024 and December 31, 2024 NVCA, staff issued permits on an average of 20 days after technical staff have deemed the application complete. Major permits were issued within 90 days 95% of the time, and minor permits were issued 100% of the time for the same time frame.

Under Conservation Ontario's Best Practices timelines, minor permits were issued within 30 days 83% of the time.

NVCA staff notified applicants of the status of their application within 21 days 98% of the time.

### NVCA Climate Change Action Plan 2024 progress report and 2025 goals

NVCA's 2022 – 2025 Climate Change Action Plan emphasizes the importance of responding to climate change, supporting NVCA partners' actions to reduce the impacts of climate change, and strengthening the commitment to face the challenges it poses to NVCA watershed and member municipalities.

There are seven goals and 34 actions listed in the action plan. The goals are:

- Flooding and Erosion
- Monitor
- Communicate and educate
- Natural heritage
- Stewardship
- Partnership

- Corporate practices

At the end of 2024, 11 of the actions were completed, 24 were incomplete, and five are ongoing.

### Procedures for the Implementation of Ontario Regulation 41/24 Update

NVCA staff has drafted an update to the Procedures for the Implementation of Ontario Regulation 41/24 document. This update will provide greater clarity for applicants and staff regarding the Administrative Review. The procedure regarding stop orders is also more transparent and clearly laid out.

The draft procedures will be posted on the NVCA website for a 30-day public commenting period. Subsequent to the comment period the draft procedures will be brought back to the Board for approval.

### Interim CAO Workplan

NVCA is going through a transformative time with the departure of the previous CAO and the upcoming recruitment of a new CAO. To ensure stability and continuity, the Interim CAO has implemented a focused work plan that addresses current challenges while positioning the organization for success under new leadership.

The four key priorities and commitments include:

- Strengthening municipal relationships
- Restoring and enforcing customer service standards
- Evaluating planning, permitting, and engineering processes
- Developing a backlog reduction strategy for planning, permitting, and engineering

[For more information, download the work plan here.](#)

### NVCA Planning and Regulation Guidelines Update

NVCA's Planning and Regulation Guidelines is a core document used by Planning and Regulation

staff to review applications, similar to a municipality's zoning by-law.

The guidelines were last updated in 2009, and the proposed modernizing of the guidelines includes referencing current legislation and provisions that better respond to growing pressures throughout the watershed.

Staff will seek input from our municipalities and stakeholders, and the public will have a 30-day commenting period. The feedback will be incorporated where possible to ensure strong yet responsive policies are enacted for the watershed.

## Upcoming Events

### March Break Camp Tiffin

Led by NVCA's environmental educators, Camp Tiffin is an outdoor camp designed to enhance your child's knowledge, understanding and appreciation of the natural world and our amazing planet.

Activities may include wilderness survival skills, kick sledding, wildlife discovery and learning how maple syrup is made!

Our staff have been excited to plan some winter camp activities which will be full of outdoor adventures.

**Date:** March 10 – 14, 2025

**Location:** Tiffin Centre for Conservation

### Spring Tonic Maple Syrup Festival

Hosted in partnership with the Rotary Club of Barrie, the Spring Tonic Maple Syrup Festival at the Tiffin Conservation Area is a tradition spanning more than three decades.

Visitors can explore how maple syrup was made in the past. After that, they will return to current times and see how maple syrup is made today! Ending the tour with a pancake and sausage breakfast with fresh maple syrup. Prices for most activities are included in the admission fee.

**Date:** April 5 – 6, 2025

**Location:** Tiffin Centre for Conservation

### Tiffin Nature School

At Tiffin Nature School, children aged 2.5 to 10 are invited to explore and connect with the natural world. We nurture their innate curiosity, offering immersive outdoor experiences that inspire discovery and growth.

**Dates:** Tuesdays & Thursdays until May 29, 2025

**Location:** Tiffin Centre for Conservation



## Grand River Conservation Authority

Summary of the General Membership Annual General Meeting – February 28, 2025

To GRCA/GRCF Boards and Grand River watershed municipalities - Please share as appropriate.

### Action Items

The Board approved the resolutions in the following reports as presented in the agenda:

- GM-02-25-20 - Financial Summary
- GM-02-25-10 - Afforestation Services for Spring 2025
- GM-02-25-12 - Refuse Waste Collection and Recycling Request for Proposals - Agreement Extension
- GM-02-25-11 - Supply and Delivery of Gasoline and Diesel Fuel - Tender Award
- GM-02-25-13 - Septic Pumping and Disposal - Request for Proposal Award
- GM-02-25-14 - Supply and Delivery of Campfire Wood - Request for Quotations
- Report and Recommendations of the Audit Committee
- Approval of 2024 Financial Statements and Report of the Auditor
- Budget 2025 and Presentation of Budget Estimates for the Current Year
- Appointment of Auditors for the year ending December 31, 2025
- Provision for Borrowing (Pending Receipt of Municipal Apportionment)

### Information Items

The Board received the following reports as information:

- GM-02-25-17 - Report of the Chair
- GM-02-25-15 - Conservation Services Update
- GM-02-25-16 - Cash and Investment Status
- GM-02-25-20 - Current Watershed Conditions

### Delegations

There were no delegations.

### Correspondence

The Board received the following correspondence:

- HFH Inc. re: Concerns regarding delays in GRCA and broader permitting processes (Correspondence and GRCA response)
- Waterloo Federation of Agriculture re: Public appointments

### Source Protection Authority Correspondence & Action Items

The General Membership of the GRCA also acts as the Source Protection Authority Board.

- SPA-02-25-01 - Submission of the amended Grand River Source Protection Plan and Assessment Report
- SPA-02-25-02 - Source Protection Committee Member Appointments

### Committee Appointments

The Board appointed members and officers to the following committees:

- Audit Committee
- Conservation Ontario Council Representatives

For full information, please refer to the [February 28 Agenda Packages in our online calendar](#).

You are receiving this email as a GRCA board member, GRCF board member, or a Grand River watershed member municipality. If you do not wish to receive this monthly summary, please respond to this email with the word 'unsubscribe'.



March 3, 2025

Denise Holmes, Chief Administrative Officer by email: [dholmes@melanctontownship.ca](mailto:dholmes@melanctontownship.ca)  
Township of Melancton

Greetings:

The Grand River Conservation Authority's (GRCA) vision is of a healthy watershed where we live, work, play and prosper in balance with the natural environment. To help achieve that vision, the GRCA delivers watershed services to twenty-two participating municipalities under Memorandums of Understanding. These non-mandatory programs are in addition to those mandated under the Conservation Authorities Act.

The GRCA is pleased to provide the appended annual report on watershed services provided in 2024. The watershed services consist of watershed sciences and collaborative planning, water quality monitoring and reporting, wastewater treatment optimization, conservation services, and subwatershed services.

A meeting to conduct an annual review of the Memorandum of Agreement and program accomplishments is available upon request to Eowyn Spencer, Supervisor of Administrative Services ([espencer@grandriver.ca](mailto:espencer@grandriver.ca), Tel: (519) 621-2763 ext. 2200).

Regards,

A handwritten signature in black ink that reads "S. Lawson".

Samantha Lawson  
Chief Administrative Officer





# Watershed Services – 2024 Annual Report

March 1, 2025

## Introduction

The Grand River Conservation Authority’s (GRCA) vision is of a healthy watershed where we live, work, play and prosper in balance with the natural environment. To help achieve that vision, the GRCA delivers watershed services to twenty-two participating municipalities under a Memorandum of Understanding and funding agreement. These non-mandatory programs are in addition to those mandated under the Conservation Authorities Act (CAA).

The watershed services consist of watershed sciences and collaborative planning, water quality monitoring and reporting, wastewater treatment optimization, conservation services, and subwatershed services.

## Watershed Issues

The health of the Grand River and its communities continues to be influenced by stressors that shape watershed conditions and responses. These include population growth, urban area expansions, intensive agricultural production, and climate change.

In 2024, watershed programs supported GRCA and municipal responses to these watershed stressors and addressed related issues, such as elevated phosphorous and nitrogen in the watershed’s rivers and aquifers. A key concern raised by watershed municipalities is the potential impact of elevated nitrates on drinking water systems and wastewater treatment.

The GRCA’s watershed programs are guided by a [Watershed-based Resource Management Strategy](#) that was approved by the Authority in June 2024.

## 2024 Highlights

The GRCA’s watershed services build understanding of watershed conditions; help landowners, municipalities, and others to take action to improve watershed health; and foster collaborative problem solving across geographic and jurisdictional boundaries.

### Understanding watershed conditions

- Operated nine automated water quality stations on the Grand and Speed rivers and provided real-time information about water temperature, pH level, dissolved oxygen, turbidity and conductivity on the GRCA’s [website](#).

- Installed a second sensor to continuously monitor nitrate levels at the Bridgeport water quality station on the Grand River. A similar sensor was installed at the Brant water quality station in 2023.
- Delivered subwatershed monitoring in 6 streams to support planning and implementation of urban area expansions and stormwater management, and documented stream flow and fish communities in 7 municipal drains. Supported municipalities in identifying subwatershed studies and environmental information needed to guide future growth and provided technical support for on-going subwatershed studies.
- Assessed potential point and non-point sources of nitrates in the Grand River and reported on conditions to the GRCA Board of Directors, the Lake Erie Region Source Protection Committee, university researchers, and the Grand River Water Managers Working Group.

### Improving water quality and watershed health

- Delivered \$932,000 in grants to landowners who implemented 270 projects to improve water quality and watershed health. Of that total, \$650,000 in grants were provided by the counties of Wellington, Brant, Haldimand, Dufferin, and Oxford, the Region of Waterloo, and the City of Hamilton. An additional \$282,000 in grants were secured from provincial and federal funding programs. These projects, worth more than \$3.5 million, help reduce nutrient, sediment, and chemical losses to the environment while maintaining or enhancing agricultural production. Many projects provide additional environmental, economic, and social benefits by improving landscape resilience to extreme weather events, sequestering carbon, reducing greenhouse gas emissions, increasing recreational opportunities, and fostering biodiversity.
- Planted over 140,000 trees through GRCA's private land tree planting program and community tree planting events.
- Developed a [video](#) to promote grants to upgrade or decommission private wells to protect drinking water sources.
- Engaged 28 municipalities in improving the quality of treated wastewater effluent discharged to the Grand River and its tributaries. Technical workshops and site visits were held at six wastewater treatment plants and 25 plant operators were engaged in technical support and training.
- Assessed wastewater treatment plant performance for the previous year and shared the [Annual Report](#) findings at a workshop attended by more than 50 participants from 15 municipalities, contract operators, and provincial agencies. At the workshop, 14 wastewater treatment plants were recognized for producing excellent quality effluent that exceeded environmental standards.

### Collaborative problem solving

- Hosted three meetings of the Grand River Water Managers Working Group. The Working Group is a network of municipal, First Nations, provincial, and federal water managers that align water supply, wastewater, stormwater, and water quality objectives and actions to achieve common watershed goals. A key topic of discussion was the potential impacts of elevated nitrates in groundwater and surface water on the quality of drinking water sources and future wastewater treatment standards.



- Provided technical input to almost twenty municipal assimilative capacity studies, wastewater master plans, water supply master plans, subwatershed and secondary plans, and climate strategies.
- Contributed to implementation of the federal-provincial Lake Erie Action Plan. The inter-agency [Grand River Water Management Plan](#), Watershed-wide Wastewater Optimization Program, and private land stewardship programs are recognized as [key actions](#) to improve the health of the Grand River and Lake Erie.

### Financial summary

The GRCA’s non-mandatory watershed services programs are funded through municipal agreements and other grants. The table below summarizes 2024 program expenses, off-setting funding, and the net cost to participating municipalities. Off-setting funds are received from provincial and federal grants, municipal funding for local or regional projects, and municipal Rural Water Quality Program capital grants for cost-share projects. Costs related to watershed sciences and collaborative planning are included in the other programs.

	<b>Total Expenses (\$)</b>	<b>Funding: Municipal Apportionment (\$)</b>	<b>Funding: Other (\$)</b>	<b>Net Surplus/ (Deficit) (\$)</b>	
<b>Programs</b>	<i>(a)</i>	<i>(b)</i>	<i>(c)</i>	<i>(b)+(c) less (a)</i>	
Subwatershed Services	263,253	235,000	84,495	56,242	Note 2
Conservation Services	1,313,710	539,000	821,204	46,494	Note 3
Water Quality Programs	435,243	243,000	126,275	(65,968)	Note 4
<b>Total</b>	<b>2,012,206</b>	<b>1,017,000</b>	<b>1,031,974</b>	<b>36,768</b>	Note 1

Note 1: Net Surplus (unspent municipal apportionment) transferred to Category 2 Stabilization Reserve.

Note 2: Wages (vacancy) \$36K under, Admin (travel) \$10K under, other expense \$10K under.

Note 3: Savings due to ability to use Special Project funding to fund program wages and admin costs instead of Category 2 municipal apportionment.

Note 4: WQ monitoring (\$12K), instrumentation supplies (\$23K) and equipment costs (\$30K) not budgeted.

### For more information

Additional information on program deliverables is provided in the attached appendix and at [www.grandriver.ca](http://www.grandriver.ca). The Grand River Conservation Authority’s Board of Directors received updates on water quality conditions (GM-06-24-52), the Watershed-wide Wastewater Optimization Program (GM-12-24-122), landowner stewardship (GM-03-24-23) and land use planning in the Region of Waterloo (GM-06-24-54). These reports are available on the GRCA’s website.

## Appendix: Category 2 Programs and Services Deliverables and Metrics – 2024 Summary

### Watershed Sciences and Collaborative Planning

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
<p>Undertake watershed, regional, and landscape scale science and reporting:</p> <ul style="list-style-type: none"> <li>• Inter-disciplinary analysis and reporting on watershed health (surface water, groundwater, forests, wetlands)</li> <li>• Collaborative work on the hydrologic functions of natural features</li> <li>• Other watershed-scale science (e.g., fisheries)</li> </ul>	<p>Analysis and reporting on watershed conditions</p>	<p>Periodic reporting via Watershed Report Cards (e.g., 2023), Water Management Plan (e.g., State of Water Resources, 2020), technical reports, and reports to Authority board</p>	<ul style="list-style-type: none"> <li>• Watershed report cards have 5-year cycle. A report card was last produced in 2023 and is available on the GRCA's website.</li> <li>• Staff participated in technical subcommittee meetings for the groundwater quality component of the next watershed report card cycle.</li> <li>• A watershed characterization and summary of Category 2 programs were incorporated into development of the Watershed-based Resource Management Strategy (per section 6(2) of the Cat 2 MOU). The Strategy was approved by Board June 2024.</li> <li>• Report GM-06-24-52 to the GRCA Board of Directors regarding water quality in the Grand River watershed, with a focus on elevated nitrate levels in groundwater and surface water.</li> </ul>
	<p>Engagement of municipal, provincial, federal, non-governmental, academic and other stakeholders</p>	<p>As below for Water Managers Working Group and via other committees and meetings</p>	<ul style="list-style-type: none"> <li>• See below for a summary of Water Managers Working Group meetings.</li> <li>• GRCA staff participated in meetings of provincial-federal initiatives under the Great Lakes Water Quality Agreement: <ul style="list-style-type: none"> <li>○ Lake Erie Action Plan Implementation Team</li> <li>○ Nuisance Algae Working Group</li> <li>○ Lake Erie Partnership Working Group (Lake Erie Lake wide Management Plan)</li> </ul> </li> <li>• GRCA contributed to reporting on implementation of the Lake Erie Action Plan and Lake wide Management Plan, as the Grand River Water Management Plan, water quality program, Watershed-wide Wastewater Optimization Program, and Conservation Services are all listed as actions to improve the health of Lake Erie.</li> </ul>
<p>Facilitating cross-municipal and inter-agency water resource management:</p> <ul style="list-style-type: none"> <li>• Support cross-disciplinary integration and inform municipal watershed planning and water, wastewater, and stormwater master planning</li> <li>• Liaise with First Nations, municipal, and provincial and federal agencies</li> </ul>	<p>Advance implementation of the collaborative, voluntary Grand River Watershed Water Management Plan. The Plan's objectives are to:</p> <ul style="list-style-type: none"> <li>• Ensure sustainable water supplies for communities, economies and ecosystems</li> <li>• Improve water quality to improve river health and reduce the river's impact on Lake Erie</li> <li>• Reduce flood damage potential</li> <li>• Build resilience to deal with climate change</li> </ul>	<p>Implementation tracking/reporting (scope TBD)</p>	<ul style="list-style-type: none"> <li>• Report GM-12-24-122 to the GRCA Board of Directors provided an update on implementation of the Watershed-wide Wastewater Optimization Program, a key action under the Grand River Water Management Plan (Integrated Action Plan action D2).</li> <li>• Report GM-03-24-23 to the GRCA Board of Directors was received regarding renewal of landowner stewardship grant funding agreements, a key action under the Grand River Water Management Plan (Integrated Action Plan action D7).</li> </ul>

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	Update the Water Management Plan (WMP) and Integrated Action Plan as needed	Scope/timing TBD	<ul style="list-style-type: none"> <li>• GRCA undertook internal discussion and development of a project charter for scoped update of the Water Management Plan to be initiated in 2025. Next step is external consultation.</li> <li>• GRCA submitted an external funding proposal for scoped update to the water quality section of the Grand River Water Management Plan (pending)</li> </ul>
	Chair the Water Managers Working Group (WMWG) with representation from watershed municipalities, First Nations, and provincial and federal agencies	Terms of Reference 2-4 meetings/workshops per year	<ul style="list-style-type: none"> <li>• WMWG TOR in place for 2023-2026 and will be renewed with scoped update of WMP</li> <li>• Two WMWG meetings held and one scoped meeting with targeted invitations: <ul style="list-style-type: none"> <li>○ May 16 WMWG – Objectives were updates and discussion on new GRCA water management deliverables and the City of Kitchener’s stormwater initiatives. 25 attendees participated from 13 partners – 9 municipalities, 1 First Nation, 2 provincial agencies, and the GRCA.</li> <li>○ Sept 5 – Co-hosted with Brantford, objective to update on nitrates conditions characterization in the Grand River watershed and information sharing among academics and municipalities wholly or partially reliant on surface water for water supply. 21 participants from 8 organizations, including 2 municipalities, 1 First Nation, 2 provincial agencies, and researchers from two universities.</li> <li>○ Dec 10 WMWG – Objective was to explore the water supply and wastewater implications of elevated nitrates in the groundwater and surface waters of the Grand River watershed. 34 attendees participated from 16 organizations, including 10 municipalities, 1 First Nation, 2 provincial agencies, and the GRCA.</li> </ul> </li> </ul>
	Provide input to municipal watershed planning – local, regional, and watershed conditions and issues identification	Upon request	<ul style="list-style-type: none"> <li>• Participated in and/or provided input to: <ul style="list-style-type: none"> <li>○ Waterloo Region Water Supply Strategy Update</li> <li>○ Waterloo Region Climate Adaptation Working Group</li> <li>○ Grey County Climate Adaptation Plan</li> <li>○ Brant County Climate Action Plan</li> <li>○ City of Guelph Clythe Creek Subwatershed Update Study</li> </ul> </li> </ul>

## Water Quality Programs

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
<p>Deliver the Watershed-wide Wastewater Optimization Program (WWOP) to support municipal wastewater management and improve and protect water quality and watershed health</p> <ul style="list-style-type: none"> <li>• Support optimization of wastewater treatment plant (WWTP) operations through: knowledge sharing workshops, hands-on training, technical advice, and a recognition program</li> <li>• Provide technical support for municipal assimilative capacity studies and master plans for water and wastewater services</li> <li>• Engage the provincial and federal governments to develop programs to reduce nutrient loads in rivers and streams, and ultimately Lake Erie</li> </ul>	<p>Collect data from municipalities, analyze, and produce an annual report on WWTP performance across the watershed.</p>	<p># of municipalities participating in annual reporting Annual report posted online</p>	<ul style="list-style-type: none"> <li>• 28 municipalities participated in the WWOP in 2024.</li> <li>• Annual Report on watershed-wide wastewater treatment plant performance (2023): <a href="#">2023-wwtp-summary-report.pdf</a></li> </ul>
	<p>Host annual workshop for information sharing and networking among municipal wastewater practitioners</p>	<p># of participants Workshop summary</p>	<ul style="list-style-type: none"> <li>• On November 14, 2024, GRCA hosted the Annual Workshop for the WWOP. GRCA welcomed 51 attendees (highest recorded attendance), from 15 organizations and municipalities to the GRCA head office.</li> <li>• Report GM-12-24-122 to the GRCA's Board of Directors provided an update on the WWOP.</li> </ul>
	<p>Provide technical support and training workshops for operators, supervisors and managers to implement optimization techniques at individual WWTPs</p>	<p># of training, technical support events # of participants</p>	<ul style="list-style-type: none"> <li>• 1 half-day Sludge Accountability Workshop was provided to the Wellington North operators at the Arthur WWTP. The training workshop was provided by GRCA and consultant CPO2 Inc. The objectives were to train operators on understanding the principles of sludge accountability (SA), how to calculate SA and the benefits of performing SA from an optimization perspective.</li> <li>• 5 site visits were conducted at WWTPs that had a good track record of meeting GRCA voluntary targets for total phosphorous (TP). The objectives of the site visits were to survey and document best practices and to conduct dosing calculations. Site visits were conducted at Kitchener, Preston, Caledonia, Cayuga, and Brantford. The results and lessons learned from these TP surveys and site visits will be shared with all watershed municipalities in 2025, once completed.</li> <li>• 25 staff from municipalities and operating authorities (i.e., Veolia, Ontario Clean Water Agency) participated in the technical support and training offered in 2024.</li> </ul>
	<p>Deliver annual recognition program to acknowledge WWTPs that participate in WWOP activities and produce a very high-quality effluent</p>	<p>Awards presented</p>	<ul style="list-style-type: none"> <li>• 14 total awards presented in 2024 (highest total number of awards) <ul style="list-style-type: none"> <li>○ 5 Bronze (Guelph, Kitchener, New Hamburg, St. George, St. Jacobs)</li> <li>○ 6 Silver (Cainsville, Caledonia, Dundalk, Elmira, Heidelberg, Preston)</li> <li>○ 3 Gold (Ayr, Brantford, Conestogo)</li> </ul> </li> </ul>

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	<p>Support municipal assimilative capacity studies and master plans for water and wastewater</p> <ul style="list-style-type: none"> <li>• Upon request, facilitate initial scoping, act as liaison with MECP, provide technical/methodological advice, provide stream data, provide watershed context, participation in steering committees (but not provide comments on EAs unless related to drinking water source protection)</li> </ul>	<p>Studies are carried out by each municipality, as needed and GRCA staff participate at the request of the municipality</p>	<ul style="list-style-type: none"> <li>• Participated in assimilative capacity study pre-consultation meetings with the Ministry of the Environment, Conservation and Parks (MECP), HESL, CIMA+, and Mapleton as a technical resource.</li> <li>• Participated in meetings on the Caledonia WWTP Schedule C Municipal Class EA with MECP, HESL, and Haldimand County as a technical resource.</li> <li>• Provided technical support to the City of Brantford regarding outfall alternatives at the Brantford WWTP.</li> <li>• Correspondence provided on Wellesley Water &amp; Wastewater Master Plan Class EA.</li> <li>• Preliminary discussion held with the Region of Waterloo regarding their upcoming Wastewater Treatment Master Plan.</li> </ul>
<p>Surface water quality monitoring, modelling, analysis and reporting</p> <ul style="list-style-type: none"> <li>• Operate and maintain continuous water quality stations</li> <li>• Maintain a water quality database</li> <li>• Develop and maintain a water quality model</li> <li>• Report on water quality and river health</li> </ul>	<p>Operate and maintain 9 continuous water quality monitoring stations</p>	<p>Continued operation of 9 stations</p>	<ul style="list-style-type: none"> <li>• Operated 9 continuous monitoring stations, collecting real-time water quality information for the following parameters: conductivity, temperature, dissolved oxygen, pH, and turbidity.</li> <li>• GRCA installed a second continuous nitrate sensor, which was installed at the Bridgeport water quality monitoring station. There are now 2 operational nitrate sensors, one at Bridgeport and one at Brant water quality station.</li> <li>• Water quality stations visited bi-weekly for cleaning and calibration</li> <li>• Data made publicly available on the GRCA website and historic data available for download.</li> <li>• Grab samples were collected from the Brant and Bridgeport water quality stations and analyzed for nitrates at an accredited laboratory for the purpose of validating GRCA continuous sensor data.</li> </ul>
	<p>Maintain a water quality database for continuous water quality data and grab sample data from GRCA, municipal and provincial water quality sampling programs within the watershed</p>	<p>Continued maintenance of the database</p>	<ul style="list-style-type: none"> <li>• Database maintained in WISKI data management platform</li> <li>• Provincial Water Quality Monitoring Network (PWQMN) database maintained by MECP and backed up on GRCA server (GRCA data only)</li> <li>• Historic PWQMN data were used to update scoped water quality metrics that were presented in the Grand River Water Management Plan. Nitrate characterization was updated at select sites along the Grand River and major tributaries, up to 2023, using PWQMN data.</li> </ul>
	<p>Develop and maintain the Grand River Simulation Model (GRSM) for use in municipal assimilative capacity studies or for broader watershed planning purposes</p>	<p>GRSM is available for any municipal studies, upon request and GRCA staff will provide support for model application in assimilative capacity studies</p>	<ul style="list-style-type: none"> <li>• GRCA initiated discussion with a provincial agency to fund a feasibility study to update the GRSM.</li> </ul>

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	Analyze and report on surface water quality	Reports on water quality are produced cyclically or as needed (e.g., reports to Board, watershed report cards, technical updates to Water Management Plan)	<ul style="list-style-type: none"> <li>Report GM-06-24-52 to the GRCA Board of Directors regarding water quality in the Grand River watershed, with a focus on elevated nitrate levels in groundwater and surface water.</li> <li>A presentation of the updated nitrate characterization was presented to the Region of Waterloo, City of Brantford and invited local academics at a virtual meeting on September 5, 2024.</li> <li>A presentation of the updated nitrate characterization was presented to the Grand River Water Managers Working Group at the quarterly meeting on December 10, 2024.</li> </ul>
Groundwater analysis and reporting	Analyze and report on groundwater quality	Reports on water quality are produced cyclically or as needed (e.g., reports to Board, watershed report cards, technical updates to Water Management Plan)	A presentation on nitrate in groundwater was presented to the Grand River Water Managers Working Group on December 10, 2024.

### Conservation Services

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
Deliver municipal and partnership cost-share programs to support private land stewardship action to improve and protect water quality and watershed health	Provide information and resources to landowners related to stewardship action including agricultural best practices, private water well maintenance, tree planting and naturalization projects.	Number of program participants, number of landowner inquiries	<ul style="list-style-type: none"> <li>256 landowners participated in GRCA delivered stewardship programs in 2024. Conservation Services staff responded to an additional 100+ inquiries from landowners.</li> </ul>
	Engage watershed residents in stewardship action through promotion of cost share opportunities	Number of residents engaged through program promotion	<ul style="list-style-type: none"> <li>Private land stewardship action and GRCA cost share programs were promoted through GRCA's Landowner Grants and Resources webpages, social media, one on one extension visits (260), and displays, presentations and participation in local agricultural industry and community events (2600 participants). Total watershed resident engagement: 28,000 (estimated).</li> </ul>
	Conduct site visits to assist landowners with planning stewardship projects and submitting applications to GRCA delivered cost share programs	Number of site visits	<ul style="list-style-type: none"> <li>260 site visits were conducted to support proposed, new and existing private land stewardship projects.</li> </ul>
	Administer and deliver municipally funded rural water quality programs (RWQP) as requested by watershed municipalities	Projects completed (number, type)	<ul style="list-style-type: none"> <li>Municipal grant funding delivered on behalf of 7 municipalities: Waterloo Region, Wellington, Brant, Haldimand, Dufferin, Oxford and well decommissioning program on behalf of the City of Hamilton. 180 projects were completed with \$650,000 in municipal grants provided. The total investment in these projects is \$3 million.</li> </ul>
		Project investment by funding source	<ul style="list-style-type: none"> <li>See above.</li> </ul>
		Total grant, kg Phosphorus retained	<ul style="list-style-type: none"> <li>An estimated 2,760 kg of phosphorus was retained on the landscape as a result of these projects. Projects completed prior to 2024 continue to retain phosphorus on the land. An estimated 135,000 kg of phosphorus is retained each year resulting from previously implemented RWQP projects.</li> </ul>

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	Seek additional partner funding to enhance cost share programs GRCA offers to watershed landowners (ie. offering funds in municipalities without a RWQP or enhancing cost share funding opportunities in areas where municipal RWQPs exist).	Projects completed (number, type) project investment by funding source, total grant, kg Phosphorus retained.	<ul style="list-style-type: none"> <li>Additional funding was secured by the GRCA to support private land stewardship. Sources include: Environment and Climate Change Canada Nature Smart Climate Solutions fund in partnerships with Conservation Ontario, Fisheries and Oceans Canada Habitat Stewardship Program for Aquatic Species at Risk, Forests Ontario 50 Million Tree Program, and Tree Canada. \$282,000 in grant from these GRCA-delivered initiatives supported 119 projects, including tree planting, erosion control, livestock fencing and cover crop incentives.</li> </ul>
Facilitate private land, municipal and community partner tree planting	Conduct field surveys and site assessments to develop tree planting plans for rural landowners and community groups (for projects that meet minimum property and project size requirements)	Number of landowners engaged, number of planting plans developed, number of projects completed, number of trees planted, planting area, km of windbreak, km of riparian buffer	<ul style="list-style-type: none"> <li>168 residents requested assistance from GRCA Forestry Specialists in planning tree planting projects. 90 planting plans were developed; 81 of these private land projects were planted by GRCA contractors. 111,700 trees were planted (planting area 76 ha, 27 km windbreak and 6.5 km riparian buffer). Planting plans were also created for 13 community/municipal partner tree planting events.</li> </ul>
	Provide technical assistance to tree planting clients to ensure successful completion of projects.	Number of landowners, projects and trees planted by landowners (plant your own projects) with Forestry Specialist support	<ul style="list-style-type: none"> <li>See above</li> </ul>
	Support rural landowners to develop suitable applications to cost share programs	Summary of project investment by funding source	<ul style="list-style-type: none"> <li>\$410,000 in grant provided to 81 landowners to cost-share tree and planting costs for 111,700 trees on 76 ha. \$215,000 was provided from municipal Rural Water Quality Programs and \$195,000 leveraged by GRCA from other sources (Forests Ontario, Tree Canada, Fisheries and Oceans Canada Habitat Stewardship Program for Aquatic Species at Risk). The total cost of these projects was \$590,000.</li> </ul>
	Secure tree stock and manage contracted planting services for landowners	Number of trees, projects, grant and investment in projects planted through GRCA planting program	<ul style="list-style-type: none"> <li>Just over 140,000 trees were secured by GRCA for 243 watershed landowners. This includes 81 landowners who had planting plans developed by GRCA forestry specialists and trees planted by GRCA contractors, 13 community planting events and 149 plant your own tree orders from eligible watershed residents, many of which received technical support from Forestry Specialists.</li> </ul>
	Serve as technical resource to landowners and community tree planting organizations	Number of community partner organizations supported; hours contributed	<ul style="list-style-type: none"> <li>Trees for Mapleton, Trees for Woolwich, Lets Tree Wilmot, Brant Tree Coalition, Perth County Stewardship Program, Sustainable Waterloo Region, Community Living Haldimand. Estimated hours contributed = 315.</li> </ul>
	Support community partner and municipality hosted outreach (tree planting) events as capacity permits	Number of community partners, number of residents engaged/event participants, number of events, number of trees planted, total area planted, volunteer hours contributed	<ul style="list-style-type: none"> <li>13 community planting events, 6,600 trees planted by 745 participant who contributed 1,500 hours, partners included Brant Tree Coalition, County of Brant, City of Brantford, Ducks Unlimited Canada, TD, Community Living Haldimand, Trees for Mapleton, Trees for Woolwich.</li> </ul>
Coordinate education and outreach activities to promote actions to improve water quality and watershed health	Engage watershed residents through development and delivery of outreach events (tours, workshops, webinars) and participation in partner, community, and municipal events and meetings; as capacity and opportunities exist	Number of partners, events, event participants.	<ul style="list-style-type: none"> <li>Private land stewardship action and GRCA stewardship programs were promoted by Conservation Services staff at 32 events in 2024. These events were hosted or offered in partnership with 26 local organizations (municipalities, community groups, agricultural industry associations). An estimated 2,600 participants attended these events.</li> </ul>



Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	Develop promotional materials (print, website, social media) to promote stewardship action and recruit participants to GRCA Conservation Services Programs.		<ul style="list-style-type: none"> <li>Maintained GRCA website, contributed to GRCA social media content, developed “Is your well, well?” video promoting private well stewardship, posted to YouTube.</li> </ul>

### Subwatershed Services

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
Deliver a subwatershed planning program and provide technical support for municipal stream monitoring and (sub)watershed planning*	Identify and recommend (sub)watershed or other regional-scale technical study priorities	Provide a table of recommendations annually	<ul style="list-style-type: none"> <li>Region of Waterloo – Prioritized completion of on-going studies. Continued monitoring programs underway since 2005. Identification of new studies was put on hold pending Provincial review of proposed settlement area boundary expansions.</li> <li>Prioritized studies underway or recently initiated by the City of Guelph and the City of Brantford.</li> </ul>
	Upon request and in watershed priority sequences, provide technical advice on terms of reference, scoping, methods for (sub)watershed studies.	Identify studies where support has been provided within the watershed annually	<ul style="list-style-type: none"> <li>North Brantford and Tutela Heights Subwatershed Study (City of Brantford) <ul style="list-style-type: none"> <li>Coordinated technical review and provided GRCA requirements for floodplain mapping and public consultation.</li> </ul> </li> <li>Clythe Creek Subwatershed Study (City of Guelph) <ul style="list-style-type: none"> <li>Coordinated technical review and provided GRCA advice for Regulatory Floodplain Mapping Terms of Reference.</li> <li>Provided recommendations for the draft Table of Contents for the Phase 1 study.</li> </ul> </li> <li>Provided comment on the Draft Framework for Processing and evaluating Urban Boundary Expansion Applications (City of Hamilton). <ul style="list-style-type: none"> <li>Comments included technical advice for scoping and recommended methods for a Phase 1 Subwatershed Study, which is proposed to be a minimum requirement for applications.</li> <li>Provided technical advice and recommendations on Phase 1 Subwatershed Study general Terms of Reference.</li> </ul> </li> <li>Guelph Innovation District Block 3 Terms of Reference (City of Guelph) <ul style="list-style-type: none"> <li>Provided technical advice based on recommendations in the Torrance Creek Subwatershed Study Management Strategy (1998).</li> </ul> </li> <li>Draft Technical Memo: Subwatershed Goals, Objectives, Targets, and Draft Land Uses (City of Kitchener). <ul style="list-style-type: none"> <li>Reviewed and provided technical advice on scoping the Subwatershed Study for the development of the Dundee Secondary Plan.</li> </ul> </li> <li>Breslau Secondary Plan (Township of Woolwich) <ul style="list-style-type: none"> <li>Attended virtual meeting, provide information on work completed to date in the East Side Subwatersheds and recommendations moving forward.</li> </ul> </li> <li>Erbsville North MESP (City of Waterloo) <ul style="list-style-type: none"> <li>Provided technical advice on the Terms of Reference for this study.</li> </ul> </li> </ul>



Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
	Seek additional partner funding to undertake subwatershed/regional studies	Identify the number of applications, specifics, success and financial information annually	<ul style="list-style-type: none"> <li>Secured federal funding (\$10,000) from Fisheries and Oceans Canada (DFO) to classify previously unclassified municipal drains in the County of Brant using DFO's municipal drain classification system. This data could inform future characterization of a subwatershed and input to the development of monitoring plans for consolidated linear infrastructure approvals.</li> <li>Successfully sampled 7 municipal drains and 9 independent drain segments. Sampling included specific parameters for flow characteristics and fish community sampling.</li> </ul>
	Review and provide input to watershed, regional and local scale subwatershed studies. <ul style="list-style-type: none"> <li>Participate on steering committees, working groups</li> <li>Scope of technical review in compliance with O. Reg 596/22 - Prescribed Acts</li> </ul>	Number of requests and reviews undertaken	<ul style="list-style-type: none"> <li>Clythe Creek Subwatershed Study: Technical Advisory Group (City of Guelph)               <ul style="list-style-type: none"> <li>Participated in Workshop #3 and #4, focusing on calibration of the hydrologic model (Workshop #3) and modeling future land use scenarios (Workshop #4).</li> </ul> </li> <li>North Brantford and Tutela Heights Subwatershed Study (City of Brantford)               <ul style="list-style-type: none"> <li>Coordinated technical review and provided GRCA comments on hydrologic and hydraulic models.</li> <li>Participated in working group with City and consultant regarding hydrologic modelling.</li> </ul> </li> <li>Randall/Breslau Drain Engineered Floodplain mapping (Region of Waterloo)               <ul style="list-style-type: none"> <li>Coordinated technical review and provided GRCA comments on engineered floodplain mapping for Randall and Breslau Drains, which was approved by GRCA General Membership on June 28, 2024.</li> </ul> </li> <li>Participated on the Mohawk Lake Steering Committee (City of Brantford).</li> </ul>
	Provide technical support and advice on municipal stream monitoring.	Number of plans reviewed and location within watershed	<ul style="list-style-type: none"> <li>Mill Creek Subwatershed Study Implementation (City of Cambridge, Township of Puslinch):               <ul style="list-style-type: none"> <li>Technical support provided for the Mill Creek Ranger program, University of Guelph Department of Integrative Biology, and Friends of Mill Creek.</li> <li>Results for STREAM benthic macroinvertebrate sampling collected in 2023 provided in 2024.</li> </ul> </li> <li>Provided technical support and advice for the City of Kitchener for the proposed city-wide weather station implementation.</li> <li>Completed water quality sampling on Blair Creek (City of Kitchener) on behalf of the MECP for a chemical compound known to be toxic to salmonids.</li> <li>Provided technical support and advice to the City of Brantford on scoping the monitoring of a prairie fen.</li> </ul>
	Serve as digital custodian for previously completed subwatershed studies (listed on GRCA website)  Respond to requests for digital copies of previously completed subwatershed studies from consultants and the public.	Upon request	<ul style="list-style-type: none"> <li>GRCA website updated to include recently completed studies available to the public.</li> <li>Responded to 97 requests from municipalities/consultants/public for digital copies of previously completed studies.</li> </ul>

Programs and Services Description	Deliverables	Metrics	2024 Watershed-wide Summary
<p>*Undertake subwatershed monitoring for watershed and regional scale subwatershed studies where services are cost-shared between the municipalities and the GRCA under separate agreements. May undertake monitoring for local scale subwatershed studies where 100% funding provided by municipal under separate agreement.</p>			<ul style="list-style-type: none"> <li>• Blair Creek (City of Kitchener): <ul style="list-style-type: none"> <li>○ Administered annual monitoring program completed by GRCA staff and consultants.</li> <li>○ Consolidated data and provide annual monitoring report.</li> </ul> </li> <li>• East Side Lands Subwatersheds (cost-shared with Region of Waterloo, monitoring sites within City of Cambridge, City of Kitchener, and Township of Woolwich): <ul style="list-style-type: none"> <li>○ Administered monitoring program completed by GRCA staff</li> <li>○ Consolidated data and provide annual monitoring report.</li> </ul> </li> <li>• Completed Randall/Breslau State of the Watershed update (Region of Waterloo) – to be submitted in 2025.</li> <li>• Jones Creek Monitoring – finalized and sent water quality data to the City of Brantford. <ul style="list-style-type: none"> <li>○ Completed monitoring in 2024</li> <li>○ QA/QC and consolidate data</li> </ul> </li> </ul>

# Information Report

## Campaign Cabinet

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### February 2025 Summary:

Campaign Cabinet met on February 18.

- Members have set up information tables at the Mansfield Ski Club, Mansfield Outdoor Centre and NDCC in February to bring greater awareness.
- Kraft Hockeyville deadline to submit nominations: March 2, 2025. Final push / call for submissions was made asking local user groups and neighbouring municipalities to help get the word out.
- Business Fundraising Face-Off Campaign to commence in March.
- Kyle Seeback's office is offering support in promoting the Honeywood fundraising efforts with a potential event to take place in the future.
- Request to have a Campaign Cabinet member present in donation photos.
- Upcoming Events:
  - March 15<sup>th</sup> – Kraft Hockeyville Top 4 Announcement
  - March 22<sup>nd</sup> – Chris Stillar Psychic Medium Fundraiser
  - March 29<sup>th</sup> – Corey Matthews Fundraising Hockey Tournament
  - April 5<sup>th</sup> – Help the Honey Dome Alumni Fundraising Tournament
- Next Steps: Plan for Off Season Campaign, Donation Wall in NDCC
- Next Meeting Date: March 4, 2025

**Submitted by: Roseann Knechtel, Clerk**

# **SEMI-ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT 2024**

**Township of Melancthon Landfill Site  
Lot 12, Concession 4  
Melancthon Township, Ontario**

**Project No. BG-900**

**Prepared for:**

**The Corporation of the Township of Melancthon  
157101 Highway 10,  
Melancthon, ON.  
L9V 2E6  
ATTN: DENISE HOLMES, CAO/CLERK**

**FEBRUARY 2025**



# **BLUEWATER GEOSCIENCE CONSULTANTS INC.**

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Kitchener, Ontario  
N2N 3J1

Tel: (519) 502-8947  
www.bluewatergeoscience.ca  
E-mail: [blemieux@rogers.com](mailto:blemieux@rogers.com)

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February 21, 2025

The Corporation of the Township of Melancthon  
157101 Highway 10,  
Melancthon, Ontario L9V 2E6  
Attn: Ms. Denise Holmes, CAO/Clerk

Dear Ms. Holmes:

**Re: 2024 Semi-Annual Groundwater Monitoring and Sampling Report,  
Township of Melancthon Landfill Site, Lot 12, Concession 4  
Melancthon Township, Ontario**

Bluewater Geoscience Consultants Inc. (Bluewater) was retained by The Corporation of the Township of Melancthon to complete the 2024 Semi-Annual Groundwater Monitoring and Sampling Report for the Melancthon Township landfill property located on Lot 12, Concession 4 in Melancthon Township, Ontario. The Township operates a municipal landfill site at the property and requires the Groundwater Monitoring and Sampling Program for their MECP Certificate of Authorization (C of A) for the operation.

The scope of work, observations, analytical test results, and our conclusions and recommendations for the 2024 Semi-Annual Groundwater Monitoring and Sampling Report are presented in the following report.

We trust that this report is complete within our terms of reference and suitable for your present requirements. If you have any questions or require further information, please do not hesitate to contact our office.

Sincerely,  
**BLUEWATER GEOSCIENCE CONSULTANTS INC.**



Breton J. Lemieux, M.Sc., P.Geo. QP<sub>ESA</sub>  
President, Senior Geoscientist

**BLUEWATER GEOSCIENCE**

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## **1.0 INTRODUCTION**

The Corporation of The Township of Melancthon (Township) retained Bluewater Geoscience Consultants Inc. (Bluewater) to complete the 2024 landfill (LF) groundwater monitoring and sampling program and to generate the annual report detailing the findings. The landfill site monitoring was undertaken to continue to assess any environmental impacts to groundwater created by the LF operations. This landfill monitoring report was completed in accordance with the requirements of the Ministry of the Environment, Conservation and Parks (MECP) Certificate of Approval for the LF site.

The site monitoring included completing two site inspections, measuring groundwater levels in all 34 observation wells during the Spring and Fall of the year and determination of the resulting groundwater flow patterns in and around the LF. Groundwater sampling was conducted on 19 selected sampling wells during both the Spring and Fall of each year. The groundwater samples for 2024 were submitted to a CAEAL-accredited analytical laboratory for analysis. The results of the completed laboratory analyses were compared to MECP's Ontario Drinking Water Standards (ODWS) (for on-site monitors) and the Reasonable Use Policy (RUP) for off-site monitors.

## **2.0 PREVIOUS INVESTIGATIONS**

### **2.1 R.J. Burnside & Associates Limited – Annual Groundwater Monitoring Reports 1993-2000**

Annual groundwater monitoring reports for the LF were completed by R.J. Burnside & Associates Limited (Burnside) from 1993 – 2000. These reports included the sampling and analysis of groundwater samples from seventeen existing monitoring wells located in and around the LF site. Eleven of the monitors are located in the overburden aquifer while six are installed within the underlying bedrock aquifer. A summary of these reports indicates that no exceedance of the MOE RUP had been determined during the groundwater sampling events. In general, on-site monitoring locations indicated that exceedance of the MOE's ODWS for on-site monitors were rare and not sustained.

### **2.2 Rubicon Environmental Inc. – Groundwater Monitoring and Hydrogeological Investigations – Spring 2001**

During 2001 Rubicon added another fourteen groundwater monitors to the existing network of monitors in and around the LF site. Eight of these monitors were installed in the overburden aquifer while six were installed in the bedrock aquifer.

During the 2001 investigations, the existing monitoring wells installed by Burnside were sampled and analysed. The additional monitoring wells were tied into the site survey, but not sampled.

### **2.3 Rubicon Environmental Inc. – Groundwater Monitoring and Hydrogeological Investigations – Spring 2002**

This report included results of the Spring and Fall 2002 site monitoring and groundwater sampling and analysis program. The monitoring and sampling included the new monitors added during 2001.

### **2.4 Rubicon Environmental Inc. – Landfill Monitoring – March 24, 2004**

This report provides details of the 2003 LF groundwater monitoring and sampling program completed at the site. The report details that some minor exceedances of the ODWS were determined for on-site monitoring wells.

### **2.5 Bluewater Geoscience Consultants Inc. – Annual Groundwater Monitoring and Sampling Reports 2004 - 2023**

These reports detail the 2004 - 2023 LF groundwater monitoring and sampling program completed at the site. The report details that some minor exceedances of the ODWS were determined for on-site and off-site monitoring wells.

## **3.0 SITE BACKGROUND**

The LF site has been in operation since ~1973 at its current location at Lot 12, Concession 4, Township of Melancthon, County of Dufferin. The LF serves the population of ~2,400 people in the Township. The nearest residence is located ~450 m south of the LF site. The location of the LF is remote and distant from any significant population centres.

The LF presently operates under Provisional Certificate of Approval (C of A) A180703. The total LF property comprises an area of ~33.038 ha., of which 6.1 ha. has been approved for landfilling. During 2013 the County of Dufferin assumed waste collection and disposal services in the Township of Melancthon. Further waste disposal at this landfill is not anticipated should County of Dufferin services be found adequate.

### **3.1 Site Inspection**

During both Spring and Fall monitoring events, a site inspection was completed. The main refuse disposal area has been covered with soil and grades have been established to reduce the amount of rainwater infiltration into the waste pod. Temporary fencing has been placed around portions of the fill area to control windblown waste. There was no waste placement at this landfill during 2024.

During the Spring 2006 inspection it was noted that OW-4S had been destroyed, likely by equipment working in the area. OW-4S is located within the current filling are. During the Fall inspection it was noted that OW-4D had been destroyed during the summer months. OW-4D was also located within the current filling area. During 2015, monitor OW-17 was destroyed and is no longer part of the monitoring network.



## 4.0 GROUNDWATER MONITORING WELLS AND METHODOLOGY

### 4.1 Existing Monitoring Wells in 2024

Thirty-four groundwater-monitoring wells were in existence at the commencement of the 2024 monitoring period. All wells were inspected and found to be in good order, with the exceptions noted just above.

Seventeen monitoring wells had been installed by Burnside pre-2001. Six of these were installed in the deeper bedrock aquifer (denoted “D” for deep) while eleven were installed in the shallow overburden aquifer (denoted “S” for shallow). All existing monitoring wells were constructed of 50 mm diameter Schedule 40 PVC pipe and are fitted with steel protective casings and locks. The locations of all monitoring wells are presented on the Base Site Plan (Figure 1B, Appendix A). A brief description of each monitor locations is provided below:

- OW 1 is installed in the overburden aquifer and is located between two former refuse disposal areas
- OW 2S and OW 2D are located downgradient (east) of the current refuse disposal area
- OW 3S and OW 3D are located immediately downgradient (east) of the current refuse disposal area
- OW 4S and OW 4D are no longer present
- OW 5S is installed in the overburden aquifer and is located north of the disposal area, near the northern property boundary. This monitor is frequently dry in Fall
- OW 6S and OW 6D are located near the south property boundary and had been intended to represent background water quality
- OW 7S and OW 7D are located near the northeast property corner, northeast of the former refuse disposal area
- OW 8 is installed in the overburden aquifer and is located in the main refuse area. OW 8 is considered a ‘leachate’ well
- OW 9S and OW 9D are located off-site, northeast of the landfill and in the east ditch of the 4<sup>th</sup> Line
- OW 10S and OW 10D are located east of the main refuse disposal area
- OW 11S and OW 11D are located northwest of the main refuse disposal area. These monitors were intended to provide further clarification of groundwater flow patterns and are not included in the sampling program
- OW 12S and OW 12D are located west of the main refuse disposal area. These monitors were intended to provide further clarification of groundwater flow patterns and have been included since the 2006 sampling program;
- OW 13S and OW 13D are located immediately south of the main refuse disposal area. These wells were located to provide better delineation of the groundwater mounding in the refuse area and provide chemical data south of the refuse area;
- OW 14S is located southeast of the main refuse disposal area and was intended to help clarify groundwater flow patterns distant from the refuse disposal area;
- OW 15S and OW 15D are located southeast of the main refuse disposal area and were intended to help clarify groundwater flow patterns distant from the main refuse disposal

- area. These monitors were sampled for the first time during 2006;
- OW 16S and OW 16D are located along the north property boundary. These monitors were intended to provide clarification of groundwater flow patterns and provide chemical analysis of groundwater at the north property boundary. These monitors were sampled for the first time during the 2006 program;
  - OW 17S is located off-site in the overburden aquifer. The monitor is located in the east ditch of the 4<sup>th</sup> Line. This monitor was intended to provide better information on shallow groundwater flow patterns and potentially provide chemical data regarding the contribution of road salt to noted groundwater impacts. This monitor was destroyed in 2015 and has not been replaced;
  - OW 18S and OW 18D are located off-site east of the 4<sup>th</sup> Line. These monitors were intended to help refine groundwater flow patterns in the overburden and bedrock aquifers and provide chemical data in that area.

#### 4.2 Wells Installed in 2006

During 2006 an additional six monitoring wells were installed at the landfill. The six new wells consisted of three sets of two wells (OW-19S and 19I, OW20S and 20D and OW-21S and 21D). The locations of the new wells are shown on Figure 1B, Appendix A. A description of the location and rationale for each of the new wells is presented below:

- OW-19S and OW-19I are located in the southeast corner of the landfill property, just west of the 4<sup>th</sup> Line. These wells were installed to provide additional points for determining groundwater flow patterns and to provide chemical data at this downgradient property boundary. OW-19S is set in the shallow till overburden while OW-19I (intermediate) is set in a lower till unit. These two wells were included in the 2007 sampling and lab analysis program for the first time;
- OW-20S and OW-20D are located just southeast of the ‘old closed landfill’ in the northeast portion of the landfill property. These wells will provide further groundwater flow data as well as providing additional chemical data. OW-20S is set in the shallow overburden, just above the bedrock. OW-20D is sealed into the bedrock. These two wells were included in the 2007 sampling and lab analysis program for the first time;
- OW-21S and OW-21D are located along the north landfill property boundary, well west of the active landfilling area. These wells will be utilized to provide additional groundwater flow information as well as providing chemical data at locations well upgradient of the fill area. OW-21S is set in the shallow overburden, just above the bedrock. OW-21D is sealed into the dolostone bedrock. These two wells were included in the 2007 sampling and lab analysis program for the first time;

All groundwater-monitoring wells have been surveyed relative to a geodetic datum and ground surface and top of monitoring well pipe elevations have been recorded. During 2006, waste placement was taking place in the immediate area of OW-4S and OW-4D. These wells were destroyed by the heavy equipment. OW-17 was destroyed during the winter of 2014-2015 and is no

longer part of the monitoring network.

#### **4.3 Water Level Monitoring**

On April 24 and October 21, 2023 groundwater levels were measured in all 34 existing monitoring wells installed at the LF. The depth to water relative to the top of monitoring well pipe was measured using a Solinst water level gauge. The determined water depths were recorded and the resulting groundwater elevations were determined. Table 1, Appendix B provides the tabular representation of the groundwater elevation data, including historic groundwater levels.

After completion of the water level measurements, the monitors selected for sampling were thoroughly purged of a minimum of 3 casing volumes of water in anticipation of the groundwater sampling.

#### **4.4 Groundwater Sampling**

The 2024 groundwater sampling and analysis program consisted of sampling 19 selected groundwater monitoring locations at and around the LF property. Samples were obtained from both overburden and bedrock aquifer wells. Prior to obtaining the groundwater samples, the selected monitors had been purged of a minimum of three casing volumes of water in order to facilitate provision of representative samples.

Groundwater samples from the selected monitoring wells were obtained using dedicated Waterra tubes and foot valves and were placed directly into the laboratory-supplied sample bottles. The groundwater samples were obtained and submitted for analysis of the volatile organic compounds (VOC's), general water chemistry and heavy metals parameters. The heavy metal samples were field filtered and preserved. The groundwater samples were chilled in coolers prior to being submitted under Chain of Custody to ALS Laboratories of Waterloo, ON for analysis. ALS is a CAEAL (Canadian Association of Environmental Analytical Laboratories) accredited laboratory.

#### **4.5 Surface Water Sampling**

Surface water sampling was not completed during the 2024 monitoring program.

#### **4.6 Groundwater Flow**

The determination of groundwater flow patterns in both overburden and bedrock aquifers are essential in determining the potential for off-site impacts and contaminant distribution. In general, groundwater levels in both overburden and bedrock aquifers were lower (~1m) in the Fall than the Spring monitoring. The measured groundwater elevations for each aquifer were determined and plotted on the site plan. The resulting groundwater flow patterns were determined based on this distribution. Figures 2 and 3 present the groundwater flow patterns for the Spring monitoring while Figures 4 and 5 provide the Fall 2024 aquifer flow patterns.

As may be noted from these Figures, mounding of groundwater in both aquifers within the refuse disposal area is occurring. This phenomenon is typical of landfill sites and should be expected to continue. The mounding creates radial flow, outwards, apparently in all directions away from the refuse disposal area. The flow then comes under the influence of background flow patterns. Based on the findings of this, and previous, monitoring events, the overburden groundwater flow is towards the northeast while the bedrock groundwater flow is more-directly eastwards.

Groundwater flow is driven by the gradient of the groundwater. This produces head differences between locations creating the conditions for groundwater movement. The horizontal hydraulic gradient in the overburden aquifer has been determined to be on the order of 0.007 m/m. Based on this gradient, and the characteristics of the overburden, the lateral groundwater flow velocity may be approximately 74 m/yr. The horizontal hydraulic gradient in the bedrock aquifer is lower; approximately 0.002 m/m. Based on this gradient and the characteristics of the aquifer, velocities of approximately 0.03 m/yr are estimated.

Vertical hydraulic gradients between the overburden and bedrock aquifers create the conditions for downward migration of groundwater impacted in the refuse disposal area. Downward vertical gradients allow downward movement of water into the bedrock aquifer. Downward vertical gradients are found in the refuse disposal area allowing shallow impacted groundwater to potentially enter the bedrock aquifer. This is significant because the bedrock aquifer is utilized as a potable water source within the Township and the bedrock aquifer is less able to attenuate groundwater contaminants.

## **5.0 GROUNDWATER QUALITY**

### **5.1 Groundwater**

Groundwater sampling and analysis for the LF site has been undertaken since 1993. Additional wells were added to the sampling regime in 1999 and selected monitoring wells installed in 2001 were added to the sampling list during 2002. Groundwater quality data for the 2024 program are provided in the Tables in Appendix B along with chemistry data from 2017 - 2023. Copies of the detailed Certificates of Analysis for the 2024 monitoring data are provided in Appendix C.

Inorganic parameters such as chloride, sulphate, hardness and alkalinity are frequently utilized to determine the extent of landfill leachate impacts in groundwater. Hardness and alkalinity are naturally elevated at the landfill property and throughout Melancthon Township. Chloride levels in both overburden and bedrock aquifers are elevated in the refuse disposal area. In general, concentrations in the bedrock aquifer are slightly higher than in the associated overburden wells. This is a reflection of the downward gradient from the overburden to the bedrock coupled with the lower attenuation capabilities in the bedrock. None of the on-site or off-site monitors exceeded the MECP ODWS concentration for chloride during the 2024 monitoring events. None of the wells sampled during 2024 exceeded the MOE RUP for chloride (125.5 mg/L) concentration. Elevated chloride concentrations in this vicinity of the 4<sup>th</sup> Line, east of the LF, may be partially attributable to the application of road salt during winter.

In general, the background groundwater quality at the LF site consists of hard water with elevated hardness, alkalinity, manganese and iron content. During the 2024 monitoring, alkalinity concentrations in excess of the ODWS were noted at OW's 2S, 2D, 3D, 7S, 7D, 9D, 16D and 20D. Iron concentrations in excess of the ODWS were determined at all sampled wells including upgradient locations. Manganese concentrations in excess of the ODWS were determined for OW's 2S, 2D, 3S, 3D, 7S, 7D, 8, 10S, 10D, 13D, 16D, 20S and 20D. As this list includes most sampled location these elevated concentrations are likely reflective of background groundwater quality in the area. The lack of significantly elevated manganese concentrations at OW-8, which is considered a leachate well and displays elevated sulphate concentrations, further suggests that elevated manganese concentrations are not landfill related.

The sulfate concentration at OW 8 of 436 mg/L in Spring 2024 was just below the ODWS of 500 mg/L and above the RUP of 253.9 mg/L. During the Fall 2024 monitoring, OW 8 was determined to be dry and was not sampled. The elevated concentration of sulfate is likely related to leachate groundwater impacts in the main refuse disposal area. No other on-site or off-site monitor exceeded the RUP for sulphate.

Parameter concentration trends through time for sulphate, chloride and manganese for selected off-site, property boundary and downgradient wells reviewed. Manganese concentrations trends do not suggest rising levels as would be expected if landfill related. Chloride trends do not suggest rising concentrations for these wells. In fact, several locations have shown slightly declining levels over the last few years. This is likely reflective of an effort on Township personnel's behalf to reduce salting in the area of the landfill entrance after several elevated chloride concentrations were detected in past years. As suggested at that time, those past elevated chloride concentrations appear to have been affected by these road salting activities.

The sulfate concentration trends for the selected wells show generally rising concentrations at OW-2S and OW-2D. Sulfate concentrations at the other selected wells do not indicate any discernible rising trends. Sulfate concentrations are generally higher in Fall than Spring. A site plan showing concentration distribution during Spring 2024 for shallow groundwater wells is provided in Figure 6 and for deep groundwater wells is provided in Figure 8, Appendix A. A site plan showing concentration distribution for Sulfate during Fall 2024 for shallow wells is provided on Figure 10 and for deep groundwater wells is provided on Figure 12, Appendix A.

A site plan showing chloride distribution during Spring 2024 is provided in Figure 7 for shallow groundwater wells and in Figure 9 for deep groundwater wells. A site plan showing chloride distribution during Fall 2024 is provided in Figure 11 and for shallow groundwater wells and in Figure 13 for deep groundwater wells.

Trace concentrations of VOC parameters, well below ODWS's and close to method detection limits, were determined for the 2024 monitoring at OW's 2D, 3D, 7S, and 10S. While these VOC concentrations are likely landfill related, they are not considered to be of significance at this landfill.

There was a general trend towards higher parameter concentrations during the Fall monitoring compared to Spring concentrations. This is a continuing trend, consistent with past findings and normal groundwater conditions.

Bluewater has evaluated the long-term trends in groundwater quality at the LF site. Most parameter concentrations have remained fairly steady over the past several years suggesting that dilution and attenuation are dealing adequately with the refuse area derived leachate impacts.

## **5.2 Surface Water**

Surface water sampling was not completed during the Spring or Fall 2024 monitoring.

## **5.3 Methane Monitoring**

Methane gas is a by-product of waste decomposition and will be generated in the waste unit until all the organic matter is completely decayed. Methane, while it is a potential explosion hazard, is not a major concern provided that no building is ever permitted within approximately 30 meters of the refuse disposal area. The shallow water table and relatively permeable cover material at the Melancthon landfill are expected to prevent significant migration of methane. Gas produced by the landfill is expected to vent naturally to the atmosphere. It should be noted however, that ice, snow cover, and frozen ground in the winter may prevent methane gas from venting and cause methane gas to migrate laterally from the refuse disposal area.

If methane is present in concentrations between 5% and 15% in air it can become explosive. Below this range, there is an inadequate amount of methane for explosion. Above this range, there is an inadequate amount of oxygen for explosion. Therefore, 5% is considered the Lower Explosive Limit (LEL) and 15% is considered the Upper Explosive Limit (UEL) for methane.

Headspace methane monitoring was completed on all wells during both Spring and Fall 2024 monitoring events. The results of the methane monitoring are presented in Table 2 Appendix B. A slight detectable methane concentration was determined for OW-8 however no other of the monitors had detectable methane concentrations during the Spring or Fall 2024 monitoring events. On-going methane monitoring should be incorporated in future monitoring events.

## **6.0 LANDFILL VOLUMES AND CAPACITY**

The Melancthon landfill has a current design capacity of 297,000 m<sup>3</sup> on the approved 6.1 ha area. At the completion of 2012, 89,326 m<sup>3</sup> of the total volume had been filled. The volume survey completed during October 2013 determined that the landfill volume used during 2013 was 10,636 m<sup>3</sup> meaning the total volume used to the end of 2015 is 99,962 m<sup>3</sup>. The 2013 volume included the importation of ~ 2,000 m<sup>3</sup> of clean fill to cover the current fill area based on the end of waste receiving at the site. No waste was added during 2024. Based on this figure, the remaining fill volume for this design is 197,038 m<sup>3</sup>.

## **7.0 SUMMARY AND CONCLUSIONS**

The following section summarizes the findings of the 2024 Annual Groundwater Monitoring Report:



- The Township of Melancthon operates a ‘natural attenuation’ landfill site in a remote, sparsely populated area of the Township. Surrounding land use is predominantly agricultural and the nearest residence is located ~450 m south of the site;
- During 2013 The County of Dufferin assumed waste collections and disposal responsibilities for Melancthon Township. No waste was imported to the landfill during 2024. At this time, further waste placement at this landfill is not anticipated given adequate service is maintained by the County;
- Two main hydrogeological units exist in the subsurface of the site. The upper unit, referred to as overburden, consists of sand and gravel and silty sand soils. The groundwater level in the overburden is unconfined and shallow (<2m) and shows seasonal fluctuations with Spring levels generally higher than those in Fall. This fluctuation is likely the result of the addition of snow melt water during the Spring. The second, deeper hydrogeological unit is the underlying dolostone bedrock aquifer. The water level in the bedrock is generally lower than in the overburden. This creates a downward vertical hydraulic gradient that allows landfill-generated impacts to potentially enter the bedrock aquifer;
- Mounding of groundwater occurs within both hydrogeological units within the refuse disposal area. This mounding creates a radial flow pattern in the refuse area that drives flow in all directions away from the mound. The groundwater then comes under the influence of the background (natural) flow regime. Groundwater flow in the overburden aquifer is northeast towards the entrance to the landfill in the northeast corner of the property. Flow in the bedrock aquifer is more-directly to the east and the eastern property boundary;
- Comparison of the laboratory analytical data from the Spring and Fall 2024 monitoring events to the applicable ODWS and RUP objectives indicates that background water quality exceeds ODWS Standards for alkalinity, iron and manganese;
- Exceedance of the MOE RUP objectives for parameters such as hardness, alkalinity, manganese and iron were determined at most sampled locations during 2024. These concentrations are likely at least partially unrelated to landfill impacts and reflect general water quality in Melancthon Township. No chloride RUP exceedance was noted for any off-site or on-site wells. Exceedance of the RUP for other leachate-indicators such as sulfate was not noted during 2024 near property boundaries. Exceedance of the RUP and ODWS for sulfate occurred at OW-8, located immediately downgradient of the principal fill area.
- Significant methane concentrations were not determined during 2024;
- The site is currently in compliance with the terms and conditions of its C of A.

## 8.0 RECOMMENDATIONS

The following recommendations are made regarding the future Groundwater Monitoring and Sampling Program at the Township of Melancthon landfill site:

- Continuation of the semi-annual groundwater monitoring and sampling program including a routine site inspection, recording of static water levels at all 34 monitoring locations and groundwater sampling and laboratory analysis of the selected monitoring wells in both Spring and Fall;
- Preparation and submission of an Annual Monitoring Report to MECP for review.
- Natural dilution of contaminants derived in the refuse disposal area coupled with natural attenuation in the overburden appears to be dealing with derived groundwater impacts adequately at this time. The widespread occurrence, including upgradient locations, of ODWS and RUP exceeding manganese, iron, hardness and alkalinity concentrations appears to be more a function of natural geologic conditions than landfill-derived impacts. Lab results for monitors downgradient of the principal fill areas show more elevated chloride and sulphate concentrations, which are not similar to findings in the northeast corner of the property.
- Monitoring for headspace methane concentration in all wells should be continued for the 2025 program.

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## **10.0 LIMITATIONS**

This report was prepared for the exclusive use of The Township of Melancthon. This report is based on information and data collected during the completion of an environmental investigation of the Site carried out by Bluewater Geoscience Consultants Inc., and is based solely on the site conditions encountered at the time of the assessment and the applicable guidelines in place at the time of this investigation.

It should be noted that the observations and recommendations presented in this report are limited to the actual locations explored and laboratory parameters analyzed. The information presented in terms of the thickness and types of the sub-soils encountered, groundwater levels and chemical testing results, etc., are only applicable to the actual locations explored. Variations may be present between these locations. Should significant variation become apparent during later investigations, it may be necessary to re-evaluate the recommendations of this report. The results of an investigation of this nature should, in no way, be construed as a warranty that the site is free from any and all contamination from past or current practices since conditions may be different from the locations tested. This assessment was carried out using existing historical information as available from various agencies and no assurance is made regarding the accuracy or completeness of this information.

If new information is discovered during future work, including excavation, borings or other studies,

Bluewater Geoscience Consultants Inc. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required. The analytical test results are assumed to be correct and performed according to all current regulations. No audit of the laboratory's methods or procedures was performed.

This assessment does not include, nor is it intended to include, any option regarding the suitability of any structure on the site for any particular function, the integrity of the on-site buildings or the geotechnical conditions on the site. Inspections of buildings do not include compliance with building, gas, electrical or boiler codes, or any other federal, provincial or municipal codes not associated with environmental concerns. Should concerns regarding any issue other than environmental matters arise as a result of our investigations, appropriately qualified professionals should address them.

This report is not to be reproduced or released to any other party, in whole or in part, without the express written consent of Bluewater Geoscience Consultants Inc.

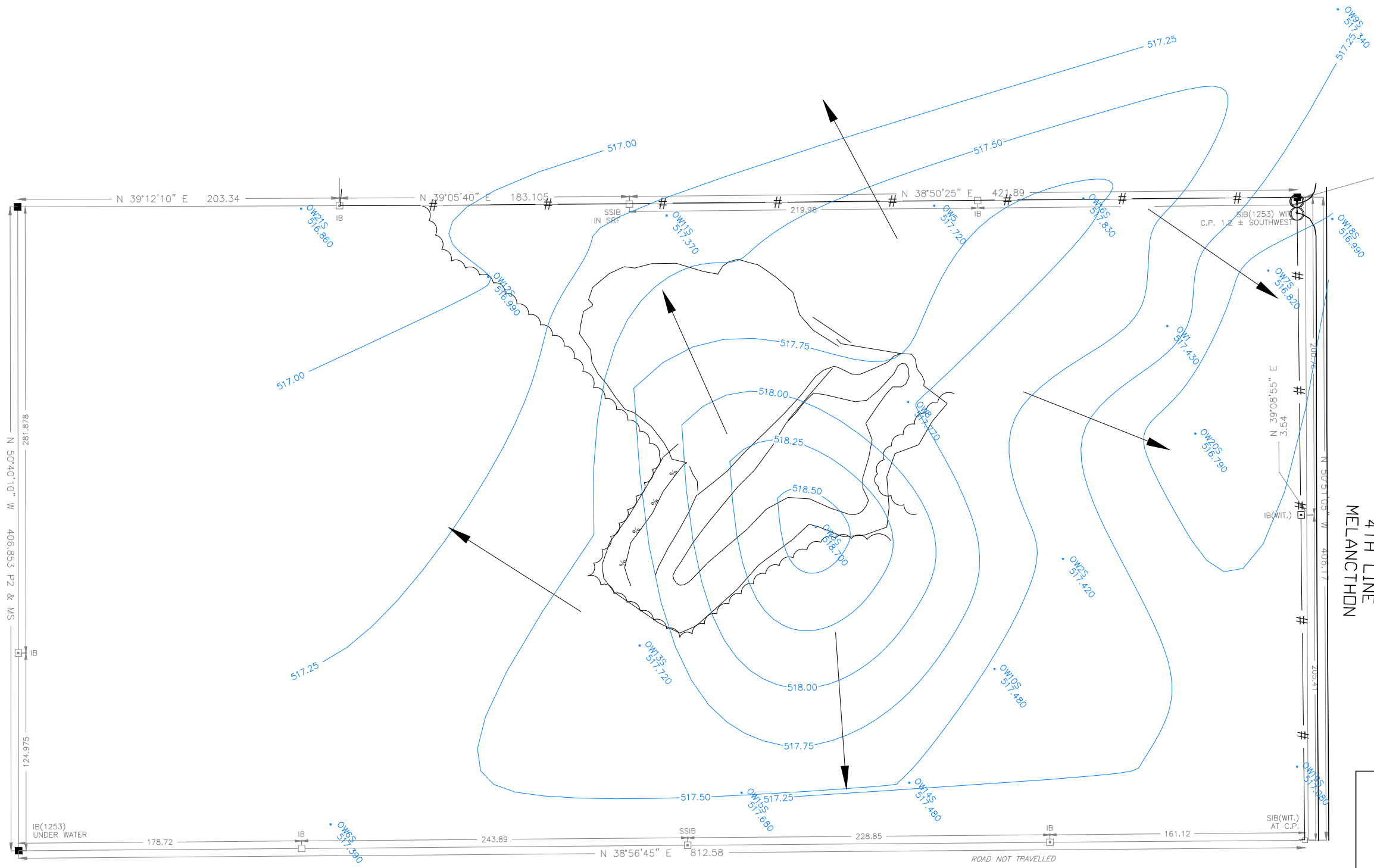
## **11.0 CLOSURE**

Bluewater Geoscience Consultants Inc. operates under a Certificate of Authorization from The Association of Professional Geoscientists of Ontario (APGO). Breton Lemieux is a registered Qualified Person (QP) with MECP and is a licensed Professional Geoscientist with over thirty-five years of international environmental consulting experience. Mr. Lemieux has a Geologic Technologist Diploma from Fleming College in Lindsay, Ontario, an Honours Bachelor of Science degree in Geology from the University of the West Indies in Kingston, Jamaica and a Master of Science degree in Earth Sciences from the University of Waterloo. His experience includes conducting Phase I, II and III ESAs at a wide variety of contaminated sites, underground storage tank removal supervision, water supply development, environmental building science and other site and landfill environmental monitoring projects.

## APPENDIX A

### FIGURES






NORTH ANGLE  
LOT 12  
CONCESSION 4, NETSR

4TH LINE  
MELANCTHON

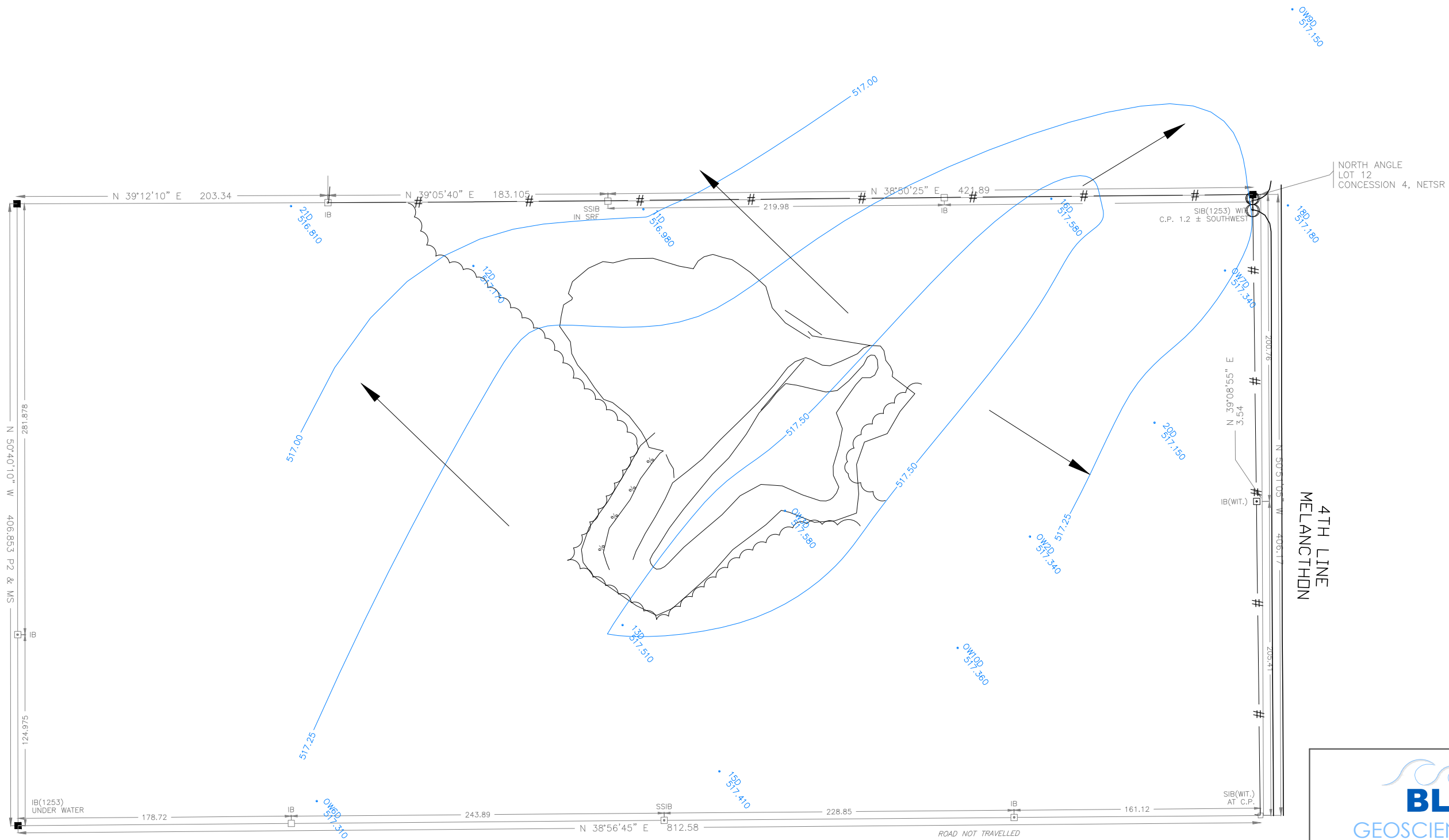
ROAD NOT TRAVELLED

- OW15S 517.660 MONITOR WELL  
GROUNDWATER ELEVATION
- 517.25 GROUNDWATER CONTOUR (0.25m INTERVAL)
- GW FLOW DIRECTION




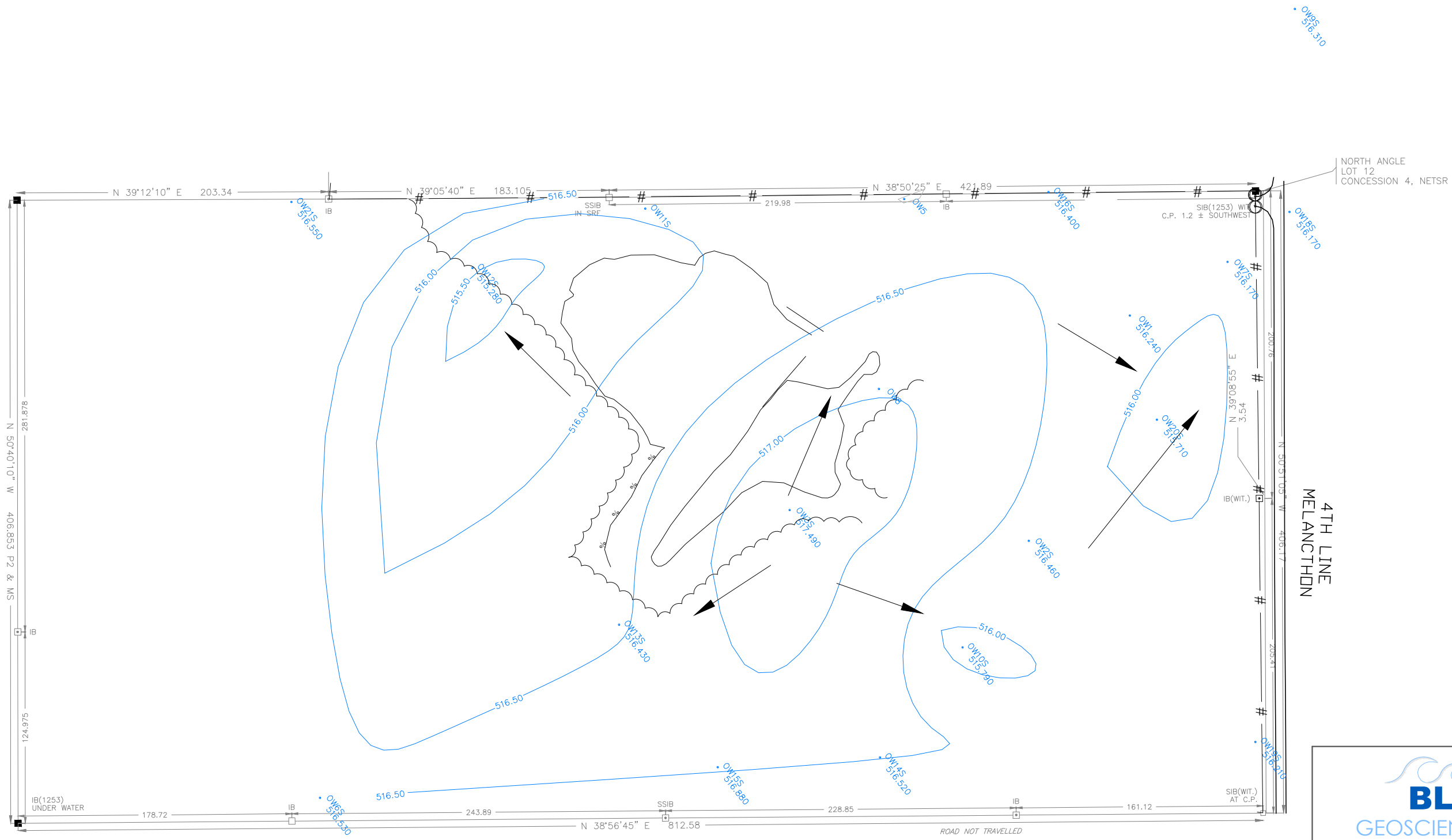
**BLUEWATER**  
GEOSCIENCE CONSULTANTS Inc.

TOWNSHIP OF MELANCTHON LANDFILL			
SHALLOW AQUIFER GROUNDWATER FLOW			
SPRING 2024			
DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO.
-	DATE: DEC. 2024	SCALE: N.T.S.	2




15D  
 517.330      MONITOR WELL  
                     GROUNDWATER ELEVATION  
  
 517.25      GROUNDWATER CONTOUR (0.25m INTERVAL)  
  
 ─────────▶      GW FLOW DIRECTION

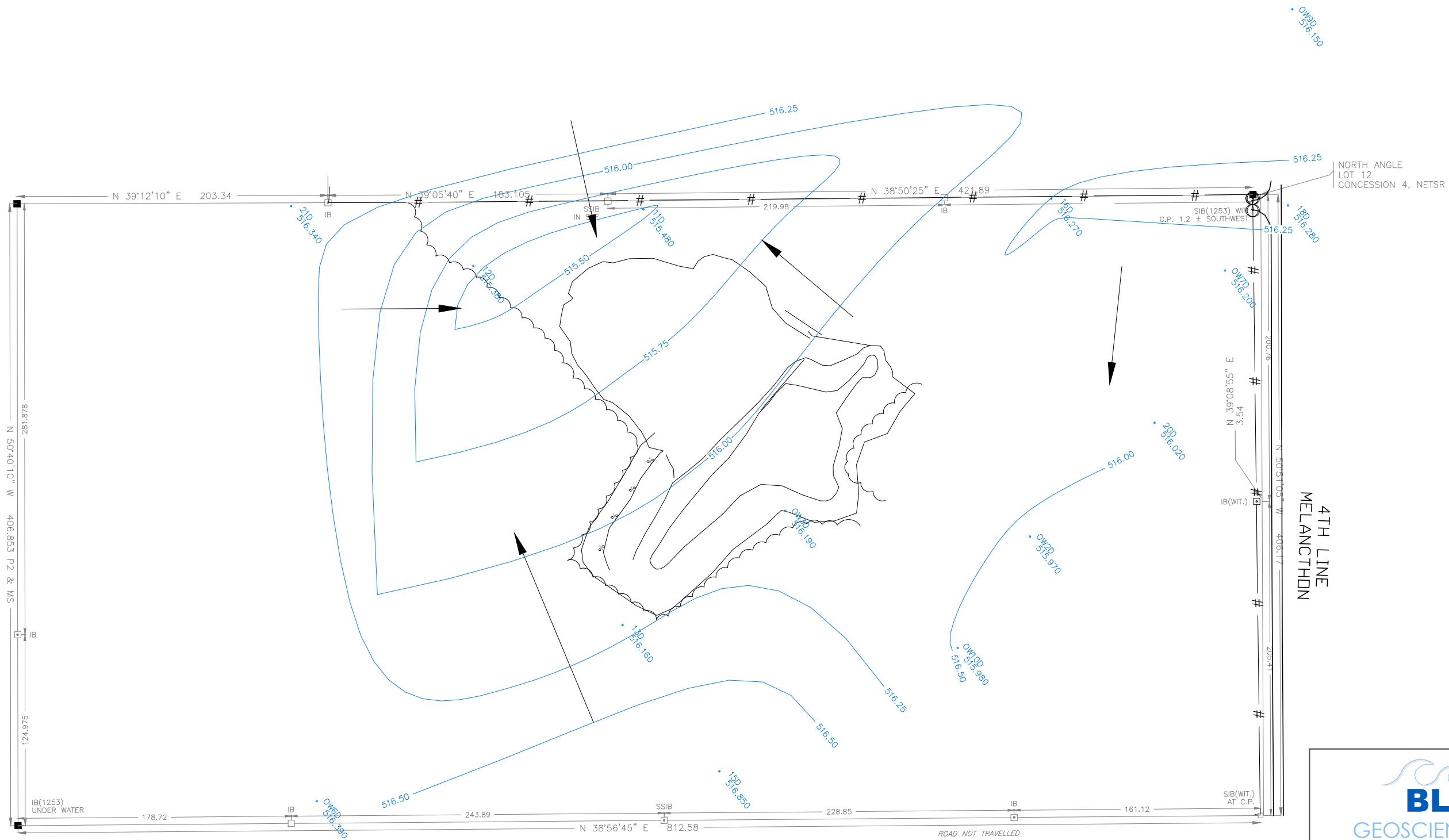
			
TOWNSHIP OF MELANCTHON LANDFILL			
DEEP AQUIFER GROUNDWATER FLOW			
SPRING 2024			
DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	<div style="font-size: 2em; font-weight: bold;">3</div>
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	




OW15S 515.800 MONITOR WELL GROUNDWATER ELEVATION  
 516.50 GROUNDWATER CONTOUR (0.5m INTERVAL)  
 → GW FLOW DIRECTION

			
TOWNSHIP OF MELANCTHON LANDFILL			
SHALLOW AQUIFER GROUNDWATER FLOW			
FALL 2024			
DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	4
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	





15D  
516.730      MONITOR WELL  
GROUNDWATER ELEVATION  
 515.2      GROUNDWATER CONTOUR (0.25m INTERVAL)  
 —————>      GW FLOW DIRECTION



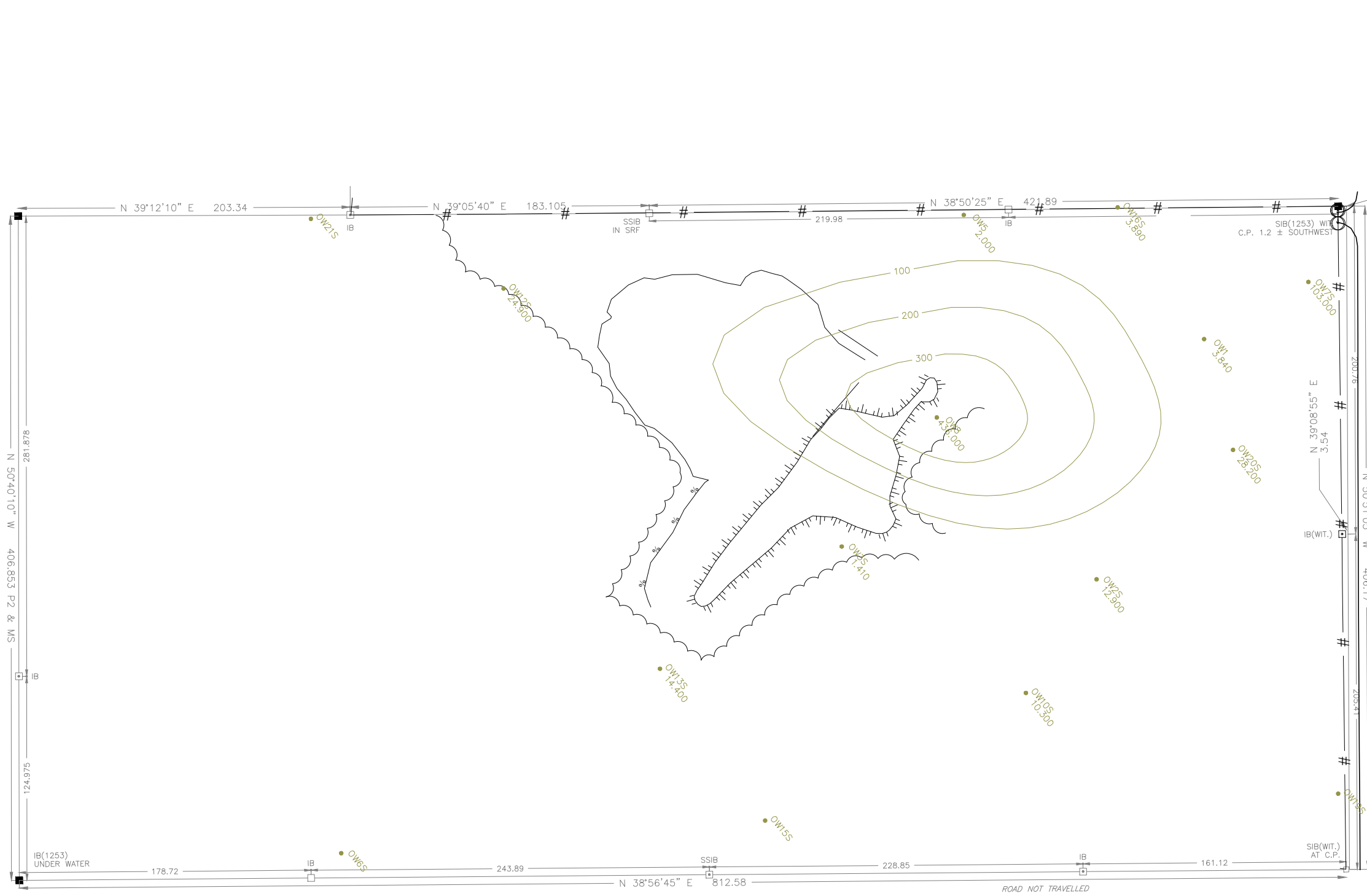
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TOWNSHIP OF MELANCTHON LANDFILL

DEEP AQUIFER GROUNDWATER FLOW

FALL 2024


DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO. 5
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	



● OW16S 3.720 MONITOR WELL  
 SULPHATE GW CONCENTRATION (mg/l)  
 — 200.0 — SULPHATE GW CONTOUR (100mg/L INTERVAL)

NORTH ANGLE  
LOT 12  
CONCESSION 4, NETSR

4TH LINE  
MELANCTHON



**BLUEWATER**  
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TOWNSHIP OF MELANCTHON LANDFILL

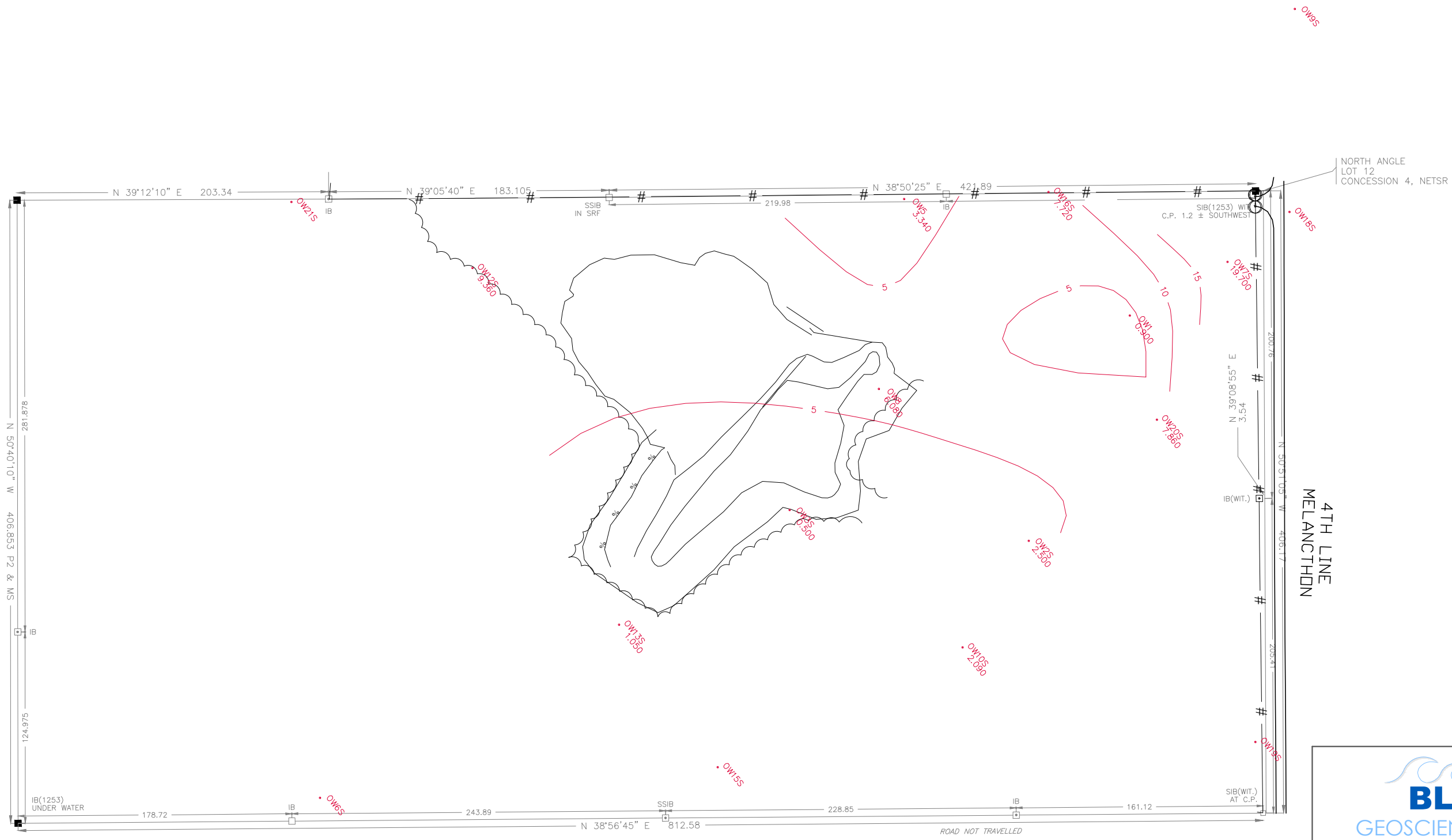
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SULPHATE G.W. CONCENTRATION


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SHALLOW AQUIFER — SPRING 2024

DRAWN BY: J.Y.	APPROVED BY: —	PROJECT NO: BG-900	FIGURE NO. 6
DESIGNED BY: —	DATE: DEC. 2024	SCALE: N.T.S.	



• OW20S 30.100 MONITOR WELL CHLORIDE GW CONCENTRATION (mg/L)  
— 10.0 — CHLORIDE GW CONTOUR (5mg/L INTERVAL)



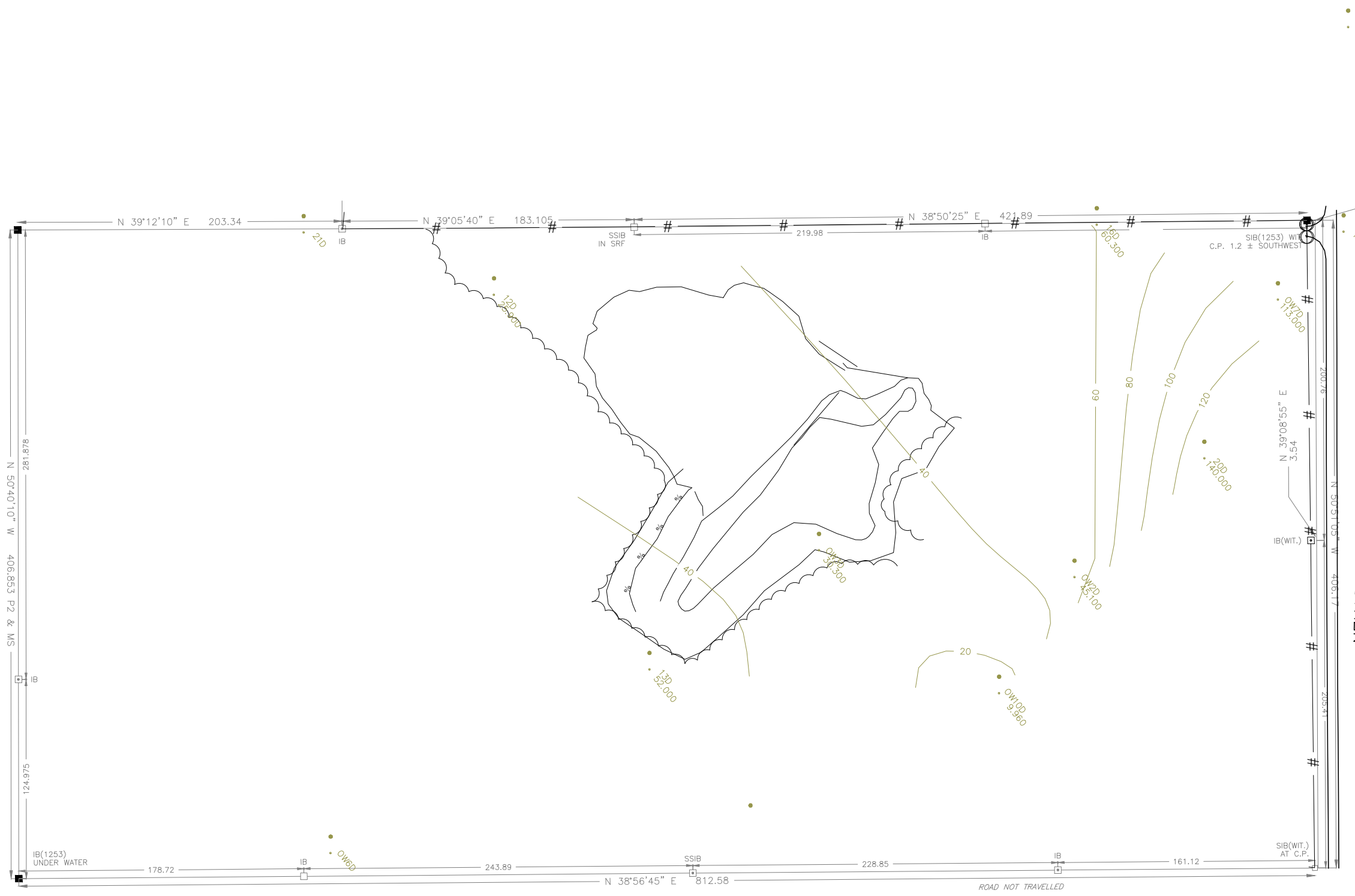
**BLUEWATER**  
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TOWNSHIP OF MELANCTHON LANDFILL

CHLORIDE G.W. CONCENTRATION

SHALLOW AQUIFER – SPRING 2024

DRAWN BY: J.Y.	APPROVED BY: —	PROJECT NO: BG-900	FIGURE NO. 7
DESIGNED BY: —	DATE: DEC. 2024	SCALE: N.T.S.	



NORTH ANGLE  
LOT 12  
CONCESSION 4, NETSR

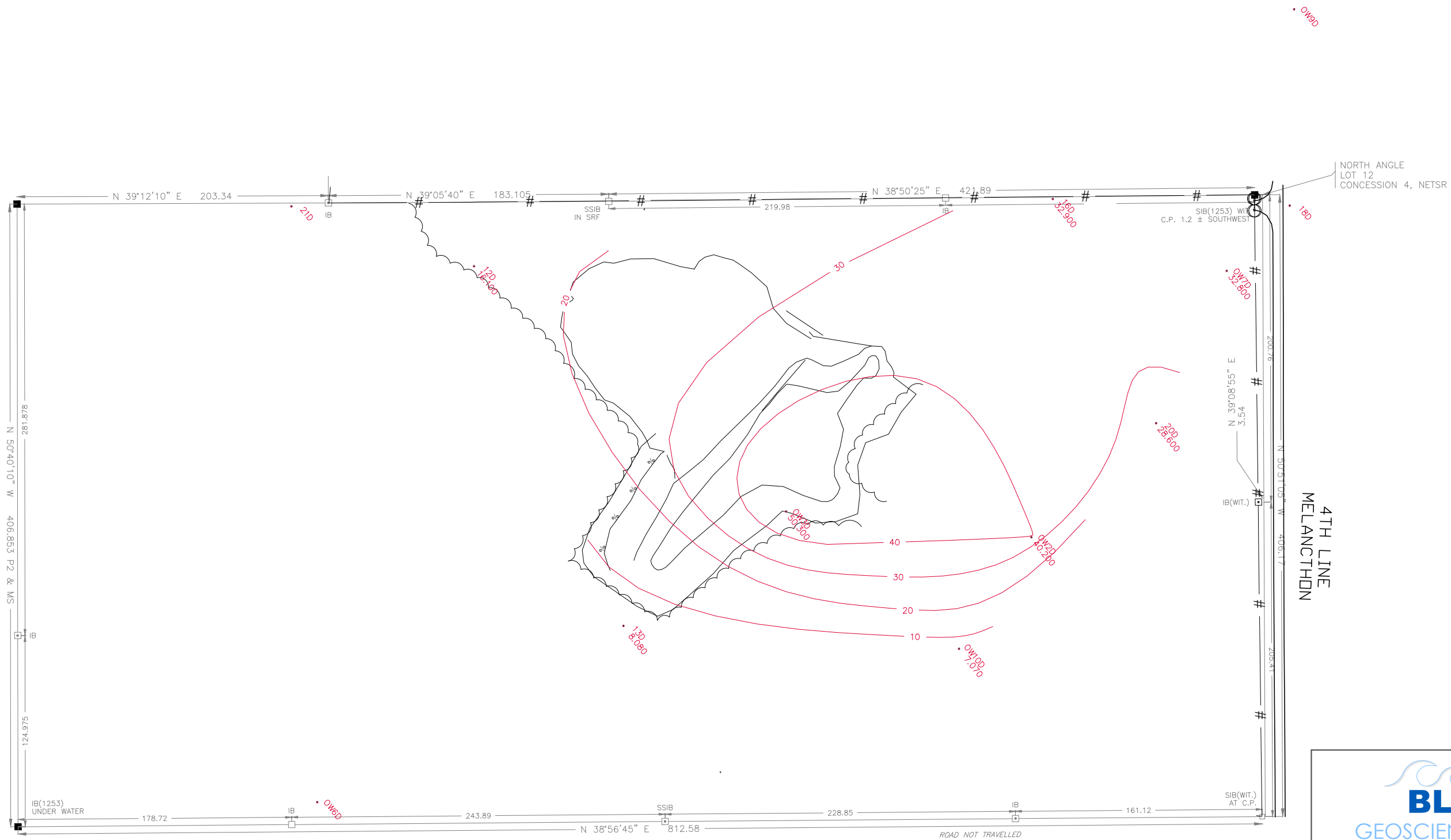
4TH LINE  
MELANCTHON



TOWNSHIP OF MELANCTHON LANDFILL  
SULPHATE G.W. CONCENTRATION  
DEEP AQUIFER – SPRING 2024


● OW16D MONITOR WELL  
48.100 SULPHATE GW CONCENTRATION (mg/l)  
— 20.0 — SULPHATE GW CONTOUR (20mg/L INTERVAL)

DRAWN BY: J.Y.	APPROVED BY: —	PROJECT NO: BG-900	FIGURE NO. 8
DESIGNED BY: —	DATE: DEC. 2024	SCALE: N.T.S.	



NORTH ANGLE  
 LOT 12  
 CONCESSION 4, NETSR

4TH LINE  
 MELANCTHON



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TOWNSHIP OF MELANCTHON LANDFILL

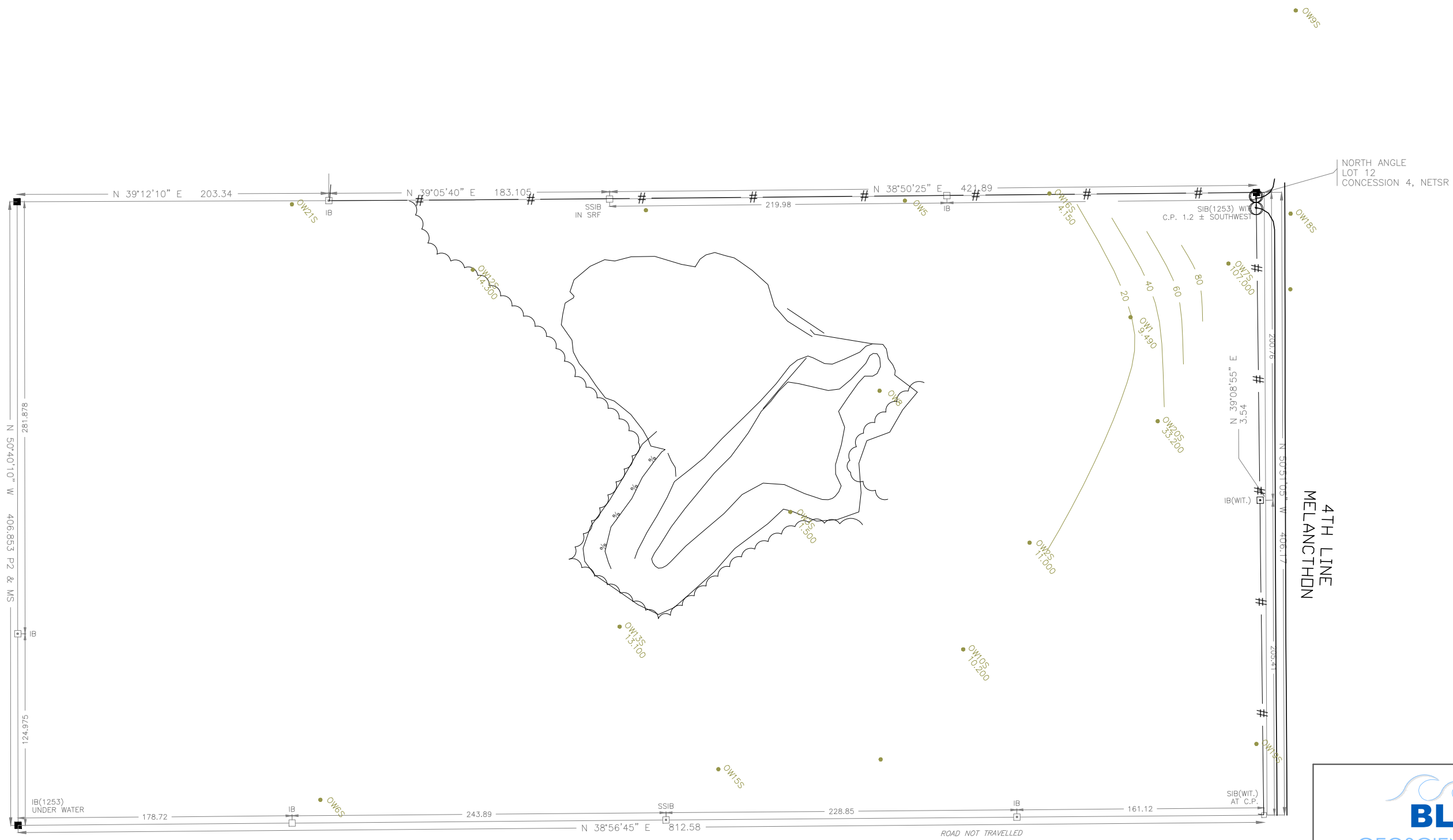
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CHLORIDE G.W. CONCENTRATION

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DEEP AQUIFER – SPRING 2024


DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO. 9
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	



● OW20S 31.400 MONITOR WELL  
 SULPHATE GW CONCENTRATION (mg/l)  
 100.0 SULPHATE GW CONTOUR (10mg/L INTERVAL)

NORTH ANGLE  
LOT 12  
CONCESSION 4, NETSR

4TH LINE  
MELANCTHON



**BLUEWATER**  
GEOSCIENCE CONSULTANTS Inc.

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TOWNSHIP OF MELANCTHON LANDFILL

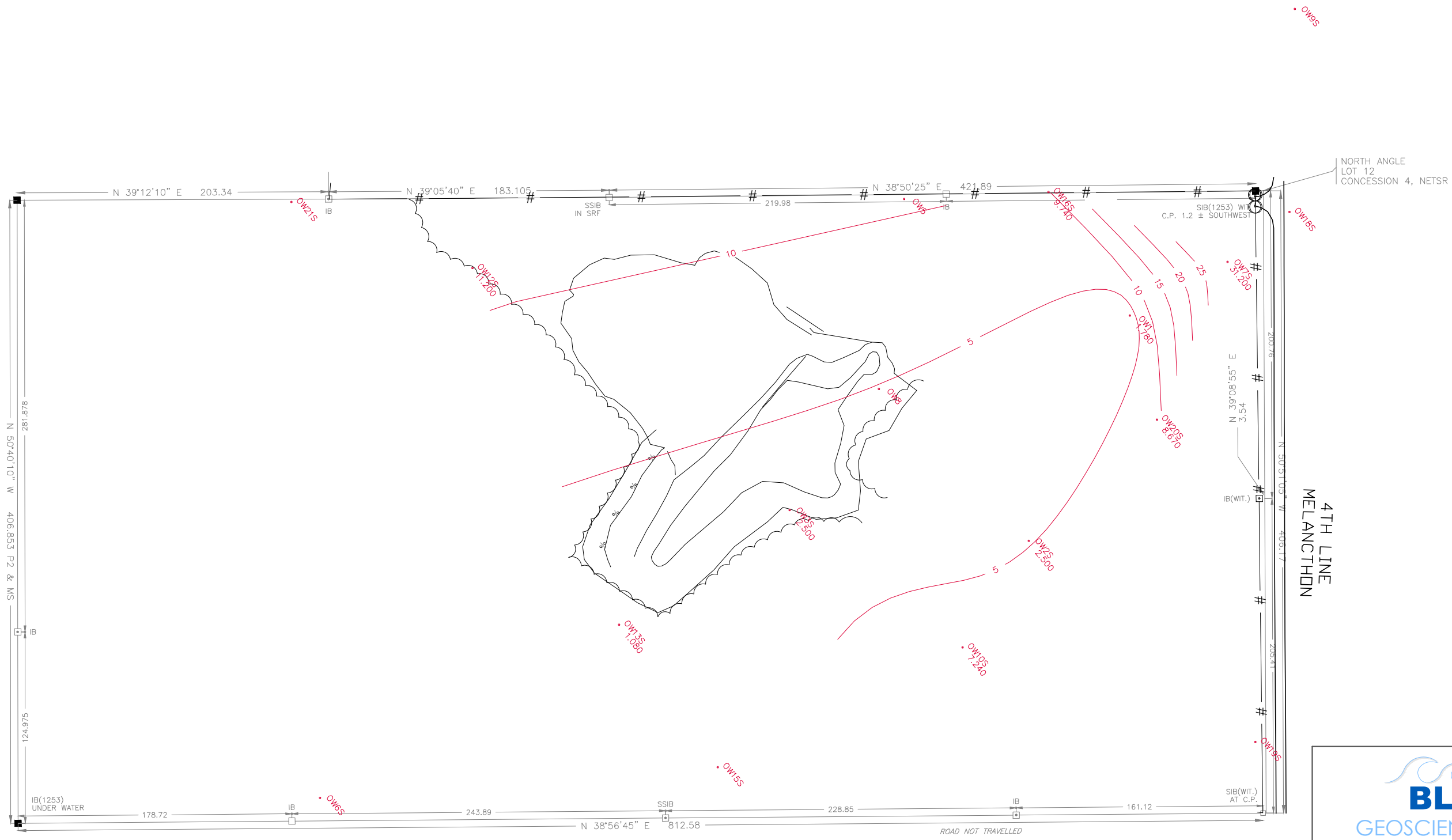
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SULPHATE G.W. CONCENTRATION


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SHALLOW AQUIFER – FALL 2024

DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO. 10
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	



• OW15S 0.910 MONITOR WELL CHLORIDE GW CONCENTRATION (mg/L)  
— 10.0 CHLORIDE GW CONTOUR (5mg/L INTERVAL)



**BLUEWATER**  
GEOSCIENCE CONSULTANTS Inc.

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TOWNSHIP OF MELANCTHON LANDFILL

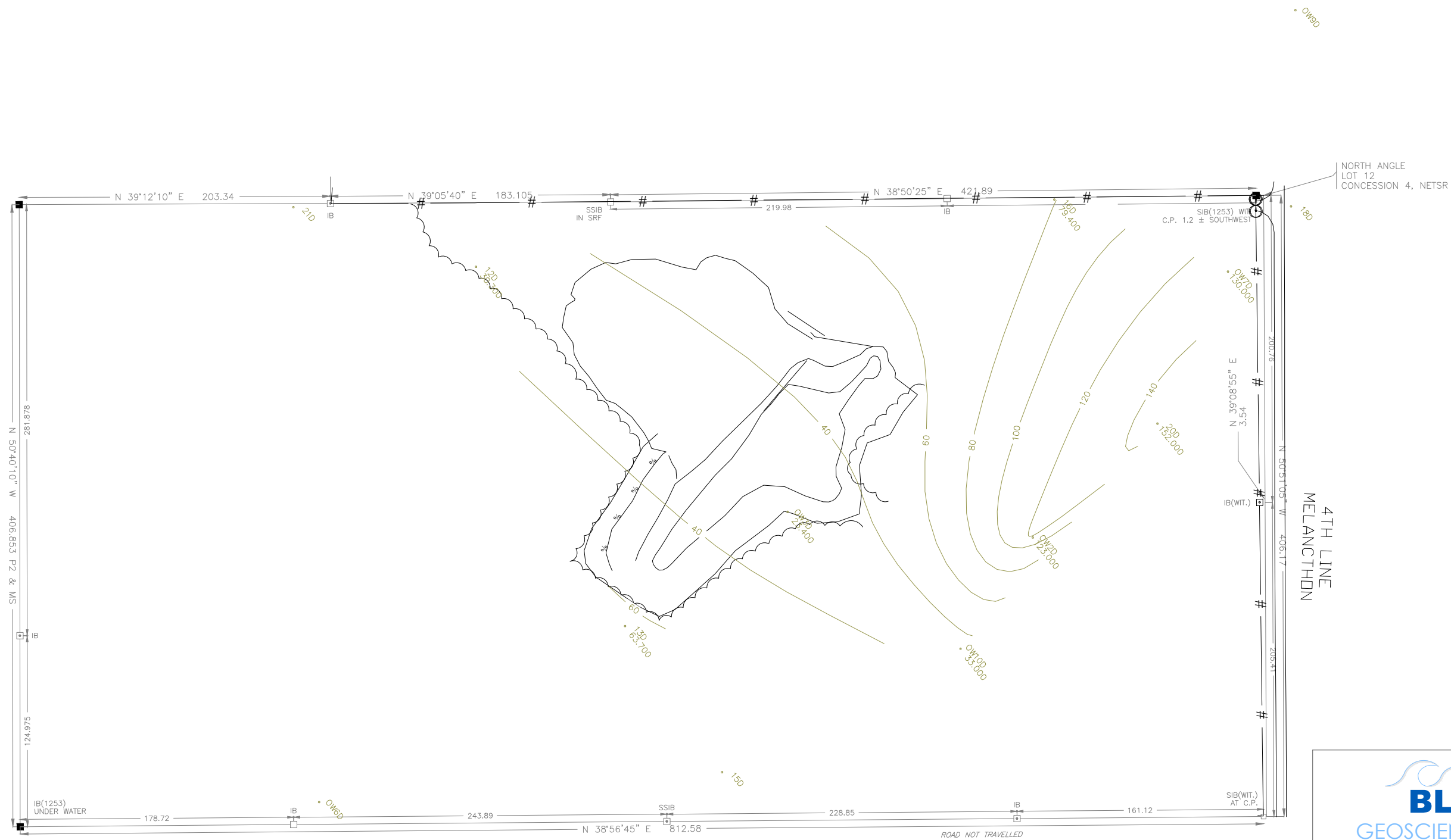
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CHLORIDE G.W. CONCENTRATION

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SHALLOW AQUIFER — FALL 2024

DRAWN BY: J.Y.	APPROVED BY: —	PROJECT NO: BG-900	FIGURE NO. 11
DESIGNED BY: —	DATE: DEC. 2024	SCALE: N.T.S.	



NORTH ANGLE  
LOT 12  
CONCESSION 4, NETSR

4TH LINE  
MELANCTHON



TOWNSHIP OF MELANCTHON LANDFILL

SULPHATE G.W. CONCENTRATION

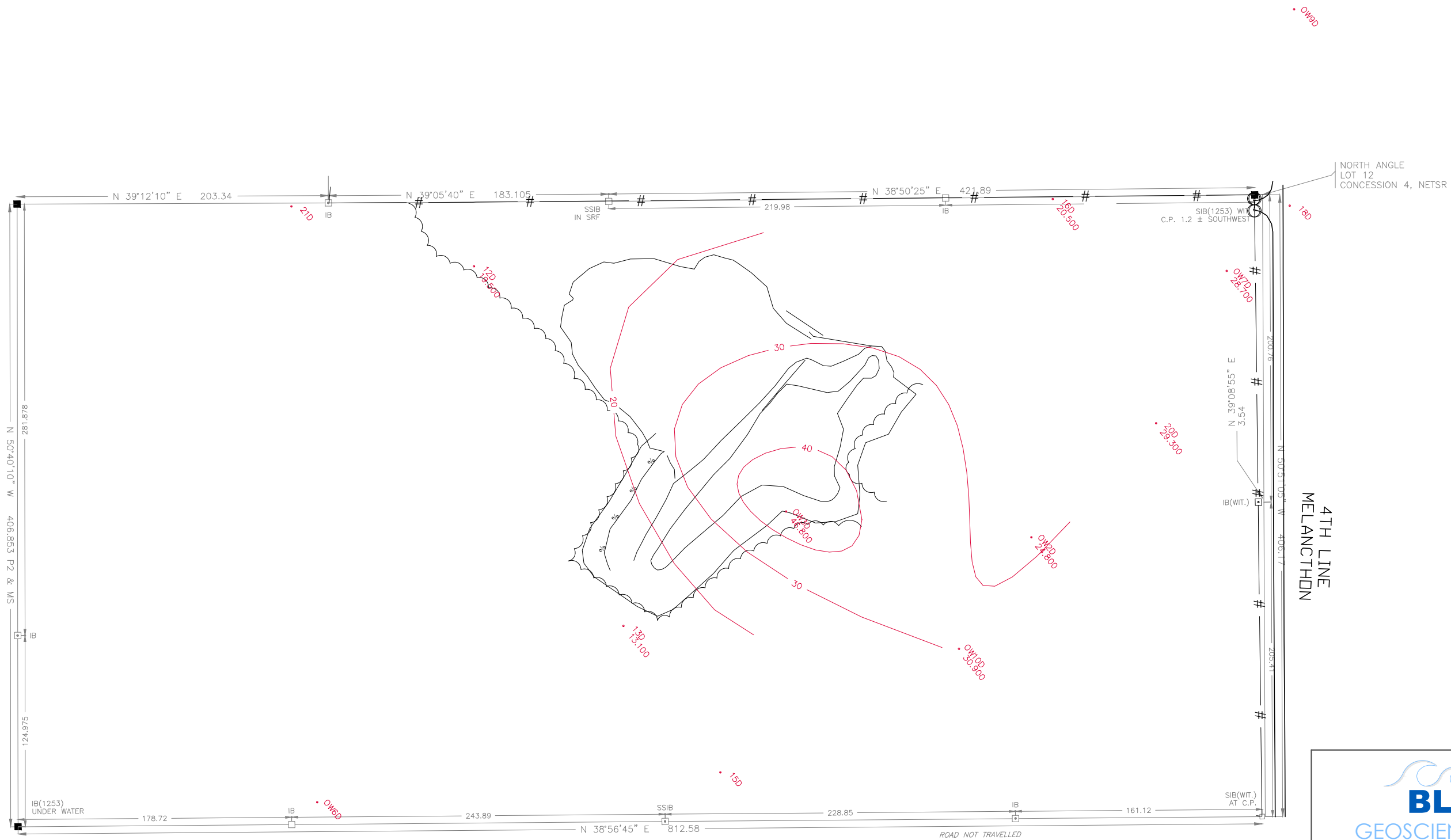
DEEP AQUIFER – FALL 2024

DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO. 12
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	


OW16D  
113.000  
MONITOR WELL  
SULPHATE GW CONCENTRATION (mg/l)

20.0  
SULPHATE GW CONTOUR (20mg/L INTERVAL)





OW15D MONITOR WELL  
 13.500 CHLORIDE GW CONCENTRATION (mg/L)  
 20.0 CHLORIDE GW CONTOUR (10mg/L INTERVAL)



**BLUEWATER**  
GEOSCIENCE CONSULTANTS Inc.

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TOWNSHIP OF MELANCTHON LANDFILL

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CHLORIDE G.W. CONCENTRATION

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DEEP AQUIFER – FALL 2024

DRAWN BY: J.Y.	APPROVED BY: -	PROJECT NO: BG-900	FIGURE NO. 13
DESIGNED BY: -	DATE: DEC. 2024	SCALE: N.T.S.	

APPENDIX B

GROUNDWATER AND METHANE MONITORING  
AND  
LABORATORY RESULTS TABLES



**Table 2:  
Headspace Methane Concentrations**

Well	Methane Conc. (ppm) 1-May-09	Methane Conc. (ppm) 10-Nov-10	Methane Conc. (ppm) 10-May-11	Methane Conc. (ppm) 31-Oct-11	Methane Conc. (ppm) 21-May-12	Methane Conc. (ppm) 24-Oct-12	Methane Conc. (ppm) 22-Apr-13	Methane Conc. (ppm) 4-Nov-13	Methane Conc. (ppm) 28-Apr-14	Methane Conc. (ppm) 22-Oct-14	Methane Conc. (ppm) 28-Apr-15	Methane Conc. (ppm) 22-Oct-15	Methane Conc. (ppm) 3-May-16	Methane Conc. (ppm) 19-Oct-16	Methane Conc. (ppm) 25-Apr-17	Methane Conc. (ppm) 25-Oct-17	Methane Conc. (ppm) 30-Apr-18	Methane Conc. (ppm) 25-Oct-18	Methane Conc. (ppm) 30-Apr-19	Methane Conc. (ppm) 25-Oct-19	Methane Conc. (ppm) 28-Apr-20	Methane Conc. (ppm) 14-Oct-20	Methane Conc. (ppm) 18-May-21	Methane Conc. (ppm) 13-Oct-21	Methane Conc. (ppm) 4-May-22	Methane Conc. (ppm) 25-Oct-22	Methane Conc. (ppm) 3-May-23	Methane Conc. (ppm) 18-Oct-23	Methane Conc. (ppm) 25-Apr-24	Methane Conc. (ppm) 22-Oct-24	
OW1	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	
OW2S	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	
OW2D	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	
OW3S	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	
OW3D	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	
OW4S	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
OW4D	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
OW5	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	
OW6S	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	
OW6D	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	
OW7S	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	
OW7D	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	
OW8	0	0	10	10	15	10	15	10	25	15	20	10	15	10	10	5	5	5	10	5	5	5	5	5	0	5	0	5	0	5	0
OW9S	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	
OW9D	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	
OW10S	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	
OW10D	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	
OW11S	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	
OW11D	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	
OW12S	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	
OW12D	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	
OW13S	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	
OW13D	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	
OW14S	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	
OW15S	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	
OW15D	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	
OW16S	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	
OW16D	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	
OW17S	0	0	0	0	0	0	0	0	0	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	Destroyed	
OW18S	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	
OW18D	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	
OW-19S	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	
OW-20S	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	
OW-20D	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	
OW021S	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	
OW-21D	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	



1,2-Dichloropropane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
1,3-Dichlorobenzene	N/V	630	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
1,4-Dichlorobenzene	5	1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON



Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







Well ID				OW3S															
Data Sampled				25-Apr-17	25-Oct-17	30-Apr-18	25-Oct-18	23-May-19	23-Oct-19	28-Apr-20	4-Oct-20	18-May-21	13-Oct-21	4-May-22	25-Oct-22	3-May-23	18-Oct-23	25-Apr-24	22-Oct-24
Parameter	ODWS	SCS	RUP																
Color, Apparent (C.U.)	5	N/V	N/V	209	25.3	15.4	18	120	29.2	33.7	31.7	22.1	7.5	33.5	25.2	73.4	41.1	648.0	1010.0
Conductivity (umhos/cm)	N/V	N/V	N/V	679	722	681	653	637	680	656	564	713	719	624	704	586	524	658	556
Hardness (as CaCO3 - mg/L)	80-100	N/V	N/V	459	446	440	401	459	485	439	637	483	462	447	436	NT	NT	751	439
pH (pH units)	6.5-8.5	N/V	8.2	7.58	7.01	7.49	7.93	7.82	7.27	7.28	7.62	7.42	7.27	7.62	7.26	7.54	7.74	7.26	7.85
Total Dissolved Solids (mg/L)	N/V	N/V	394	408	450	409	437	431	449	377	409	381	409	437	370	344	390	368	369
Turbidity (NTU)	1	N/V	N/V	245	701	339	665	396	620	219	327	244	276	239	161	376	235	235	263
Alkalinity, Total (mg/L)	30-500	N/V	391.5	382	428	413	375	429	405	383	396	389	414	373	413	384	332	409	401
Ammonia as N (mg/L)	N/V	N/V	N/V	0.24	0.195	<0.02	0.082	0.066	0.201	0.344	<0.01	<0.01	0.107	0.292	<0.010	0.014	0.0126	<0.0050	0.251
Chloride (mg/L)	250	250	125.5	0.61	0.77	<0.5	<0.5	<0.5	0.54	0.88	<0.5	0.61	<0.5	<0.50	<0.50	<0.5	<0.50	<0.50	<2.50
Fluoride (mg/L)	1.5	N/V	0.45	<0.02	<0.02	<0.02	<0.02	0.022	0.028	0.028	0.028	0.028	0.029	<0.020	<0.020	<0.020	<0.020	<0.020	<0.100
Nitrite-N (mg/L)	1	1	0.3	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020	<0.100
Nitrate-N (mg/L)	10	10	2.6	0.039	0.066	0.058	<0.02	0.033	<0.02	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	0.037	<0.010	<0.050
Phosphate-P (ortho)	N/V	N/V	N/V	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.0030	<0.0030	<0.0030	<0.0030	0.0017	<0.0010
Sulphate (mg/L)	500	N/V	253.9	2.72	3.32	1.42	1.49	1.16	1.33	2.1	1.25	1.4	1.07	0.58	0.86	0.59	0.76	1.41	<1.50
<b>Metal Scan-Total</b>	<b>Units: mg/L</b>			<b>mg/L</b>															
Aluminum (Al)-Total	N/V	N/V	0.0525	<0.01	<0.010	<0.010	<0.010	0.0054	1.17	<0.0050	<0.0050	0.0057	<0.0050	0.0146	0.0080	0.302	0.0134	0.0178	0.0040
Antimony (Sb)-Total	N/V	0.006	N/V	<0.0050	<0.0050	<0.0050	<0.0050	0.00012	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Total	0.025	0.025	N/V	0.0010	<0.0010	<0.0010	<0.0010	0.00092	0.00315	0.00134	0.00067	0.00046	0.00079	0.00160	0.00079	0.00162	0.00222	0.00118	0.00386
Barium (Ba)-Total	1	1	N/V	0.093	0.031	0.049	0.108	0.102	0.203	0.142	0.0777	0.0579	0.0742	0.120	0.0697	0.115	0.0675	0.119	0.109
Beryllium (Be)-Total	N/V	0.004	N/V	<0.0010	<0.0010	<0.0010	<0.0010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.000020	<0.000020	0.000026	<0.000020	<0.000020	<0.000020
Bismuth (Bi)-Total	N/V	N/V	N/V	<0.0010	<0.0010	<0.0010	<0.0010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Total	5	5	2.5025	0.138	<0.050	0.09	0.185	0.166	0.312	0.254	0.117	0.087	0.110	0.208	0.109	0.205	0.099	0.205	0.196
Cadmium (Cd)-Total	0.005	0.005	N/V	<0.000090	<0.000090	<0.000090	<0.000090	0.0000065	0.0000818	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.0000264	<0.000050	<0.000050	<0.000050
Calcium (Ca)-Total	N/V	N/V	N/V	125	116	131	139	124	173	134	134	129	127	124	129	124	109	127	123
Chromium (Cr)-Total	0.05	0.05	N/V	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00173	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00068	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Total	N/V	0.1	N/V	<0.00050	<0.00050	<0.00050	<0.00050	0.00012	0.00078	0.00070	<0.00010	<0.00010	0.00015	0.00024	0.00024	0.00073	0.00117	0.00041	0.00136
Copper (Cu)-Total	1	0.023	0.5007	<0.0010	<0.0010	<0.0010	<0.0010	0.00046	0.00333	0.00061	0.00057	0.00063	0.00039	0.00077	0.00071	0.00208	0.00046	0.00123	<0.00020
Iron (Fe)-Total	0.3	N/V	0.17	1.89	0.089	0.32	2.35	2.06	5.23	2.91	1.30	0.860	1.40	3.43	1.38	3.46	2.66	3.83	6.18
Lead (Pb)-Total	0.01	0.01	0.0027	<0.0010	<0.0010	<0.0010	<0.0010	<0.000050	0.0184	<0.000050	0.000054	0.000164	<0.000050	0.000295	0.000075	0.00210	0.000135	0.000170	<0.000050
Magnesium (Mg)-Total	N/V	N/V	87	30.8	27.1	32.1	33.6	31.0	50.1	35.8	30.8	30.3	29.1	33.6	30.2	36.1	25.9	32.9	32.0
Manganese (Mn)-Total	0.05	N/V	0.09	0.100	0.0967	0.216	0.109	0.106	0.394	0.387	0.0662	0.0459	0.0908	0.180	0.119	0.269	0.381	0.205	0.412
Molybdenum (Mo)-Total	N/V	7.3	N/V	<0.0010	<0.0010	<0.0010	<0.0010	0.000317	0.000208	0.000261	0.000290	0.000268	0.000300	0.000210	0.000349	0.000239	0.000569	0.000314	0.000726
Nickel (Ni)-Total	N/V	0.1	N/V	<0.0020	<0.0020	<0.0020	<0.0020	0.00080	0.00250	0.00153	0.00067	<0.00050	<0.00050	0.00108	0.00134	0.00136	0.00130	0.00123	0.00161
Phosphorus (P)-Total	N/V	N/V	N/V	<0.050	<0.050	<0.050	<0.050	<0.050	0.076	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Total	N/V	N/V	N/V	4.6	1.2	2.2	5	5.40	9.68	8.37	3.29	2.72	3.75	6.77	3.76	7.09	3.30	6.70	6.16
Selenium (Se)-Total	0.01	0.01	N/V	<0.00040	0.00062	<0.00040	<0.00040	0.000151	0.000150	0.000345	0.000253	0.000266	0.000155	0.00104	0.000116	0.000356	0.000174	0.000637	0.000310
Silicon (Si)-Total	N/V	N/V	N/V	3.7	3.7	3.7	4.5	3.87	7.48	4.83	4.50	3.86	4.33	4.08	4.58	4.42	4.18	4.29	4.99
Silver (Ag)-Total	N/V	0.0012	N/V	<0.00010	<0.00010	<0.00010	<0.00010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Sodium (Na)-Total	N/V	N/V	100.5	10.8	4.68	7.03	13.1	11.8	21.7	18.3	8.63	6.38	7.69	12.6	7.39	12.2	7.22	13.2	12.2
Strontium (Sr)-Total	N/V	N/V	N/V	0.263	0.215	0.245	0.29	0.288	0.378	0.325	0.278	0.239	0.253	0.290	0.236	0.276	0.220	0.289	0.281
Thallium (Tl)-Total	N/V	0.002	N/V	<0.00030	<0.00030	<0.00030	<0.00030	<0.000010	<0.000040	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	0.000010	<0.000010	<0.000010	<0.000010
Tin (Sn)-Total	N/V	N/V	N/V	<0.0010	<0.0010	<0.0010	<0.0010	<0.00010	0.00019	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Total	N/V	N/V	N/V	<0.0020	<0.0020	<0.0020	<0.0020	<0.00030	0.0524	<0.00030	<0.00030	<0.00030	<0.00030	0.00047	<0.00030	0.0106	0.00054	0.00126	<0.00030
Tungsten (W)-Total	N/V	N/V	N/V	<0.010	<0.010	<0.010	<0.010	<0.00010	0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00016	<0.00010	0.00020
Uranium (U)-Total	N/V	N/V	N/V	<0.0050	<0.0050	<0.0050	<0.0050	0.000466	0.000541	0.000474	0.000590	0.000460	0.000536	0.000424	0.000548	0.000468	0.000486	0.000469	0.000365
Vanadium (V)-Total	N/V	0.2	N/V	<0.0010	<0.0010	<0.0010	<0.0010	<0.00050	0.00257	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00092	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	5	1.1	0.005	<0.0030	<0.0030	<0.0030	<0.0030	0.0012	0.0376	0.0031	0.0013	0.0017	<0.0010	0.0053	0.0026	0.0068	0.0026	0.0043	0.0029
Zirconium (Zr)-Total	N/V	N/V	N/V	<0.0040	<0.0040	<0.0040	<0.0040	0.00031	0.00193	0.00052	<0.00030	<0.00030	<0.00030	0.00058	0.00026	0.00079	0.00026	0.00048	0.00052
<b>Volatile Organics</b>	<b>Units: µg/L</b>			<b>µg/L</b>															
1,1,1,2-Tetrachloroethane	N/V	200	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
1,1,2,2-Tetrachloroethane	N/V	1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
1,1,1-Trichloroethane	N/V	200	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
1,1,2-Trichloroethane	N/V	5	N/V	<0.5	NT	<0.5	NT												

2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON





2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	2.8	NT	2.8	NT	2.8	NT	2.8	NT	NT	NT	NT	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	NT	NT	NT	NT	NT	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	1	NT	1	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON



2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	2.4	NT	2.4	NT	<2	NT	<2	NT	<2	NT	1.1	NT	1.1	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON









2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	1.2	NT	1.2	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	NT	NT	NT	NT	NT	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	2.5	NT	2.5	NT	2.5	NT	2.5	NT	1.5	NT	1.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON









2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1.0	NT	<1.0	NT	<1.0	NT	<1.0	NT	<1.0	NT	NT	NT	NT	NT	NT	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	3.1	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







2-Chloroethylvinyl Ether	N/V	N/V	N/V	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
2-Hexanone	N/V	N/V	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Acetone	N/V	300	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Benzene	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromodichloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromoform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Bromomethane	N/V	10	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Carbon Disulfide	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Carbon tetrachloride	5	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chlorobenzene	N/V	30	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloroethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Chloroform	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Chloromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
cis-1,2-Dichloroethylene	N/V	70	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
cis-1,3-Dichloropropene	N/V	1.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dibromochloromethane	N/V	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Dichlorodifluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Dichloromethane	50	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Ethyl Benzene	2.4	2.4	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
m+p-Xylenes	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Methyl Ethyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
Methyl Isobutyl Ketone	N/V	350	N/V	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT	<20	NT
MTBE	N/V	700	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
o-Xylene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Styrene	N/V	100	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Tetrachloroethylene	30	5	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Toluene	24	24	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,2-Dichloroethylene	N/V	0.1	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
trans-1,3-Dichloropropene	N/V	N/V	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichloroethylene	50	50	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Trichlorofluoromethane	N/V	N/V	N/V	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT	<1	NT
Trihalomethanes (total)	100	N/V	N/V	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT	<2	NT
Vinyl chloride	2	1.3	N/V	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT	<0.5	NT
Xylenes (Total)	300	300	N/V	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT	<1.5	NT

**Notes:**

**OWDS** - Ontario Drinking Water Standards (mg/L) from Ont. Reg. 169/03

**SCS** - Table 2 Site Condition Standards (mg/L) from Ont. Reg. 153/04

**RUP** - Reasonable Use Policy from Guideline B-7, MOEE, 1994

Values shown in **BOLD** exceed ODWS

**N/V** - No Value. No maximum concentration assigned.

**NT** - Not Tested, no analysis completed for this parameter/sample

Analyses completed at ALS Laboratory Group in Waterloo, ON







## APPENDIX C

### LABORATORY CERTIFICATES OF ANALYSIS



## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

<p><b>Work Order</b> : <b>WT2410007</b></p> <p><b>Client</b> : <b>Bluewater Geoscience Consultants Inc.</b></p> <p><b>Contact</b> : Breton Lemieux</p> <p><b>Address</b> : 42 Shadyridge Place Kitchener ON Canada N2N 3J1</p> <p><b>Telephone</b> : 519 744 4123</p> <p><b>Project</b> : BG-900</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1081630</p> <p><b>Sampler</b> : BJL</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : SOA</p> <p><b>No. of samples received</b> : 19</p> <p><b>No. of samples analysed</b> : 19</p>	<p><b>Page</b> : 1 of 88</p> <p><b>Laboratory</b> : ALS Environmental - Waterloo</p> <p><b>Account Manager</b> : Gayle Braun</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : +1 519 886 6910</p> <p><b>Date Samples Received</b> : 25-Apr-2024 14:05</p> <p><b>Date Analysis Commenced</b> : 25-Apr-2024</p> <p><b>Issue Date</b> : 01-May-2024 19:21</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Guideline Comparison

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Kelly Fischer	Technical Specialist	Inorganics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Inorganics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Metals, Waterloo, Ontario
Sarah Birch	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.

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

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

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

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

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

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

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

## Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLHC	<i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i>
DLM	<i>Detection Limit Adjusted due to sample matrix effects (e.g. chemical interference, colour, turbidity).</i>
DLUI	<i>Detection Limit Raised: Unknown interference generated an apparent false positive test result.</i>



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-1	25-Apr-2024 00:00	WT2410007-001	ONDWS AO/OG	ONDWS MAC	--	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	404	30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	45.7	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	722	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	431	80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.58	6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	378	DLDS 500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	27.5	5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	0.90	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.023	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.036	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0024	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	3.84	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0015	0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00021	--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0408	--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.089	--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000232	--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	106	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00025	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00058	1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-001 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.161	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000051	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0025	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	40.5	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0267	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000227	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00112	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	3.12	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00111	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000148	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	5.05	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	6.25	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.170	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	6.70	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000055	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00012	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000549	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0111	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-001 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-001 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-1	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	45.7 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	431 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	27.5 NTU	5 NTU

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW2-S	25-Apr-2024 00:00	WT2410007-002	ONDWS AO/OG	ONDWS MAC	--	--
Sub-Matrix: Groundwater (Matrix: Water)				Client sample ID						
				Sampling date/time						
				WT2410007-002						
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	686	30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	70.2	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1120	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	669	80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.38	6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	602 DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	37.5	5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	<2.50 DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100 DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100 DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	12.9 DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0016	0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00139	--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0687	--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.314	--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	151	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00132	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020	1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-002 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.938	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000080	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0080	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	71.0	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.174	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000214	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00295	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.14	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00089	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000500	DLM	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	8.16	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000100	DLM	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	11.0	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.214	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	6.71	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000035	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00030	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000593	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0040	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-002 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-002 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW2-S	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	686 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	70.2 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	669 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	602 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	37.5 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.938 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.174 mg/L	0.05 mg/L



**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW2-D	25-Apr-2024 00:00	WT2410007-003	ONDWS AO/OG	ONDWS MAC	--	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	705		30 - 500 mg/L	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	57.6		5 CU	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1380		--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	646		80 - 100 mg/L	--	--	--	--
pH	E108/WT	0.10	pH units	7.27		6.5 - 8.5 pH units	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	705	DLDS	500 mg/L	--	--	--	--
Turbidity	E121/WT	0.10	NTU	16.5		5 NTU	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	11.2	DLHC	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	40.2	DLDS	250 mg/L	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0020	DLM	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	45.1	DLDS	500 mg/L	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0048		0.1 mg/L	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.0110		--	0.01 mg/L	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.230		--	1 mg/L	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.576		--	5 mg/L	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050		--	0.005 mg/L	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	144		--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00744		--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00076		1 mg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-003 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	7.31	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000252	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0039	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	69.6	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.765	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000765	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.0204	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	14.8	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00385	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000290	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	7.58	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	43.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.399	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	14.9	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000194	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00040	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00102	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0193	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00100	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	0.61	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-003 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	0.57	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	0.56	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-003 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	117	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW2-D	Water	Alkalinity, total (as CaCO <sub>3</sub> )		ONDWS	AO/OG	705 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	57.6 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	646 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	705 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	16.5 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	7.31 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.765 mg/L	0.05 mg/L
	Water	Arsenic, dissolved	Health basis of MAC: Cancer (lung, bladder, liver, skin) (classified as human carcinogen). Other: Skin, vascular and neurological effects (numbness and tingling of extremities).	ONDWS	MAC	0.0110 mg/L	0.01 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	43.2 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-3S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	409		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	648	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	658		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	453		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.71		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	368	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	235		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	<0.50		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.020		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0017		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	1.41		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0178		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00118		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.119		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.205		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	127		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00041		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00123		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-004 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	3.83	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000170	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0015	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	32.9	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.205	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000314	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00123	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	6.70	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00165	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000637	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.29	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	13.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.289	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	3.55	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	0.00126	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000469	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0043	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00048	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-004 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-004 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-3S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	648 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	453 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	235 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	3.83 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.205 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-3D		ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sampling date/time	25-Apr-2024	00:00						
Sub-Matrix: Groundwater (Matrix: Water)				WT2410007-005								
<b>Physical Tests</b>												
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	995	DLHC	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	1070	DLM	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1840		--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	751		80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.26		6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	958	DLDS	500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	253		5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>												
Ammonia, total (as N)	E298/WT	0.0050	mg/L	36.9	DLHC	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	50.3	DLDS	250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	30.3	DLDS	500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>												
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0183		0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00591		--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.433		--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.882		--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000106		--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	193		--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00103		--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00086		--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00045		1 mg/L	--	--	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-005 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	19.0	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000364	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0020	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	65.4	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.740	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000133	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00341	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	27.4	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00632	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.00396	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	7.29	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	53.9	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.687	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	14.1	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	0.00014	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00090	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000247	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00114	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0047	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00235	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	1.97	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-005 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	0.67	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	1.55	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	0.65	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--

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 Work Order : WT2410007  
 Client : Bluewater Geoscience Consultants Inc.  
 Project : BG-900



Analyte	Method/Lab	LOR	Unit	WT2410007-005 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	2.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	116	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-3D	Water	Alkalinity, total (as CaCO <sub>3</sub> )		ONDWS	AO/OG	995 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	1070 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	751 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	958 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	253 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	19.0 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.740 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	53.9 mg/L	20 mg/L
	Water	Benzene	Health basis of MAC: Bone marrow (red and white blood cell) changes and cancer (classified as human carcinogen). Other: Blood system and immunological responses.	ONDWS	MAC	1.97 µg/L	1 µg/L

**Key:**  
 ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-5	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-006							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	214		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	156	DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	407		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	275		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.03		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	224	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	105		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0244		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	3.34		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.031		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.42		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0097		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	2.00		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.194		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00036		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0105		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.015		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000340		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	71.0		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000018		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00054		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00022		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00277		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-006 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.406	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00184	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	23.7	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0503	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000145	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00058	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.42	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00066	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000286	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	2.25	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	1.34	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.0728	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	1.07	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00600	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000199	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00053	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0053	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-006 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-006 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	114	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-5	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	156 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	275 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	105 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.194 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.406 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.0503 mg/L	0.05 mg/L





**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-7S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	645		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	3620	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1130		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	638		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.35		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	728	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	2190		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.156		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	19.7	DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	103	DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0080		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00012		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00047		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0834		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.133		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.000102		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	173		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00061		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00341		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-007 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.345	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	50.1	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.594	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000720	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00196	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.54	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00050	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000248	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.60	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	13.3	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.247	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	36.3	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00461	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0425	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00075	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-007 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-007 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-7S	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	645 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	3620 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	638 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	728 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	2190 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.345 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.594 mg/L	0.05 mg/L



**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-7D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	609		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	201	DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1330		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	655		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.55		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	774	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	64.0		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	9.82	DLHC	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	32.8	DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	2.10	DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	113	DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0040		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00109		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.119		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.532		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000212		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	142		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00169		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00061		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-008 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	2.07	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000335	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0033	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	73.0	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.130	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000404	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00754	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	22.8	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00682	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000074	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.03	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	27.7	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.413	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	41.2	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000459	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00108	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0656	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00036	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-008 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-008 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	116	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-7D	Water	Alkalinity, total (as CaCO <sub>3</sub> )		ONDWS	AO/OG	609 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	201 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	655 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	774 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	64.0 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	2.07 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.130 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	27.7 mg/L	20 mg/L



**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-8	25-Apr-2024 00:00	WT2410007-009	ONDWS AO/OG	ONDWS MAC	--	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	409		30 - 500 mg/L	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	116		5 CU	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1410		--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	834		80 - 100 mg/L	--	--	--	--
pH	E108/WT	0.10	pH units	7.67		6.5 - 8.5 pH units	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	974	DLDS	500 mg/L	--	--	--	--
Turbidity	E121/WT	0.10	NTU	32.1		5 NTU	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0108		--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	6.08	DLDS	250 mg/L	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.10	DLDS	--	10 mg/L	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0015		--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	436	DLDS	500 mg/L	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0024		0.1 mg/L	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00011		--	0.006 mg/L	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00024		--	0.01 mg/L	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0326		--	1 mg/L	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.623		--	5 mg/L	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000215		--	0.005 mg/L	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	208		--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00013		--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00272		1 mg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-009 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	<0.010	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	76.3	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.00089	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000460	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00054	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	9.79	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00038	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000156	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	3.42	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	11.7	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.517	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	159	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000760	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0045	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-009 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-009 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-8	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	116 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	834 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	974 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	32.1 NTU	5 NTU

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-10S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-010							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	297		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	3120	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	496		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	291		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.95		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	282	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	1520		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0859		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	2.09		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.054		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	10.3		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0045		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00016		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0246		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.035		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000054		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	71.7		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00026		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00064		1 mg/L	--	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-010 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.035	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000286	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	27.1	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.312	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000590	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00134	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	0.863	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00052	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000056	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	2.34	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	2.74	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.0838	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	6.43	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000039	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000783	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0035	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-010 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-010 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	116	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-10S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	3120 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	291 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	1520 NTU	5 NTU
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.312 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-10D	ONDWS	ONDWS	--	--	--	--
Sub-Matrix: Groundwater (Matrix: Water)				Sampling date/time	AO/OG	MAC				
				WT2410007-011	25-Apr-2024 00:00					
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	354	30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	43.7	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	645	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	371	80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.88	6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	320	DLDS 500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	92.0	5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	1.33	DLHC --	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	7.07	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.037	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	9.96	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0016	0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00021	--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0808	--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.133	--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000265	--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	89.7	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00105	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00090	1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-011 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.031	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000342	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0013	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	35.8	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.709	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000682	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00423	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.87	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00140	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000082	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	3.40	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	6.66	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.155	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	20.1	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000180	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000452	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0152	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-011 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-011 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-10D	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	43.7 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	371 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	92.0 NTU	5 NTU
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.709 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-12S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-012							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	238		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	298	DLHC	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	583		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	394		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.93		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	338	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	597		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	9.36		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.038		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	10.1		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0013		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	24.9		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.532		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00042		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0179		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	0.000036		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.067		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000663		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	95.8		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000046		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00074		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00027		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00268		1 mg/L	--	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-012 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.452	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00720	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	37.7	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0444	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000227	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00106	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.42	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00142	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000121	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	2.81	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	3.92	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.104	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	9.32	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000029	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	0.0154	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00115	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00115	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0120	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00068	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-012 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-012 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	104	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-12S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	298 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	394 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	597 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.532 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.452 mg/L	0.3 mg/L
	Water	Nitrate (as N)	Health basis of MAC: Methaemoglobinaemia (blue baby syndrome) and effects on thyroid gland function in bottle-fed infants. Other: Classified as possible carcinogen under conditions that result in endogenous nitrosation. Systems using chloramine disinfection or that have naturally occurring ammonia should monitor the level of nitrate in the distribution system. Homeowners with a well should test concentration of nitrate in their water supply.	ONDWS	MAC	10.1 mg/L	10 mg/L

**Key:**  
 ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-12D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-013							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	293		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	37.8		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	677		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	348		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.88		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	387	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	12.4		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	16.1		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.034		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	8.18		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	25.9		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.101		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00026		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0167		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.076		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000717		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	89.5		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00010		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00208		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-013 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.110	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00117	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	30.2	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0206	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000527	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00119	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.12	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00067	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000148	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	2.45	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	5.42	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.102	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	8.60	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000058	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	0.00312	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00015	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00348	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0149	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-013 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-013 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	114	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	104	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-12D	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	37.8 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	348 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	12.4 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.101 mg/L	0.1 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-13S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-014							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	320		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	2840	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	556		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	329		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.99		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	298	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	939		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	<0.0050		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	1.05		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.034		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0011		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	14.4		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0152		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00032		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0160		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.021		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000076		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	83.3		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00081		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00013		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00115		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-014 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.152	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000387	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	29.4	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0197	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000384	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00078	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	0.552	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00036	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000994	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	2.29	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	3.20	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.0984	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	7.24	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00060	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000515	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0170	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-014 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-014 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-13S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	2840 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	329 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	939 NTU	5 NTU

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-13D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	425		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	296	DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	844		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	448		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.80		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	481	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	65.3		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	1.48	DLHC	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	8.08		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.020		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.122		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	52.0		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0149		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00122		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0524		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.109		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000163		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	115		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00034		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00127		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-015 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	1.43	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00140	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0012	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	39.0	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.126	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000764	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00259	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.82	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00145	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000253	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.44	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	8.44	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.206	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	18.2	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000059	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	0.00018	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00060	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000728	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.113	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00032	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-015 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-015 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	104	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-13D	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	296 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	448 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	65.3 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	1.43 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.126 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-16S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
				WT2410007-016							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	316		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	860	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	555		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	418		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.01		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	305	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	222		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0085		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	7.72		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.042		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.724		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0054		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	3.89		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.662		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00114		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0372		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	0.000034		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.054		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000575		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	106		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000056		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00108		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00046		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00444		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-016 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.825	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00556	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0021	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	37.2	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0888	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000472	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00169	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.78	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00220	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000062	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	7.04	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	4.92	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.149	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	4.15	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000047	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	0.00011	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.0300	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000828	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00150	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0110	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00077	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-016 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-016 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	104	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-16S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	860 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	418 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	222 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.662 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.825 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.0888 mg/L	0.05 mg/L



**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-16D	Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time	25-Apr-2024 00:00	WT2410007-017	ONDWS AO/OG	ONDWS MAC
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	513		30 - 500 mg/L	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	50.2		5 CU	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1120		--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	545		80 - 100 mg/L	--	--	--	--
pH	E108/WT	0.10	pH units	7.82		6.5 - 8.5 pH units	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	612	DLDS	500 mg/L	--	--	--	--
Turbidity	E121/WT	0.10	NTU	20.1		5 NTU	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	7.27	DLHC	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	32.9	DLDS	250 mg/L	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.72	DLDS	--	10 mg/L	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	60.3	DLDS	500 mg/L	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0300		0.1 mg/L	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00264		--	0.01 mg/L	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.116		--	1 mg/L	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.349		--	5 mg/L	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.000179		--	0.005 mg/L	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	120		--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000010		--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00092		--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00636		1 mg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-017 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.826	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.0137	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0033	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	59.5	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.300	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000731	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00497	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	15.0	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00545	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	5.86	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	21.1	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.304	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	21.7	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000221	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	0.00030	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00200	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00108	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0171	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00034	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-017 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-017 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-16D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	513 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	50.2 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	545 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	612 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	20.1 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.826 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.300 mg/L	0.05 mg/L
	Water	Lead, dissolved	Health basis of MAC: Biochemical and neurobehavioural effects (intellectual development, behaviour) in infants and young children (under 6 years). Other: Anaemia, central nervous system effects; in pregnant women, can affect the unborn child; in infants and children under 6 years, can affect intellectual development, behaviour, size and hearing; classified as probably carcinogenic to humans. MAC is based on chronic effects, it is intended to apply to average concentrations in water consumed for extended periods. Exposure to lead should nevertheless be kept to a minimum; plumbing should be thoroughly flushed before water is used for consumption; most significant contribution is generally from lead service line entering the building.	ONDWS	MAC	0.0137 mg/L	0.01 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	21.1 mg/L	20 mg/L



**Key:**

ONDWS	Ontario Drinking Water Regulation (JAN, 2020)
AO/OG	Aesthetic Objective/Operational Guideline (2006)
MAC	Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-20S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Groundwater (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	437		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	4230	DLHC DLM	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	656		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	370		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.09		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	359	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	2570		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.111		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	7.86		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.174		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	28.2		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0109		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00099		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0463		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.151		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	74.1		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00082		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00022		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-018 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.378	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000175	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0068	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	44.8	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.196	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00225	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00185	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	4.40	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00142	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.36	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	32.6	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.228	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	17.7	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000071	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00070	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00024	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00147	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0024	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-018 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-018 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	115	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	105	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-20S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	4230 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	370 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	2570 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.378 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.196 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	32.6 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-20D	25-Apr-2024	00:00	WT2410007-019	ONDWS AO/OG	ONDWS MAC	--
Sub-Matrix: Groundwater (Matrix: Water)				Sampling date/time						
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	597		30 - 500 mg/L	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	32.0		5 CU	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1350		--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	672		80 - 100 mg/L	--	--	--	--
pH	E108/WT	0.10	pH units	7.77		6.5 - 8.5 pH units	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	802	DLDS	500 mg/L	--	--	--	--
Turbidity	E121/WT	0.10	NTU	4.06		5 NTU	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	7.25	DLHC	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	28.6	DLDS	250 mg/L	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.04	DLDS	--	10 mg/L	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	140	DLDS	500 mg/L	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0020		0.1 mg/L	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00058		--	0.01 mg/L	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.117		--	1 mg/L	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.568		--	5 mg/L	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000075		--	0.005 mg/L	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	142		--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00340		--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00026		1 mg/L	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2410007-019 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.172	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000070	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0044	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	77.1	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.562	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000427	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00810	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	19.8	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00570	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000061	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.36	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	27.3	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.408	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	47.1	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000353	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000650	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0084	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00030	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--
<b>Volatile Organic Compounds</b>										
Acetone	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Benzene	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Bromodichloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromoform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Bromomethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Carbon tetrachloride	E611D/WT	0.20	µg/L	<0.20	--	2 µg/L	--	--	--	--
Chlorobenzene	E611D/WT	0.50	µg/L	<0.50	30 µg/L	80 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-019 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
Chloroform	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromochloromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dibromoethane, 1,2-	E611D/WT	0.20	µg/L	<0.20	--	--	--	--	--	--
Dichlorobenzene, 1,2-	E611D/WT	0.50	µg/L	<0.50	3 µg/L	200 µg/L	--	--	--	--
Dichlorobenzene, 1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichlorobenzene, 1,4-	E611D/WT	0.50	µg/L	<0.50	1 µg/L	5 µg/L	--	--	--	--
Dichlorodifluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Dichloroethylene, 1,1-	E611D/WT	0.50	µg/L	<0.50	--	14 µg/L	--	--	--	--
Dichloroethylene, cis-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloroethylene, trans-1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloromethane	E611D/WT	1.0	µg/L	<1.0	--	50 µg/L	--	--	--	--
Dichloropropane, 1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis+trans-1,3-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Dichloropropylene, cis-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Dichloropropylene, trans-1,3-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Ethylbenzene	E611D/WT	0.50	µg/L	<0.50	2.4 µg/L	140 µg/L	--	--	--	--
Hexane, n-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Methyl ethyl ketone [MEK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl isobutyl ketone [MIBK]	E611D/WT	20	µg/L	<20	--	--	--	--	--	--
Methyl-tert-butyl ether [MTBE]	E611D/WT	0.50	µg/L	<0.50	--	15 µg/L	--	--	--	--
Styrene	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethane, 1,1,2,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Tetrachloroethylene	E611D/WT	0.50	µg/L	<0.50	--	10 µg/L	--	--	--	--
Toluene	E611D/WT	0.50	µg/L	<0.50	24 µg/L	60 µg/L	--	--	--	--
Trichloroethane, 1,1,1-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethane, 1,1,2-	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Trichloroethylene	E611D/WT	0.50	µg/L	<0.50	--	5 µg/L	--	--	--	--
Trichlorofluoromethane	E611D/WT	0.50	µg/L	<0.50	--	--	--	--	--	--
Vinyl chloride	E611D/WT	0.50	µg/L	<0.50	--	1 µg/L	--	--	--	--
Xylene, m+p-	E611D/WT	0.40	µg/L	<0.40	--	--	--	--	--	--
Xylene, o-	E611D/WT	0.30	µg/L	<0.30	--	--	--	--	--	--
Xylenes, total	E611D/WT	0.50	µg/L	<0.50	300 µg/L	90 µg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2410007-019 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Volatile Organic Compounds - Continued</b>										
BTEX, total	E611D/WT	1.0	µg/L	<1.0	--	--	--	--	--	--
<b>Volatile Organic Compounds Surrogates</b>										
Bromofluorobenzene, 4-	E611D/WT	1.0	%	116	--	--	--	--	--	--
Difluorobenzene, 1,4-	E611D/WT	1.0	%	104	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.

### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-20D	Water	Alkalinity, total (as CaCO <sub>3</sub> )		ONDWS	AO/OG	597 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	32.0 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	672 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	802 mg/L	500 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.562 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	27.3 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)




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## QUALITY CONTROL INTERPRETIVE REPORT

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<p><b>Work Order</b> : <b>WT2410007</b></p> <p><b>Client</b> : <b>Bluewater Geoscience Consultants Inc.</b></p> <p><b>Contact</b> : Breton Lemieux</p> <p><b>Address</b> : 42 Shadyridge Place Kitchener ON Canada N2N 3J1</p> <p><b>Telephone</b> : 519 744 4123</p> <p><b>Project</b> : BG-900</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1081630</p> <p><b>Sampler</b> : BJL</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : SOA</p> <p><b>No. of samples received</b> : 19</p> <p><b>No. of samples analysed</b> : 19</p>	<p><b>Page</b> : 1 of 39</p> <p><b>Laboratory</b> : ALS Environmental - Waterloo</p> <p><b>Account Manager</b> : Gayle Braun</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : +1 519 886 6910</p> <p><b>Date Samples Received</b> : 25-Apr-2024 14:05</p> <p><b>Issue Date</b> : 01-May-2024 19:21</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

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

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### ***Workorder Comments***

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

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### ***Summary of Outliers***

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

- No Duplicate outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Method Blank value outliers occur - please see following pages for full details.
- Matrix Spike 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
<b>Method Blank (MB) Values</b>								
Physical Tests	QC-MRG2-1418238 001	----	Alkalinity, total (as CaCO3)	----	E290	2.3 mg/L <sup>B</sup>	2 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.

<b>Matrix Spike (MS) Recoveries</b>								
Volatile Organic Compounds	Anonymous	Anonymous	Bromomethane	74-83-9	E611D	7.65 % <sup>K</sup>	60.0-140%	Recovery less than lower data quality objective
Volatile Organic Compounds	Anonymous	Anonymous	Dichloropropylene, cis-1,3-	10061-01-5	E611D	11.2 % <sup>K</sup>	60.0-140%	Recovery less than lower data quality objective
Volatile Organic Compounds	Anonymous	Anonymous	Dichloropropylene, trans-1,3-	10061-02-6	E611D	38.8 % <sup>K</sup>	60.0-140%	Recovery less than lower data quality objective

**Result Qualifiers**

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



## Analysis Holding Time Compliance

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

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

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

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

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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-1	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-10D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-10S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-12D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-12S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-13D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	28 days	2 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-13S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✔	26-Apr-2024	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	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-16D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-16S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-20D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-20S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW2-D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW2-S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-3D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-3S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-5	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	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	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-7D	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-7S	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Ammonia by Fluorescence</b>										
Amber glass total (sulfuric acid) [ON MECP] OW-8	E298	25-Apr-2024	26-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-1	E235.Cl	25-Apr-2024	25-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-10D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-10S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-12D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-12S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Chloride in Water by IC</b>										
HDPE [ON MECP] OW-13D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW2-D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW2-S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-5	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-8	E235.Cl	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-1	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-10D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-10S	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-12D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-13D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
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<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-20D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-20S	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW2-D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW2-S	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>											
HDPE [ON MECP] OW-3D	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	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	
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>										
HDPE [ON MECP] OW-3S	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>										
HDPE [ON MECP] OW-5	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>										
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HDPE [ON MECP] OW-7S	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓
<b>Anions and Nutrients : Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)</b>										
HDPE [ON MECP] OW-8	E378-U	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	29-Apr-2024	7 days	4 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] OW-1	E235.F	25-Apr-2024	25-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] OW-10D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] OW-10S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Anions and Nutrients : Fluoride in Water by IC</b>										
HDPE [ON MECP] OW-12D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW2-D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW2-S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-5	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-8	E235.F	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.NO3	25-Apr-2024	25-Apr-2024	7 days	1 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	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		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW2-D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	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		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW2-S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-5	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-8	E235.NO3	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.NO2	25-Apr-2024	25-Apr-2024	7 days	1 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	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		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✔	26-Apr-2024	7 days	2 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW2-D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW2-S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-5	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-8	E235.NO2	25-Apr-2024	26-Apr-2024	7 days	2 days	✓	26-Apr-2024	7 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.SO4	25-Apr-2024	25-Apr-2024	28 days	1 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW2-D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW2-S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-5	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-8	E235.SO4	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-1	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-10D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-10S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-12D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-12S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-13D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-13S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-16D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-16S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	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		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-20D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-20S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW2-D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW2-S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-3D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-3S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-5	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-7D	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	180 days	1 days	✓	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-7S	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✓	26-Apr-2024	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		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-8	E421	25-Apr-2024	26-Apr-2024	180 days	1 days	✔	26-Apr-2024	180 days	1 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-1	E290	25-Apr-2024	25-Apr-2024	14 days	1 days	✔	26-Apr-2024	14 days	1 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-10D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-10S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-12D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-12S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-13D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-13S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-16D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✔	26-Apr-2024	14 days	2 days	✔	





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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-16S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-20D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-20S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW2-D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW2-S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-3D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-3S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-5	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-7D	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-7S	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-8	E290	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-1	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-10D	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-10S	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-12D	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-12S	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-13S	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW2-D	E330	25-Apr-2024	---	---	---		26-Apr-2024	48 hrs	36 hrs	✓	



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		
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW2-S	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-3D	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-3S	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-5	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-7D	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-7S	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-8	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	36 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-13D	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	37 hrs	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-16D	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	37 hrs	✓	



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	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-16S	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	37 hrs	✓
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-20D	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	37 hrs	✓
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-20S	E330	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	37 hrs	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-1	E100	25-Apr-2024	25-Apr-2024	28 days	1 days	✓	26-Apr-2024	28 days	1 days	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-10D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-10S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-12D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-12S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓
<b>Physical Tests : Conductivity in Water</b>										
HDPE [ON MECP] OW-13D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-13S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-16D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-16S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-20D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-20S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW2-D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW2-S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-3D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-3S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	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		
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-5	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-7D	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-7S	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-8	E100	25-Apr-2024	26-Apr-2024	28 days	2 days	✓	26-Apr-2024	28 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-1	E108	25-Apr-2024	25-Apr-2024	14 days	1 days	✓	26-Apr-2024	14 days	1 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-10D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-10S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-12D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-12S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-13D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-13S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-16D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-16S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-20D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-20S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW2-D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW2-S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-3D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-3S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-5	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-7D	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-7S	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-8	E108	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] OW-1	E162	25-Apr-2024	---	---	---		29-Apr-2024	7 days	5 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] OW-10S	E162	25-Apr-2024	---	---	---		29-Apr-2024	7 days	5 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] OW2-D	E162	25-Apr-2024	---	---	---		29-Apr-2024	7 days	5 days	✓	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] OW2-S	E162	25-Apr-2024	---	---	---		29-Apr-2024	7 days	5 days	✓	





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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-3D	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-3S	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-5	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-7D	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-7S	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-8	E162	25-Apr-2024	----	----	----		29-Apr-2024	7 days	5 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-10D	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-12D	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-12S	E162	25-Apr-2024	----	----	----		30-Apr-2024	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	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-13D	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-13S	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-16D	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-16S	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-20D	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-20S	E162	25-Apr-2024	----	----	----		30-Apr-2024	7 days	6 days	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-1	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-10D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-10S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓



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	
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-12D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-12S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-13D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-13S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-16D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-16S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-20D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-20S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW2-D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓



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		
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW2-S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-3D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-3S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-5	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-7D	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-7S	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-8	E121	25-Apr-2024	----	----	----		26-Apr-2024	48 hrs	34 hrs	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-1	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-10D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-10S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-12D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-12S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-13D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-13S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-16D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-16S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-20D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-20S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW2-D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW2-S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-3D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-3S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-5	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-7D	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-7S	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	
<b>Volatile Organic Compounds : VOCs (Eastern Canada List) by Headspace GC-MS</b>											
Glass vial (sodium bisulfate) OW-8	E611D	25-Apr-2024	26-Apr-2024	14 days	2 days	✓	26-Apr-2024	14 days	2 days	✓	

**Legend & Qualifier Definitions**

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1417456	2	22	9.0	5.0	✔
Ammonia by Fluorescence	E298	1417847	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1417454	2	22	9.0	5.0	✔
Colour (Apparent) by Spectrometer	E330	1418129	2	25	8.0	5.0	✔
Conductivity in Water	E100	1417458	2	22	9.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1417624	1	19	5.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1418231	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1417451	2	24	8.3	5.0	✔
Nitrate in Water by IC	E235.NO3	1417452	2	22	9.0	5.0	✔
Nitrite in Water by IC	E235.NO2	1417453	2	22	9.0	5.0	✔
pH by Meter	E108	1417457	2	22	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1417450	2	23	8.7	5.0	✔
TDS by Gravimetry	E162	1420813	2	40	5.0	5.0	✔
Turbidity by Nephelometry	E121	1417968	2	32	6.2	5.0	✔
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1418452	1	20	5.0	5.0	✔
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1417456	2	22	9.0	5.0	✔
Ammonia by Fluorescence	E298	1417847	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1417454	2	22	9.0	5.0	✔
Colour (Apparent) by Spectrometer	E330	1418129	2	25	8.0	5.0	✔
Conductivity in Water	E100	1417458	2	22	9.0	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1417624	1	19	5.2	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1418231	1	20	5.0	5.0	✔
Fluoride in Water by IC	E235.F	1417451	2	24	8.3	5.0	✔
Nitrate in Water by IC	E235.NO3	1417452	2	22	9.0	5.0	✔
Nitrite in Water by IC	E235.NO2	1417453	2	22	9.0	5.0	✔
pH by Meter	E108	1417457	2	22	9.0	5.0	✔
Sulfate in Water by IC	E235.SO4	1417450	2	23	8.7	5.0	✔
TDS by Gravimetry	E162	1420813	2	40	5.0	5.0	✔
Turbidity by Nephelometry	E121	1417968	2	32	6.2	5.0	✔
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1418452	1	20	5.0	5.0	✔
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1417456	2	22	9.0	5.0	✔
Ammonia by Fluorescence	E298	1417847	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1417454	2	22	9.0	5.0	✔



Matrix: **Water**

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Method Blanks (MB) - Continued</b>							
Colour (Apparent) by Spectrometer	E330	1418129	2	25	8.0	5.0	✓
Conductivity in Water	E100	1417458	2	22	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1417624	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1418231	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1417451	2	24	8.3	5.0	✓
Nitrate in Water by IC	E235.NO3	1417452	2	22	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1417453	2	22	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1417450	2	23	8.7	5.0	✓
TDS by Gravimetry	E162	1420813	2	40	5.0	5.0	✓
Turbidity by Nephelometry	E121	1417968	2	32	6.2	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1418452	1	20	5.0	5.0	✓
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1417847	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1417454	2	22	9.0	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1417624	1	19	5.2	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1418231	1	20	5.0	5.0	✓
Fluoride in Water by IC	E235.F	1417451	2	24	8.3	5.0	✓
Nitrate in Water by IC	E235.NO3	1417452	2	22	9.0	5.0	✓
Nitrite in Water by IC	E235.NO2	1417453	2	22	9.0	5.0	✓
Sulfate in Water by IC	E235.SO4	1417450	2	23	8.7	5.0	✓
VOCs (Eastern Canada List) by Headspace GC-MS	E611D	1418452	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
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 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.
Turbidity by Nephelometry	E121 ALS Environmental - Waterloo	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry	E162 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.
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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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)
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters.  Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
VOCs (Eastern Canada List) by Headspace GC-MS	E611D ALS Environmental - Waterloo	Water	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

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.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .
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 the GC/MS-FID system.

## QUALITY CONTROL REPORT

<p><b>Work Order</b> : <b>WT2410007</b></p> <p><b>Client</b> : Bluewater Geoscience Consultants Inc.</p> <p><b>Contact</b> : Breton Lemieux</p> <p><b>Address</b> : 42 Shadyridge Place Kitchener ON Canada N2N 3J1</p> <p><b>Telephone</b> : 519 744 4123</p> <p><b>Project</b> : BG-900</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : 20-1081630</p> <p><b>Sampler</b> : BJL</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : SOA</p> <p><b>No. of samples received</b> : 19</p> <p><b>No. of samples analysed</b> : 19</p>	<p><b>Page</b> : 1 of 17</p> <p><b>Laboratory</b> : ALS Environmental - Waterloo</p> <p><b>Account Manager</b> : Gayle Braun</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : +1 519 886 6910</p> <p><b>Date Samples Received</b> : 25-Apr-2024 14:05</p> <p><b>Date Analysis Commenced</b> : 25-Apr-2024</p> <p><b>Issue Date</b> : 01-May-2024 19:21</p>
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Kelly Fischer	Technical Specialist	Waterloo Inorganics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Waterloo Inorganics, Waterloo, Ontario
Nik Perkio	Inorganics Analyst	Waterloo Metals, Waterloo, Ontario
Sarah Birch	VOC Section Supervisor	Waterloo VOC, Waterloo, Ontario

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Work Order : WT2410007  
Client : Bluewater Geoscience Consultants Inc.  
Project : BG-900



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## General Comments

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

Key :

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

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

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

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

## Workorder Comments

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

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### Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 1417456)</b>											
WT2410007-001	OW-1	Alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	404	408	0.906%	20%	----
<b>Physical Tests (QC Lot: 1417457)</b>											
WT2410007-001	OW-1	pH	----	E108	0.10	pH units	7.58	7.61	0.395%	4%	----
<b>Physical Tests (QC Lot: 1417458)</b>											
WT2410007-001	OW-1	Conductivity	----	E100	1.0	µS/cm	722	729	0.965%	10%	----
<b>Physical Tests (QC Lot: 1417968)</b>											
WT2409823-001	Anonymous	Turbidity	----	E121	0.10	NTU	22.3	22.2	0.448%	15%	----
<b>Physical Tests (QC Lot: 1417969)</b>											
WT2410007-016	OW-16S	Turbidity	----	E121	0.10	NTU	222	225	1.34%	15%	----
<b>Physical Tests (QC Lot: 1418129)</b>											
VA24A8602-001	Anonymous	Colour, apparent	----	E330	2.0	CU	13.5	15.1	1.6	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1418237)</b>											
WT2410007-002	OW2-S	pH	----	E108	0.10	pH units	7.38	7.40	0.271%	4%	----
<b>Physical Tests (QC Lot: 1418238)</b>											
WT2410007-002	OW2-S	Alkalinity, total (as CaCO <sub>3</sub> )	----	E290	1.0	mg/L	686	686	0.0408%	20%	----
<b>Physical Tests (QC Lot: 1418239)</b>											
WT2410007-002	OW2-S	Conductivity	----	E100	1.0	µS/cm	1120	1130	0.533%	10%	----
<b>Physical Tests (QC Lot: 1418336)</b>											
WT2410007-017	OW-16D	Colour, apparent	----	E330	2.0	CU	50.2	52.5	4.65%	20%	----
<b>Physical Tests (QC Lot: 1420813)</b>											
HA2400812-002	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	657	667	1.51%	20%	----
<b>Physical Tests (QC Lot: 1422228)</b>											
WT2410188-008	Anonymous	Solids, total dissolved [TDS]	----	E162	20	mg/L	632	626	0.874%	20%	----
<b>Anions and Nutrients (QC Lot: 1417450)</b>											
WT2410029-001	Anonymous	Sulfate (as SO <sub>4</sub> )	14808-79-8	E235.SO4	6.00	mg/L	89.2	89.4	0.271%	20%	----
<b>Anions and Nutrients (QC Lot: 1417451)</b>											
WT2410029-001	Anonymous	Fluoride	16984-48-8	E235.F	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1417452)</b>											
WT2410029-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.400	mg/L	<0.400	<0.400	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1417453)</b>											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 1417453) - continued</b>											
WT2410029-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.200	mg/L	<0.200	<0.200	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1417454)</b>											
WT2410029-001	Anonymous	Chloride	16887-00-6	E235.Cl	10.0	mg/L	1580	1590	0.554%	20%	----
<b>Anions and Nutrients (QC Lot: 1417847)</b>											
WT2409961-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.127	0.129	1.80%	20%	----
<b>Anions and Nutrients (QC Lot: 1418231)</b>											
HA2400832-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0018	0.0018	0.00001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1418232)</b>											
WT2410007-002	OW2-S	Fluoride	16984-48-8	E235.F	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1418233)</b>											
WT2410007-002	OW2-S	Nitrate (as N)	14797-55-8	E235.NO3	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1418234)</b>											
WT2410007-002	OW2-S	Nitrite (as N)	14797-65-0	E235.NO2	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1418235)</b>											
WT2410007-002	OW2-S	Chloride	16887-00-6	E235.Cl	2.50	mg/L	<2.50	<2.50	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1418236)</b>											
WT2410007-002	OW2-S	Sulfate (as SO4)	14808-79-8	E235.SO4	1.50	mg/L	12.9	12.8	0.07	Diff <2x LOR	----
<b>Dissolved Metals (QC Lot: 1417624)</b>											
WT2410007-001	OW-1	Aluminum, dissolved	7429-90-5	E421	0.0010	mg/L	0.0015	0.0016	0.00006	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	0.00021	0.00020	0.000010	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	0.0408	0.0405	0.746%	20%	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	0.089	0.089	0.0005	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	0.0000232	0.0000212	0.0000020	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	106	106	0.153%	20%	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	0.00025	0.00025	0.000002	Diff <2x LOR	----
		Copper, dissolved	7440-50-8	E421	0.00020	mg/L	0.00058	0.00062	0.00004	Diff <2x LOR	----
		Iron, dissolved	7439-89-6	E421	0.010	mg/L	0.161	0.161	0.00286%	20%	----
		Lead, dissolved	7439-92-1	E421	0.000050	mg/L	0.000051	0.000052	0.000001	Diff <2x LOR	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	0.0025	0.0024	0.00001	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 1417624) - continued</b>											
WT2410007-001	OW-1	Magnesium, dissolved	7439-95-4	E421	0.0050	mg/L	40.5	40.7	0.542%	20%	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	0.0267	0.0266	0.270%	20%	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	0.000227	0.000218	0.000009	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	0.00112	0.00110	0.00003	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	3.12	3.11	0.237%	20%	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	0.00111	0.00105	0.00006	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	0.000148	0.000114	0.000034	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	5.05	5.07	0.316%	20%	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	6.25	6.22	0.486%	20%	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	0.170	0.175	2.91%	20%	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	6.70	6.48	3.32%	20%	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	0.000055	0.000054	0.000001	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	0.00012	0.00012	0.000002	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	0.000549	0.000561	2.09%	20%	----
Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----		
Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	0.0111	0.0109	1.66%	20%	----		
Zirconium, dissolved	7440-67-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----		
<b>Volatile Organic Compounds (QC Lot: 1418452)</b>											
WT2409509-001	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	12.2	12.0	1.65%	30%	----
		Bromoform	75-25-2	E611D	0.50	µg/L	1.53	1.51	0.02	Diff <2x LOR	----
		Bromomethane	74-83-9	E611D	0.50	µg/L	<0.50	<0.50	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	----
		Chloroform	67-66-3	E611D	0.50	µg/L	11.6	11.5	1.47%	30%	----
		Dibromochloromethane	124-48-1	E611D	0.50	µg/L	10.3	10.2	1.36%	30%	----
		Dibromoethane, 1,2-	106-93-4	E611D	0.20	µg/L	<0.20	<0.20	0	Diff <2x LOR	----



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Volatile Organic Compounds (QC Lot: 1418452) - continued</b>											
WT2409509-001	Anonymous	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	7.63	7.50	1.72%	30%	----
		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	----
		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, 1,1,1,2,2-	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	0.83	0.84	0.01	Diff <2x LOR	----
		Vinyl chloride	75-01-4	E611D	0.50	µg/L	<0.50	<0.50	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
<b>Physical Tests (QCLot: 1417456)</b>						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	1.0	---
<b>Physical Tests (QCLot: 1417458)</b>						
Conductivity	---	E100	1	µS/cm	<1.0	---
<b>Physical Tests (QCLot: 1417968)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1417969)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1418129)</b>						
Colour, apparent	---	E330	2	CU	<2.0	---
<b>Physical Tests (QCLot: 1418238)</b>						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	# 2.3	B
<b>Physical Tests (QCLot: 1418239)</b>						
Conductivity	---	E100	1	µS/cm	<1.0	---
<b>Physical Tests (QCLot: 1418336)</b>						
Colour, apparent	---	E330	2	CU	<2.0	---
<b>Physical Tests (QCLot: 1420813)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Physical Tests (QCLot: 1422228)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Anions and Nutrients (QCLot: 1417450)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
<b>Anions and Nutrients (QCLot: 1417451)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1417452)</b>						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1417453)</b>						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	---
<b>Anions and Nutrients (QCLot: 1417454)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
<b>Anions and Nutrients (QCLot: 1417847)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1418231)</b>						



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 1418231) - continued</b>						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Anions and Nutrients (QCLot: 1418232)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1418233)</b>						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1418234)</b>						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
<b>Anions and Nutrients (QCLot: 1418235)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 1418236)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Dissolved Metals (QCLot: 1417624)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1417624) - continued</b>						
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----
<b>Volatile Organic Compounds (QCLot: 1418452)</b>						
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 tetrachloride	56-23-5	E611D	0.2	µg/L	<0.20	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	<0.50	----
Chloroform	67-66-3	E611D	0.5	µg/L	<0.50	----
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	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Volatile Organic Compounds (QCLot: 1418452) - continued</b>						
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	----
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	0.5	µg/L	<0.50	----
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
<b>Physical Tests (QCLot: 1417456)</b>									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	101	85.0	115	---
<b>Physical Tests (QCLot: 1417457)</b>									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
<b>Physical Tests (QCLot: 1417458)</b>									
Conductivity	---	E100	1	µS/cm	1410 µS/cm	103	90.0	110	---
<b>Physical Tests (QCLot: 1417968)</b>									
Turbidity	---	E121	0.1	NTU	200 NTU	97.5	85.0	115	---
<b>Physical Tests (QCLot: 1417969)</b>									
Turbidity	---	E121	0.1	NTU	200 NTU	96.5	85.0	115	---
<b>Physical Tests (QCLot: 1418129)</b>									
Colour, apparent	---	E330	2	CU	25 CU	106	70.0	130	---
<b>Physical Tests (QCLot: 1418237)</b>									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
<b>Physical Tests (QCLot: 1418238)</b>									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	103	85.0	115	---
<b>Physical Tests (QCLot: 1418239)</b>									
Conductivity	---	E100	1	µS/cm	1410 µS/cm	101	90.0	110	---
<b>Physical Tests (QCLot: 1418336)</b>									
Colour, apparent	---	E330	2	CU	25 CU	106	70.0	130	---
<b>Physical Tests (QCLot: 1420813)</b>									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	86.8	85.0	115	---
<b>Physical Tests (QCLot: 1422228)</b>									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	98.9	85.0	115	---
<b>Anions and Nutrients (QCLot: 1417450)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	---
<b>Anions and Nutrients (QCLot: 1417451)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.1	90.0	110	---
<b>Anions and Nutrients (QCLot: 1417452)</b>									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	97.7	90.0	110	---
<b>Anions and Nutrients (QCLot: 1417453)</b>									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	97.2	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
<b>Anions and Nutrients (QCLot: 1417454)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	100	90.0	110	----
<b>Anions and Nutrients (QCLot: 1417847)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	99.1	85.0	115	----
<b>Anions and Nutrients (QCLot: 1418231)</b>									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.031 mg/L	108	80.0	120	----
<b>Anions and Nutrients (QCLot: 1418232)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	101	90.0	110	----
<b>Anions and Nutrients (QCLot: 1418233)</b>									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.0	90.0	110	----
<b>Anions and Nutrients (QCLot: 1418234)</b>									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	98.4	90.0	110	----
<b>Anions and Nutrients (QCLot: 1418235)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	99.6	90.0	110	----
<b>Anions and Nutrients (QCLot: 1418236)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	100	90.0	110	----
<b>Dissolved Metals (QCLot: 1417624)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	102	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	101	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	102	80.0	120	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	100	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	103	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	103	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	102	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.002 mg/L	100	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	102	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.012 mg/L	100	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	102	80.0	120	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	0.025 mg/L	103	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.012 mg/L	95.8	80.0	120	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	2.5 mg/L	102	80.0	120	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	0.012 mg/L	100	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.012 mg/L	102	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1417624) - continued</b>									
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	102	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	97.4	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	101	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	0.05 mg/L	105	80.0	120	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	0.5 mg/L	105	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	94.9	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	109	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.012 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	102	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	105	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	104	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	96.6	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	103	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.012 mg/L	98.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	102	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	96.7	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	101	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	98.4	80.0	120	----
<b>Volatile Organic Compounds (QCLot: 1418452)</b>									
Acetone	67-64-1	E611D	20	µg/L	100 µg/L	98.8	70.0	130	----
Benzene	71-43-2	E611D	0.5	µg/L	100 µg/L	94.2	70.0	130	----
Bromodichloromethane	75-27-4	E611D	0.5	µg/L	100 µg/L	104	70.0	130	----
Bromoform	75-25-2	E611D	0.5	µg/L	100 µg/L	93.6	70.0	130	----
Bromomethane	74-83-9	E611D	0.5	µg/L	100 µg/L	110	60.0	140	----
Carbon tetrachloride	56-23-5	E611D	0.2	µg/L	100 µg/L	124	70.0	130	----
Chlorobenzene	108-90-7	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Chloroform	67-66-3	E611D	0.5	µg/L	100 µg/L	111	70.0	130	----
Dibromochloromethane	124-48-1	E611D	0.5	µg/L	100 µg/L	106	70.0	130	----
Dibromoethane, 1,2-	106-93-4	E611D	0.2	µg/L	100 µg/L	102	70.0	130	----
Dichlorobenzene, 1,2-	95-50-1	E611D	0.5	µg/L	100 µg/L	102	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	103	70.0	130	----
Dichlorodifluoromethane	75-71-8	E611D	0.5	µg/L	100 µg/L	87.6	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
<b>Volatile Organic Compounds (QCLot: 1418452) - continued</b>									
Dichloroethane, 1,1-	75-34-3	E611D	0.5	µg/L	100 µg/L	98.5	70.0	130	----
Dichloroethane, 1,2-	107-06-2	E611D	0.5	µg/L	100 µg/L	101	70.0	130	----
Dichloroethylene, 1,1-	75-35-4	E611D	0.5	µg/L	100 µg/L	102	70.0	130	----
Dichloroethylene, cis-1,2-	156-59-2	E611D	0.5	µg/L	100 µg/L	110	70.0	130	----
Dichloroethylene, trans-1,2-	156-60-5	E611D	0.5	µg/L	100 µg/L	99.0	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	92.5	70.0	130	----
Dichloropropylene, cis-1,3-	10061-01-5	E611D	0.3	µg/L	100 µg/L	85.3	70.0	130	----
Dichloropropylene, trans-1,3-	10061-02-6	E611D	0.3	µg/L	100 µg/L	80.2	70.0	130	----
Ethylbenzene	100-41-4	E611D	0.5	µg/L	100 µg/L	93.8	70.0	130	----
Hexane, n-	110-54-3	E611D	0.5	µg/L	100 µg/L	92.4	70.0	130	----
Methyl ethyl ketone [MEK]	78-93-3	E611D	20	µg/L	100 µg/L	93.3	70.0	130	----
Methyl isobutyl ketone [MIBK]	108-10-1	E611D	20	µg/L	100 µg/L	84.8	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	0.5	µg/L	100 µg/L	96.9	70.0	130	----
Styrene	100-42-5	E611D	0.5	µg/L	100 µg/L	90.6	70.0	130	----
Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	0.5	µg/L	100 µg/L	112	70.0	130	----
Tetrachloroethane, 1,1,1,2,2-	79-34-5	E611D	0.5	µg/L	100 µg/L	89.8	70.0	130	----
Tetrachloroethylene	127-18-4	E611D	0.5	µg/L	100 µg/L	126	70.0	130	----
Toluene	108-88-3	E611D	0.5	µg/L	100 µg/L	92.7	70.0	130	----
Trichloroethane, 1,1,1-	71-55-6	E611D	0.5	µg/L	100 µg/L	117	70.0	130	----
Trichloroethane, 1,1,2-	79-00-5	E611D	0.5	µg/L	100 µg/L	100	70.0	130	----
Trichloroethylene	79-01-6	E611D	0.5	µg/L	100 µg/L	123	70.0	130	----
Trichlorofluoromethane	75-69-4	E611D	0.5	µg/L	100 µg/L	126	60.0	140	----
Vinyl chloride	75-01-4	E611D	0.5	µg/L	100 µg/L	93.7	60.0	140	----
Xylene, m+p-	179601-23-1	E611D	0.4	µg/L	200 µg/L	95.4	70.0	130	----
Xylene, o-	95-47-6	E611D	0.3	µg/L	100 µg/L	94.0	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
<b>Anions and Nutrients (QCLot: 1417450)</b>										
WT2410029-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	1980 mg/L	2000 mg/L	98.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 1417451)</b>										
WT2410029-001	Anonymous	Fluoride	16984-48-8	E235.F	19.8 mg/L	20 mg/L	98.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 1417452)</b>										
WT2410029-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	47.1 mg/L	50 mg/L	94.2	75.0	125	----
<b>Anions and Nutrients (QCLot: 1417453)</b>										
WT2410029-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	9.45 mg/L	10 mg/L	94.5	75.0	125	----
<b>Anions and Nutrients (QCLot: 1417454)</b>										
WT2410029-001	Anonymous	Chloride	16887-00-6	E235.Cl	1970 mg/L	2000 mg/L	98.6	75.0	125	----
<b>Anions and Nutrients (QCLot: 1417847)</b>										
WT2409961-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	ND mg/L	----	ND	75.0	125	----
<b>Anions and Nutrients (QCLot: 1418231)</b>										
HA2400832-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0208 mg/L	0.02 mg/L	106	70.0	130	----
<b>Anions and Nutrients (QCLot: 1418232)</b>										
WT2410007-002	OW2-S	Fluoride	16984-48-8	E235.F	5.01 mg/L	5 mg/L	100	75.0	125	----
<b>Anions and Nutrients (QCLot: 1418233)</b>										
WT2410007-002	OW2-S	Nitrate (as N)	14797-55-8	E235.NO3	12.3 mg/L	12.5 mg/L	98.4	75.0	125	----
<b>Anions and Nutrients (QCLot: 1418234)</b>										
WT2410007-002	OW2-S	Nitrite (as N)	14797-65-0	E235.NO2	2.44 mg/L	2.5 mg/L	97.5	75.0	125	----
<b>Anions and Nutrients (QCLot: 1418235)</b>										
WT2410007-002	OW2-S	Chloride	16887-00-6	E235.Cl	507 mg/L	500 mg/L	101	75.0	125	----
<b>Anions and Nutrients (QCLot: 1418236)</b>										
WT2410007-002	OW2-S	Sulfate (as SO4)	14808-79-8	E235.SO4	500 mg/L	500 mg/L	100	75.0	125	----
<b>Dissolved Metals (QCLot: 1417624)</b>										
WT2410007-002	OW2-S	Aluminum, dissolved	7429-90-5	E421	0.101 mg/L	0.1 mg/L	101	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0507 mg/L	0.05 mg/L	101	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0629 mg/L	0.05 mg/L	126	70.0	130	----
		Barium, dissolved	7440-39-3	E421	ND mg/L	----	ND	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00516 mg/L	0.005 mg/L	103	70.0	130	----
		Bismuth, dissolved	7440-69-9	E421	0.0453 mg/L	0.05 mg/L	90.6	70.0	130	----
		Boron, dissolved	7440-42-8	E421	ND mg/L	----	ND	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00509 mg/L	0.005 mg/L	102	70.0	130	----



Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1417624) - continued</b>										
WT2410007-002	OW2-S	Calcium, dissolved	7440-70-2	E421	ND mg/L	---	ND	70.0	130	---
		Cesium, dissolved	7440-46-2	E421	0.00259 mg/L	0.002 mg/L	104	70.0	130	---
		Chromium, dissolved	7440-47-3	E421	0.0129 mg/L	0.012 mg/L	103	70.0	130	---
		Cobalt, dissolved	7440-48-4	E421	0.0121 mg/L	0.012 mg/L	97.1	70.0	130	---
		Copper, dissolved	7440-50-8	E421	0.0120 mg/L	0.012 mg/L	96.4	70.0	130	---
		Iron, dissolved	7439-89-6	E421	ND mg/L	---	ND	70.0	130	---
		Lead, dissolved	7439-92-1	E421	0.0243 mg/L	0.025 mg/L	97.1	70.0	130	---
		Lithium, dissolved	7439-93-2	E421	0.0119 mg/L	0.012 mg/L	95.6	70.0	130	---
		Magnesium, dissolved	7439-95-4	E421	ND mg/L	---	ND	70.0	130	---
		Manganese, dissolved	7439-96-5	E421	ND mg/L	---	ND	70.0	130	---
		Molybdenum, dissolved	7439-98-7	E421	0.0133 mg/L	0.012 mg/L	106	70.0	130	---
		Nickel, dissolved	7440-02-0	E421	0.0238 mg/L	0.025 mg/L	95.1	70.0	130	---
		Phosphorus, dissolved	7723-14-0	E421	0.605 mg/L	0.5 mg/L	121	70.0	130	---
		Potassium, dissolved	7440-09-7	E421	2.64 mg/L	2.5 mg/L	106	70.0	130	---
		Rubidium, dissolved	7440-17-7	E421	0.00513 mg/L	0.005 mg/L	102	70.0	130	---
		Selenium, dissolved	7782-49-2	E421	0.0506 mg/L	0.05 mg/L	101	70.0	130	---
		Silicon, dissolved	7440-21-3	E421	ND mg/L	---	ND	70.0	130	---
		Silver, dissolved	7440-22-4	E421	0.00442 mg/L	0.005 mg/L	88.5	70.0	130	---
		Sodium, dissolved	7440-23-5	E421	ND mg/L	---	ND	70.0	130	---
		Strontium, dissolved	7440-24-6	E421	ND mg/L	---	ND	70.0	130	---
		Sulfur, dissolved	7704-34-9	E421	ND mg/L	---	ND	70.0	130	---
		Tellurium, dissolved	13494-80-9	E421	0.00583 mg/L	0.005 mg/L	116	70.0	130	---
		Thallium, dissolved	7440-28-0	E421	0.0496 mg/L	0.05 mg/L	99.2	70.0	130	---
		Thorium, dissolved	7440-29-1	E421	0.00460 mg/L	0.005 mg/L	92.0	70.0	130	---
		Tin, dissolved	7440-31-5	E421	0.0259 mg/L	0.025 mg/L	104	70.0	130	---
		Titanium, dissolved	7440-32-6	E421	0.0123 mg/L	0.012 mg/L	98.2	70.0	130	---
		Tungsten, dissolved	7440-33-7	E421	0.00505 mg/L	0.005 mg/L	101	70.0	130	---
		Uranium, dissolved	7440-61-1	E421	ND mg/L	---	ND	70.0	130	---
		Vanadium, dissolved	7440-62-2	E421	0.0265 mg/L	0.025 mg/L	106	70.0	130	---
		Zinc, dissolved	7440-66-6	E421	0.0237 mg/L	0.025 mg/L	95.0	70.0	130	---
		Zirconium, dissolved	7440-67-7	E421	0.00511 mg/L	0.005 mg/L	102	70.0	130	---
<b>Volatile Organic Compounds (QCLot: 1418452)</b>										
WT2409509-001	Anonymous	Acetone	67-64-1	E611D	93 µg/L	100 µg/L	92.8	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	99.7 µg/L	100 µg/L	99.7	60.0	140	---
		Bromoform	75-25-2	E611D	91.1 µg/L	100 µg/L	91.1	60.0	140	---
		Bromomethane	74-83-9	E611D	7.65 µg/L	100 µg/L	7.65	60.0	140	K
		Carbon tetrachloride	56-23-5	E611D	123 µg/L	100 µg/L	123	60.0	140	---
		Chlorobenzene	108-90-7	E611D	99.3 µg/L	100 µg/L	99.3	60.0	140	---
		Chloroform	67-66-3	E611D	106 µg/L	100 µg/L	106	60.0	140	---
		Dibromochloromethane	124-48-1	E611D	102 µg/L	100 µg/L	102	60.0	140	---
		Dibromoethane, 1,2-	106-93-4	E611D	96.3 µg/L	100 µg/L	96.3	60.0	140	---
		Dichlorobenzene, 1,2-	95-50-1	E611D	99.9 µg/L	100 µg/L	99.9	60.0	140	---
		Dichlorobenzene, 1,3-	541-73-1	E611D	101 µg/L	100 µg/L	101	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
<b>Volatile Organic Compounds (QCLot: 1418452) - continued</b>										
WT2409509-001	Anonymous	Dichlorobenzene, 1,4-	106-46-7	E611D	101 µg/L	100 µg/L	101	60.0	140	----
		Dichlorodifluoromethane	75-71-8	E611D	81.8 µg/L	100 µg/L	81.8	60.0	140	----
		Dichloroethane, 1,1-	75-34-3	E611D	96.7 µg/L	100 µg/L	96.7	60.0	140	----
		Dichloroethane, 1,2-	107-06-2	E611D	98.2 µg/L	100 µg/L	98.2	60.0	140	----
		Dichloroethylene, 1,1-	75-35-4	E611D	100.0 µg/L	100 µg/L	100.0	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	94.9 µg/L	100 µg/L	94.9	60.0	140	----
		Dichloromethane	75-09-2	E611D	106 µg/L	100 µg/L	106	60.0	140	----
		Dichloropropane, 1,2-	78-87-5	E611D	90.7 µg/L	100 µg/L	90.7	60.0	140	----
		Dichloropropylene, cis-1,3-	10061-01-5	E611D	11.2 µg/L	100 µg/L	11.2	60.0	140	K
		Dichloropropylene, trans-1,3-	10061-02-6	E611D	38.8 µg/L	100 µg/L	38.8	60.0	140	K
		Ethylbenzene	100-41-4	E611D	93.0 µg/L	100 µg/L	93.0	60.0	140	----
		Hexane, n-	110-54-3	E611D	89.9 µg/L	100 µg/L	89.9	60.0	140	----
		Methyl ethyl ketone [MEK]	78-93-3	E611D	90 µg/L	100 µg/L	90.1	60.0	140	----
		Methyl isobutyl ketone [MIBK]	108-10-1	E611D	80 µg/L	100 µg/L	79.7	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611D	95.4 µg/L	100 µg/L	95.4	60.0	140	----
		Styrene	100-42-5	E611D	78.7 µg/L	100 µg/L	78.7	60.0	140	----
		Tetrachloroethane, 1,1,1,2-	630-20-6	E611D	111 µg/L	100 µg/L	111	60.0	140	----
		Tetrachloroethane, 1,1,1,2,2-	79-34-5	E611D	92.5 µg/L	100 µg/L	92.5	60.0	140	----
		Tetrachloroethylene	127-18-4	E611D	125 µg/L	100 µg/L	125	60.0	140	----
		Toluene	108-88-3	E611D	92.2 µg/L	100 µg/L	92.2	60.0	140	----
		Trichloroethane, 1,1,1-	71-55-6	E611D	115 µg/L	100 µg/L	115	60.0	140	----
		Trichloroethane, 1,1,2-	79-00-5	E611D	97.7 µg/L	100 µg/L	97.7	60.0	140	----
		Trichloroethylene	79-01-6	E611D	121 µg/L	100 µg/L	121	60.0	140	----
		Trichlorofluoromethane	75-69-4	E611D	127 µg/L	100 µg/L	127	60.0	140	----
		Vinyl chloride	75-01-4	E611D	90.0 µg/L	100 µg/L	90.0	60.0	140	----
		Xylene, m+p-	179601-23-1	E611D	190 µg/L	200 µg/L	94.9	60.0	140	----
		Xylene, o-	95-47-6	E611D	93.4 µg/L	100 µg/L	93.4	60.0	140	----

**Qualifiers**

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





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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 1081630

PH

Environmental Division  
Waterloo  
Work Order Reference  
WT2410007

Contact and company name below will appear on the final report

Report To: Bremner GeoScience  
Company: B. LEMLEY  
Contact: B. LEMLEY  
Phone: Company address below will appear on the final report

Street:   
City/Province:   
Postal Code:   
Invoice To: Same as Report To  YES  NO

Company:   
Project Information: Oil and Gas Required Fields (client use)

ALS Account # / Quote #: BG-900  
Job #:   
PO / AFE:   
LSD:

ALS Lab Work Order # (ALS use only): WT2410007 CM

Sample Identification and/or Coordinates (This description will appear on the report)

ALS Sample # (ALS use only)

Sample Identification and/or Coordinates (This description will appear on the report)

ALS contact: GARYL

Date: 25/04/20

Time: 6:00

Sample Type: GW

Sampler: BSL

Location:

Routing Code:

Requestioner:

Major/Minor Code:

AFE/Cost Center:

PO#:

Routing Code:

Reports / Recipients

Select Report Format:  PDF  EXCEL  EOD (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

Select Invoice Distribution:  EMAIL  MAIL  FAX

Invoice Recipients

Turnaround Time (TAT) Requested

For all tests with rush TATs requested, please

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

Analysis Re

Number of Containers

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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. Add (may apply) to rush requests on weekends, statutory holidays and non-

Date and Time Required for all E&P TATs:

For all tests with rush TATs requested, please

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

Analysis Re

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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION  
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.  
1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

WHITE - LABORATORY COPY YELLOW - CLIENT COPY  
Released by: BSL Date: AP-25/24 Time:  Received by:  Date:  Time:

SHIPPING RELEASE (client use) INITIAL SHIPMENT RECEPTION (ALS use only)

Drinking Water (DW) Samples (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

Shipping 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: 53 30 65 FINAL COOLER TEMPERATURES °C:

FINAL SHIPMENT RECEPTION (ALS use only)

Released by: BSL Date: AP-25/24 Time:  Received by:  Date:  Time:

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

Released by: BSL Date: AP-25/24 Time:  Received by:  Date:  Time:

Released by: BSL Date: AP-25/24 Time:  Received by:  Date:  Time:

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Released by: BSL Date: AP-25/24 Time:  Received by:  Date:  Time:




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## CERTIFICATE OF ANALYSIS (GUIDELINE EVALUATION)

---

**Work Order** : **WT2431427**  
**Client** : **Bluewater Geoscience Consultants Inc.**  
**Contact** : Breton Lemieux  
**Address** : 42 Shadyridge Place  
                   Kitchener ON Canada N2N 3J1  
**Telephone** : 519 744 4123  
**Project** : BG-900  
**PO** : ----  
**C-O-C number** : ----  
**Sampler** : BJL  
**Site** : ----  
**Quote number** : SOA  
**No. of samples received** : 17  
**No. of samples analysed** : 17

**Page** : 1 of 53  
**Laboratory** : ALS Environmental - Waterloo  
**Account Manager** : Gayle Braun  
**Address** : 60 Northland Road, Unit 1  
                   Waterloo, Ontario Canada N2V 2B8  
**Telephone** : +1 519 886 6910  
**Date Samples Received** : 22-Oct-2024 14:00  
**Date Analysis Commenced** : 23-Oct-2024  
**Issue Date** : 29-Oct-2024 16:20

---

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
- Guideline Comparison

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

---

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Jon Fisher	Production Manager, Environmental	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Metals, Waterloo, Ontario

## General Comments

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

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

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

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

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

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

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

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

>: greater than.

<: less than.

Red shading is applied where the result or the LOR is greater than the Guideline Upper Limit (or lower than the Guideline Lower Limit, if applicable).

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

## Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLDS	<i>Detection Limit Raised: Dilution required due to high Dissolved Solids / Electrical Conductivity.</i>
DLHC	<i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i>
DLUI	<i>Detection Limit Raised: Unknown interference generated an apparent false positive test result.</i>





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-1	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sampling date/time	22-Oct-2024 00:00						
				WT2431427-001							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	374		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	626		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	583		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	495		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.87		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	396	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	162		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0055		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	1.78		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.035		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.090		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0072		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	9.49		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0708		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00138		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0752		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.263		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000108		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	114		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00088		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00062		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-001 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.485	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00142	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0032	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	51.1	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0734	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000330	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00307	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	10.7	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00371	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000069	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	5.84	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	12.8	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.271	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	19.7	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000038	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	0.00334	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00011	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000648	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0189	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00028	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.





## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-1	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	626 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	495 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	162 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.485 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.0734 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID							
				OW-2S	ONDWS AO/OG	ONDWS MAC	--	--	--	--	
Sub-Matrix: Water (Matrix: Water)				Sampling date/time	22-Oct-2024 00:00						
				WT2431427-002							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	534	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	53.8	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	969	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	650	80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.79	6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	637 DLDS	500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	19.9	5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.117	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	<2.50 DLDS	250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100 DLDS	--	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100 DLDS	--	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	--	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	11.0 DLDS	500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	<0.0010	0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00081	--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0678	--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.350	--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	147	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00075	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020	1 mg/L	--	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-002 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.845	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000168	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0089	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	68.8	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.163	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000271	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00246	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.60	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00111	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000122	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	8.90	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	10.1	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.227	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	9.67	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000056	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00056	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000709	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0019	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-2S	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	534 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	53.8 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	650 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	637 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	19.9 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.845 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.163 mg/L	0.05 mg/L

**Key:**

ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-2D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	570	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	148	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1270	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	642	80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.19	6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	744	DLDS 500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	44.2	5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	6.84	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	24.8	250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.101	--	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020	--	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010	--	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	123	500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0016	0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00136	--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.137	--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.546	--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	129	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00349	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020	1 mg/L	--	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-003 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	3.08	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000711	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0038	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	77.8	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.701	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000676	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.0101	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	11.3	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00270	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000118	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.76	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	25.7	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.322	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	38.6	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000173	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00119	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0031	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00051	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-2D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	570 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	148 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	642 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	744 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	44.2 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	3.08 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.701 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	25.7 mg/L	20 mg/L

**Key:**

ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID							
				OW-3S	ONDWS	ONDWS	--	--	--	--	
Sub-Matrix: Water (Matrix: Water)				Sampling date/time	22-Oct-2024 00:00	AO/OG	MAC				
				WT2431427-004							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	354	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	1010	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	556	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	439	80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.85	6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	369	DLDS 500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	263	5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.251	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	<2.50	DLDS 250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS --	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS --	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS --	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	<1.50	DLDS 500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0040	0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00386	--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.109	--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.196	--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	123	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00136	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020	1 mg/L	--	--	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2431427-004 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	6.18	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0015	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	32.0	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.412	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000726	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00161	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	6.16	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00197	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000310	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.99	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	12.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.281	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	2.29	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00020	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000365	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0029	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00052	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-3D	22-Oct-2024 00:00	WT2431427-005	ONDWS AO/OG	ONDWS MAC	--	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	967		30 - 500 mg/L	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	1200		5 CU	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1760		--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	760		80 - 100 mg/L	--	--	--	--
pH	E108/WT	0.10	pH units	7.97		6.5 - 8.5 pH units	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	969	DLDS	500 mg/L	--	--	--	--
Turbidity	E121/WT	0.10	NTU	205		5 NTU	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	37.5		--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	46.8	DLDS	250 mg/L	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	23.4	DLDS	500 mg/L	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0201	DLHC	0.1 mg/L	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00100	DLHC	--	0.006 mg/L	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00346	DLHC	--	0.01 mg/L	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.425	DLHC	--	1 mg/L	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000200	DLHC	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000500	DLHC	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.914	DLHC	--	5 mg/L	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000500	DLHC	--	0.005 mg/L	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	199	DLHC	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000100	DLHC	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00500	DLHC	--	0.05 mg/L	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	<0.00100	DLHC	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00200	DLHC	1 mg/L	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-005 (Continued)		ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>											
Iron, dissolved	E421/WT	0.010	mg/L	17.6	DLHC	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	<0.000500	DLHC	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0100	DLHC	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	63.9	DLHC	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.618	DLHC	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	<0.000500	DLHC	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	<0.00500	DLHC	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.500	DLHC	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	25.5	DLHC	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00597	DLHC	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000500	DLHC	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	7.46	DLHC	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000100	DLHC	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	50.4	DLHC	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.681	DLHC	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	8.59	DLHC	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00200	DLHC	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000100	DLHC	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00100	DLHC	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00100	DLHC	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00300	DLHC	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00100	DLHC	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000258	DLHC	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00500	DLHC	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	<0.0100	DLHC	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00200	DLHC	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field		--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-3D	Water	Alkalinity, total (as CaCO <sub>3</sub> )		ONDWS	AO/OG	967 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	1200 CU	5 CU
	Water	Hardness (as CaCO <sub>3</sub> ), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO <sub>3</sub> ) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	760 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	969 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	205 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	17.6 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.618 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	50.4 mg/L	20 mg/L

**Key:**

ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-7S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
					WT2431427-006						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	798		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	6560		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1170		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	710		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.97		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	788	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	2910		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.712		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	31.2		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.069		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.021		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0012		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	107		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.150		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00840		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.109		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	0.000031		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.225		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000538		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	185		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000013		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00060		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00092		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00269		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-006 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	6.31	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00124	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0025	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	60.2	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.271	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000562	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00267	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.82	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00083	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000265	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.44	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	19.7	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.288	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	38.6	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	0.00021	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00500	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00395	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00130	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0289	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00157	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-7S	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	798 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	6560 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	710 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	788 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	2910 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.150 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	6.31 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.271 mg/L	0.05 mg/L

**Key:**  
 ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID							
				OW-7D	ONDWS	ONDWS	--	--	--	--	
Sub-Matrix: Water (Matrix: Water)				Sampling date/time	22-Oct-2024 00:00	AO/OG	MAC				
				WT2431427-007							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	558	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	155	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1300	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	680	80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.04	6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	794 DLDS	500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	33.8	5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	9.80	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	28.7 DLDS	250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100 DLDS	--	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.53 DLDS	--	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	--	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	130 DLDS	500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.130	0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00397	--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.142	--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.513	--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000219	--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	152	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000014	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00173	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00080	1 mg/L	--	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-007 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	2.82	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00480	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0035	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	72.9	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.182	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000497	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00631	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	20.1	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00606	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000102	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.64	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	26.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.412	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	44.5	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000149	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00400	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00149	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00075	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0433	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00080	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-7D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	558 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	155 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	680 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	794 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	33.8 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.130 mg/L	0.1 mg/L
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	2.82 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.182 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	26.2 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID										
				OW-10S	Sub-Matrix: Water	Sampling date/time	ONDWS AO/OG	ONDWS MAC	--	--	--	--		
				WT2431427-008	22-Oct-2024 00:00									
<b>Physical Tests</b>														
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	494		30 - 500 mg/L	--	--	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	2460		5 CU	--	--	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	599		--	--	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	397		80 - 100 mg/L	--	--	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.90		6.5 - 8.5 pH units	--	--	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	472	DLDS	500 mg/L	--	--	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	868		5 NTU	--	--	--	--	--	--	--	--
<b>Anions and Nutrients</b>														
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.434		--	--	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	7.24	DLDS	250 mg/L	--	--	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	0.051	DLDS	--	1 mg/L	--	--	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0011		--	--	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	10.2	DLDS	500 mg/L	--	--	--	--	--	--	--	--
<b>Dissolved Metals</b>														
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0018		0.1 mg/L	--	--	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00043		--	0.01 mg/L	--	--	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0398		--	1 mg/L	--	--	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.087		--	5 mg/L	--	--	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050		--	0.005 mg/L	--	--	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	95.4		--	--	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00069		--	--	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020		1 mg/L	--	--	--	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-008 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.270	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000413	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0014	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	38.5	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.272	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000504	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00289	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.71	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00146	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000053	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	3.87	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	8.52	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.130	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	4.43	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000067	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000709	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0049	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-10S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	2460 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	397 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	868 NTU	5 NTU
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.272 mg/L	0.05 mg/L

**Key:**

ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-10D	22-Oct-2024	00:00	WT2431427-009	ONDWS AO/OG	ONDWS MAC	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	566	30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	252	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1140	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	581	80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.91	6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	680 DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	88.2	5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	11.8	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	30.9 DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100 DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100 DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	33.0 DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0018	0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00357	--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.238	--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.445	--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000165	--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	132	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000016	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00673	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00104	1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-009 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	3.72	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000470	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0035	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	61.1	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	1.17	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000653	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.0183	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	9.45	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00365	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000087	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.93	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	30.8	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.320	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	12.1	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000372	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000954	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0555	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00035	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.





### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-10D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	566 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	252 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	581 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	680 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	88.2 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	3.72 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	1.17 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	30.8 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-12S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
				WT2431427-010							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	386		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	1470		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	767		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	489		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.50		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	505	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	473		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.613		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	11.2		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.049		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.061		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0026		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	14.3		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.175		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00061		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0283		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	0.000026		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.137		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.000142		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	124		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000016		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	0.00056		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00060		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00249		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-010 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.282	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00540	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	43.6	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.518	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000344	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00557	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.52	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00220	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000212	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	3.82	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	11.3	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.139	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	7.38	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000103	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	0.00378	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00344	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	0.00090	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0303	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00092	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-12S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	1470 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	489 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	505 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	473 NTU	5 NTU
	Water	Aluminum, dissolved	There is no consistent, convincing evidence that aluminum in drinking water causes adverse health effects in humans. The operational guideline applies to treatment plants using aluminum-based coagulants; it does not apply to naturally occurring aluminum found in groundwater. For treatment plants using aluminum-based coagulants, monthly samples should be taken of the water leaving the plant; the OGs are based on a running annual average of monthly samples.	ONDWS	AO/OG	0.175 mg/L	0.1 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.518 mg/L	0.05 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-12D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
				WT2431427-011							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	413		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	72.9		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	886		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	428		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.72		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	501	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	14.1		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.564		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	19.5		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.045		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	1.66		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	0.178		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0013		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	30.3		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0150		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00012		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00035		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0372		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.184		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.000399		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	109		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000012		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00030		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00162		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-011 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.050	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000929	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0014	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	37.9	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.402	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00107	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00556	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	1.44	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00162	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000141	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.18	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	12.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.144	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	9.94	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000217	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00060	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00030	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00837	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0632	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-12D	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	72.9 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	428 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	501 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	14.1 NTU	5 NTU
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.402 mg/L	0.05 mg/L

**Key:**  
 ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-13S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
				WT2431427-012							
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	455		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	3360		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	639		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	353		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.74		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	444	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	1110		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.0141		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	1.08		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.043		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0013		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	13.1		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0023		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00021		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0170		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.016		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000123		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	90.6		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00055		1 mg/L	--	--	--	--	--





Analyte	Method/Lab	LOR	Unit	WT2431427-012 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.012	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000071	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	30.9	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0126	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000207	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	0.436	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00026	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.00102	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	3.14	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	2.82	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.108	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	5.68	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000575	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0173	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-13S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	3360 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	353 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	1110 NTU	5 NTU

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID										
				OW-13D	Sub-Matrix: Water	Sampling date/time	ONDWS AO/OG	ONDWS MAC	--	--	--	--		
				WT2431427-013	22-Oct-2024 00:00									
<b>Physical Tests</b>														
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	515		30 - 500 mg/L	--	--	--	--	--	--	--	
Colour, apparent	E330/WT	2.0	CU	477		5 CU	--	--	--	--	--	--	--	
Conductivity	E100/WT	1.0	µS/cm	1050		--	--	--	--	--	--	--	--	
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	383		80 - 100 mg/L	--	--	--	--	--	--	--	
pH	E108/WT	0.10	pH units	7.56		6.5 - 8.5 pH units	--	--	--	--	--	--	--	
Solids, total dissolved [TDS]	E162/WT	10	mg/L	616	DLDS	500 mg/L	--	--	--	--	--	--	--	
Turbidity	E121/WT	0.10	NTU	113		5 NTU	--	--	--	--	--	--	--	
<b>Anions and Nutrients</b>														
Ammonia, total (as N)	E298/WT	0.0050	mg/L	2.77		--	--	--	--	--	--	--	--	
Chloride	E235.Cl/WT	0.50	mg/L	13.1	DLDS	250 mg/L	--	--	--	--	--	--	--	
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--	--	--	
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--	--	--	--	
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--	--	--	--	
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--	--	--	
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	63.7	DLDS	500 mg/L	--	--	--	--	--	--	--	
<b>Dissolved Metals</b>														
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0019		0.1 mg/L	--	--	--	--	--	--	--	
Antimony, dissolved	E421/WT	0.00010	mg/L	0.00013		--	0.006 mg/L	--	--	--	--	--	--	
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00054		--	0.01 mg/L	--	--	--	--	--	--	
Barium, dissolved	E421/WT	0.00010	mg/L	0.0428		--	1 mg/L	--	--	--	--	--	--	
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--	--	--	
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--	--	--	
Boron, dissolved	E421/WT	0.010	mg/L	0.070		--	5 mg/L	--	--	--	--	--	--	
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000409		--	0.005 mg/L	--	--	--	--	--	--	
Calcium, dissolved	E421/WT	0.050	mg/L	98.1		--	--	--	--	--	--	--	--	
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--	--	--	
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--	--	--	
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00014		--	--	--	--	--	--	--	--	
Copper, dissolved	E421/WT	0.00020	mg/L	0.00177		1 mg/L	--	--	--	--	--	--	--	



Analyte	Method/Lab	LOR	Unit	WT2431427-013 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.381	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000432	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0013	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	33.5	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.0645	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000755	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00182	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	2.10	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00095	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000247	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	4.23	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	5.80	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.171	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	12.4	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000048	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000850	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.131	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-13D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	515 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	477 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	383 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	616 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	113 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.381 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.0645 mg/L	0.05 mg/L

**Key:**

ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-16S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sampling date/time	22-Oct-2024 00:00						
Sub-Matrix: Water (Matrix: Water)					WT2431427-014						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	386		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	1250		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	668		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	429		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.67		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	430	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	344		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.134		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	9.74		250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.054		--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.029		--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	0.016		--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0044		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	4.15		500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0468		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00107		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0544		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.121		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000117		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	108		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00066		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00056		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-014 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.859	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00148	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0022	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	38.7	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.106	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000434	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00135	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	5.34	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00234	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.68	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	6.22	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.196	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	6.53	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000041	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00200	DLUI	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000703	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0038	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00024	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-16S	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	1250 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	429 mg/L	80-100 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	344 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.859 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.106 mg/L	0.05 mg/L

**Key:**  
 ONDWS Ontario Drinking Water Regulation (JAN, 2020)  
 AO/OG Aesthetic Objective/Operational Guideline (2006)  
 MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)





## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-16D	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sub-Matrix: Water (Matrix: Water)	Sampling date/time						
					WT2431427-015						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	708		30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	358		5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1420		--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	692		80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.76		6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	778	DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	78.3		5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	15.6		--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	20.5	DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100	DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.100	DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050	DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010		--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	79.4	DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0040		0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010		--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00341		--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.194		--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020		--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050		--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.680		--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000286		--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	149		--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	0.000011		--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050		--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00201		--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00106		1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-015 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	4.94	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.00766	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0042	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	77.7	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.447	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000338	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00502	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	25.4	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00960	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	0.000084	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.23	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	23.2	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.500	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	30.7	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000220	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000505	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0132	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00094	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-16D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	708 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	358 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	692 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	778 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	78.3 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	4.94 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.447 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	23.2 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID	OW-20S	ONDWS AO/OG	ONDWS MAC	--	--	--	--
				Sampling date/time	22-Oct-2024 00:00						
Sub-Matrix: Water (Matrix: Water)					WT2431427-016						
<b>Physical Tests</b>											
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	4050	30 - 500 mg/L	--	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	6050	5 CU	--	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	712	--	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	373	80 - 100 mg/L	--	--	--	--	--	--
pH	E108/WT	0.10	pH units	8.08	6.5 - 8.5 pH units	--	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	528	DLDS 500 mg/L	--	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	2220	5 NTU	--	--	--	--	--	--
<b>Anions and Nutrients</b>											
Ammonia, total (as N)	E298/WT	0.0050	mg/L	0.164	--	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	8.67	250 mg/L	--	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	0.202	--	1.5 mg/L	--	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	<0.020	--	10 mg/L	--	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.010	--	1 mg/L	--	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	0.0016	--	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	33.2	500 mg/L	--	--	--	--	--	--
<b>Dissolved Metals</b>											
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0015	0.1 mg/L	--	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00381	--	0.01 mg/L	--	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.0492	--	1 mg/L	--	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.138	--	5 mg/L	--	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	<0.0000050	--	0.005 mg/L	--	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	77.0	--	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00060	--	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	<0.00020	1 mg/L	--	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-016 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.990	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0068	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	44.0	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.148	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.00212	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00149	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	4.04	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00148	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	7.72	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	27.9	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.235	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	18.4	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000059	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	0.00020	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.00119	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0023	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.



### Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-20S	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	4050 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	6050 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	373 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	528 mg/L	500 mg/L
	Water	Turbidity	Filtration systems should be designed and operated to reduce turbidity levels as low as reasonably achievable and strive to achieve a treated water turbidity target from individual filters of less than 0.1 NTU. Particles can harbour microorganisms, protecting them from disinfection, and can entrap heavy metals and biocides; elevated or fluctuating turbidity in filtered water can indicate a problem with the water treatment process and a potential increased risk of pathogens in treated water.	ONDWS	AO/OG	2220 NTU	5 NTU
	Water	Iron, dissolved	Based on taste and staining of laundry and plumbing fixtures; no evidence exists of dietary iron toxicity in the general population.	ONDWS	AO/OG	0.990 mg/L	0.3 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.148 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	27.9 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)



## Analytical Results

Analyte	Method/Lab	LOR	Unit	Client sample ID						
				OW-20D	22-Oct-2024	00:00	WT2431427-017	ONDWS AO/OG	ONDWS MAC	--
<b>Physical Tests</b>										
Alkalinity, total (as CaCO3)	E290/WT	1.0	mg/L	581	30 - 500 mg/L	--	--	--	--	--
Colour, apparent	E330/WT	2.0	CU	22.3	5 CU	--	--	--	--	--
Conductivity	E100/WT	1.0	µS/cm	1370	--	--	--	--	--	--
Hardness (as CaCO3), dissolved	EC100/WT	0.50	mg/L	682	80 - 100 mg/L	--	--	--	--	--
pH	E108/WT	0.10	pH units	7.68	6.5 - 8.5 pH units	--	--	--	--	--
Solids, total dissolved [TDS]	E162/WT	10	mg/L	815 DLDS	500 mg/L	--	--	--	--	--
Turbidity	E121/WT	0.10	NTU	4.67	5 NTU	--	--	--	--	--
<b>Anions and Nutrients</b>										
Ammonia, total (as N)	E298/WT	0.0050	mg/L	7.60	--	--	--	--	--	--
Chloride	E235.Cl/WT	0.50	mg/L	29.3 DLDS	250 mg/L	--	--	--	--	--
Fluoride	E235.F/WT	0.020	mg/L	<0.100 DLDS	--	1.5 mg/L	--	--	--	--
Nitrate (as N)	E235.NO3/WT	0.020	mg/L	0.144 DLDS	--	10 mg/L	--	--	--	--
Nitrite (as N)	E235.NO2/WT	0.010	mg/L	<0.050 DLDS	--	1 mg/L	--	--	--	--
Phosphate, ortho-, dissolved (as P)	E378-U/WT	0.0010	mg/L	<0.0010	--	--	--	--	--	--
Sulfate (as SO4)	E235.SO4/WT	0.30	mg/L	152 DLDS	500 mg/L	--	--	--	--	--
<b>Dissolved Metals</b>										
Aluminum, dissolved	E421/WT	0.0010	mg/L	0.0012	0.1 mg/L	--	--	--	--	--
Antimony, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	0.006 mg/L	--	--	--	--
Arsenic, dissolved	E421/WT	0.00010	mg/L	0.00049	--	0.01 mg/L	--	--	--	--
Barium, dissolved	E421/WT	0.00010	mg/L	0.129	--	1 mg/L	--	--	--	--
Beryllium, dissolved	E421/WT	0.000020	mg/L	<0.000020	--	--	--	--	--	--
Bismuth, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	--	--	--	--	--
Boron, dissolved	E421/WT	0.010	mg/L	0.545	--	5 mg/L	--	--	--	--
Cadmium, dissolved	E421/WT	0.0000050	mg/L	0.0000150	--	0.005 mg/L	--	--	--	--
Calcium, dissolved	E421/WT	0.050	mg/L	146	--	--	--	--	--	--
Cesium, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Chromium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	0.05 mg/L	--	--	--	--
Cobalt, dissolved	E421/WT	0.00010	mg/L	0.00313	--	--	--	--	--	--
Copper, dissolved	E421/WT	0.00020	mg/L	0.00215	1 mg/L	--	--	--	--	--



Analyte	Method/Lab	LOR	Unit	WT2431427-017 (Continued)	ONDWS AO/OG	ONDWS MAC	--	--	--	--
<b>Dissolved Metals - Continued</b>										
Iron, dissolved	E421/WT	0.010	mg/L	0.259	0.3 mg/L	--	--	--	--	--
Lead, dissolved	E421/WT	0.000050	mg/L	0.000188	--	0.01 mg/L	--	--	--	--
Lithium, dissolved	E421/WT	0.0010	mg/L	0.0038	--	--	--	--	--	--
Magnesium, dissolved	E421/WT	0.0050	mg/L	77.2	--	--	--	--	--	--
Manganese, dissolved	E421/WT	0.00010	mg/L	0.586	0.05 mg/L	--	--	--	--	--
Molybdenum, dissolved	E421/WT	0.000050	mg/L	0.000429	--	--	--	--	--	--
Nickel, dissolved	E421/WT	0.00050	mg/L	0.00786	--	--	--	--	--	--
Phosphorus, dissolved	E421/WT	0.050	mg/L	<0.050	--	--	--	--	--	--
Potassium, dissolved	E421/WT	0.050	mg/L	21.6	--	--	--	--	--	--
Rubidium, dissolved	E421/WT	0.00020	mg/L	0.00656	--	--	--	--	--	--
Selenium, dissolved	E421/WT	0.000050	mg/L	<0.000050	--	0.05 mg/L	--	--	--	--
Silicon, dissolved	E421/WT	0.050	mg/L	6.15	--	--	--	--	--	--
Silver, dissolved	E421/WT	0.000010	mg/L	<0.000010	--	--	--	--	--	--
Sodium, dissolved	E421/WT	0.050	mg/L	28.0	200 mg/L	20 mg/L	--	--	--	--
Strontium, dissolved	E421/WT	0.00020	mg/L	0.428	--	--	--	--	--	--
Sulfur, dissolved	E421/WT	0.50	mg/L	57.8	--	--	--	--	--	--
Tellurium, dissolved	E421/WT	0.00020	mg/L	<0.00020	--	--	--	--	--	--
Thallium, dissolved	E421/WT	0.000010	mg/L	0.000404	--	--	--	--	--	--
Thorium, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Tin, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Titanium, dissolved	E421/WT	0.00030	mg/L	<0.00030	--	--	--	--	--	--
Tungsten, dissolved	E421/WT	0.00010	mg/L	<0.00010	--	--	--	--	--	--
Uranium, dissolved	E421/WT	0.000010	mg/L	0.000748	--	0.02 mg/L	--	--	--	--
Vanadium, dissolved	E421/WT	0.00050	mg/L	<0.00050	--	--	--	--	--	--
Zinc, dissolved	E421/WT	0.0010	mg/L	0.0148	5 mg/L	--	--	--	--	--
Zirconium, dissolved	E421/WT	0.00020	mg/L	0.00023	--	--	--	--	--	--
Dissolved metals filtration location	EP421/WT		-	Field	--	--	--	--	--	--

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

Please refer to the Accreditation section for an explanation of analyte accreditations.





## Summary of Guideline Breaches by Sample

SampleID/Client ID	Matrix	Analyte	Analyte Summary	Guideline	Category	Result	Limit
OW-20D	Water	Alkalinity, total (as CaCO3)		ONDWS	AO/OG	581 mg/L	30-500 mg/L
	Water	Colour, apparent	May interfere with disinfection; removal is important to ensure effective treatment.	ONDWS	AO/OG	22.3 CU	5 CU
	Water	Hardness (as CaCO3), dissolved	Hardness levels between 80 and 100 mg/L (as CaCO3) provide acceptable balance between corrosion and incrustation; where a water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	AO/OG	682 mg/L	80-100 mg/L
	Water	Solids, total dissolved [TDS]	Based on taste; TDS above 500 mg/L results in excessive scaling in water pipes, water heaters, boilers and appliances; TDS is composed of calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride, sulphate and nitrate.	ONDWS	AO/OG	815 mg/L	500 mg/L
	Water	Manganese, dissolved	Based on taste and staining of laundry and plumbing fixtures.	ONDWS	AO/OG	0.586 mg/L	0.05 mg/L
	Water	Sodium, dissolved	Based on taste; where a sodium-based water softener is used, a separate unsoftened supply for cooking and drinking purposes is recommended.	ONDWS	MAC	28.0 mg/L	20 mg/L

**Key:**

- ONDWS Ontario Drinking Water Regulation (JAN, 2020)
- AO/OG Aesthetic Objective/Operational Guideline (2006)
- MAC Schedule 1 (Microbiological) and 2 (Chemical) Standards (JAN,2020)




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## QUALITY CONTROL INTERPRETIVE REPORT

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<p><b>Work Order</b> : <b>WT2431427</b></p> <p><b>Client</b> : <b>Bluewater Geoscience Consultants Inc.</b></p> <p><b>Contact</b> : Breton Lemieux</p> <p><b>Address</b> : 42 Shadyridge Place Kitchener ON Canada N2N 3J1</p> <p><b>Telephone</b> : 519 744 4123</p> <p><b>Project</b> : BG-900</p> <p><b>PO</b> : ----</p> <p><b>C-O-C number</b> : ----</p> <p><b>Sampler</b> : BJL</p> <p><b>Site</b> : ----</p> <p><b>Quote number</b> : SOA</p> <p><b>No. of samples received</b> : 17</p> <p><b>No. of samples analysed</b> : 17</p>	<p><b>Page</b> : 1 of 33</p> <p><b>Laboratory</b> : ALS Environmental - Waterloo</p> <p><b>Account Manager</b> : Gayle Braun</p> <p><b>Address</b> : 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8</p> <p><b>Telephone</b> : +1 519 886 6910</p> <p><b>Date Samples Received</b> : 22-Oct-2024 14:00</p> <p><b>Issue Date</b> : 29-Oct-2024 16:16</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

**Key**

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

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### ***Workorder Comments***

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

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### ***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		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-1	E298	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Ammonia by Fluorescence</b>											
Amber glass total (sulfuric acid) [ON MECP] OW-10D	E298	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
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Amber glass total (sulfuric acid) [ON MECP] OW-16D	E298	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
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<b>Anions and Nutrients : Chloride in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.Cl	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
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HDPE [ON MECP] OW-16D	E235.Cl	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
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HDPE [ON MECP] OW-1	E378-U	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	24-Oct-2024	7 days	3 days	✔	
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HDPE [ON MECP] OW-13S	E235.F	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.F	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.F	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.F	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Fluoride in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.F	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	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		
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-2D	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-2S	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.NO3	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 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		
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrate in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.NO3	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	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		
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-2D	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-2S	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.NO2	22-Oct-2024	23-Oct-2024	7 days	2 days	✔	25-Oct-2024	7 days	4 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 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		
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Nitrite in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.NO2	22-Oct-2024	24-Oct-2024	7 days	3 days	✔	25-Oct-2024	7 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-1	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-10D	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-10S	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-2D	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-2S	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-3D	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-3S	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-7D	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-7S	E235.SO4	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-12D	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-12S	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-13D	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-13S	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	





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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-16D	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-16S	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-20D	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Anions and Nutrients : Sulfate in Water by IC</b>											
HDPE [ON MECP] OW-20S	E235.SO4	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	3 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-1	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-10D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-10S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-12D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-12S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	



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

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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-13D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-13S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-16D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-16S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-20D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-20S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-2D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-2S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-3D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-3S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-7D	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Dissolved Metals : Dissolved Metals in Water by CRC ICPMS</b>											
HDPE dissolved (nitric acid) OW-7S	E421	22-Oct-2024	28-Oct-2024	180 days	7 days	✔	28-Oct-2024	180 days	7 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-1	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-10D	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-10S	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-2D	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-2S	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-3D	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	



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Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-3S	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-7D	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-7S	E290	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-12D	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-12S	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-13D	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-13S	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-16D	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-16S	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-20D	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✓	25-Oct-2024	14 days	4 days	✓	
<b>Physical Tests : Alkalinity Species by Titration</b>											
HDPE [ON MECP] OW-20S	E290	22-Oct-2024	24-Oct-2024	14 days	3 days	✓	25-Oct-2024	14 days	4 days	✓	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-1	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-10D	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-10S	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-12D	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-12S	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-13D	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-13S	E330	22-Oct-2024	---	---	---		29-Oct-2024	48 hrs	175 hrs	* EHT	



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	
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-16D	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-16S	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-20D	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-20S	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-2D	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-2S	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-3D	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-3S	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>										
HDPE [ON MECP] OW-7D	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	* EHT



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		
<b>Physical Tests : Colour (Apparent) by Spectrometer</b>											
HDPE [ON MECP] OW-7S	E330	22-Oct-2024	----	----	----		29-Oct-2024	48 hrs	175 hrs	✖	EHT
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-1	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-10D	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-10S	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-2D	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-2S	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-3D	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-3S	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-7D	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	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		
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-7S	E100	22-Oct-2024	23-Oct-2024	28 days	2 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-12D	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-12S	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-13D	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-13S	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-16D	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-16S	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-20D	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	28 days	4 days	✔	
<b>Physical Tests : Conductivity in Water</b>											
HDPE [ON MECP] OW-20S	E100	22-Oct-2024	24-Oct-2024	28 days	3 days	✔	25-Oct-2024	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		
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-1	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-10D	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-10S	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-2D	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-2S	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-3D	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-3S	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-7D	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-7S	E108	22-Oct-2024	23-Oct-2024	14 days	2 days	✔	25-Oct-2024	14 days	4 days	✔	



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

Analyte Group : Analytical Method Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-12D	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-12S	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-13D	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-13S	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-16D	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-16S	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-20D	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : pH by Meter</b>											
HDPE [ON MECP] OW-20S	E108	22-Oct-2024	24-Oct-2024	14 days	3 days	✔	25-Oct-2024	14 days	4 days	✔	
<b>Physical Tests : TDS by Gravimetry</b>											
HDPE [ON MECP] OW-1	E162	22-Oct-2024	----	----	----		25-Oct-2024	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	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-10D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-10S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-12D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-12S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-13D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-13S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-16D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-16S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-20D	E162	22-Oct-2024	----	----	----		25-Oct-2024	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	
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-20S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-2D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-2S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-3D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-3S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-7D	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : TDS by Gravimetry</b>										
HDPE [ON MECP] OW-7S	E162	22-Oct-2024	----	----	----		25-Oct-2024	7 days	4 days	✔
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-1	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✔
<b>Physical Tests : Turbidity by Nephelometry</b>										
HDPE [ON MECP] OW-10D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✔



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		
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-10S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-12D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-12S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-13D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-13S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-16D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-16S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-20S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-2D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	



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		
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-2S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-3D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-3S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-7D	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-7S	E121	22-Oct-2024	----	----	----		23-Oct-2024	48 hrs	34 hrs	✓	
<b>Physical Tests : Turbidity by Nephelometry</b>											
HDPE [ON MECP] OW-20D	E121	22-Oct-2024	----	----	----		24-Oct-2024	48 hrs	57 hrs	* EHT	

**Legend & Qualifier Definitions**

EHT: Exceeded ALS recommended hold time prior to analysis.

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



## Quality Control Parameter Frequency Compliance

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

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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity Species by Titration	E290	1726461	2	20	10.0	5.0	✓
Ammonia by Fluorescence	E298	1726358	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1726453	2	30	6.6	5.0	✓
Colour (Apparent) by Spectrometer	E330	1736814	1	20	5.0	5.0	✓
Conductivity in Water	E100	1726460	2	30	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1735507	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1726457	2	30	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1726450	2	28	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1726451	2	38	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1726452	2	29	6.9	5.0	✓
pH by Meter	E108	1726459	2	36	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1726454	2	28	7.1	5.0	✓
TDS by Gravimetry	E162	1730697	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1725084	3	60	5.0	5.0	✓
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity Species by Titration	E290	1726461	2	20	10.0	5.0	✓
Ammonia by Fluorescence	E298	1726358	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1726453	2	30	6.6	5.0	✓
Colour (Apparent) by Spectrometer	E330	1736814	1	20	5.0	5.0	✓
Conductivity in Water	E100	1726460	2	30	6.6	5.0	✓
Dissolved Metals in Water by CRC ICPMS	E421	1735507	1	20	5.0	5.0	✓
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1726457	2	30	6.6	5.0	✓
Fluoride in Water by IC	E235.F	1726450	2	28	7.1	5.0	✓
Nitrate in Water by IC	E235.NO3	1726451	2	38	5.2	5.0	✓
Nitrite in Water by IC	E235.NO2	1726452	2	29	6.9	5.0	✓
pH by Meter	E108	1726459	2	36	5.5	5.0	✓
Sulfate in Water by IC	E235.SO4	1726454	2	28	7.1	5.0	✓
TDS by Gravimetry	E162	1730697	1	20	5.0	5.0	✓
Turbidity by Nephelometry	E121	1725084	3	60	5.0	5.0	✓
<b>Method Blanks (MB)</b>							
Alkalinity Species by Titration	E290	1726461	2	20	10.0	5.0	✓
Ammonia by Fluorescence	E298	1726358	1	20	5.0	5.0	✓
Chloride in Water by IC	E235.Cl	1726453	2	30	6.6	5.0	✓
Colour (Apparent) by Spectrometer	E330	1736814	1	20	5.0	5.0	✓
Conductivity in Water	E100	1726460	2	30	6.6	5.0	✓



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

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
<i>Analytical Methods</i>							
<b>Method Blanks (MB) - Continued</b>							
Dissolved Metals in Water by CRC ICPMS	E421	1735507	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1726457	2	30	6.6	5.0	✔
Fluoride in Water by IC	E235.F	1726450	2	28	7.1	5.0	✔
Nitrate in Water by IC	E235.NO3	1726451	2	38	5.2	5.0	✔
Nitrite in Water by IC	E235.NO2	1726452	2	29	6.9	5.0	✔
Sulfate in Water by IC	E235.SO4	1726454	2	28	7.1	5.0	✔
TDS by Gravimetry	E162	1730697	1	20	5.0	5.0	✔
Turbidity by Nephelometry	E121	1725084	3	60	5.0	5.0	✔
<b>Matrix Spikes (MS)</b>							
Ammonia by Fluorescence	E298	1726358	1	20	5.0	5.0	✔
Chloride in Water by IC	E235.Cl	1726453	2	30	6.6	5.0	✔
Dissolved Metals in Water by CRC ICPMS	E421	1735507	1	20	5.0	5.0	✔
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U	1726457	2	30	6.6	5.0	✔
Fluoride in Water by IC	E235.F	1726450	2	28	7.1	5.0	✔
Nitrate in Water by IC	E235.NO3	1726451	2	38	5.2	5.0	✔
Nitrite in Water by IC	E235.NO2	1726452	2	29	6.9	5.0	✔
Sulfate in Water by IC	E235.SO4	1726454	2	28	7.1	5.0	✔





## Methodology References and Summaries

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

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Conductivity in Water	E100 ALS Environmental - Waterloo	Water	APHA 2510 (mod)	Conductivity, also known as Electrical Conductivity (EC) or Specific Conductance, is measured by immersion of a conductivity cell with platinum electrodes into a water sample. Conductivity measurements are temperature-compensated to 25°C.
pH by Meter	E108 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.
Turbidity by Nephelometry	E121 ALS Environmental - Waterloo	Water	APHA 2130 B (mod)	Turbidity is measured by the nephelometric method, by measuring the intensity of light scatter under defined conditions.
TDS by Gravimetry	E162 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.
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.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
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)
Colour (Apparent) by Spectrometer	E330 ALS Environmental - Waterloo	Water	APHA 2120 C (mod)	Colour (Apparent) is measured in an unfiltered sample spectrophotometrically using the single wavelength method. The colour contribution of settleable solids are not included in the result. This method is intended for potable waters.  Colour measurements can be highly pH dependent, and apply to the pH of the sample as received (at time of testing), without pH adjustment.
Dissolved Orthophosphate by Colourimetry (Ultra Trace Level 0.001 mg/L)	E378-U ALS Environmental - Waterloo	Water	APHA 4500-P F (mod)	Dissolved Orthophosphate is determined colourimetrically on a sample that has been lab or field filtered through a 0.45 micron membrane filter.  Field filtration is recommended to ensure test results represent conditions at time of sampling.
Dissolved Metals in Water by CRC ICPMS	E421 ALS Environmental - Waterloo	Water	APHA 3030B/EPA 6020B (mod)	Water samples are filtered (0.45 um), preserved with nitric acid, and analyzed by Collision/Reaction Cell ICPMS.  Method Limitation (re: Sulfur): Sulfide and volatile sulfur species may not be recovered by this method.
Dissolved Hardness (Calculated)	EC100 ALS Environmental - Waterloo	Water	APHA 2340B	"Hardness (as CaCO <sub>3</sub> ), dissolved" is calculated from the sum of dissolved Calcium and Magnesium concentrations, expressed in CaCO <sub>3</sub> equivalents. "Total Hardness" refers to the sum of Calcium and Magnesium Hardness. Hardness is normally or preferentially calculated from dissolved Calcium and Magnesium concentrations, because it is a property of water due to dissolved divalent cations.

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.
Dissolved Metals Water Filtration	EP421 ALS Environmental - Waterloo	Water	APHA 3030B	Water samples are filtered (0.45 um), and preserved with HNO <sub>3</sub> .

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: WT2431427</b>	<b>Page</b>	: 1 of 13
<b>Client</b>	: Bluewater Geoscience Consultants Inc.	<b>Laboratory</b>	: ALS Environmental - Waterloo
<b>Contact</b>	: Breton Lemieux	<b>Account Manager</b>	: Gayle Braun
<b>Address</b>	: 42 Shadyridge Place Kitchener ON Canada N2N 3J1	<b>Address</b>	: 60 Northland Road, Unit 1 Waterloo, Ontario Canada N2V 2B8
<b>Telephone</b>	: 519 744 4123	<b>Telephone</b>	: +1 519 886 6910
<b>Project</b>	: BG-900	<b>Date Samples Received</b>	: 22-Oct-2024 14:00
<b>PO</b>	: ----	<b>Date Analysis Commenced</b>	: 23-Oct-2024
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 29-Oct-2024 16:17
<b>Sampler</b>	: B JL		
<b>Site</b>	: ----		
<b>Quote number</b>	: SOA		
<b>No. of samples received</b>	: 17		
<b>No. of samples analysed</b>	: 17		

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

This Quality Control Report contains the following information:

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

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Jon Fisher	Production Manager, Environmental	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Inorganics, Waterloo, Ontario
Walt Kippenhuck	Supervisor - Inorganic	Waterloo Metals, Waterloo, Ontario



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## General Comments

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

### Key :

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

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## Workorder Comments

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

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### Laboratory Duplicate (DUP) Report

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

Sub-Matrix: <b>Water</b>					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Physical Tests (QC Lot: 1725084)</b>											
HA2402608-016	Anonymous	Turbidity	----	E121	0.10	NTU	0.25	0.26	0.01	Diff <2x LOR	----
<b>Physical Tests (QC Lot: 1725085)</b>											
WT2431427-016	OW-20S	Turbidity	----	E121	0.10	NTU	2220	2240	0.762%	15%	----
<b>Physical Tests (QC Lot: 1726459)</b>											
WT2431427-001	OW-1	pH	----	E108	0.10	pH units	7.87	7.88	0.127%	4%	----
<b>Physical Tests (QC Lot: 1726460)</b>											
WT2431427-001	OW-1	Conductivity	----	E100	1.0	µS/cm	583	591	1.36%	10%	----
<b>Physical Tests (QC Lot: 1726461)</b>											
WT2431427-001	OW-1	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	374	378	0.883%	20%	----
<b>Physical Tests (QC Lot: 1727862)</b>											
WT2431503-002	Anonymous	Turbidity	----	E121	0.10	NTU	24.4	22.4	8.56%	15%	----
<b>Physical Tests (QC Lot: 1728895)</b>											
WT2431427-011	OW-12D	Alkalinity, total (as CaCO3)	----	E290	1.0	mg/L	413	418	1.21%	20%	----
<b>Physical Tests (QC Lot: 1728896)</b>											
WT2431427-011	OW-12D	pH	----	E108	0.10	pH units	7.72	7.68	0.519%	4%	----
<b>Physical Tests (QC Lot: 1728897)</b>											
WT2431427-011	OW-12D	Conductivity	----	E100	1.0	µS/cm	886	881	0.566%	10%	----
<b>Physical Tests (QC Lot: 1730697)</b>											
WT2431427-001	OW-1	Solids, total dissolved [TDS]	----	E162	20	mg/L	396	396	0.00%	20%	----
<b>Physical Tests (QC Lot: 1736814)</b>											
WT2431365-001	Anonymous	Colour, apparent	----	E330	2.0	CU	<2.0	<2.0	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1726358)</b>											
WT2431233-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.0050	mg/L	0.0707	0.0716	1.26%	20%	----
<b>Anions and Nutrients (QC Lot: 1726450)</b>											
WT2431453-001	Anonymous	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.129	0.128	0.002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1726451)</b>											
WT2431453-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.092	0.092	0.0001	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1726452)</b>											
WT2431453-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1726453)</b>											



Sub-Matrix: Water					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Anions and Nutrients (QC Lot: 1726453) - continued</b>											
WT2431453-001	Anonymous	Chloride	16887-00-6	E235.Cl	0.50	mg/L	87.6	87.5	0.0958%	20%	----
<b>Anions and Nutrients (QC Lot: 1726454)</b>											
WT2431453-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	206	206	0.194%	20%	----
<b>Anions and Nutrients (QC Lot: 1726457)</b>											
WT2431427-001	OW-1	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0072	0.0074	0.0002	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1728898)</b>											
WT2431427-010	OW-12S	Nitrate (as N)	14797-55-8	E235.NO3	0.020	mg/L	0.061	0.056	0.005	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1728899)</b>											
WT2431427-010	OW-12S	Sulfate (as SO4)	14808-79-8	E235.SO4	0.30	mg/L	14.3	14.2	0.777%	20%	----
<b>Anions and Nutrients (QC Lot: 1728900)</b>											
WT2431427-010	OW-12S	Nitrite (as N)	14797-65-0	E235.NO2	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1728901)</b>											
WT2431427-010	OW-12S	Fluoride	16984-48-8	E235.F	0.020	mg/L	0.049	0.038	0.010	Diff <2x LOR	----
<b>Anions and Nutrients (QC Lot: 1728902)</b>											
WT2431427-010	OW-12S	Chloride	16887-00-6	E235.Cl	0.50	mg/L	11.2	11.1	1.72%	20%	----
<b>Anions and Nutrients (QC Lot: 1728903)</b>											
HA2402639-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0010	mg/L	0.0179	0.0176	1.74%	20%	----
<b>Dissolved Metals (QC Lot: 1735507)</b>											
FJ2403180-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0030	mg/L	<0.0030	<0.0030	0	Diff <2x LOR	----
		Antimony, dissolved	7440-36-0	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Arsenic, dissolved	7440-38-2	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Barium, dissolved	7440-39-3	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Beryllium, dissolved	7440-41-7	E421	0.000020	mg/L	<0.000020	<0.000020	0	Diff <2x LOR	----
		Bismuth, dissolved	7440-69-9	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Boron, dissolved	7440-42-8	E421	0.010	mg/L	<0.010	<0.010	0	Diff <2x LOR	----
		Cadmium, dissolved	7440-43-9	E421	0.0000050	mg/L	<0.0000050	<0.0000050	0	Diff <2x LOR	----
		Calcium, dissolved	7440-70-2	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Cesium, dissolved	7440-46-2	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Chromium, dissolved	7440-47-3	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Cobalt, dissolved	7440-48-4	E421	0.00010	mg/L	<0.00010	<0.00010	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	<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	----
		Lithium, dissolved	7439-93-2	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----



Sub-Matrix: **Water**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
<b>Dissolved Metals (QC Lot: 1735507) - continued</b>											
FJ2403180-001	Anonymous	Magnesium, dissolved	7439-95-4	E421	0.100	mg/L	<0.100	<0.100	0	Diff <2x LOR	----
		Manganese, dissolved	7439-96-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Molybdenum, dissolved	7439-98-7	E421	0.000050	mg/L	<0.000050	<0.000050	0	Diff <2x LOR	----
		Nickel, dissolved	7440-02-0	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Phosphorus, dissolved	7723-14-0	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Potassium, dissolved	7440-09-7	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Rubidium, dissolved	7440-17-7	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Selenium, dissolved	7782-49-2	E421	0.000050	mg/L	<0.050 µg/L	<0.000050	0	Diff <2x LOR	----
		Silicon, dissolved	7440-21-3	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Silver, dissolved	7440-22-4	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Sodium, dissolved	7440-23-5	E421	0.050	mg/L	<0.050	<0.050	0	Diff <2x LOR	----
		Strontium, dissolved	7440-24-6	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Sulfur, dissolved	7704-34-9	E421	0.50	mg/L	<0.50	<0.50	0	Diff <2x LOR	----
		Tellurium, dissolved	13494-80-9	E421	0.00020	mg/L	<0.00020	<0.00020	0	Diff <2x LOR	----
		Thallium, dissolved	7440-28-0	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Thorium, dissolved	7440-29-1	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Tin, dissolved	7440-31-5	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Titanium, dissolved	7440-32-6	E421	0.0100	mg/L	<0.0100	<0.0100	0	Diff <2x LOR	----
		Tungsten, dissolved	7440-33-7	E421	0.00010	mg/L	<0.00010	<0.00010	0	Diff <2x LOR	----
		Uranium, dissolved	7440-61-1	E421	0.000010	mg/L	<0.000010	<0.000010	0	Diff <2x LOR	----
		Vanadium, dissolved	7440-62-2	E421	0.00050	mg/L	<0.00050	<0.00050	0	Diff <2x LOR	----
		Zinc, dissolved	7440-66-6	E421	0.0010	mg/L	<0.0010	<0.0010	0	Diff <2x LOR	----
		Zirconium, dissolved	7440-67-7	E421	0.00030	mg/L	<0.00030	<0.00030	0	Diff <2x LOR	----



## Method Blank (MB) Report

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

Sub-Matrix: Water

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Physical Tests (QCLot: 1725084)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1725085)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1726460)</b>						
Conductivity	---	E100	1	µS/cm	1.4	---
<b>Physical Tests (QCLot: 1726461)</b>						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
<b>Physical Tests (QCLot: 1727862)</b>						
Turbidity	---	E121	0.1	NTU	<0.10	---
<b>Physical Tests (QCLot: 1728895)</b>						
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	<1.0	---
<b>Physical Tests (QCLot: 1728897)</b>						
Conductivity	---	E100	1	µS/cm	<1.0	---
<b>Physical Tests (QCLot: 1730697)</b>						
Solids, total dissolved [TDS]	---	E162	10	mg/L	<10	---
<b>Physical Tests (QCLot: 1736814)</b>						
Colour, apparent	---	E330	2	CU	<2.0	---
<b>Anions and Nutrients (QCLot: 1726358)</b>						
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	<0.0050	---
<b>Anions and Nutrients (QCLot: 1726450)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1726451)</b>						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	---
<b>Anions and Nutrients (QCLot: 1726452)</b>						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	---
<b>Anions and Nutrients (QCLot: 1726453)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	---
<b>Anions and Nutrients (QCLot: 1726454)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	---
<b>Anions and Nutrients (QCLot: 1726457)</b>						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	---
<b>Anions and Nutrients (QCLot: 1728898)</b>						





Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Anions and Nutrients (QCLot: 1728898) - continued</b>						
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1728899)</b>						
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	<0.30	----
<b>Anions and Nutrients (QCLot: 1728900)</b>						
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	<0.010	----
<b>Anions and Nutrients (QCLot: 1728901)</b>						
Fluoride	16984-48-8	E235.F	0.02	mg/L	<0.020	----
<b>Anions and Nutrients (QCLot: 1728902)</b>						
Chloride	16887-00-6	E235.Cl	0.5	mg/L	<0.50	----
<b>Anions and Nutrients (QCLot: 1728903)</b>						
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	<0.0010	----
<b>Dissolved Metals (QCLot: 1735507)</b>						
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	<0.0010	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	<0.00010	----
Arsenic, dissolved	7440-38-2	E421	0.0001	mg/L	<0.00010	----
Barium, dissolved	7440-39-3	E421	0.0001	mg/L	<0.00010	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	<0.000020	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	<0.000050	----
Boron, dissolved	7440-42-8	E421	0.01	mg/L	<0.010	----
Cadmium, dissolved	7440-43-9	E421	0.000005	mg/L	<0.0000050	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	<0.050	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	<0.000010	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	<0.00050	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	<0.00010	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	<0.00020	----
Iron, dissolved	7439-89-6	E421	0.01	mg/L	<0.010	----
Lead, dissolved	7439-92-1	E421	0.00005	mg/L	<0.000050	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	<0.0010	----
Magnesium, dissolved	7439-95-4	E421	0.005	mg/L	<0.0050	----
Manganese, dissolved	7439-96-5	E421	0.0001	mg/L	<0.00010	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	<0.000050	----
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	<0.00050	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	<0.050	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	<0.050	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	<0.00020	----



Sub-Matrix: **Water**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
<b>Dissolved Metals (QCLot: 1735507) - continued</b>						
Selenium, dissolved	7782-49-2	E421	0.00005	mg/L	<0.000050	----
Silicon, dissolved	7440-21-3	E421	0.05	mg/L	<0.050	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	<0.000010	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	<0.050	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	<0.00020	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	<0.50	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	<0.00020	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	<0.000010	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	<0.00010	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	<0.00010	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	<0.00030	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	<0.00010	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	<0.000010	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	<0.00050	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	<0.0010	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	<0.00020	----



## 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
<b>Physical Tests (QCLot: 1725084)</b>									
Turbidity	---	E121	0.1	NTU	200 NTU	94.5	85.0	115	---
<b>Physical Tests (QCLot: 1725085)</b>									
Turbidity	---	E121	0.1	NTU	200 NTU	94.0	85.0	115	---
<b>Physical Tests (QCLot: 1726459)</b>									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
<b>Physical Tests (QCLot: 1726460)</b>									
Conductivity	---	E100	1	µS/cm	1410 µS/cm	104	90.0	110	---
<b>Physical Tests (QCLot: 1726461)</b>									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	101	85.0	115	---
<b>Physical Tests (QCLot: 1727862)</b>									
Turbidity	---	E121	0.1	NTU	200 NTU	93.5	85.0	115	---
<b>Physical Tests (QCLot: 1728895)</b>									
Alkalinity, total (as CaCO3)	---	E290	1	mg/L	150 mg/L	100	85.0	115	---
<b>Physical Tests (QCLot: 1728896)</b>									
pH	---	E108	---	pH units	7 pH units	101	98.0	102	---
<b>Physical Tests (QCLot: 1728897)</b>									
Conductivity	---	E100	1	µS/cm	1410 µS/cm	104	90.0	110	---
<b>Physical Tests (QCLot: 1730697)</b>									
Solids, total dissolved [TDS]	---	E162	10	mg/L	1000 mg/L	98.0	85.0	115	---
<b>Physical Tests (QCLot: 1736814)</b>									
Colour, apparent	---	E330	2	CU	25 CU	92.3	70.0	130	---
<b>Anions and Nutrients (QCLot: 1726358)</b>									
Ammonia, total (as N)	7664-41-7	E298	0.005	mg/L	0.2 mg/L	103	85.0	115	---
<b>Anions and Nutrients (QCLot: 1726450)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	100.0	90.0	110	---
<b>Anions and Nutrients (QCLot: 1726451)</b>									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	98.3	90.0	110	---
<b>Anions and Nutrients (QCLot: 1726452)</b>									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	99.8	90.0	110	---
<b>Anions and Nutrients (QCLot: 1726453)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	98.8	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
<b>Anions and Nutrients (QCLot: 1726454)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	101	90.0	110	----
<b>Anions and Nutrients (QCLot: 1726457)</b>									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	104	80.0	120	----
<b>Anions and Nutrients (QCLot: 1728898)</b>									
Nitrate (as N)	14797-55-8	E235.NO3	0.02	mg/L	2.5 mg/L	95.7	90.0	110	----
<b>Anions and Nutrients (QCLot: 1728899)</b>									
Sulfate (as SO4)	14808-79-8	E235.SO4	0.3	mg/L	100 mg/L	99.8	90.0	110	----
<b>Anions and Nutrients (QCLot: 1728900)</b>									
Nitrite (as N)	14797-65-0	E235.NO2	0.01	mg/L	0.5 mg/L	94.7	90.0	110	----
<b>Anions and Nutrients (QCLot: 1728901)</b>									
Fluoride	16984-48-8	E235.F	0.02	mg/L	1 mg/L	97.0	90.0	110	----
<b>Anions and Nutrients (QCLot: 1728902)</b>									
Chloride	16887-00-6	E235.Cl	0.5	mg/L	100 mg/L	97.6	90.0	110	----
<b>Anions and Nutrients (QCLot: 1728903)</b>									
Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.001	mg/L	0.05 mg/L	101	80.0	120	----
<b>Dissolved Metals (QCLot: 1735507)</b>									
Aluminum, dissolved	7429-90-5	E421	0.001	mg/L	0.1 mg/L	98.4	80.0	120	----
Antimony, dissolved	7440-36-0	E421	0.0001	mg/L	0.05 mg/L	101	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	----
Beryllium, dissolved	7440-41-7	E421	0.00002	mg/L	0.005 mg/L	105	80.0	120	----
Bismuth, dissolved	7440-69-9	E421	0.00005	mg/L	0.05 mg/L	102	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	105	80.0	120	----
Calcium, dissolved	7440-70-2	E421	0.05	mg/L	2.5 mg/L	104	80.0	120	----
Cesium, dissolved	7440-46-2	E421	0.00001	mg/L	0.002 mg/L	103	80.0	120	----
Chromium, dissolved	7440-47-3	E421	0.0005	mg/L	0.012 mg/L	104	80.0	120	----
Cobalt, dissolved	7440-48-4	E421	0.0001	mg/L	0.012 mg/L	101	80.0	120	----
Copper, dissolved	7440-50-8	E421	0.0002	mg/L	0.012 mg/L	102	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	105	80.0	120	----
Lithium, dissolved	7439-93-2	E421	0.001	mg/L	0.012 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	102	80.0	120	----
Molybdenum, dissolved	7439-98-7	E421	0.00005	mg/L	0.012 mg/L	104	80.0	120	----



Sub-Matrix: **Water**

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Target Concentration	LCS	Low	High	Qualifier
<b>Dissolved Metals (QCLot: 1735507) - continued</b>									
Nickel, dissolved	7440-02-0	E421	0.0005	mg/L	0.025 mg/L	103	80.0	120	----
Phosphorus, dissolved	7723-14-0	E421	0.05	mg/L	0.5 mg/L	110	80.0	120	----
Potassium, dissolved	7440-09-7	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
Rubidium, dissolved	7440-17-7	E421	0.0002	mg/L	0.005 mg/L	104	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	101	60.0	140	----
Silver, dissolved	7440-22-4	E421	0.00001	mg/L	0.005 mg/L	96.1	80.0	120	----
Sodium, dissolved	7440-23-5	E421	0.05	mg/L	2.5 mg/L	103	80.0	120	----
Strontium, dissolved	7440-24-6	E421	0.0002	mg/L	0.012 mg/L	102	80.0	120	----
Sulfur, dissolved	7704-34-9	E421	0.5	mg/L	2.5 mg/L	95.7	80.0	120	----
Tellurium, dissolved	13494-80-9	E421	0.0002	mg/L	0.005 mg/L	102	80.0	120	----
Thallium, dissolved	7440-28-0	E421	0.00001	mg/L	0.05 mg/L	103	80.0	120	----
Thorium, dissolved	7440-29-1	E421	0.0001	mg/L	0.005 mg/L	104	80.0	120	----
Tin, dissolved	7440-31-5	E421	0.0001	mg/L	0.025 mg/L	104	80.0	120	----
Titanium, dissolved	7440-32-6	E421	0.0003	mg/L	0.012 mg/L	92.0	80.0	120	----
Tungsten, dissolved	7440-33-7	E421	0.0001	mg/L	0.005 mg/L	106	80.0	120	----
Uranium, dissolved	7440-61-1	E421	0.00001	mg/L	0 mg/L	108	80.0	120	----
Vanadium, dissolved	7440-62-2	E421	0.0005	mg/L	0.025 mg/L	104	80.0	120	----
Zinc, dissolved	7440-66-6	E421	0.001	mg/L	0.025 mg/L	102	80.0	120	----
Zirconium, dissolved	7440-67-7	E421	0.0002	mg/L	0.005 mg/L	98.6	80.0	120	----



## Matrix Spike (MS) Report

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

Sub-Matrix: **Water**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
<b>Anions and Nutrients (QCLot: 1726358)</b>										
WT2431233-001	Anonymous	Ammonia, total (as N)	7664-41-7	E298	0.105 mg/L	0.1 mg/L	105	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726450)</b>										
WT2431453-001	Anonymous	Fluoride	16984-48-8	E235.F	0.927 mg/L	1 mg/L	92.7	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726451)</b>										
WT2431453-001	Anonymous	Nitrate (as N)	14797-55-8	E235.NO3	2.44 mg/L	2.5 mg/L	97.6	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726452)</b>										
WT2431453-001	Anonymous	Nitrite (as N)	14797-65-0	E235.NO2	0.502 mg/L	0.5 mg/L	100	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726453)</b>										
WT2431453-001	Anonymous	Chloride	16887-00-6	E235.Cl	98.1 mg/L	100 mg/L	98.1	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726454)</b>										
WT2431453-001	Anonymous	Sulfate (as SO4)	14808-79-8	E235.SO4	ND mg/L	----	ND	75.0	125	----
<b>Anions and Nutrients (QCLot: 1726457)</b>										
WT2431427-001	OW-1	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0199 mg/L	0.02 mg/L	101	70.0	130	----
<b>Anions and Nutrients (QCLot: 1728898)</b>										
WT2431427-010	OW-12S	Nitrate (as N)	14797-55-8	E235.NO3	2.30 mg/L	2.5 mg/L	92.0	75.0	125	----
<b>Anions and Nutrients (QCLot: 1728899)</b>										
WT2431427-010	OW-12S	Sulfate (as SO4)	14808-79-8	E235.SO4	93.7 mg/L	100 mg/L	93.7	75.0	125	----
<b>Anions and Nutrients (QCLot: 1728900)</b>										
WT2431427-010	OW-12S	Nitrite (as N)	14797-65-0	E235.NO2	0.470 mg/L	0.5 mg/L	93.9	75.0	125	----
<b>Anions and Nutrients (QCLot: 1728901)</b>										
WT2431427-010	OW-12S	Fluoride	16984-48-8	E235.F	0.903 mg/L	1 mg/L	90.3	75.0	125	----
<b>Anions and Nutrients (QCLot: 1728902)</b>										
WT2431427-010	OW-12S	Chloride	16887-00-6	E235.Cl	96.3 mg/L	100 mg/L	96.3	75.0	125	----
<b>Anions and Nutrients (QCLot: 1728903)</b>										
HA2402639-001	Anonymous	Phosphate, ortho-, dissolved (as P)	14265-44-2	E378-U	0.0200 mg/L	0.02 mg/L	102	70.0	130	----
<b>Dissolved Metals (QCLot: 1735507)</b>										
FJ2403180-001	Anonymous	Aluminum, dissolved	7429-90-5	E421	0.0955 mg/L	0.1 mg/L	95.5	70.0	130	----
		Antimony, dissolved	7440-36-0	E421	0.0492 mg/L	0.05 mg/L	98.3	70.0	130	----
		Arsenic, dissolved	7440-38-2	E421	0.0535 mg/L	0.05 mg/L	107	70.0	130	----
		Barium, dissolved	7440-39-3	E421	0.0126 mg/L	0.012 mg/L	101	70.0	130	----
		Beryllium, dissolved	7440-41-7	E421	0.00514 mg/L	0.005 mg/L	103	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
<b>Dissolved Metals (QCLot: 1735507) - continued</b>										
FJ2403180-001	Anonymous	Bismuth, dissolved	7440-69-9	E421	0.0454 mg/L	0.05 mg/L	90.8	70.0	130	----
		Boron, dissolved	7440-42-8	E421	0.047 mg/L	0.05 mg/L	94.3	70.0	130	----
		Cadmium, dissolved	7440-43-9	E421	0.00513 mg/L	0.005 mg/L	103	70.0	130	----
		Calcium, dissolved	7440-70-2	E421	2.45 mg/L	2.5 mg/L	98.1	70.0	130	----
		Cesium, dissolved	7440-46-2	E421	0.00248 mg/L	0.002 mg/L	99.2	70.0	130	----
		Chromium, dissolved	7440-47-3	E421	0.0124 mg/L	0.012 mg/L	99.6	70.0	130	----
		Cobalt, dissolved	7440-48-4	E421	0.0124 mg/L	0.012 mg/L	99.5	70.0	130	----
		Copper, dissolved	7440-50-8	E421	0.0124 mg/L	0.012 mg/L	99.5	70.0	130	----
		Iron, dissolved	7439-89-6	E421	0.049 mg/L	0.05 mg/L	97.3	70.0	130	----
		Lead, dissolved	7439-92-1	E421	0.0252 mg/L	0.025 mg/L	101	70.0	130	----
		Lithium, dissolved	7439-93-2	E421	0.0121 mg/L	0.012 mg/L	96.8	70.0	130	----
		Magnesium, dissolved	7439-95-4	E421	2.64 mg/L	2.5 mg/L	106	70.0	130	----
		Manganese, dissolved	7439-96-5	E421	0.0127 mg/L	0.012 mg/L	102	70.0	130	----
		Molybdenum, dissolved	7439-98-7	E421	0.0125 mg/L	0.012 mg/L	100	70.0	130	----
		Nickel, dissolved	7440-02-0	E421	0.0248 mg/L	0.025 mg/L	99.1	70.0	130	----
		Phosphorus, dissolved	7723-14-0	E421	0.540 mg/L	0.5 mg/L	108	70.0	130	----
		Potassium, dissolved	7440-09-7	E421	2.52 mg/L	2.5 mg/L	101	70.0	130	----
		Rubidium, dissolved	7440-17-7	E421	0.00488 mg/L	0.005 mg/L	97.7	70.0	130	----
		Selenium, dissolved	7782-49-2	E421	0.0532 mg/L	0.05 mg/L	106	70.0	130	----
		Silicon, dissolved	7440-21-3	E421	0.506 mg/L	0.5 mg/L	101	70.0	130	----
		Silver, dissolved	7440-22-4	E421	0.00457 mg/L	0.005 mg/L	91.5	70.0	130	----
		Sodium, dissolved	7440-23-5	E421	2.60 mg/L	2.5 mg/L	104	70.0	130	----
		Strontium, dissolved	7440-24-6	E421	0.0123 mg/L	0.012 mg/L	98.6	70.0	130	----
		Sulfur, dissolved	7704-34-9	E421	2.47 mg/L	2.5 mg/L	98.7	70.0	130	----
		Tellurium, dissolved	13494-80-9	E421	0.00526 mg/L	0.005 mg/L	105	70.0	130	----
		Thallium, dissolved	7440-28-0	E421	0.0504 mg/L	0.05 mg/L	101	70.0	130	----
		Thorium, dissolved	7440-29-1	E421	0.00460 mg/L	0.005 mg/L	92.1	70.0	130	----
		Tin, dissolved	7440-31-5	E421	0.0245 mg/L	0.025 mg/L	98.0	70.0	130	----
		Titanium, dissolved	7440-32-6	E421	0.0116 mg/L	0.012 mg/L	92.7	70.0	130	----
		Tungsten, dissolved	7440-33-7	E421	0.00498 mg/L	0.005 mg/L	99.7	70.0	130	----
		Uranium, dissolved	7440-61-1	E421	0.000250 mg/L	0 mg/L	99.8	70.0	130	----
		Vanadium, dissolved	7440-62-2	E421	0.0256 mg/L	0.025 mg/L	102	70.0	130	----
		Zinc, dissolved	7440-66-6	E421	0.0258 mg/L	0.025 mg/L	103	70.0	130	----
		Zirconium, dissolved	7440-67-7	E421	0.00471 mg/L	0.005 mg/L	94.2	70.0	130	----





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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20 - 1081609

Page 1 of 2

1081609

Environmental Division  
Waterloo  
Work Order Reference  
WT2431427



Telephone: + 1 519 888 8910

<b>Report To</b> Contact and company name below will appear on the final report Company: <u>Bluewater GeoScience</u> Contact: <u>B. Lemieux</u> Phone: Company address below will appear on the final report		<b>Reports / Recipients</b> Select Report Format: <input checked="" type="checkbox"/> PDF <input type="checkbox"/> EXCEL <input type="checkbox"/> EOD (DIGITAL) Merge QC/QCI Reports with COA <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A Select Distribution: <input checked="" type="checkbox"/> BMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax Email 2 Email 3	
Street: City/Province: Postal Code: Invoice To: Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Copy of Invoice with Report <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Company: Contact:		<b>Invoice Recipients</b> Select Invoice Distribution: <input checked="" type="checkbox"/> BMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX Email 1 or Fax Email 2 Email 3	
<b>Project Information</b> ALS Account # / Quote #: <u>BG-900</u> Job #: PO / AFE: LSD:		<b>Oil and Gas Required Fields (client use)</b> AFE/Coast Center: Major/Minor Code: Requisitioner: Location:	
ALS Lab Work Order # (ALS use only): <u>WT2431427 PH.</u> ALS Sample # (ALS use only):		ALS Contact: <u>Gayle</u> Date (dd-mm-yy): <u>22/10/24</u> Sampler: <u>BST</u> Time (hh:mm): Sample Type:	
Sample Identification and/or Coordinates (This description will appear on the report)		<b>NUMBER OF CONTAINERS</b> <u>Gen-Chem. Pkg. 1 A</u>	
Drinking Water (DW) Samples' (client use) Are samples taken from a Regulated DW System? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Are samples for human consumption/ use? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		<b>SAMPLE RECEIPT DETAILS (ALS use only)</b> Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED Submission Comments Identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A <input type="checkbox"/> N/A INITIAL COOLER TEMPERATURES °C: <u>9.1</u> <u>8.8</u> FINAL COOLER TEMPERATURES °C:	
Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only) <u>ODWS</u>		<b>SHIPMENT RELEASE (client use)</b> Released by: <u>BSL</u> Date: <u>07.22.24</u> Time: <b>INITIAL SHIPMENT RECEPTION (ALS use only)</b> Received by: <u>VM</u> Date: <u>22-09-24</u> Time: <u>11:50</u>	

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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

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

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

ALS 2023 FORM





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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

COC Number: 20-1081608

Page 2 of 2

Contact and company name below will appear on the final report

Report To: **Bluespan Geoscience**  
 Company: **B. LeMeux**  
 Contact: **B. LeMeux**  
 Phone:   
 Company address below will appear on the final report

Select Report Format:  PDF  EXCEL  EOD (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

Street:   
 City/Province:   
 Postal Code:   
 Invoice To: Same as Report To  YES  NO  
 Copy of Invoice with Report  YES  NO  
 Company:   
 Contact:   
 Project Information

Select Invoice Distribution:  EMAIL  MAIL  FAX  
 Email 1 or Fax   
 Email 2   
 Email 3   
 Invoice Recipients

ALS Account # / Quote #: **BSG-900**  
 Job #: **BSG-900**  
 PO / AFE:   
 Location:   
 ALS Lab Work Order # (ALS use only):   
 ALS Sample # (ALS use only):

Oil and Gas Required Fields (client use)  
 AFE/Coat Center:   
 Major/Minor Code:   
 Requisitioner:   
 Location:   
 ALS Contact: **GARYL**

Turnaround Time (TAT) Requested  
 Routine [R]: if received by 3pm M-F - no surcharges apply  
 4 day [R4]: if received by 3pm M-F - 25% rush surcharge minimum  
 3 day [R3]: if received by 3pm M-F - 25% rush surcharge minimum  
 2 day [R2]: if received by 3pm M-F - 50% rush surcharge minimum  
 1 day [R1]: if received by 3pm M-F - 100% rush surcharge minimum  
 Same day [R2]: 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 Requested for all E&P TATs:   
 For all tests with rush TATs requested, please contact your AM to confirm availability.

Sample Identification and/or Coordinates  
 (This description will appear on the report)

Date: **22/10/24** Time: **14:00** Sample Type: **GS**

NUMBER OF CONTAINERS  
**Gen-Chem Pkg. 1**  
 Indicate Filtered (F), Preserved (P) or Filtered and Preserved (FP) below

Drinking Water (DW) Samples<sup>1</sup> (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)  
**DOUS**

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: **9.1** FINAL COOLER TEMPERATURES °C: **8.8**

Released by: **BSL** Date: **OCT 22/24** Time: **14:00** Received by: **VM** Date: **22-OCT-24** Time: **14:00**  
 SHIPMENT RELEASE (client use) INITIAL SHIPMENT RECEPTION (ALS use only) FINAL SHIPMENT RECEPTION (ALS use only)  
 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.



**Nottawasaga Valley**  
Conservation Authority

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Mayor and Council of the Township of Melancthon  
157101 Highway 10  
Melancthon, Ontario  
L9V 2E6

February 28, 2025

Dear Mayor and Councillors,

I am writing on behalf of the Nottawasaga Valley Conservation Authority (NVCA) Board of Directors regarding Oro-Medonte's recent resolution proposing the amalgamation of the NVCA and the Lake Simcoe Region Conservation Authority (LSRCA) under section 11 of the *Conservation Authorities Act, 1990*.

Following careful deliberation with our Board, and discussion with the Chair and CAO of the LSRCA, it is the position of the NVCA Board that a formal amalgamation is neither necessary nor advisable. (Our resolution to that effect is enclosed.)

Let me outline why our Board has taken this position:

To date, no independent, expert analysis has been presented to demonstrate that amalgamation would improve efficiency or service delivery. On the contrary, experience has shown that larger municipal entities often result in increased costs, governance challenges, operational inefficiencies and a loss of local focus.

Further, NVCA and LSRCA serve distinct watersheds with unique ecological, planning and regulatory frameworks. While some municipalities are within both Authorities, the vast majority of NVCA member municipalities have little in common with the Lake Simcoe watershed. Additionally, the LSRCA has distinct responsibilities under the *Lake Simcoe Protection Act*, which highlights the unique challenges of that watershed. A single, combined Authority could dilute focus and reduce responsiveness to local needs, given the new entity would span a very large geographic area.

Rather than pursuing an amalgamation process—one that would inevitably lead to debates over jurisdiction, governance and composition—the NVCA Board is focused on delivering meaningful improvements that address the concerns of our municipal partners. Our goal is to enhance service delivery, streamline permitting and development processes, and maintain a strong commitment to protecting people and property from natural hazards under Ontario law.

This work is already well underway under the leadership of our Interim CAO. I would like to highlight several initiatives that directly respond to the issues raised by our stakeholders and members:

**Nottawasaga Valley Conservation Authority**  
8195 8<sup>th</sup> Line, Utopia, ON L0M 1T0  
T: 705-424-1479 • F: 705-424-2115  
admin@nvca.on.ca • nvca.on.ca

A member of Conservation Ontario  
ACT 1

MAR 20 2025

- Operational Accountability: We have implemented a new monthly reporting system for development and permitting applications to the Chair and Vice-Chair to ensure heightened accountability and service improvement.
- Process Review and Best Practices: We are undertaking a comprehensive audit of our development-application processes to identify opportunities for greater efficiency. As part of this review, we are working collaboratively with LSRCA and other Authorities to share best practices and standardize processes where appropriate.
- Improving Consistency Between NVCA and Other Conservation Authorities: Recognizing that some municipalities are subject to both authorities' regulations, we are committed to aligning our review processes to ensure they are as consistent and predictable as possible.
- Customer Service Improvements: We are updating our customer-service policy and will provide additional staff training to enhance responsiveness and efficiency.

You may view more about this action plan in the enclosed staff report presented to our board.

These measures are practical, targeted and achievable. They will result in tangible improvements without the disruption, expense and uncertainty that an amalgamation process would bring.

The NVCA Board remains committed to continuous improvement and collaboration with our municipal partners. We welcome your feedback as we pursue these important initiatives and remain open to further discussions on how we can best support your community's needs.

Thank you for your attention to this matter. Please do not hesitate to contact me or our Interim CAO, Sheryl Flannagan at [sflannagan@nvca.on.ca](mailto:sflannagan@nvca.on.ca), if you wish to discuss this further.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Jonathan Scott', with a stylized flourish extending from the end.

Jonathan Scott

Chair, Nottawasaga Valley Conservation Authority

cc

Mayors and Councils within the LSRCA and NVCA

LSRCA Board

Conservation Ontario Council





NOTTAWASAGA VALLEY CONSERVATION AUTHORITY  
BOARD OF DIRECTORS  
MEETING NO. 02-25-BOD  
February 28, 2025

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Agenda Item#: 13.4.1

Resolution#: 18-25

MOVED BY: Cllr. June Porter

SECONDED BY: Mayor Gary Harvey

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**WHEREAS:** the Board of Directors is in receipt of correspondence from Oro-Medonte Council that seeks to start the amalgamation process between the NVCA and the Lake Simcoe Region Conservation Authority (LSRCA) as outlined in Section 11 of the Conservation Authorities Act; and

**WHEREAS:** NVCA and LSRCA serve distinct and separate watersheds, each with unique ecological, planning and regulatory considerations, including LSRCA's additional responsibilities under the Lake Simcoe Protection Act; and

**WHEREAS:** no independent, expert analysis has been conducted to determine whether an amalgamation would improve efficiency and service delivery or whether it may instead result in increased costs, governance challenges, operational inefficiencies or dilution of focus on the needs of the individual watersheds; and

**WHEREAS:** Conservation Ontario has generally supported maintaining the current structure of thirty-six Conservation Authorities across Ontario, recognizing the value of locally focused watershed management; and

**WHEREAS:** the NVCA is actively collaborating with other Conservation Authorities and through a customer centric focus, has been making improvements to processes and procedures, therefore,

**BE IT RESOLVED:** that the NVCA Board of Directors opposes the proposed amalgamation of NVCA and the LSRCA, as it has not been demonstrated that such a change would benefit watershed management, municipalities or the public; and

**FURTHER THAT:** the Board supports continued and enhanced collaboration between NVCA, Conservation Ontario, and other Conservation Authorities to standardize processes and procedures where feasible, particularly to assist development and permit applicants whose activities fall within municipalities that straddle multiple watersheds; and

**FURTHER THAT:** remains committed to working constructively with Oro-Medonte and all NVCA member municipalities to address and resolve any challenges, including planning and permitting, in a fair, transparent and efficient manner; and



NOTTAWASAGA VALLEY CONSERVATION AUTHORITY  
BOARD OF DIRECTORS  
MEETING NO. 02-25-BOD  
February 28, 2025

---

**FURTHER THAT:** a copy of this resolution with a letter from the Chair be sent to all NVCA and LSRCA member municipalities, the LSRCA Board and Conservation Ontario Council.

- Carried Unanimously
- Approved by Consent
- Defeated
- Tabled
- Deferred until \_\_\_\_\_

A handwritten signature in black ink, appearing to read "Jonath", written in a cursive style with a long horizontal stroke extending to the right.

NVCA Chair



Staff Report: 04-02-25-BOD

Date: 28/02/2025

To: Chair and Members of the Board of Directors

From: Sheryl Flannagan  
Interim Chief Administrative Officer/Director, Corporate Services

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**SUBJECT: Interim CAO Workplan**

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**Recommendation**

**RESOLVED THAT: the Board of Directors receive Staff Report No. 04-02-25-BOD regarding the Interim CAO workplan.**

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Purpose of the Staff Report

The purpose of this Staff Report is to update the Board on the Interim CAO's workplan during this transitional period and to update the Board on progress and commitments moving forward.

Background

The NVCA is going through a transformative time with the departure of the previous CAO and the upcoming recruitment of a new CAO. To ensure stability and continuity, the Interim CAO has implemented a focused workplan that addresses current challenges while positioning the organization for success under new leadership.

Issues/Analysis

The following is a list of the four key priorities and commitments.

## 1. Strengthening Municipal relationships

The Interim CAO, Chair, and Vice-Chair have prioritized engaging with partner municipalities to foster collaboration and address concerns. To date, meetings have been held with Wasaga Beach, New Tecumseth, and Oro-Medonte, with a meeting scheduled with Springwater on February 26<sup>th</sup>. Additionally, the Chair has issued an introductory letter inviting all partner municipalities to share any concerns or ideas with the NVCA.

### Progress to Date:

- Engaged with four municipalities to discuss development priorities and address concerns
- Implemented a 48-hour response protocol for issues raised by municipal partners
- Issued a Chair's introductory letter inviting all municipalities to meet or connect with the NVCA

### Continued Commitment:

Goal – Meet with any municipality that expresses interest in engaging with the NVCA

Next Steps – Continue outreach to municipalities and respond promptly to all requests for meetings.

Outcome – Strengthen municipal partnerships and identify opportunities for process improvements based on their feedback.

## 2. Restoring and Enforcing Customer Service Standards

The NVCA's customer service strategy and charter, implemented in 2013, lapsed in practice due to high workloads during the COVID-19 pandemic. In January 2025, the Interim CAO reinstated compliance with the customer service strategy and reminded all staff of their obligations to meet service standards. A copy of the strategy is attached (see attachment #1).

### Progress to Date:

- Customer Service Strategy compliance was reinstated in January 2025
- All staff have been instructed to comply with service timelines as outlined in the charter

### Continued Commitment:

Goal – Achieve full compliance with the Customer Service Strategy within Q1 2025

Next Steps – Review customer service strategy compliance with senior staff on a monthly basis and identify any issues of concern

Reporting – Provide progress updates to the Board at the end of Q2 and again at year-end

Outcome – Improve response times and enhance customer satisfaction

### 3. Evaluating Planning, Permitting, and Engineering processes

The NVCA recognizes the need for a comprehensive evaluation of planning, permitting, and engineering process to ensure efficiency and alignment with legislative changes. The Interim CAO is currently consulting with other CAO's to identify the best approach for this review.

Progress to Date:

- Initiated discussions with other conservation authorities to evaluate process review options
- Solicited recommendations for consultants experienced in conservation authority process evaluations.

Continued Commitment:

Goal – Initiate an external process review by March 31, 2025

Next Steps – Select a consultant or peer conservation authority(s) to conduct the review and set a clear timeline for completion

Outcome – Identify inefficiencies, streamline workflows and enhance service delivery

### 4. Developing a backlog reduction strategy for Planning, Permitting, and Engineering

The NVCA is exploring immediate and long-term solutions to address the backlog in planning, permitting and engineering files. While process improvements from item 3 will drive long-term efficiency, short-term solutions are also under review.

Progress to Date:

- Considering third-party consultants to expedite peer reviews, but cost estimates (approximately \$100,000) raise concerns due to budget constraints



- Exploring internal measures to reduce workload on engineering staff without compromising service standards

Continued Commitment:

Goal – Present a backlog reduction strategy to the Board by the March 2025 meeting

Next Steps – Conclude process review from item 3 to identify internal efficiencies, investigate phased or capped use of consultants if internal measures are insufficient, and provide the Board with a cost-benefit analysis before committing significant funds to peer reviews.

Outcome – Reduce backlog while maintaining fiscal responsibility and service standards.

#### Relevance to Authority Policy/Mandate

The workplan directly supports the NVCA’s mandate under the *Conservation Authorities Act* by ensuring efficient operations, enhancing customer service and fostering productive relationships with partner municipalities.

#### Impact on Authority Finances

Staff time to prepare this report is addressed in the 2025 budget. Any additional costs related to external consultants for process reviews or backlog reduction will be brought to the Board for approval with a clear cost-benefit analysis.

#### Climate Change Implications

There are no climate change implications related to this report.

Reviewed by:  
*Original Signed by*  
Sheryl Flannagan  
Interim Chief Administrative Officer/  
Director, Corporate Services

Approved for submission by:  
*Original Signed by*  
Sheryl Flannagan  
Interim Chief Administrative Officer/  
Director Corporate Services

Attachment #1 – Customer Service Strategy

**THE CORPORATION OF THE TOWNSHIP OF MELANCTHON**

**BY-LAW NUMBER \_\_\_\_\_ - 2025**

**BEING A BY-LAW TO AUTHORIZE THE SIGNING OF AN ACCESS  
AGREEMENT BETWEEN THE CORPORATION OF THE TOWNSHIP OF  
MELANCTHON AND THE GRAND RIVER CONSERVATION  
AUTHORITY**

**WHEREAS** it is deemed expedient that the Corporation of the Township of Melancthon and the Grand River Conservation Authority enter into an access agreement for Provincial Groundwater Monitoring Network Wells.

**NOW THEREFORE THE CORPORATION OF THE TOWNSHIP OF MELANCTHON BY  
THE MUNICIPAL COUNCIL THEREOF ENACTS AS FOLLOWS:**

1. THAT the Chief Administrative Officer is hereby authorized and directed to sign the Access Agreement between the Corporation of the Township of Melancthon and the Grand River Conservation Authority for two monitoring wells that the Grand River Conservation Authority has located on road allowance in the Township of Melancthon, in substantially the same form as attached hereto as Schedule "A".

BY-LAW READ A FIRST AND SECOND TIME THIS 20<sup>TH</sup> DAY OF MARCH, 2025.

BY-LAW READ A THIRD TIME AND PASSED THIS 20<sup>TH</sup> DAY OF MARCH, 2025.

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CLERK

**THIS AGREEMENT** made this \_\_\_\_\_ day of \_\_\_\_\_, 2025.

**BETWEEN:**

**TOWNSHIP OF MELANCTHON**

together herein called “Owner”,

OF THE FIRST PART

- and –

**THE GRAND RIVER CONSERVATION AUTHORITY**

herein called “Authority”,

OF THE SECOND PART

**WHEREAS:**

1. The Owner is the registered owner of the lands described herein under Schedule “A”, and as amended from time to time (herein called “the Lands”).
2. The Owner (in response to a request from the Authority) has agreed, subject to and upon the terms herein contained, to grant to the Authority a non-exclusive licence for reasonable access to the Lands for the purpose of drilling, installing, maintaining, repairing, removing, operating, monitoring and sampling boreholes and/or monitoring wells (the “**Monitoring Wells**”) in/on the Lands to measure water levels and determine the quality of subsurface groundwater associated with the Provincial Groundwater Monitoring Network.

**WITNESS** that in consideration of the premises and other good and valuable consideration, the receipt and sufficiency whereof is hereby acknowledged, The Owner and Authority agree as follows:

1. The Parties hereto acknowledge and confirm the accuracy and truth of the foregoing recitals.
2. All prior agreements, understandings and arrangements with the Authority for Monitoring Wells associated with the Provincial Groundwater Monitoring Network on the Lands, are hereby revoked and replaced in their entirety by this Agreement.

3. **GRANT OF LICENCE**

The Owner hereby grants to the Authority a non-exclusive licence to use the Lands for the purpose of drilling, installing, maintaining, repairing, removing, operating, monitoring and sampling Monitoring Wells in/on the Lands in the locations shown on Schedule "A" or as agreed by the Owner from time to time, to determine the quality and level of subsurface groundwater, and for every such purpose and for all purposes necessary or incidental to the exercise of the rights hereby created the Authority and its servants, agents, consultants, contractors and subcontractors and their supplies and equipment shall have reasonable access to the Lands. The licence granted hereby shall be non-exclusive and in common with the rights of the Owner and its invitees and any existing easements to the Lands; provided that neither Owner nor its licensees, easement rights holders or invitees shall be permitted to alter, move, remove or otherwise decommission any Monitoring Wells without the prior written consent of the Authority, not to be unreasonably withheld. Subject to the rights and obligations in this Agreement, Owner shall have the charge, administration, management and right of sale or disposition of the Lands as well as the right to fully use and enjoy the same. Owner is not and will not be under any obligation at any time to maintain the Lands, construct or repair or improve access, or clear snow or other obstructions, to or on the Lands.

4. **OBLIGATIONS OF THE OWNER**

The Owner agrees:

- (a) to negotiate options with the Authority prior to submitting written notice for termination of the Agreement if the Monitoring Wells become a hindrance, which would include, but not be limited to installation of electronic monitoring equipment, conversion to flush mounted casings or relocation; and
- (b) to notify the Authority in the event the Owner plans or intends to sell or otherwise dispose of any of the Lands.

5. **TERM OF AGREEMENT**

The term of this Agreement shall be ten (10) years commencing March 1, 2025 and ending February 28, 2035. This Agreement shall be automatically renewed for one (1) additional term of ten (10) years thereafter, unless terminated by either party upon giving at least one hundred twenty (120) days prior written notice to the other party.

THAT this Agreement may be cancelled unilaterally by either party by providing six (6) months notice in writing of the intention to cancel to the other party or by mutual agreement with any agreed period of notice.

6. **OBLIGATIONS OF THE AUTHORITY**

The Authority agrees:

- (a) to perform the drilling, installation, maintenance, repair, removal, operating, monitoring and sampling, of the Monitoring Wells to be conducted upon the Lands (the “**Work**”) at its sole risk and expense in accordance with generally accepted good engineering practices and standards and in compliance with all applicable laws (including, without restriction, compliance with all applicable environmental laws and regulations), ensuring that its agents, servants, consultants, contractors and subcontractors are competent, properly trained, licensed and insured to carry out the Work to be performed pursuant to this Agreement and are informed of the Authority’s obligations under this Agreement;
- (b) to request the written approval from the Owner prior to the commencement of any Work or taking any action that is not described in herein, such consent not to be unreasonably withheld;
- (c) to restrict its access to the Lands by traveling only over and along existing open areas, trails and access roadways that have been constructed upon the Lands, if applicable, as much as reasonably possible;
- (d) to ensure that its access to and use of the Lands does not unreasonably impede or interfere with the reasonable use and enjoyment of the Lands by the Owners or its invitees or by any existing easement rights holders, and to abandon and/or relocate

the Monitoring Wells as requested by the Owner in writing, acting reasonably;

- (e) to obtain at its expense all permits, licences and approvals that are required from any and all governmental authorities in connection with the Work on the Lands;
- (f) during the entire term of this Agreement, to obtain and keep in force a general public liability insurance policy in at least the amount of two million dollars (\$2,000,000.00) of lawful money of Canada, that protects the Authority and the employees of the Authority from all claims, demands, actions, causes of action that may be taken or made against them or any of them for any loss, damage or injury, including death, of any nature or kind whatsoever that may arise through any act or omission or both including negligent acts or omissions of the Authority or any employee or employees of the Authority;
- (g) to name the Owner as an additional insured, but only in respect of the carrying out of responsibilities assumed by the Authority on the Lands under the conditions of this Agreement, and not in respect of any act or omission of the Owner or its invites, or, if applicable, any of their respective owners, members, directors, officers, agents, servants, consultants, contractors and subcontractors;
- (h) to take special note on the Lands of inherent occupational hazards, if any, and to be knowledgeable of, and abide by, the provisions of all legislative enactment, by-laws and regulations in regard to health and safety in the Province of Ontario;
- (i) to promptly notify the Owner of any loss, damage or injury suffered by any person or of any damage to any property resulting from, occasioned by or arising in connection with the Work or the Monitoring Wells;
- (j) to indemnify and hold the Owner harmless from and against all liabilities, claims (including orders and prosecutions), suits, actions, fines, damages, losses, costs, and expenses (including defence costs and court costs) arising out of injury to or death of any person or damage to or loss or destruction of any property or in defending any action (including orders and prosecutions), application, claim or demand for environment or occupational health and safety liability

arising from the actions, errors or omissions of the Authority, its agents, servants, consultants, contractors and sub-contractors, caused by or resulting from activities of the Authority described herein on the Lands or any part of the Lands or arising from any negligence, default, improper performance or non-performance of obligations in this Agreement by the Authority, its agents, servants, consultants, contractors and sub-contractors; provided that the indemnity as outlined in this Agreement shall not apply to existing contamination or environmental issues, concerns or conditions at the location of work or lands owned by the Owner being performed by the Authority or their contractor;

- (k) upon expiry of this Agreement (or of any renewal thereof) or upon the earlier termination of this Agreement, to forthwith abandon the Monitoring Wells (including capping and sealing) in accordance with good engineering practice, , and regulations thereto and as outlined in Provincial policy and guideline documents and to remove all equipment from the Lands and to restore and deliver up vacant possession of the Lands in the condition that existed at the time of signing of this Agreement;
- (l) that all site restoration required as a result of the operations as outlined under this Agreement by the Authority or its contractors and subcontractors will be the responsibility of the Authority, and all costs associated with such site restoration, the repair of any fencing and trails and any other associated costs relating to this Agreement will be borne by the Authority;
- (m) to keep the Monitoring Wells in a state of good maintenance and repair throughout the term of this Agreement in accordance with good engineering practices and, upon notice, to repair any damage to the Lands caused by the Authority; and
- (n) not to register this Agreement nor any notice thereof on title to the Lands.

7. **ENFORCEABILITY**

The invalidity or unenforceability of any paragraph or provision in this Agreement shall not be deemed to affect the validity or enforceability of any other provision of this Agreement.

8. **APPLICABLE LAW**

This Agreement shall be construed solely and exclusively in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein and both parties hereby irrevocably attorn to the exclusive jurisdiction of the courts of the Province of Ontario.

9. **SEVERABILITY OF TERMS**

All of the terms of this Agreement are severable from each other and will survive the invalidity of any other term of this Agreement.

10. **ASSIGNABILITY**

No party shall assign, sub-contract or transfer this Agreement or any of its rights or obligations without prior written consent of the other party.

11. **DEFAULT**

If any party fails to perform any of the covenants or obligations of performance imposed on it in this Agreement, the other party shall give the defaulting party written notice, stating specifically the cause for which the notice of default is given. If, within a period of thirty (30) days after giving notice, the defaulting party fails to cure the default, then the party not in default may cancel this Agreement or cure the default at the defaulting party's expense or both without obligation by furnishing the defaulting party written notice of cancellation. Such cancellation shall be without prejudice to either party's rights and obligations under the Agreement or at law.

12. **EFFECTIVE DATE**

This Agreement will be effective on the date that the last party executes and delivers this Agreement.

13. **AMENDMENTS TO THIS AGREEMENT**

Any amendments to this Agreement shall only be made in writing with the consent of the parties.

14. **SUCCESSORS**

This Agreement shall enure to the benefit of and be binding upon the parties and their respective successors and permitted assigns.



15. **WAIVER**

No waiver of any breach under this Agreement or of any available remedy shall be effective unless stated in writing and signed by the party granting such waiver.

16. **NOTICES**

It is mutually agreed between the Parties that all notices or other documents required or which may be given under this Agreement shall be in writing, duly signed by the party giving such notice and delivered/sent/transmitted in person, by mail, electronic mail or by nationally/internationally-recognized courier, with a copy by fax (if available), addressed as follows:

**Grand River Conservation  
Authority**

400 Clyde Rd. PO Box 729  
Cambridge ON N1R 5W6

Attn: Senior Hydrogeologist –  
Groundwater Resources

**Township of Melancthon**

157101 Highway 10  
Melancthon, Ontario L9V 2E6

Denise B. Holmes  
CAO/Clerk

or to any solicitor or firm of solicitors for the time being acting for the Township or the Authority, as known to the others by reason of a notice given pursuant to this Section. Any notice or document so given shall be deemed to have been received on the third business day following the date of mailing, on the following business day if transmitted by telefax or electronic mail, and on the day that it is personally delivered or sent by courier. Any party may from time to time, by notice given as provided above, change its address for the purpose of this clause.

17. **EXECUTION OF THIS AGREEMENT**

This Agreement may be executed in counterparts in writing or by electronic signature and delivered by mail, facsimile or other electronic means, including in Portable Document Format (PDF), no one copy of which need be executed by all of the parties, and all such counterparts together shall constitute one agreement and shall be a valid and binding agreement among the parties hereto as of the date first above written.

18. **ENTIRE AGREEMENT**

This Agreement contains the entire agreement between the parties with respect to the subject matter of this Agreement and supersedes all prior agreements, negotiations, representatives and proposals, written and oral, relating to the subject matter. Time shall be of the essence of this Agreement.

**THE NEXT PAGE IS THE SIGNING PAGE**

**IN WITNESS WHEREOF** the parties herein have hereunto executed this Agreement the day and year first above written.

**GRAND RIVER CONSERVATION AUTHORITY**

Per: \_\_\_\_\_  
Name: Karen Armstrong  
Title: Deputy CAO, Secretary Treasurer

I have the authority to bind the Corporation

**Township of Melancthon**

Per: \_\_\_\_\_  
Name: Denise B. Holmes  
Title: CAO/Clerk

I have authority to bind the Corporation

**SCHEDULE "A"**

Well Name	Location Type	Well Status	Drilled Date	Easting	Northing	Property Address
W347-2	Monitoring Well	Level & Quality	April 8, 2003	555048	4889092	682617 Sideroad 260, Melancthon Township
W347-3	Monitoring Well	Level & Quality	April 8, 2003	555048	4889092	682617 Sideroad 260, Melancthon Township

**THE CORPORATION OF THE TOWNSHIP OF MELANCTHON**

**BY-LAW NUMBER -2025**

BEING A BY-LAW TO ADOPT THE ESTIMATES OF ALL SUMS REQUIRED DURING THE YEAR AND TO STRIKE THE RATES OF TAXATION, AND TO FURTHER PROVIDE FOR PENALTY AND INTEREST IN DEFAULT OF PAYMENT THEREOF FOR THE YEAR 2025

**WHEREAS** the Council of the Corporation of the Township of Melancthon has, in accordance with the Municipal Act, 2001, S.O. 2001, Chapter 25 as amended, Section 290 (1)(2)(3)(4) and Section 291 (1) considered the estimates of the Municipality for the year 2024;

**AND WHEREAS** pursuant to the County of Dufferin By-law the County of Dufferin set tax ratios and to set tax rate reductions for prescribed property subclasses for county purposes and lower tier municipal purposes;

**AND WHEREAS** the tax ratios established the relative amount of taxation to be borne by each property class and have been set for the taxation year 2024 under the authority of the Municipal Act, 2001, S.O. 2001, Chapter 25 Section 308(5) as follows:

Residential Class is	1.000000
Multi-residential Class is	1.700000
New Multi-Residential	1.100000
Commercial Class is	1.220000
Industrial Class is	2.198400
Aggregate Extraction Class is	1.788852
Landfill Class is	1.181500
Pipeline Class is	0.842100
Farmland Class is	0.220000
Managed Forest Class is	0.250000

**AND WHEREAS** all property assessment rolls on which the 2025 taxes are to be levied have been returned and revised pursuant to the provision of the Assessment Act, R.S.O. 1990, c.A.31, as amended (hereinafter referred to as the “Assessment Act”) subject to appeals at present before the Assessment Review Board, the Ontario Municipal Board and the District Court;

**AND WHEREAS** the “Residential/Farm Assessment”, “Multi-Residential Assessment”, “Commercial Assessment”, “Industrial Assessment”, “Aggregate Extraction Assessment”, “Pipeline Assessment”, “Farmlands Assessment” and “Managed Forests Assessment” and the applicable subclasses pursuant to Section 7 of the Assessment Act, as amended by the Fair Municipal Finance Act, 1997 and Regulations thereto, have been determined on the basis of the aforementioned property assessment rolls and are detailed on Schedule “A” attached hereto and which forms part hereof;

**AND WHEREAS** the Province of Ontario has regulated all education tax rates for 2025; and hereby adopted to be applied against the whole of the assessment for real property.

**AND WHEREAS** the Treasurer shall add all or any arrears for special charges such as developer charges; fees regarding registered tax properties; service charges for cutting weeds, dog licensing fees and drain maintenance arrears pursuant to any statute or by-law to the respective properties chargeable thereto and that the same shall be collected by the collector in the manner as all other rates or levies.

**NOW THEREFORE** the Council of the Corporation of the Township of Melancthon enacts as follows:

**THAT** the Corporation of the Township of Melancthon adopt the sum of Three Million, Four hundred and Ninety-Nine Thousand, Two Hundred and Sixteen Dollars (\$3,499,236.00) as detailed in Schedule “B” attached hereto and which forms part hereof as the estimate of the Property Tax Levy required during the year 2025 for general purposes of the Corporation of the Township of Melancthon.

**THAT** for the year 2025 in the Corporation of the Township of Melancthon, the lower tier municipalities shall levy upon Residential/Farm Assessment, Multi-Residential Assessment,

Commercial Assessment, Industrial Assessment, Aggregate Extraction Assessment, Pipeline Assessment, Farmlands Assessment and Managed Forests Assessment and applicable subclasses the tax rates for Township purposes set out in “Schedule A” attached hereto and which forms part hereof.

**THAT** tax rates for the Township of Melancthon portion of the tax bill are hereby adopted to be applied against the whole of the assessment for real property as set out in Schedule “D”.

1. The taxes shall become due and payable in two instalments:

First installment due and payable on August 21, 2025

Second installment due and payable on November 20, 2025

2. A penalty at the rate of 1.25% will be charged on the first day of default and on the first day of each calendar month thereafter in which default continues, on all unpaid instalments of taxes until December 31, 2025 after which the interest rates of 1.25% per month for each month or fraction thereof will be added.
3. The Treasurer may mail or cause the same to be mailed to the resident or place of business of such person indicated on the last revised assessment roll, a written or printed notice specifying the amount of taxes payable.
4. The taxes are payable at the Municipal Office, 157101 Highway 10, Melancthon, Ontario, L9V 2E6, the Toronto Dominion Bank or Credit Union in Shelburne, the CIBC or Credit Union in Dundalk, by mail, or by telephone/internet banking and by direct debit but not credit card.
5. In the event that the Provincial OPTA system does not have the necessary data to provide on Commercial, Industrial and Multi-Residential tax capping to permit processing tax bills for these installment dates, then the Treasurer is authorized to process tax bills for the remaining tax classes and to establish later tax installment due date(s) for the Commercial, Industrial and Multi-Residential tax classes on a separate bill.

This by-law shall come into force and effect upon the date of the final reading thereof.

**By-law read a first and second time this 21<sup>st</sup> day of March, 2025.**

**By-law read a third time and passed this 21<sup>st</sup> day of March, 2025.**

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Mayor

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Clerk

**SCHEDULE A  
TOWNSHIP OF MELANCTHON  
CALCULATION OF LOWER TIER TAX RATES**

**Weighted Assessments Calculation**

	<b>"Pure" Assessment</b>	<b>Tax Ratio</b>	<b>Weighted Assessment</b>	
Residential	457,031,200	1.0000	457,031,200	RT
Residential Payment in Lieu	0	1.0000	0	RH
Commercial Full (Occupied)	11,615,400	1.2200	14,170,788	CT
Commercial Vacant Land	393,200	1.2200	479,704	CU
Commercial Excess Land	68,000	1.2200	82,960	CX
Commercial New Const. - Full	0	1.2200	0	XT
Commercial New Const. Vacant	0	1.2200	0	XU
Shopping Centre (Occupied)	0	1.2200	0	ST
Parking Lot Full	0	1.2200	0	GT
Industrial (Occupied)	44,376,200	2.1984	97,556,638	IT
Industrial Aggregate	4,455,000	1.7889	7,969,336	VT
Vacant Units & Excess Land	141,000	2.1984	309,974	IX
Industrial PIL shared	117,000	2.1984	257,213	IH
New Construction Excess Land	0	1.5389	0	JU
Residential - Payment in Lieu	0	1.0000	0	
Pipeline	1,948,000	0.8421	1,640,411	PT
Farmlands	258,894,126	0.2200	56,956,708	FT
Managed Forest	2,779,000	0.2500	694,750	TT
<b>Total</b>	<b>781,818,126</b>		<b>637,149,681</b>	



**TOWNSHIP OF MELANCTHON 2025 DRAFT BUDGET AS AT MARCH 6, 2025**

BUDGET PAGE	DEPARTMENT EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED YEAR END AMOUNT	2025 BUDGET
<b>GENERAL GOVERNMENT SERVICES</b>						
4	COUNCIL	\$ 117,540.00	\$ 110,214.39	\$ 120,387.00	\$ 120,983.14	\$ 150,764.00
5	ADMINISTRATION	\$ 696,192.00	\$ 650,672.49	\$ 919,397.00	\$ 877,340.19	\$ 798,080.00
5	TAXATION WRITE OFFS	\$ 35,000.00	\$ 48,703.00	\$ 50,000.00	\$ 26,758.00	\$ 30,000.00
		<b>\$ 848,732.00</b>	<b>\$ 809,589.88</b>	<b>\$ 1,089,784.00</b>	<b>\$ 1,025,081.33</b>	<b>\$ 978,844.00</b>

<b>PROTECTION TO PERSONAL &amp; PROPERTY</b>						
6	FIRE SERVICES	\$ 364,169.00	\$ 364,169.00	\$ 417,686.00	\$ 390,873.49	\$ 450,985.00
6	POLICING	\$ 447,718.00	\$ 442,670.00	\$ 488,370.00	\$ 486,660.31	\$ 527,573.00
6	BYLAW ENFORCEMENT	\$ 12,000.00	\$ 28,000.00	\$ 32,000.00	\$ 34,971.00	\$ 40,000.00
6	CONSERVATION AUTHORITY	\$ 34,800.00	\$ 34,800.00	\$ 36,016.00	\$ 37,561.11	\$ 40,460.00
6	ANIMAL CONTROL	\$ 11,200.00	\$ 8,934.00	\$ 11,500.00	\$ 9,315.00	\$ 11,500.00
6	STREET LIGHTS	\$ 6,000.00	\$ 4,653.00	\$ 6,500.00	\$ 6,678.00	\$ 7,100.00
		<b>\$ 875,887.00</b>	<b>\$ 883,226.00</b>	<b>\$ 992,072.00</b>	<b>\$ 966,058.91</b>	<b>\$ 1,077,618.00</b>

<b>TRANSPORTATION SERVICES</b>						
7	SALARIES & ADMINISTRATION	\$ 566,820.00	\$ 599,378.83	\$ 715,300.00	\$ 657,119.00	\$ 731,518.00
7	ROAD DEPARTMENT BUILDING & MISC.	\$ 189,300.00	\$ 163,862.00	\$ 202,942.00	\$ 202,468.00	\$ 277,280.00
8	ROAD EQUIPMENT	\$ 320,000.00	\$ 303,720.00	\$ 416,444.20	\$ 381,029.00	\$ 344,500.00
8	NEW EQUIPMENT	\$ 822,000.00	\$ 443,027.00	\$ 150,000.00	\$ 17,300.00	\$ 954,615.00
9	BRIDGES, CULVERTS, DRAINS	\$ 173,907.00	\$ 110,013.00	\$ 310,907.00	\$ 301,574.00	\$ 145,907.00
9	ROADSIDE	\$ 45,175.00	\$ 29,617.00	\$ 21,700.00	\$ 27,255.00	\$ 68,500.00
9	HARDTOP	\$ 48,500.00	\$ 32,652.00	\$ 49,500.00	\$ 10,488.00	\$ 49,500.00
9	LOOSETOP	\$ 602,000.00	\$ 732,398.00	\$ 602,000.00	\$ 582,838.00	\$ 642,000.00
10	WINTER CONTROL	\$ 55,000.00	\$ 63,011.00	\$ 70,000.00	\$ 55,065.00	\$ 71,000.00
10	ROAD IMPROVEMENTS	\$ 900,000.00	\$ 796,608.00	\$ 375,000.00	\$ 293,894.00	\$ 750,000.00
10	RESERVES	\$ 150,000.00	\$ 150,000.00	\$ 270,000.00	\$ 285,918.10	\$ 50,000.00
		<b>\$ 3,872,702.00</b>	<b>\$ 3,424,286.83</b>	<b>\$ 3,183,793.20</b>	<b>\$ 2,814,948.10</b>	<b>\$ 4,084,820.00</b>

BUDGET PAGE	DEPARTMENT EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
11	<b>ENVIRONMENTAL SERVICES</b>	\$ 33,918.00	\$ 18,169.00	\$ 33,918.00	\$ 26,318.00	\$ 26,998.00
		<b>\$ 33,918.00</b>	<b>\$ 18,169.00</b>	<b>\$ 33,918.00</b>	<b>\$ 26,318.00</b>	<b>\$ 26,998.00</b>
11	<b>RECREATION</b>	\$ 158,273.00	\$ 213,994.00	\$ 129,700.00	\$ 220,349.20	\$ 333,200.00
		<b>\$ 158,273.00</b>	<b>\$ 213,994.00</b>	<b>\$ 129,700.00</b>	<b>\$ 220,349.20</b>	<b>\$ 333,200.00</b>
11	<b>HEALTH &amp; SOCIAL SERVICES (CEMETERY)</b>	\$ 5,000.00	\$ -	\$ 5,000.00	\$ 341.00	\$ 5,000.00
		<b>\$ 5,000.00</b>	<b>\$ -</b>	<b>\$ 5,000.00</b>	<b>\$ 341.00</b>	<b>\$ 5,000.00</b>
11	<b>LIBRARY</b>	\$ 70,915.00	\$ 70,996.00	\$ 69,490.00	\$ 69,490.00	\$ 72,888.00
		<b>\$ 70,915.00</b>	<b>\$ 70,996.00</b>	<b>\$ 69,490.00</b>	<b>\$ 69,490.00</b>	<b>\$ 72,888.00</b>
12	<b>PLANNING</b>	\$ 150,000.00	\$ 38,285.00	\$ 200,000.00	\$ 35,055.00	\$ 125,000.00
		<b>\$ 150,000.00</b>	<b>\$ 38,285.00</b>	<b>\$ 200,000.00</b>	<b>\$ 35,055.00</b>	<b>\$ 125,000.00</b>
12	<b>DRAINAGE</b>	\$ 55,000.00	\$ 28,365.00	\$ 55,000.00	\$ 28,103.00	\$ 65,000.00
		<b>\$ 55,000.00</b>	<b>\$ 28,365.00</b>	<b>\$ 55,000.00</b>	<b>\$ 28,103.00</b>	<b>\$ 65,000.00</b>
12	<b>RESERVES</b>	\$ -	\$ -	\$ -	\$ -	\$ -
		<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
12	<b>SUBTOTAL EXPENSES</b>	<b>\$ 6,070,427.00</b>	<b>\$ 5,486,911.71</b>	<b>\$ 5,758,757.20</b>	<b>\$ 5,185,744.54</b>	<b>\$ 6,769,368.00</b>



BUDGET PAGE	DEPARTMENT REVENUE SUMMARY	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
13	<b>TAXATION</b>					
	SUPPLEMENTALS	\$ 85,000.00	\$ 87,652.00	\$ 90,000.00	\$ 108,912.00	\$ 100,000.00
	GRANT IN LIEU	\$ 1,950.00	\$ 2,015.00	\$ 2,050.00	\$ 2,015.00	\$ 2,050.00
		<b>\$ 86,950.00</b>	<b>\$ 89,667.00</b>	<b>\$ 92,050.00</b>	<b>\$ 110,927.00</b>	<b>\$ 102,050.00</b>
13	<b>GRANTS</b>	\$ 427,082.00	\$ 398,174.00	\$ 406,590.00	\$ 391,677.00	\$ 443,313.00
		<b>\$ 427,082.00</b>	<b>\$ 398,174.00</b>	<b>\$ 406,590.00</b>	<b>\$ 391,677.00</b>	<b>\$ 443,313.00</b>
13	<b>ADMINISTRATION</b>	\$ 25,870.00	\$ 25,172.00	\$ 93,664.20	\$ 90,875.50	\$ 24,720.00
		<b>\$ 25,870.00</b>	<b>\$ 25,172.00</b>	<b>\$ 93,664.20</b>	<b>\$ 90,875.50</b>	<b>\$ 24,720.00</b>
14	<b>PROTECTIONS TO PERSONS &amp; PROPERTY</b>	\$ 5,000.00	\$ 5,920.00	\$ 5,500.00	\$ 6,590.00	\$ 5,500.00
		<b>\$ 5,000.00</b>	<b>\$ 5,920.00</b>	<b>\$ 5,500.00</b>	<b>\$ 6,590.00</b>	<b>\$ 5,500.00</b>
14	<b>ROADS</b>	\$ 1,501,442.00	\$ 1,183,536.00	\$ 902,137.00	\$ 565,380.00	\$ 1,605,409.00
		<b>\$ 1,501,442.00</b>	<b>\$ 1,183,536.00</b>	<b>\$ 902,137.00</b>	<b>\$ 565,380.00</b>	<b>\$ 1,605,409.00</b>
14	<b>PLANNING</b>	\$ 53,500.00	\$ 34,983.00	\$ 57,450.00	\$ 40,006.00	\$ 30,250.00
		<b>\$ 53,500.00</b>	<b>\$ 34,983.00</b>	<b>\$ 57,450.00</b>	<b>\$ 40,006.00</b>	<b>\$ 30,250.00</b>
15	<b>OTHER</b>	\$ 876,150.00	\$ 927,611.42	\$ 897,150.00	\$ 1,030,560.30	\$ 1,058,890.00
		<b>\$ 876,150.00</b>	<b>\$ 927,611.42</b>	<b>\$ 897,150.00</b>	<b>\$ 1,030,560.30</b>	<b>\$ 1,058,890.00</b>
15	<b>SUBTOTAL REVENUE</b>	<b>\$ 2,975,994.00</b>	<b>\$ 2,665,063.42</b>	<b>\$ 2,454,541.20</b>	<b>\$ 2,236,015.80</b>	<b>\$ 3,270,132.00</b>

GL ACCT # 5001	COUNCIL EXPENDITURES EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
1010	SALARIES, MEETINGS	\$ 96,140.00	\$ 95,291.00	\$ 99,505.00	\$ 99,500.00	\$ 102,520.00
1025	RECEIVER GENERAL	\$ 4,450.00	\$ 4,630.00	\$ 4,840.00	\$ 4,850.00	\$ 5,145.00
1030	EHT	\$ 1,850.00	\$ 1,858.00	\$ 1,942.00	\$ 10,748.14	\$ 1,999.00
1070	MILEAGE	\$ 1,000.00	\$ 126.00	\$ 1,000.00	\$ 500.00	\$ 1,000.00
1080	CONFERENCES/CONVENTIONS/SEMINARS/TRAINING	\$ 7,500.00	\$ 5,310.39	\$ 9,500.00	\$ 4,000.00	\$ 9,500.00
1090	MEALS	\$ 600.00	\$ 232.00	\$ 600.00	\$ 300.00	\$ 600.00
2190	MISCELLANEOUS/HYBRID COUNCIL	\$ 6,000.00	\$ 2,767.00	\$ 3,000.00	\$ 1,085.00	\$ 30,000.00
	<b>TOTAL COUNCIL EXPENDITURES</b>	<b>\$ 117,540.00</b>	<b>\$ 110,214.39</b>	<b>\$ 120,387.00</b>	<b>\$ 120,983.14</b>	<b>\$ 150,764.00</b>

GL ACCT # 5002	ADMINISTRATION EXPENDITURES EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
1010	WAGES, VACATION PAY, UNUSED SICK PAY	\$ 320,360.00	\$ 317,712.95	\$ 379,180.00	\$ 384,564.00	\$ 425,148.00
1020	BENEFITS	\$ 32,000.00	\$ 29,101.99	\$ 32,000.00	\$ 30,717.71	\$ 36,000.00
1022	TRAINING	\$ 1,500.00	\$ 1,912.60	\$ 2,000.00	\$ 1,400.00	\$ 2,000.00
1025	RECEIVER GENERAL (CPP & EI)	\$ 18,720.00	\$ 18,518.13	\$ 21,100.00	\$ 18,777.47	\$ 21,984.00
1026	MEETINGS	\$ 1,000.00	\$ 81.66	\$ 1,000.00	\$ 37.00	\$ 1,000.00
1030	EHT	\$ 6,240.00	\$ 6,222.53	\$ 8,980.00	\$ 13,806.00	\$ 9,196.00
1040	WSIB	\$ 8,840.00	\$ 9,000.00	\$ 13,123.00	\$ 11,835.09	\$ 12,862.00
1065	OMERS TOWNSHIP	\$ 34,300.00	\$ 32,688.56	\$ 44,172.00	\$ 41,849.00	\$ 46,408.00
1070	MILEAGE	\$ 1,500.00	\$ 483.00	\$ 1,500.00	\$ 1,083.60	\$ 1,500.00
1080	CONFERENCES	\$ 4,000.00	\$ 2,556.73	\$ 4,000.00	\$ 1,230.00	\$ 4,000.00
2025	OFFICE FURNITURE	\$ 1,200.00	\$ 376.71	\$ 5,000.00	\$ 5,000.00	\$ 4,000.00
2010	OFFICE SUPPLIES	\$ 6,800.00	\$ 8,170.00	\$ 8,000.00	\$ 8,300.00	\$ 8,500.00
2020	POSTAGE	\$ 7,000.00	\$ 5,853.44	\$ 6,000.00	\$ 6,000.00	\$ 7,000.00
2030	OFFICE EQUIPMENT	\$ 4,500.00	\$ 3,944.88	\$ 4,500.00	\$ 4,022.00	\$ 4,500.00
2035	COMPUTER PROGRAM UPDATES & IT SERVICES	\$ 23,500.00	\$ 23,500.00	\$ 32,500.00	\$ 41,124.00	\$ 40,000.00
2036	COMPUTERS & SERVER	\$ 500.00		\$ 30,500.00	\$ 28,616.00	\$ -
2037	ESRI LICENSE AGREEMENT	\$ 3,100.00	\$ 2,605.00	\$ 3,100.00	\$ 2,650.00	\$ 3,100.00
2040	ADVERTISING	\$ 1,500.00	\$ 358.00	\$ 1,500.00	\$ 1,486.00	\$ 1,000.00
2050	AUDIT	\$ 24,000.00	\$ 22,436.00	\$ 24,000.00	\$ 25,973.00	\$ 26,000.00
2060	MEMBERSHIPS	\$ 4,000.00	\$ 3,878.00	\$ 4,000.00	\$ 4,364.00	\$ 4,000.00
2070	HEATING	\$ 3,400.00	\$ 3,400.00	\$ 3,700.00	\$ 3,500.00	\$ 3,700.00
2080	HYDRO	\$ 5,300.00	\$ 5,300.00	\$ 5,500.00	\$ 5,300.00	\$ 5,500.00
2090	TELEPHONE	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,250.00	\$ 3,100.00
2094	INTERNET	\$ 1,800.00	\$ 2,480.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
2095	WEBSITE MAINTENANCE	\$ 500.00	\$ 264.00	\$ 500.00	\$ 500.00	\$ 500.00

GL ACCT # 5002	ADMINISTRATION EXPENDITURES EXPENDITURES (CONTINUED)	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
	STRATEGIC PLAN	\$ 30,000.00	\$ -	\$ 30,000.00	\$ 26,270.00	\$ -
2100	PROFESSIONAL FEES - LEGAL	\$ 25,000.00	\$ 22,242.31	\$ 25,000.00	\$ 11,544.00	\$ 15,000.00
2102	INTEGRITY COMMISSIONER SERVICES	\$ 3,000.00	\$ 662.00	\$ 3,000.00	\$ 100.00	\$ 1,500.00
2103	HEALTH AND SAFETY SERVICES	\$ 4,700.00	\$ 6,064.00	\$ 6,022.00	\$ 6,044.00	\$ 6,100.00
2107	DEVELOPMENT CHARGE STUDY			\$ 27,000.00	\$ 28,020.32	\$ -
	RISK ASSESSMENT STUDY			\$ 17,000.00	\$ 16,923.00	\$ -
	ASSET RETIREMENT STUDY			\$ 10,000.00	\$ -	\$ -
	ASSET MANAGEMENT PLAN & FINANCIAL REPORTING			\$ 46,300.00	\$ 41,609.00	\$ 6,000.00
2109	EMPLOYEE TOWNSHIP COMPENSATION PLAN	\$ 15,000.00	\$ 15,264.00	\$ -	\$ -	\$ -
2110	INSURANCE	\$ 52,000.00	\$ 57,000.00	\$ 64,000.00	\$ 38,478.00	\$ 42,000.00
2120	ELECTION	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00
2162	BLDG MAINTENANCE	\$ 8,000.00	\$ 5,050.00	\$ 6,000.00	\$ 14,100.00	\$ 6,000.00
2163	OFFICE CLEANING	\$ 2,400.00	\$ 2,239.00	\$ 3,664.00	\$ 2,595.00	\$ 3,000.00
2164	LANDSCAPING & GRASS CUTTING	\$ 300.00		\$ 300.00	\$ 225.00	\$ 300.00
2165	WATER SAMPLING	\$ 125.00	\$ 82.00	\$ 125.00	\$ 116.00	\$ 125.00
2190	OTHER/MISCELLANEOUS	\$ 4,000.00	\$ 3,845.00	\$ 4,000.00	\$ 6,500.00	\$ 4,000.00
2200	PETTY CASH	\$ 500.00	\$ 200.00	\$ 500.00	\$ 200.00	\$ 500.00
4030	BANK CHARGES	\$ 1,300.00	\$ 1,350.00	\$ 1,800.00	\$ 1,800.00	\$ 2,000.00
6135	GRANT TO OTHERS	\$ 3,750.00	\$ 3,250.00	\$ 3,750.00	\$ 5,850.00	\$ 5,000.00
6133	DONATION TO MARKDALE HOSPITAL (5YRS)	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
6136	ERSKINE CLINIC (2018-2027)	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
	MUNICIPAL PARKING LOT					
7011	LOAN FOR MUNICIPAL EXPANSION	\$ 13,057.00	\$ 13,057.00	\$ 13,057.00	\$ 13,057.00	\$ 13,057.00
	<b>TOTAL</b>	<b>\$ 696,192.00</b>	<b>\$ 650,672.49</b>	<b>\$ 919,397.00</b>	<b>\$ 877,340.19</b>	<b>\$ 798,080.00</b>

4010	<b>TOTAL TAX WRITE OFF EXPENDITURES</b>	<b>\$ 35,000.00</b>	<b>\$ 48,703.00</b>	<b>\$ 50,000.00</b>	<b>\$ 26,758.00</b>	<b>\$ 30,000.00</b>
	<b>TOTAL ADMINISTRATION EXPENDITURES</b>	<b>\$ 848,732.00</b>	<b>\$ 809,589.88</b>	<b>\$ 1,089,784.00</b>	<b>\$ 1,025,081.33</b>	<b>\$ 978,844.00</b>

GL ACCT #	PROTECTION TO PERSONS/PROPERTY EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
	<b>FIRE SERVICES</b>					
3 6010	MULMUR MELANCTHON FD	\$ 127,070.00	\$ 127,070.00	\$ 152,494.00	\$ 142,311.49	\$ 166,535.00
3 6020	SHELBURNE AND DISTRICT FD	\$ 167,099.00	\$ 167,099.00	\$ 190,192.00	\$ 176,252.00	\$ 204,450.00
3 6030	TOWNSHIP OF SOUTHGATE FD - OPER/CAP	\$ 70,000.00	\$ 70,000.00	\$ 75,000.00	\$ 72,310.00	\$ 80,000.00
	<b>SUB TOTAL</b>	<b>\$ 364,169.00</b>	<b>\$ 364,169.00</b>	<b>\$ 417,686.00</b>	<b>\$ 390,873.49</b>	<b>\$ 450,985.00</b>
	<b>POLICING</b>					
4 3050	POLICING	\$ 435,468.00	\$ 435,468.00	\$ 452,154.00	\$ 452,154.00	\$ 492,038.00
4 3055	POLICING - ESO	\$ 350.00	\$ 360.00	\$ 3,408.00	\$ 3,408.00	\$ 6,035.00
4 3052	POLICING - RIDE	\$ 6,600.00	\$ 6,742.00	\$ 27,508.00	\$ 28,042.82	\$ 28,000.00
4 3053	POLICE SERVICES BOARD	\$ 300.00	\$ 100.00	\$ 300.00	\$ 1,350.00	\$ 1,500.00
4 2310	TASK FORCE	\$ 5,000.00	\$ -	\$ 5,000.00	\$ 1,705.49	
	<b>SUB TOTAL</b>	<b>\$ 447,718.00</b>	<b>\$ 442,670.00</b>	<b>\$ 488,370.00</b>	<b>\$ 486,660.31</b>	<b>\$ 527,573.00</b>
	<b>BY LAW ENFORCEMENT</b>					
4 6155	<b>BY LAW ENFORCEMENT</b>	<b>\$ 12,000.00</b>	<b>\$ 28,000.00</b>	<b>\$ 32,000.00</b>	<b>\$ 34,971.00</b>	<b>\$ 40,000.00</b>
	<b>CONSERVATION AREA</b>					
4 6040	NOTTAWASAGA VALLEY CA	\$ 13,745.00	\$ 13,745.00	\$ 14,226.00	\$ 15,869.11	\$ 18,010.00
4 6050	GRAND RIVER CA	\$ 21,055.00	\$ 21,055.00	\$ 21,790.00	\$ 21,692.00	\$ 22,450.00
	<b>SUB TOTAL</b>	<b>\$ 34,800.00</b>	<b>\$ 34,800.00</b>	<b>\$ 36,016.00</b>	<b>\$ 37,561.11</b>	<b>\$ 40,460.00</b>
	<b>ANIMAL CONTROL</b>					
13 6140	LIVESTOCK CLAIMS	\$ 4,000.00	\$ 1,014.00	\$ 4,000.00	\$ 2,000.00	\$ 4,000.00
4 6150	ANIMAL CONTROL	\$ 7,200.00	\$ 7,920.00	\$ 7,500.00	\$ 7,315.00	\$ 7,500.00
	<b>SUB TOTAL</b>	<b>\$ 11,200.00</b>	<b>\$ 8,934.00</b>	<b>\$ 11,500.00</b>	<b>\$ 9,315.00</b>	<b>\$ 11,500.00</b>
	<b>STREET LIGHTS</b>					
6 3025	STREET LIGHTS LED	\$ 5,000.00	\$ 4,653.00	\$ 5,500.00	\$ 5,500.00	\$ 5,600.00
6 3026	STREET LIGHT REPAIR	\$ 1,000.00	\$ -	\$ 1,000.00	\$ 1,178.00	\$ 1,500.00
	<b>SUB TOTAL</b>	<b>\$ 6,000.00</b>	<b>\$ 4,653.00</b>	<b>\$ 6,500.00</b>	<b>\$ 6,678.00</b>	<b>\$ 7,100.00</b>
	<b>TOTAL PROTECTION TO PERSONS/PROPERTY</b>	<b>\$ 875,887.00</b>	<b>\$ 883,226.00</b>	<b>\$ 992,072.00</b>	<b>\$ 966,058.91</b>	<b>\$ 1,077,618.00</b>

GL ACCT # 5005	ROADWAYS EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
<b>SALARIES &amp; ADMINISTRATION</b>						
1010	SALARIES AND WAGES	\$ 421,200.00	\$ 452,681.90	\$ 542,420.00	\$ 504,545.00	\$ 549,295.00
1025	RECEIVER GENERAL, EHT & WSIB	\$ 45,760.00	\$ 52,690.00	\$ 70,610.00	\$ 64,285.00	\$ 65,115.00
1020	BENEFITS	\$ 28,000.00	\$ 28,195.00	\$ 34,000.00	\$ 32,784.00	\$ 36,000.00
1065	OMERS TOWNSHIP CONTRIBUTION	\$ 37,960.00	\$ 37,535.93	\$ 41,670.00	\$ 41,824.00	\$ 43,508.00
1070	MILEAGE	\$ 100.00	\$ 12.00	\$ 100.00	\$ 28.00	\$ 100.00
1022	STAFF TRAINING AND SEMINARS	\$ 4,000.00	\$ 2,954.00	\$ 7,500.00	\$ 1,690.00	\$ 7,500.00
2010	OFFICE SUPPLIES/COMPUTOR	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 1,114.00	\$ 2,000.00
2036	GPS MONTHLY TRACKING EXPENSE	\$ 5,500.00	\$ 3,385.00	\$ 5,000.00	\$ 4,849.00	\$ 5,000.00
2112	ASSET MANAGEMENT PLAN SUPPORT	\$ 6,000.00	\$ 13,311.00	\$ 12,000.00	\$ 6,000.00	\$ 5,000.00
2112	ASSET MANAGEMENT PLAN UPDATE	\$ -	\$ -	\$ -	\$ -	\$ -
3105	BRIDGE STUDY/INSPECTIONS	\$ 16,300.00	\$ 6,614.00	\$ -	\$ -	\$ 18,000.00
<b>TOTAL</b>		<b>\$ 566,820.00</b>	<b>\$ 599,378.83</b>	<b>\$ 715,300.00</b>	<b>\$ 657,119.00</b>	<b>\$ 731,518.00</b>
<b>ROAD DEPARTMENT BUILDING MISC.</b>						
2070	UTILITIES - HEAT	\$ 16,000.00	\$ 11,586.00	\$ 16,000.00	\$ 13,000.00	\$ 15,000.00
2080	UTILITIES - HYDRO	\$ 7,000.00	\$ 8,000.00	\$ 8,200.00	\$ 7,280.00	\$ 8,000.00
2090	TELEPHONE	\$ 1,200.00	\$ 1,142.00	\$ 1,200.00	\$ 1,200.00	\$ 1,300.00
2091	MOBILE PHONE	\$ 1,500.00	\$ 674.00	\$ 700.00	\$ 1,208.00	\$ 780.00
2040	ADVERTISING	\$ 750.00	\$ -	\$ 750.00	\$ -	\$ 750.00
2041	SIGNS	\$ 6,000.00	\$ 5,800.00	\$ 6,000.00	\$ 19,371.00	\$ 15,000.00
2110	INSURANCE	\$ 70,000.00	\$ 82,100.00	\$ 92,220.00	\$ 101,823.00	\$ 110,000.00
2100	LEGAL FEES	\$ 20,000.00	\$ 12,000.00	\$ 20,000.00	\$ 6,701.00	\$ 10,000.00
2050	AUDIT	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
2060	MEMBERSHIPS	\$ 150.00	\$ 113.00	\$ 150.00	\$ 113.00	\$ 150.00
2165	MATERIALS AND SUPPLIES/STOCK	\$ 7,000.00	\$ 6,762.00	\$ 9,000.00	\$ 8,000.00	\$ 9,000.00
2166	COVERALLS	\$ 6,000.00	\$ 5,756.00	\$ 4,000.00	\$ 3,000.00	\$ 1,000.00
3000	SERVICES AND RENTS/MISC	\$ 7,500.00	\$ 2,207.00	\$ 7,500.00	\$ 1,500.00	\$ 12,500.00
2103	HEALTH & SAFETY SERVICES	\$ 5,000.00	\$ 5,000.00	\$ 6,022.00	\$ 6,022.00	\$ 6,500.00
2104	HEALTH & SAFETY SERVICES/SUPPLIES	\$ 1,000.00	\$ 1,100.00	\$ 1,000.00	\$ 2,650.00	\$ 2,500.00
2162	BUILDING MAINTENANCE	\$ 20,000.00	\$ 5,600.00	\$ 10,000.00	\$ 12,000.00	\$ 62,000.00
2185	OIL SEPARATER	\$ 2,200.00	\$ -	\$ 2,200.00	\$ 2,600.00	\$ 2,800.00
2192	SHOP TOOLS	\$ 5,000.00	\$ 4,022.00	\$ 5,000.00	\$ 2,000.00	\$ 5,000.00
2190	MISCELLANEOUS	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 4,000.00	\$ 4,000.00
3800	CONTRACT WORK	\$ 1,000.00	\$ -	\$ 1,000.00	\$ -	\$ 1,000.00
<b>TOTAL</b>		<b>\$ 189,300.00</b>	<b>\$ 163,862.00</b>	<b>\$ 202,942.00</b>	<b>\$ 202,468.00</b>	<b>\$ 277,280.00</b>

GL ACCT # 5005	ROADWAYS EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
<b>ROAD EQUIPMENT</b>						
2150	FUEL - CLEAR	\$ 70,000.00	\$ 76,000.00	\$ 74,000.00	\$ 55,000.00	\$ 72,000.00
2155	FUEL - DYED	\$ 65,000.00	\$ 60,000.00	\$ 65,000.00	\$ 55,000.00	\$ 65,000.00
3070/3072	FUEL - PATROL TRUCKS	\$ 18,000.00	\$ 17,780.00	\$ 20,000.00	\$ 17,000.00	\$ 20,000.00
2180	OIL - TRUCKS AND GRADER	\$ 5,000.00	\$ 2,300.00	\$ 5,000.00	\$ 4,875.00	\$ 6,000.00
3071	TR # 1 - REPAIRS	\$ 5,000.00	\$ 3,100.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00
3073	TR # 2 - REPAIRS	\$ 15,000.00	\$ 20,737.00	\$ 15,000.00	\$ 10,000.00	\$ 15,000.00
3074	TR # 3 - REPAIRS	\$ 15,000.00	\$ 2,800.00	\$ 15,000.00	\$ 10,000.00	\$ 15,000.00
3075	TR # 4 - REPAIRS	\$ 15,000.00	\$ 16,833.00	\$ 15,000.00	\$ 12,000.00	\$ 15,000.00
3076	TR # 5 - REPAIRS	\$ 15,000.00	\$ 15,404.00	\$ 15,000.00	\$ 25,630.00	\$ 15,000.00
3077	TR # 6 - REPAIRS	\$ 15,000.00	\$ 21,650.00	\$ 15,000.00	\$ 25,000.00	\$ 15,000.00
3069	TR # 7 - REPAIRS	\$ 5,000.00	\$ 867.00	\$ 5,000.00	\$ 202.00	\$ 5,000.00
3068	TR # 8 - REPAIRS		\$ 2,771.00	\$ 5,000.00	\$ 3,600.00	\$ 5,000.00
3067	TR # 9 - REPAIRS		\$ 2,840.00	\$ 5,000.00	\$ 1,500.00	\$ 5,000.00
3079	GR#1 - CAT - REPAIRS	\$ 15,000.00	\$ 6,721.00	\$ 15,000.00	\$ 10,000.00	\$ 15,000.00
3080	GR#2 - REPAIRS	\$ 15,000.00	\$ 9,000.00	\$ 81,444.20	\$ 85,687.00	\$ 10,000.00
3065	GR#3 - REPAIRS		\$ 4,392.00	\$ 15,000.00	\$ 10,500.00	\$ 15,000.00
3081	BACKHOE REPAIRS	\$ 3,000.00	\$ 1,651.00	\$ 3,000.00	\$ 1,500.00	\$ 3,000.00
3082	LOADER	\$ 2,500.00	\$ 2,390.00	\$ 2,500.00	\$ 20,000.00	\$ 2,500.00
3083	JOHN DEERE MOWER	\$ 1,000.00		\$ 1,000.00	\$ 150.00	\$ 1,000.00
3084	POWER WASHER	\$ 3,000.00	\$ 3,840.00	\$ 3,000.00	\$ 300.00	\$ 3,000.00
3085	CHAIN SAW	\$ 1,000.00		\$ 1,000.00	\$ 785.00	\$ 1,000.00
3086	ROADSIDE MOWER	\$ 2,000.00	\$ 1,086.00	\$ 1,000.00	\$ -	\$ 1,000.00
3500	WINTER CONTROL-PLOW & WING PARTS	\$ 20,000.00	\$ 19,900.00	\$ 20,000.00	\$ 15,000.00	\$ 20,000.00
2191	RADIO AND TRUCK LICENSES	\$ 12,000.00	\$ 11,658.00	\$ 12,000.00	\$ 12,300.00	\$ 12,500.00
2195	RADIO MAINTENANCE & REPAIR	\$ 2,500.00		\$ 2,500.00	\$ -	\$ 2,500.00
<b>TOTAL</b>		<b>\$ 320,000.00</b>	<b>\$ 303,720.00</b>	<b>\$ 416,444.20</b>	<b>\$ 381,029.00</b>	<b>\$ 344,500.00</b>
<b>NEW EQUIPMENT (CAPITAL)</b>						
7010	VEHICLES - TRUCK	\$ -		\$ 70,000.00		\$ 65,000.00
7005	MOWER			\$ 20,000.00	\$ 17,300.00	
	GRADER	\$ 610,000.00	\$ 293,781.00	\$ -	\$ -	
	TRUCK - 2 TONNE DUALY PICK-UP	\$ 100,000.00	\$ 116,982.00	\$ -	\$ -	
	PICK-UP EQUIPMENT	\$ 60,000.00	\$ 32,264.00	\$ -	\$ -	
	TRACTOR WITH BLOWER BRUSHER (loan)	\$ 52,000.00		\$ 60,000.00	\$ -	\$ 500,000.00
	SNOW PLOW					\$ 389,615.00
<b>TOTAL</b>		<b>\$ 822,000.00</b>	<b>\$ 443,027.00</b>	<b>\$ 150,000.00</b>	<b>\$ 17,300.00</b>	<b>\$ 954,615.00</b>

GL ACCT # 5005	ROADWAYS EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET		
<b>BRIDGES, CULVERTS, DRAINS</b>						
3100	BRIDGE & CULVERT MTCE	\$ 15,000.00	\$ 7,212.00	\$ 15,000.00	\$ 667.00	\$ 15,000.00
	BRIDGE # 7 (ENG. 2025 - CONST. 2026)	\$ 25,000.00	\$ -	\$ -	\$ -	\$ 35,000.00
3111	BRIDGE # 11	\$ -				
3115	BRIDGE # 18 (ENGINEERING 2026)	\$ -				
	BRIDGE 2030 REHABILITATION	\$ -				
3100	BRIDGE # 6 - CONSTRUCTION - WATERPROOF/PAVE	\$ 20,000.00				
	BRIDGE # 2007 WATERPROOF & PAVE					
3118	BRIDGE # 2033, 2007, 6 - ENGINEERING DESIGN	\$ 18,000.00	\$ 24,500.00	\$ 200,000.00	\$ 260,000.00	
	BRIDGE # 16 - ROCK PROTECTION					
3851	ROAD CROSSINGS DUE TO DRAIN MTCE	\$ 55,000.00	\$ 37,394.00	\$ 55,000.00		\$ 55,000.00
7021	CULVERT 2027 LOAN PAYMENT	\$ 40,907.00	\$ 40,907.00	\$ 40,907.00	\$ 40,907.00	\$ 40,907.00
	<b>TOTAL</b>	<b>\$ 173,907.00</b>	<b>\$ 110,013.00</b>	<b>\$ 310,907.00</b>	<b>\$ 301,574.00</b>	<b>\$ 145,907.00</b>
<b>ROADSIDE</b>						
3215	GRASS MOWING & WEED SPRAYING	\$ 2,675.00	\$ 5,098.00	\$ 5,200.00	\$ 6,921.00	\$ 7,000.00
3212	PARK MAINTENANCE		\$ 3,155.00	\$ 4,000.00	\$ 3,371.00	\$ 4,000.00
3205	BRUSHING - TREE TRIM AND REMOVAL				\$ 5,785.00	\$ -
3206	DITCHING	\$ 30,000.00	\$ 16,062.00	\$ -	\$ 5,373.00	\$ 20,000.00
3322	CATCH BASINS	\$ 2,500.00		\$ 2,500.00	\$ 1,870.00	\$ 2,500.00
3610	GUIDE POSTS & HARDWARE	\$ 5,000.00	\$ 202.00	\$ 5,000.00	\$ 235.00	\$ 5,000.00
3315	SHOULDER MAINTENANCE	\$ 5,000.00	\$ 5,100.00	\$ 5,000.00	\$ 3,700.00	\$ 5,000.00
	SIDEWALK - HORNING'S MILLS ENGINEERING					\$ 25,000.00
	<b>TOTAL</b>	<b>\$ 45,175.00</b>	<b>\$ 29,617.00</b>	<b>\$ 21,700.00</b>	<b>\$ 27,255.00</b>	<b>\$ 68,500.00</b>
<b>HARDTOP</b>						
3304	PREVENTATIVE MAINTENANCE	\$ 20,000.00	\$ 8,366.00	\$ 20,000.00	\$ 3,000.00	\$ 20,000.00
3310	COLD MIX, PATCHING, ROUTINE MTCE	\$ 6,000.00	\$ 2,266.00	\$ 6,000.00	\$ 2,400.00	\$ 6,000.00
3320	SWEEPING, FLUSHING, CLEANING	\$ 5,500.00	\$ 5,164.00	\$ 5,500.00	\$ 5,088.00	\$ 5,500.00
3321	LINE PAINTING	\$ 17,000.00	\$ 16,856.00	\$ 18,000.00	\$ -	\$ 18,000.00
	<b>TOTAL</b>	<b>\$ 48,500.00</b>	<b>\$ 32,652.00</b>	<b>\$ 49,500.00</b>	<b>\$ 10,488.00</b>	<b>\$ 49,500.00</b>
<b>LOOSETOP</b>						
3125	POULTON PLACE - CORBETTON		\$ 132,194.00	\$ -	\$ -	\$ -
3750	TOWNLINES	\$ 1,000.00	\$ 224.00	\$ 1,000.00	\$ 112.00	\$ 1,000.00
3200	ROADSIDE MAINTENANCE	\$ 1,000.00		\$ 1,000.00	\$ 1,300.00	\$ 1,000.00
3210	GRAVEL RESURFACING	\$ 400,000.00	\$ 440,254.00	\$ 400,000.00	\$ 430,458.00	\$ 440,000.00
3211	GRAVEL MAINTENANCE	\$ 30,000.00	\$ 31,691.00	\$ 30,000.00	\$ 15,650.00	\$ 30,000.00
3410	DUST LAYER (CALCIUM CHLORIDE)	\$ 170,000.00	\$ 128,035.00	\$ 170,000.00	\$ 135,318.00	\$ 170,000.00
	<b>TOTAL</b>	<b>\$ 602,000.00</b>	<b>\$ 732,398.00</b>	<b>\$ 602,000.00</b>	<b>\$ 582,838.00</b>	<b>\$ 642,000.00</b>
GL ACCT # 5005	ROADWAYS EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
<b>WINTER CONTROL</b>						
3510	SAND & SALT	\$ 55,000.00	\$ 63,011.00	\$ 65,000.00	\$ 53,065.00	\$ 65,000.00
3505	SNOW REMOVAL/BLOWING	\$ -		\$ 5,000.00	\$ 2,000.00	\$ 6,000.00
	<b>TOTAL</b>	<b>\$ 55,000.00</b>	<b>\$ 63,011.00</b>	<b>\$ 70,000.00</b>	<b>\$ 55,065.00</b>	<b>\$ 71,000.00</b>
<b>ROAD IMPROVEMENT</b>						
3139	7TH LINE SW/ 4TH LINE OS	\$ 150,000.00	\$ 186,750.00	\$ -	\$ -	\$ -
3138	RIVERVIEW/HUNTER PKWY	\$ 250,000.00	\$ 153,635.00	\$ -	\$ -	\$ -
3124	15 SR 3RD L TO CTY RD 124/GEORGE, ADDESON LLOYD ST	\$ 250,000.00	\$ 171,745.00	\$ -	\$ -	\$ -
3144	3RD LINE 20 SR 1.2 KM SOUTH/MILL LANE	\$ 250,000.00	\$ 284,478.00	\$ -	\$ -	\$ -
	15 SR MAIN ST 1 KM EAST			\$ 250,000.00	\$ 141,250.00	
	GEORGE STREET ADDESON ST AND LLOYD ST			\$ 125,000.00	\$ 49,710.00	
	MILL LANE				\$ 102,934.00	
	260 SIDEROAD - 2ND LINE NE TO RIVERVIEW					\$ 750,000.00
	4TH LINE OS - COUNTY7 ROAD 17 TO LOTS 9 & 10					\$ -
	<b>TOTAL</b>	<b>\$ 900,000.00</b>	<b>\$ 796,608.00</b>	<b>\$ 375,000.00</b>	<b>\$ 293,894.00</b>	<b>\$ 750,000.00</b>
<b>RESERVE</b>						
5030	REPLACEMENT EQUIPMENT RESERVE	\$ 150,000.00	\$ 150,000.00	\$ 220,000.00	\$ 220,000.00	\$ -
	TRANSFER TO RESERVES FOR INSURANCE SUPRLUS				\$ 15,918.10	
	ROAD CAPITAL RESERVES			\$ 50,000.00	\$ 50,000.00	\$ 50,000.00
	<b>TOTAL</b>	<b>\$ 150,000.00</b>	<b>\$ 150,000.00</b>	<b>\$ 270,000.00</b>	<b>\$ 285,918.10</b>	<b>\$ 50,000.00</b>
<b>TOTAL ROAD EXPENDITURES</b>		<b>\$ 3,872,702.00</b>	<b>\$ 3,424,286.83</b>	<b>\$ 3,183,793.20</b>	<b>\$ 2,814,948.10</b>	<b>\$ 4,084,820.00</b>

GL ACCT # 5007	ENVIRONMENTAL SERVICES EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
2171	LEVELLING	\$ 7,500.00	\$ -	\$ 7,500.00	\$ -	
2105	LANDFILL STUDY/MONITORING	\$ 16,318.00	\$ 8,159.00	\$ 16,318.00	\$ 16,318.00	\$ 16,898.00
2190	MISCELLANEOUS	\$ 100.00	\$ 10.00	\$ 100.00	\$ -	\$ 100.00
7001	REHABILITATION RESERVE	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
7010	ENVIRONMENTAL/SUSTAINABILITY	\$ -				
	<b>TOTAL</b>	<b>\$ 33,918.00</b>	<b>\$ 18,169.00</b>	<b>\$ 33,918.00</b>	<b>\$ 26,318.00</b>	<b>\$ 26,998.00</b>

GL ACCT # 5010	RECREATION SERVICES EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
5055	CORBETTON PARK	\$ 2,500.00	\$ 26,534.00	\$ 2,500.00	\$ 10,500.00	\$ 6,500.00
	RIVERVIEW PARK					\$ 10,000.00
6060	HORNING'S MILLS PARK	\$ 5,500.00	\$ 8,942.00	\$ 12,000.00	\$ 11,000.00	\$ 12,000.00
	HORNING'S MILLS PARK UPGRADES (TWP PORTION)					\$ 150,000.00
6065	HORNING'S MILLS COMMUNITY HALL	\$ 12,000.00	\$ 29,843.00	\$ 15,000.00	\$ 47,497.00	\$ 22,500.00
6063	HORNING'S MILLS HALL PARKING LOT (capital)				\$ 12,733.00	\$ -
6064	HORNING'S MILLS HALL BLDNG (Trillium Grant)				\$ 41,183.00	\$ -
6066	HORNING'S MILLS HERITAGE PROJECT	\$ 500.00		\$ 500.00	\$ 252.20	\$ 500.00
6070	CENTRE DUFFERIN RECREATION COMPLEX	\$ 54,000.00	\$ 57,075.00	\$ 60,000.00	\$ 79,904.00	\$ 84,000.00
6080	DUNDALK COMMUNITY CENTRE	\$ 15,500.00	\$ 15,500.00	\$ 16,200.00	\$ 15,600.00	\$ 16,700.00
6100	NORTH DUFFERIN COMMUNITY CENTRE	\$ 62,773.00	\$ 76,100.00	\$ 20,000.00	\$ 1,427.00	\$ 29,000.00
	HORNING'S MILLS HALL BOARD	\$ 2,000.00				
	HERITAGE COMMITTEE	\$ 3,500.00		\$ 3,500.00	\$ 253.00	\$ 2,000.00
	<b>TOTAL</b>	<b>\$ 158,273.00</b>	<b>\$ 213,994.00</b>	<b>\$ 129,700.00</b>	<b>\$ 220,349.20</b>	<b>\$ 333,200.00</b>

GL ACCT # 5016	CEMETARY EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
8902	HORNING'S MILLS CEMETERY	\$ 5,000.00		\$ 5,000.00	\$ 341.00	\$ 5,000.00
8904	ST. PAUL'S CEMETERY					
	<b>TOTAL</b>	<b>\$ 5,000.00</b>	<b>\$ -</b>	<b>\$ 5,000.00</b>	<b>\$ 341.00</b>	<b>\$ 5,000.00</b>

GL ACCT # 5011	LIBRARY EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
6110	SHELBURNE LIBRARY	\$ 61,915.00	\$ 61,915.00	\$ 60,000.00	\$ 60,000.00	\$ 62,968.00
6120	DUNDALK LIBRARY	\$ 9,000.00	\$ 9,081.00	\$ 9,490.00	\$ 9,490.00	\$ 9,920.00
	<b>TOTAL</b>	<b>\$ 70,915.00</b>	<b>\$ 70,996.00</b>	<b>\$ 69,490.00</b>	<b>\$ 69,490.00</b>	<b>\$ 72,888.00</b>

GL ACCT # 5012	PLANNING SERVICES EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
2100	PROFESSIONAL/LEGAL FEES	\$ 60,000.00	\$ 23,285.00	\$ 60,000.00	\$ 20,000.00	\$ 25,000.00
2018	OFFICIAL PLAN	\$ 30,000.00		\$ 50,000.00	\$ -	\$ 100,000.00
2109	NEW ZONING BY-LAW	\$ 45,000.00		\$ 75,000.00	\$ -	
2101	LPAT/OLT APPEALS	\$ -				
2102	LPAT/OLT APPEALS RESERVES	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ -
2304	STRADA OPA/ZBA				\$ 55.00	
	<b>TOTAL</b>	<b>\$ 150,000.00</b>	<b>\$ 38,285.00</b>	<b>\$ 200,000.00</b>	<b>\$ 35,055.00</b>	<b>\$ 125,000.00</b>

GL ACCT # 5009	DRAINAGE EXPENDITURES	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
3060	DRAINAGE SUPERINTENDENT	\$ 50,000.00	\$ 28,199.00	\$ 50,000.00	\$ 22,032.00	\$ 60,000.00
3070	NUISANCE BEAVER & BEAVER DAM REMOVAL	\$ 5,000.00	\$ 166.00	\$ 5,000.00	\$ 6,071.00	\$ 5,000.00
	<b>TOTAL</b>	<b>\$ 55,000.00</b>	<b>\$ 28,365.00</b>	<b>\$ 55,000.00</b>	<b>\$ 28,103.00</b>	<b>\$ 65,000.00</b>

<b>TOTAL EXPENITURER</b>		<b>\$ 6,070,427.00</b>	<b>\$ 5,486,911.71</b>	<b>\$ 5,758,757.20</b>	<b>\$ 5,185,744.54</b>	<b>\$ 6,769,368.00</b>
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GL ACCT #	TAXATION REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
4001 0700	SUPPLEMENTAL TAXES	\$ 85,000.00	\$ 87,652.00	\$ 90,000.00	\$ 108,912.00	\$ 100,000.00
4003 0100	PAYMENT IN LIEU	\$ 1,950.00	\$ 2,015.00	\$ 2,050.00	\$ 2,015.00	\$ 2,050.00
	<b>TOTAL TAXATION REVENUE</b>	<b>\$ 86,950.00</b>	<b>\$ 89,667.00</b>	<b>\$ 92,050.00</b>	<b>\$ 110,927.00</b>	<b>\$ 102,050.00</b>

GL ACCT # 4004	GRANT REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
150	OMPF	\$ 175,300.00	\$ 175,300.00	\$ 168,900.00	\$ 168,900.00	\$ 193,300.00
300	RIDE GRANT	\$ 6,600.00	\$ 6,700.00	\$ 7,508.00	\$ 6,600.00	\$ 6,600.00
172	COURT SECURITY & PRISONER TRANSPORT	\$ 730.00		\$ 730.00	\$ 1,100.00	\$ 1,100.00
500	LIBRARY GRANT	\$ 4,452.00	\$ 4,452.00	\$ 4,452.00	\$ 4,452.00	\$ 4,452.00
156	OCIF FUNDING (FORMULA COMPONENT)	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00	\$ 110,361.00
	MUNICIPAL EMERGENCY REDINESS FUNDS					\$ 12,500.00
700	ONTARIO AGGREGATE LIC. FEE	\$ 115,000.00	\$ 97,967.00	\$ 100,000.00	\$ 86,573.00	\$ 85,000.00
100	DRAINAGE SUPERINTENDENT	\$ 25,000.00	\$ 13,755.00	\$ 25,000.00	\$ 24,052.00	\$ 30,000.00
	<b>TOTAL COUNCIL REVENUE</b>	<b>\$ 427,082.00</b>	<b>\$ 398,174.00</b>	<b>\$ 406,590.00</b>	<b>\$ 391,677.00</b>	<b>\$ 443,313.00</b>

GL ACCT # 4010	ADMINISTRATION REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
100	TAX CERTIFICATES	\$ 2,500.00	\$ 2,600.00	\$ 2,500.00	\$ 3,000.00	\$ 2,800.00
110	TAX STATEMENT/DUPLICATE TAX BILLS	\$ 500.00	\$ 600.00	\$ 500.00	\$ 560.00	\$ 500.00
115	REMINDER/OVERDUE NOTICE FEE	\$ 3,000.00	\$ 3,200.00	\$ 3,000.00	\$ 2,234.00	\$ 3,000.00
200	BUILDING PERMIT APPROVAL	\$ 5,500.00	\$ 5,300.00	\$ 5,500.00	\$ 4,950.00	\$ 5,300.00
250	SITE ALTERATION PERMIT APPROVAL	\$ -	\$ 500.00	\$ 500.00		\$ 500.00
300	NSF CHEQUE CHARGE	\$ 100.00	\$ 210.00	\$ 200.00	\$ 70.00	\$ 100.00
400	PHOTOCOPIES	\$ -				
4015 0100	DOG LICENCES	\$ 10,000.00	\$ 9,950.00	\$ 10,000.00	\$ 9,580.00	\$ 9,500.00
4066 0000	LOTTERY LICENCES	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00
4040 0100	LIVESTOCK CLAIM GRANTS	\$ 4,000.00	\$ 2,792.00	\$ 3,000.00	\$ 2,017.50	\$ 3,000.00
	TAX SALE PROCEEDS (2024)			\$ 68,444.20	\$ 68,444.00	\$ -
	<b>TOTAL ADMINISTRATION REVENUE</b>	<b>\$ 25,870.00</b>	<b>\$ 25,172.00</b>	<b>\$ 93,664.20</b>	<b>\$ 90,875.50</b>	<b>\$ 24,720.00</b>

GL ACCT # 4012	FIRE REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
100	FIRE REVENUE	\$ 1,500.00	\$ 2,395.00	\$ 2,000.00	\$ 2,900.00	\$ 2,000.00
300	FIRE PERMIT	\$ 3,500.00	\$ 3,525.00	\$ 3,500.00	\$ 3,690.00	\$ 3,500.00
	<b>TOTAL FIRE REVENUE</b>	<b>\$ 5,000.00</b>	<b>\$ 5,920.00</b>	<b>\$ 5,500.00</b>	<b>\$ 6,590.00</b>	<b>\$ 5,500.00</b>

GL ACCT # 4020	ROAD REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
110	ROADS MISC REVENUE	\$ 9,000.00	\$ 755.00	\$ 750.00	\$ 24,150.00	\$ 1,000.00
115	ROAD OCCUPANCY PERMITS		\$ 46,875.00	\$ 9,500.00	\$ 12,000.00	\$ 8,000.00
125	ENTRANCE PERMITS	\$ 4,000.00	\$ 3,400.00	\$ 4,000.00	\$ 5,400.00	\$ 3,000.00
130	WIDE LOAD PERMITS	\$ 2,000.00	\$ 800.00	\$ 1,000.00	\$ 200.00	\$ 200.00
200	CULVERTS					
500	SHELBURNE ROAD AGREEMENT	\$ 6,442.00	\$ 6,442.00	\$ 6,887.00	\$ 6,887.00	\$ 7,094.00
	<b>TRANSFER FROM RESERVES</b>					
703	TRFR FROM GAS TAX (260 SIDE ROAD)	\$ 135,000.00	\$ 135,000.00	\$ 100,000.00	\$ 100,000.00	\$ 100,000.00
704	TRFR FROM ROAD CAPITAL RESERVE	\$ 200,000.00	\$ 200,000.00	\$ -	\$ -	\$ -
702	TRFR FROM EQUIPMENT RESERVE - TRUCK	\$ 595,000.00	\$ 268,027.00	\$ 120,000.00	\$ 17,300.00	\$ 514,615.00
0	TRFR FROM WORKING CAPITAL RESERVE	\$ 99,000.00	\$ 45,000.00			
700	TRFR FROM Working (Asset Management)				\$ 41,610.00	
	TRFR FROM PAVING RESERVE	\$ 74,000.00	\$ 74,000.00			
	TRFR DEV CHG (GRADER)	\$ 175,000.00	\$ 175,000.00			
	TRFR DEV CHG (DC STUDY)(BRIDGE STUDY)	\$ 52,000.00	\$ 52,000.00	\$ 27,000.00	\$ 28,020.00	\$ 9,000.00
	TRFR DEV CHG (ZONING BY-LAW)					\$ 67,500.00
	TRFR TAX STABILIZATION (Risk Asses & Strat Plan)	\$ 150,000.00	\$ 150,000.00	\$ 217,000.00	\$ 43,193.00	
	TRFR WORKING (HM PARK UPGRADES-GRANT)					\$ 150,000.00
	TRFR PARK PAVILLION		\$ 26,237.00			
	TRFR DEV CHG (SNOW BLOWER)					\$ 500,000.00
	TRFR MMAH (HYBRID COUNCIL CHAMBERS)			\$ 16,000.00	\$ -	\$ 12,500.00
	TRFR WORKING (ROAD PROJECTS)					\$ 200,000.00
	TRFR WORKING (BRIDGE)			\$ 200,000.00	\$ 200,000.00	
	TRFR WORKING (ZONING BY-LAW)					\$ 32,500.00
	TRFR WORKING (ROADS)			\$ 200,000.00	\$ 86,620.00	\$ -
	<b>TOTAL ROADS REVENUE</b>	<b>\$ 1,501,442.00</b>	<b>\$ 1,183,536.00</b>	<b>\$ 902,137.00</b>	<b>\$ 565,380.00</b>	<b>\$ 1,605,409.00</b>

GL ACCT # 4035	PLANNING REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
100	OFFICIAL PLAN APPLICATION	\$ -			\$ 5,000.00	\$ 1,000.00
310	SITE PLAN APPLICATION FEES	\$ -	\$ 750.00	\$ 750.00	\$ 500.00	\$ 750.00
350	ZONING BY-LAW AMENDMENT	\$ 6,000.00	\$ 3,000.00	\$ 3,000.00	\$ 10,000.00	\$ 6,000.00
300	CONSENT APPLICATIONS	\$ 6,000.00	\$ 9,000.00	\$ 8,000.00	\$ -	\$ 2,000.00
325	MINOR VARIANCE	\$ 5,000.00	\$ 2,000.00	\$ 2,000.00	\$ -	\$ 2,000.00
200	ZONING REQUESTS	\$ 1,000.00	\$ 1,400.00	\$ 1,200.00	\$ 3,000.00	\$ 2,000.00
360	CHANGE OF USE CERTIFICATE APPLICATION	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 3,764.00	\$ 2,500.00
370	TELECOMMUNICATION FACILITES APPLICATION	\$ -				
375	PRE-APPLICATION CONSULTATION	\$ 12,000.00	\$ 11,000.00	\$ 10,000.00	\$ 7,582.00	\$ 4,000.00
	TRAILER LICENSES				\$ 160.00	
500	PROFESSIONAL SERVICES REIMBURSEMENT	\$ -	\$ 5,333.00	\$ 30,000.00		\$ 10,000.00
320	SUBDIVISION AGREEMENT				\$ 10,000.00	\$ -
	<b>TOTAL PLANNING REVENUE</b>	<b>\$ 53,500.00</b>	<b>\$ 34,983.00</b>	<b>\$ 57,450.00</b>	<b>\$ 40,006.00</b>	<b>\$ 30,250.00</b>

GL ACCT # 4050	OTHER REVENUE	2023 BUDGET	2023 ACTUAL	2024 BUDGET	2024 PROPOSED	2025 BUDGET
100	MISCELLANEOUS REVENUE	\$ 600.00	\$ 5,805.00	\$ 600.00	\$ 9,633.00	\$ 1,000.00
125	CHD COMMUNITY CONTRIBUTION	\$ 309,000.00	\$ 309,000.00	\$ 309,000.00	\$ 309,000.00	\$ 309,000.00
130	PLATEAU COMMUNITY CONTRIBUTION	\$ 35,000.00	\$ 36,763.00	\$ 35,000.00	\$ 37,998.30	\$ 38,000.00
135	DWP COMMUNITY CONTRIBUTION	\$ 264,000.00	\$ 264,000.00	\$ 264,000.00	\$ 291,169.66	\$ 291,000.00
4015 0400	BY-LAW INFRACTION TO TAXES		\$ 6,000.00	\$ 6,000.00	\$ 17,905.00	\$ 10,000.00
200	PENALTIES AND INTEREST ON TAXES	\$ 105,000.00	\$ 104,270.00	\$ 105,000.00	\$ 116,662.00	\$ 105,000.00
300	INTEREST ON DEPOSITS	\$ 45,000.00	\$ 118,115.00	\$ 100,000.00	\$ 165,474.33	\$ 130,000.00
400	POA	\$ 45,000.00	\$ 59,250.00	\$ 50,000.00	\$ 48,968.01	\$ 50,000.00
4077 0000	LAND RENTAL	\$ 2,550.00	\$ 2,550.00	\$ 2,550.00	\$ 2,550.00	\$ 5,775.00
4050 0460	HORNING'S MILLS PK (TRFR FROM MMAH 19)					
4004 0166	HORNING'S MILLS PK (TRFR FROM MAIN ST REV.)					
4050 0460	TRFR FROM MMAH-2019 FOR COUNCIL HYBRID	\$ 5,000.00	\$ 5,000.00	\$ -	\$ -	\$ -
	TRFR FROM EMERGENCY RELIEF FUND	\$ 25,000.00		\$ 25,000.00	\$ 25,000.00	\$ 9,115.00
4050 0460	TRFR FROM TAX STABALIZATION (LEGALS OVERAGE)	\$ 40,000.00	\$ -	\$ -	\$ -	\$ -
	TRFR FROM PARKS ACCOUNT					\$ 10,000.00
	TRFR FROM DC CHARGES OPP		\$ 3,828.42	\$ -	\$ -	
	HORNINGS MILLS OTF PROJECT		\$ 13,030.00	\$ -	\$ 6,200.00	
	2024 SURPLUS TO ASSIST IN ROADS CAPITAL PROJECT					\$ 100,000.00
	<b>TOTAL OTHER REVENUE</b>	<b>\$ 876,150.00</b>	<b>\$ 927,611.42</b>	<b>\$ 897,150.00</b>	<b>\$ 1,030,560.30</b>	<b>\$ 1,058,890.00</b>
	<b>TOTAL REVENUE</b>	<b>\$ 2,975,994.00</b>	<b>\$ 2,665,063.42</b>	<b>\$ 2,454,541.20</b>	<b>\$ 2,236,015.80</b>	<b>\$ 3,270,132.00</b>
	<b>TOTAL EXPENDITURES</b>	<b>\$ 6,070,427.00</b>	<b>\$ 5,486,911.71</b>	<b>\$ 5,758,757.20</b>	<b>\$ 5,185,744.54</b>	<b>\$ 6,769,368.00</b>
		<b>\$ 3,094,433.00</b>	<b>\$ 2,821,848.29</b>	<b>\$ 3,304,216.00</b>	<b>\$ 2,949,728.74</b>	<b>\$ 3,499,236.00</b>
				6.78%		5.90%
				4.88%		3.82%



**SCHEDULE C  
CALCULATIONS OF LOWER TIER TAX RATES**

**SCHEDULE A to BY-LAW -2025-**

**TOWNSHIP OF MELANCTHON**

**2025 TAX RATES & LEVIES**



**Township of Melancthon**

<b>Property Class</b>	<b>Tax Class</b>	<b>Township of Melancthon</b>	<b>County of Dufferin</b>	<b>Provincial Education</b>	<b>2025 Total</b>
		<b>Tax Rates</b>	<b>Tax Rates</b>	<b>Tax Rates</b>	<b>Tax Rates</b>
Residential	RT	0.549202%	0.418501%	0.153000%	1.120703%
Commercial Full (Occupied)	CT	0.670026%	0.510571%	0.880000%	2.060597%
Commercial Vacant Land	CU	0.670026%	0.510571%	0.880000%	2.060597%
Commercial Excess Land	CX	0.670026%	0.510571%	0.880000%	2.060597%
Industrial (Occupied)	IT	1.207365%	0.920033%	0.880000%	3.007397%
Industrial Aggregate	VT	0.982440%	0.748636%	0.511000%	2.242077%
Industrial Excess Land	IX	1.207365%	0.920033%	0.880000%	3.007397%
Industrial New Const. Full	IH	1.207365%	0.920033%	0.880000%	3.007397%
Pipeline	PT	0.462483%	0.352420%	0.856022%	1.670924%
Farmlands	FT	0.120824%	0.092070%	0.038250%	0.251145%
Managed Forest	TT	0.137300%	0.104625%	0.038250%	0.280176%
<b>TOTAL AMOUNTS TO BE RAISED</b>					

**SCHEDULE A to BY-LAW -2025-**

TOWNSHIP OF MELANCTHON

**2025 TAX RATES & LEVIES**



**Township of Melancthon**

Property Class	Tax Class	Township of Melancthon	County of Dufferin	Provincial Education	2025 Total	2025	Township of Melancthon	County of Dufferin	Education	Total Tax Levy
		Tax Rates	Tax Rates	Tax Rates	Tax Rates	CVA	Tax Levy	Tax Levy	Tax Levy	
Residential	RT	0.549202%	0.418501%	0.153000%	1.120703%	\$457,031,200.00	\$2,510,022.49	\$1,912,680.14	\$699,257.74	\$5,121,960.37
Commercial Full (Occupied)	CT	0.670026%	0.510571%	0.880000%	2.060597%	\$11,615,400.00	\$77,826.19	\$59,304.89	\$102,215.52	\$239,346.60
Commercial Vacant Land	CU	0.670026%	0.510571%	0.880000%	2.060597%	\$393,200.00	\$2,634.54	\$2,007.57	\$3,460.16	\$8,102.27
Commercial Excess Land	CX	0.670026%	0.510571%	0.880000%	2.060597%	\$68,000.00	\$455.62	\$347.19	\$598.40	\$1,401.21
Industrial (Occupied)	IT	1.207365%	0.920033%	0.880000%	3.007397%	\$44,376,200.00	\$535,782.58	\$408,275.51	\$390,510.56	\$1,334,568.65
Industrial Aggregate	VT	0.982440%	0.748636%	0.511000%	2.242077%	\$4,455,000.00	\$43,767.72	\$33,351.75	\$22,765.05	\$99,884.52
Industrial Excess Land	IX	1.207365%	0.920033%	0.880000%	3.007397%	\$141,000.00	\$1,702.38	\$1,297.25	\$1,240.80	\$4,240.43
Industrial New Const. Full	IH	1.207365%	0.920033%	0.880000%	3.007397%	\$117,000.00	\$1,412.62	\$1,076.44	\$1,029.60	\$3,518.65
Pipeline	PT	0.462483%	0.352420%	0.856022%	1.670924%	\$1,948,000.00	\$9,009.16	\$6,865.14	\$16,675.31	\$32,549.61
Farmlands	FT	0.120824%	0.092070%	0.038250%	0.251145%	\$258,894,126.00	\$312,807.13	\$238,364.39	\$99,027.00	\$650,198.52
Managed Forest	TT	0.137300%	0.104625%	0.038250%	0.280176%	\$2,779,000.00	\$3,815.58	\$2,907.54	\$1,062.97	\$7,786.08
<b>TOTAL AMOUNTS TO BE RAISED</b>						<b>\$781,818,126.00</b>	<b>\$3,499,236.00</b>	<b>\$2,666,477.79</b>	<b>\$1,337,843.11</b>	<b>\$7,503,556.89</b>



The Corporation of

**THE TOWNSHIP OF MELANCTHON**

157101 Highway 10, Melancthon, Ontario, L9V 2E6

**NOTICE OF STATUTORY PUBLIC MEETING  
OFFICIAL PLAN AMENDMENT**

**RECEIPT OF COMPLETE APPLICATION**

**TAKE NOTICE** that the Township of Melancthon has received a complete application for an Official Plan Amendment for the lands legally known as Lot 24 and Part Lot 23 and 25, Concession 7 SW in the Township of Melancthon. The civic address of the subject property is 078106 7<sup>th</sup> Line SW.

**AND PURSUANT** to Section 22 of the *Planning Act*, R.S.O. 1990, C.P.13 as amended, the application file is available for review at the Municipal Office. Please contact the Township to arrange to review this file.

**PUBLIC MEETING:** The Council for the Corporation of the Township of Melancthon will be holding a public meeting described below under Section 22 of the *Planning Act*, R.S.O. 1990, C.P.13 as amended, to allow the public to comment on a proposed Official Plan Amendment.

**DATE AND LOCATION OF PUBLIC MEETING**

*Date and Time*                      Thursday, March 20<sup>th</sup>, 2025 at 5:30 p.m.  
*Location*                              Council Chambers – 157101 Highway 10 or Virtual via Zoom

If you wish to attend virtually, please email the Clerk prior to the day of the public meeting so you can be provided with the link to the meeting.

**THE PURPOSE** of the application is to redesignate the subject property from *Agricultural and Environmental Protection* to *Agricultural – Site Specific and Environmental Protection*. The site-specific provision, in particular, is the reduction of the minimum lot area that is required for severances in *Agricultural* areas. This amendment will allow for the future severance of the subject lands (File: B1/24).

**FURTHER INFORMATION AND MAP OF LAND SUBJECT TO THE APPLICATION**

A key map has been appended (see *Appendix A*) that identifies the lands that are subject to the Official Plan Amendment application.

Additional information and materials regarding the proposed Official Plan Amendment application are available for review by contacting the Township office by telephone at 519-925-5525, by email to the Clerk at [dholmes@melancthontownship.ca](mailto:dholmes@melancthontownship.ca), or by visiting the Township office located at 157101 Highway 10, Melancthon, ON during regular business hours Monday – Friday, 8:30 a.m. – 4:30 p.m. (the Office is closed between 12:00 p.m. and 1:00 p.m.).

**IF YOU WISH TO BE NOTIFIED** of the decision of the Council for the Corporation of the Township of Melancthon in respect to the proposed amendment, you must submit a written request to the Clerk of the Township of Melancthon at 157101 Highway 10, Melancthon, Ontario, L9V 2E6, email - [dholmes@melancthontownship.ca](mailto:dholmes@melancthontownship.ca).

If a person or public body does not make oral submissions at a public meeting or make written submissions to Council before the proposed amendments are approved, the person or public





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body is not entitled to appeal the decision of Council to the Ontario Land Tribunal.

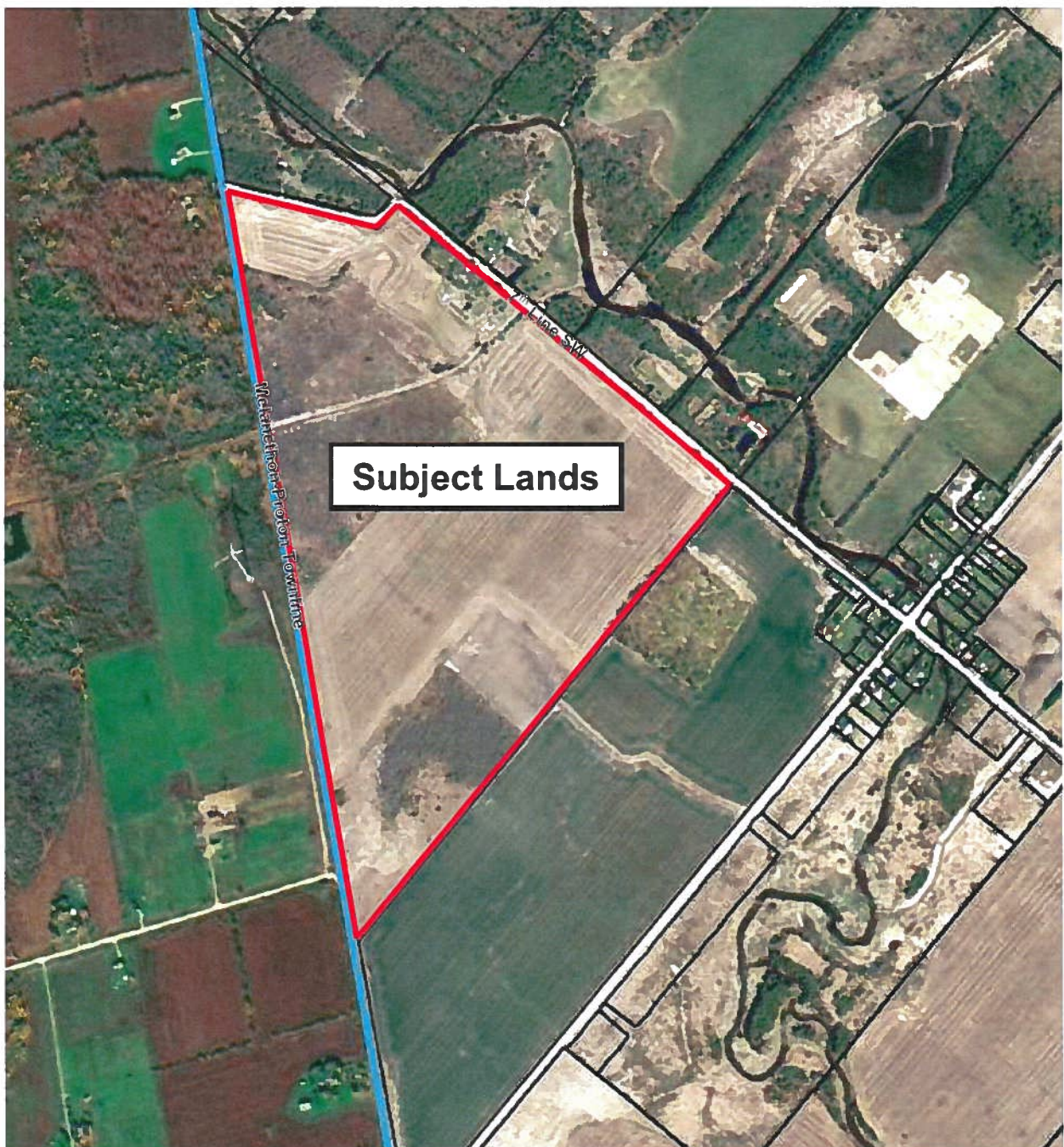
If a person or public body does not make oral submissions at a public meeting or make written submissions to Council before the proposed amendments are approved, the person or public body may not be added as a party to the hearing of an appeal before the Ontario Land Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.

Mailing Date of this Notice: February 6, 2025

A handwritten signature in black ink, appearing to read 'Denise B. Holmes'.

**Denise B. Holmes, AMCT**  
CAO/Clerk  
Township of Melancthon

#### Appendix A – Lands Subject to Official Plan Amendment Application





The Corporation of  
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## MEMORANDUM

**To:** Mayor White and Members of Council  
**Copy:** Ms. Denise Holmes, CAO/Clerk  
**From:** Liam Morgan, Development Planner  
**Date:** March 20<sup>th</sup>, 2025  
**Re:** Planning Report – Official Plan Amendment Five (5)– 078106 7<sup>th</sup> Line SW

---

### 1.0 RECOMMENDATIONS

**THAT Planning Report – Official Plan Amendment Five (5)– 078106 7<sup>th</sup> Line SW, dated March 20<sup>th</sup>, 2025 be received;**

**THAT Council adopt Official Plan Amendment Number Five (5) with respect to Official Plan Amendment Application – 078106 7<sup>th</sup> Line SW;**

**AND THAT Township Planning staff be directed to submit the required documentation to the County of Dufferin for final approval in accordance with the requirements of the *Planning Act*.**

### 2.0 BACKGROUND

The Township received an application from Loft Planning Inc. (herein referred to as the 'applicant') on behalf of Manassa and Melinda Martin (herein referred to as the 'owner') seeking an amendment to the Township Official Plan. The proposed amendment aims to implement a site-specific regulation for the lands designated as *Agricultural* that will allow for a new agricultural lot to be 28.3 hectares in size instead of the required approximately 40 hectares under the *Agricultural* designation. The intent of this amendment is to support the approval of a previously submitted consent application (B1-24).

#### Pre-Consultation Process

In July of 2023, the owner submitted a pre-consultation application to the Township of Melancthon to discuss a proposed severance of the subject lands; however, based upon a review of the pre-consultation file, it seems that a resubmission of the pre-consultation occurred in September of 2023.

Following the resubmission of the pre-consultation materials, Township of Melancthon staff undertook a pre-consultation meeting with the owner on September 12<sup>th</sup>, 2023. It must be noted that specific details of that meeting are solely based on the documents provided in the application file, as the current Township of Melancthon Planner was not employed by the County/Township at that time. The Township of Melancthon Planner, at that time, requested that the applicant proceed with a Consent application and Zoning By-law Amendment application. As part of those applications, the Township of Melancthon Planner requested the following studies be submitted:

1. Planning Justification Report
2. Environmental Impact Study
3. Geotechnical Investigation Report
4. Hydrogeological Study
5. Floodplain Hazard Assessment
6. Function Servicing Report
7. Stormwater Management Report





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8. Minimum Distance Separation Calculation

The reasoning behind the studies and reports requested by the previous Township of Melancthon can't be determined since the current Township of Melancthon Planner was not privy to the discussions that occurred during the pre-consultation meeting.

Related Application – Consent Application (B1-24)

Consent application, B1-24, was submitted by the applicant to Township of Melancthon staff on November 20<sup>th</sup>, 2024. Township of Melancthon Planning staff subsequently issued a complete application memorandum on December 3<sup>rd</sup>, 2024. The application was brought forth to Council/Committee of Adjustment on January 16<sup>th</sup>, 2025, where Township of Melancthon Planning staff were able to present their recommendation report, and a public meeting was held.

During Township of Melancthon Planning's staff review of the application it was determined that conformity issues between the application and Township Official Plan were present. Specifically, the issues found were related to the minimum lot size required, 40 hectares, for new lots related to agricultural uses. As such, the recommendation report brought forward by Township of Melancthon Planning staff recommended deferral to allow for additional discussions to occur between the applicant and Township staff on how to address the Township Official Plan discrepancies.

Intent of Current Report

After further discussions between the applicant and Township of Melancthon Planning staff, it was mutually agreed that an amendment to the Township of Melancthon Official Plan was the most appropriate course of action. The amendment would ensure that the initially proposed consent aligned with all overarching planning policies and, as such, could proceed further.

Ultimately, the purpose of the following report is to provide Council with a recommendation on whether the proposed Official Plan Amendment application should be approved or denied. It is the aim of this report to provide Council with a detailed analysis of the proposed application and determination on whether it in fact represents 'good planning'. Using this report Council will be tasked to conclude if the proposed application should be accepted or refused.

**3.0 DESCRIPTION OF SUBJECT LANDS**

The lands subject to the Official Plan Amendment application are municipally known as 078106 7<sup>th</sup> Line SW and legally described as Lot 24, Part Lot 23, and Part Lot 25, Concession 7 SW, (Roll Number: 221900000411400).

Presently on the subject lands, which are approximately 65.9 hectares (162.8 acres) in size and have a lot frontage of approximately 812.6 metres, is an existing residential dwelling with accessory buildings. The lands are designated as *Agricultural* and *Environmental Protection* under the Township Official Plan and zoned as *General Agricultural (A1)* and *Open Space Conservation (OS2)*, as per Zoning By-law 12-1979. Surrounding land uses include agricultural land, existing rural residential dwellings, and the community settlement area of Riverview.

An aerial of the subject lands has been provided for reference below in *Figure 1*.



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**Figure 1: Aerial of Subject Lands**



#### **4.0 PROPONENT APPLICATION**

The intent of this application is to amend the minimum lot size requirement for lands designated as *Agricultural* that seek to sever a portion of the lands for agricultural use. Specifically, the amendment will reduce the minimum requirement of approximately 40 hectares in *Agricultural* areas (sec. 5.2.5.b) to approximately 28 hectares.

It must also be mentioned that should Township Council approve the Official Plan Amendment application; the associated consent application (B1-24) will be brought forth at a future Council/Committee of Adjustment meeting for decision.

#### **5.0 POLICY OVERVIEW**

*Provincial Planning Statement, 2024*

The *Provincial Planning Statement, 2024* (herein referred to as 'PPS, 2024') is the province's guiding document for land use planning and development in Ontario. All decisions relating to land use planning and development, as such, must be consistent with the policies provided in the PPS, 2024.



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As it relates to the application at hand, the PPS, 2024 does provide policy direction for *Prime Agricultural* lands, which is what the subject lands are defined as. Broadly speaking, the PPS, 2024 directs that Ontario's agricultural land base – *Prime Agricultural Areas* and *Specialty Crop Areas* – be designated and protected for long-term use for agriculture (sec. 4.3.1.2). Specific policies relating to lands uses permitted in *Prime Agricultural Areas* are outlined in section 4.3.2 and include the following:

1. Agricultural uses, agricultural-related uses, and on-farm diversified uses based on provincial guidance.
2. All types, sizes, and intensities of *agricultural uses* and *normal farm practices* shall be promoted and protected in accordance with provincial standards.
3. New land uses in *prime agricultural areas*, including the creation of lots and new or expanding livestock facilities, shall comply with the *minimum distance separation formulae*.
4. A principal dwelling associated with an agricultural operation shall be permitted in *prime agricultural areas* as an agricultural use, in accordance with provincial guidance, except where prohibited in accordance with policy 4.3.3.1.c).
5. Where a residential dwelling is permitted on a lot in a *prime agricultural area*, up to two additional residential units shall be permitted in accordance with provincial guidance, provided that, where two additional residential units are proposed, at least one of these additional residential units is located within or attached to the principal dwelling, and any additional residential units:
  - a. Comply with the *minimum distance separation formulae*.
  - b. Are computability with, and would not hinder, surrounding agricultural operations.
  - c. Have appropriate sewage and water services.
  - d. Address any public health and safety concerns.
  - e. Are of limited scale and located within, attached, or in close proximity to the principal dwelling or farm building cluster; and,
  - f. Minimize land taken out of agricultural production
6. For greater certainty, the two additional residential units that are permitted on a lot in a *prime agricultural area* in accordance with policy 4.3.2.5 are in addition to farm worker housing permitted as an *agricultural use*.

PPS, 2024 also offers policy direction as it relates to natural features, which is relevant to the current application being that there are several natural heritage features on the subject lands. With respect to the current application, Section 4.1 offers the following relevant policies:

1. Natural features and areas shall be protected for the long term.
2. The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognized linkages between and among *natural heritage features and areas, surface water features, and ground water features*.
5. Development and site alteration shall not be permitted in:
  - a. *Significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E1.





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- b. *Significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1.
- c. *Significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1.
- d. *Significant wildlife habitat*.
- e. *Significant areas of natural and scientific interest*; and
- f. *Coastal wetlands* in Ecoregions 5E, 6E and 7E1 that are not subject to policy 4.1.4.b).

unless it has been demonstrated that there will be not negative impacts on the natural features or their ecological functions.

- 8. *Development and site alteration* shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 4.1.4, 4.1.5, and 4.1.6 unless the ecological function of the adjacent lands has been evaluated, and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.
- 9. Nothing in policy 4.1 is intended to limit the ability of *agricultural uses* to continue.

The PPS, 2024 also provides policy direction with respect to *Protecting Public Health and Safety* under section 5. This section of PPS, 2024 is particularly relevant in the case of this application as a result of natural hazards in the form of *watercourse* and *floodplain* on the subject lands. Section 5.2 of the PPS, 2024 speaks to policies for natural hazards and is further outlined below.

- 1. Planning authorities shall, in collaboration with conversation authorities where they exist, identify hazardous lands and hazardous sites and manage development in these areas, in accordance with provincial guidance.
- 2. (b) Development shall generally be directed to areas outside of hazardous lands adjacent to river, stream and small inland lake systems which are impacted by flooding hazards and/or erosion hazards.

*County of Dufferin Official Plan*

The County of Dufferin Official Plan, which has been recently (October 2024) been modified through Official Plan Amendments #2 and #3, offers overarching policy direction for land use and development matters in the entire County of Dufferin. The intent of the County of Dufferin Official Plan, especially as it relates to the current application, is outlined in section 1.1.5 and includes the following policies:

- a. Foster the creation of complete, healthy, and sustainable communities and enhance the quality of life for all residents.
- c. Protect *Prime Agricultural areas* and recognize the importance of agriculture in the County and ensure its continued viability by promoting a range of agricultural uses, activities and complimentary uses.
- f. Protect natural heritage features and the environment and foster the creation of an enhanced and connected *natural heritage system* and recognize the importance of provincially significant features and land forms located within the Niagara Escarpment, the Oak Ridges Moraine, and the Greenbelt Plan Area.



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- g. Maintain and enhance the County's *Countryside Areas* and *character* and significant environmental features and resources.

Under the County Official Plan, the subject lands are designated as *Prime Agricultural*. It is the intent of the *Prime Agricultural* designation to protect agricultural areas from incompatible uses, while accommodating a diverse range of agricultural uses, agricultural-related uses, and on-farm diversified uses (sec. 4.2). Permitted uses, as per section 4.2.2., include agricultural uses, normal farm practices, residential dwellings, agricultural related-uses, on-farm diversified uses, home occupations, home industries, forestry, conservation, wildlife and fisheries management, passive recreational uses, watershed management, and flood and erosion control projects.

Lands designated as *Prime Agricultural*, especially as it relates to the current application, are also subject to the below land use policies:

Section 4.2.3 – Land Use Policies

- b. In order to avoid land use conflicts within the *Agricultural Area* designation, new land uses, including *lot* creation, and new or expanding livestock facilities will comply with the *Minimum Distance Separation Formulae*, to ensure appropriate standards for separating incompatible uses from existing, new or expanding livestock facilities. The *Minimum Distance Separation Formulae* will be implemented through the applicable local municipal planning documents.

Section 4.2.5 – Prime Agricultural Area Lot Creation and Adjustment

- a. *Lot* creation in the *Prime Agricultural Area* will generally be discouraged and only permitted in accordance with provincial policy and the policies of the local municipal official plan. The minimum *lot* area of both the retained and severed *lots* will be established in the local municipal official plans in accordance with the *lot* creation policies for the uses set out below.
- b. For *agricultural uses*, provided that the lots are of a size appropriate for the type of *agricultural use(s)* common in the area and are sufficiently large enough to maintain flexibility for future changes in the type or size of agricultural operations. For *prime agricultural areas* within the Greenbelt Plan Protected Countryside, the minimum lot size will be 40 hectares (100 acres).
- c. The creation of new residential lots in the *prime agricultural area* shall not be permitted except in accordance with policy 4.2.5(c).

As noted in the discussion on the PPS, 2024, the subject lands also entail several natural heritage features, with those features being specifically *woodlands* and *watercourses*. The County of Dufferin Official Plan provides guidance as it relates to those natural features through sections 5.3.4 and 5.3.8, which are outlined below.

**Woodlands (sec. 5.3.4)** – The intent of this Plan is to conserve existing woodlands and vegetation and prohibit incompatible land uses that deter their long-term benefits. Woodlands are illustrated on Schedule E. Some areas may not be identified since the exact boundaries of mapped areas may change over time. Development and site alteration will not be permitted within or adjacent to significant woodlands unless it has been demonstrated that there will be no negative impacts on the natural heritage features or their ecological functions through the preparation of an



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Environmental Impact Study (EIS).

**Watercourses (sec. 5.3.8)** – It is the intent of this Plan to protect natural watercourses from incompatible development to minimize the impacts of such development on their function.

The County Official Plan also includes policy direction relating to flooding hazards under section 6.2.1. Policies relevant to this application include the following:

- a. Development will be directed to areas outside of *flooding hazards, erosions hazards, and hazardous lands* adjacent to *river, stream and small inland lake systems* which are impacted by flooding hazards and/or *erosion hazards*.
- b. The replacement of existing buildings or structures, or minor additions to existing buildings or structures, may be permitted on an existing lot of record in a flood plain subject to the policies of this Plan and the local municipal official plan policies and subject to approval from the applicable Conservation Authority and/or Ministry of Natural Resources. Lot creation will be directed to areas outside of a *flooding hazard*.

*Township of Melancthon Official Plan*

The Township of Melancthon Official Plan designates the subject lands as both *Agricultural* and *Environmental Conservation*, as per Schedule A-4. Permitted uses associated with the *Agricultural* designation, which are contained in section 5.2.1, include agricultural uses, agriculture-related uses, on-farm diversified uses (i.e., farm related tourism), single detached dwelling, and wayside pits. For the *Environmental Conservation* designation permitted uses, which are found in 5.5.1, include legally existing uses, low impact and passive recreation uses, forest, wildlife, and fisheries management and archaeological works, essential public watershed management and flood or erosion control works, essential transportation and utility facilities, existing public and private parks, agricultural uses, and uses permitted in the underlying land use designation.

The *Environmental Conservation* designation on the subject lands is further specified by the type of natural heritage feature located on the lands in question. Schedule D highlights that a significant portion of the lands designated as *Environmental Conservation* are particularly defined as *Locally Significant and Unevaluated Wetlands*. Further to that, Schedule E illustrates that a *Watercourse* is another natural feature on the subject lands. Policies relating to *Locally Significant Wetlands and Unevaluated Wetlands* and *Watercourses* are highlighted below.

Section 5.5.2 – Locally Significant Wetlands and Unevaluated Wetlands

- h. Locally significant wetlands shall be protected and maintained in a natural state. They may be protected through stewardship agreements or conservation easements.
- j. The policies of section 3.4.2 with regard to assessing environmental impact shall apply to any development or site alteration within a locally significant wetland. Environmental impact documentation may also be required for any development on adjacent lands to a locally significant wetland. Generally, the construction of a dwelling or accessory buildings to a dwelling on such adjacent lands will not require an assessment of environmental impact.
- k. Agricultural uses may continue within locally significant and unevaluated wetlands and such uses shall be encouraged to employ best management practices to protect and enhance wetland features.



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Policies specifically related to severances are solely defined under the *Agricultural* designation and are not provided under the *Environmental Conservation* designation. Section 5.2.5, in particular, provides guiding policies relating to severances in *Agricultural* areas, which are further elaborated on below.

- a. The planning objectives of the consent and lot creation policies for the *Agricultural* designation are to preserve prime agricultural land for *agricultural uses*, minimize the fragmentation of such land, protect agricultural operations, and minimize the intrusion of incompatible uses into *prime agricultural areas*.
- b. (i) Lots may be created for agricultural uses, provided such lots are of a size appropriate for the type of agricultural uses that are common in this area and are sufficiently large to maintain flexibility for future changes in the type or size of agricultural operations. Compliance with the policies of subsection 5.2.2(h) is particularly important in this regard. The applicable minimum agricultural lot size provisions shall be addressed in the implementing Zoning By-law and new lots for agricultural uses shall be approximately 40 hectares or the original survey lot size, whichever is lesser.

The Township Official Plan also provides general policies related to severances, as per section 7.2(a). Those policies are provided below.

- i. The use of both the proposed severed and retained lots shall comply with the policies of the applicable land use designation and with the provisions of the zoning by-law.
- ii. Where the severed or retained lots will involve new buildings, structures, wells or sewage disposal systems, it must be established that the subject lots have soil and drainage conditions suitable for the proper sitting of buildings, structures and an on-site sewage disposal system, and that a sufficient supply of potable water is available or can be obtained.
- vii. Consents shall be granted only when both the severed and retained lands have frontage on an open public road built to municipal standards.
- x. The size and dimensions of any lot created by a consent approval should be appropriate for the use proposed and no lot shall be created which does not comply with the provisions of the zoning by-law and the requirements of any agency having jurisdiction.
- xiv. Lot creation is prohibited in provincially significant wetlands or the habitat of endangered species and threatened species. Lot creation in other natural heritage features and areas shall comply with the provisions of section 3.4.2 concerning the assessment of environmental impact to confirm that there will be no negative impacts on those features or areas.

The presence of natural heritage features on the subject lands is further established in the Township Official Plan, which highlights that a *watercourse* is present on the subject lands, as per Schedule E. It must also be noted that the presence of the *watercourse* also leads to a portion of the subject lands being labelled as *Floodplain* under Schedule F. All applicable *watercourse* and *floodplain* policies are discussed below.

Section 3.5.1 – General and Floodplain Related Policies

- a. It is a policy of this Plan that *development* and *site alteration* will generally be directed to areas outside of hazardous lands and sites. The creation of new lots by consent or by



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plan of subdivision will be prohibited within the flooding hazard limit or erosion hazard limit. The policies of this section and section 5.5 apply more specifically to these areas, particularly areas in floodplains or near watercourses.

Section 4.8 – Setbacks from Watercourses

- a. *Development* will be set back from watercourses to protect the natural features and functions of the watercourse and related lands, protect fish habitat, provide riparian habitat, and minimize the risk to property and public safety. The areas within the vicinity of watercourses are primarily designated Environmental Protection or are included in the Environmental Conservation overlay designation and the policies relating to those designations will apply together with other applicable policies of this Plan such as those in section 3.5 relating to hazardous lands and sites.

Section 5.5.3 – Floodplains, Watercourses and Drains Related Policies

- a. Development, and site alteration, other than that specifically permitted by the policies of this section, section 3.5.1 and section 5.5.1, will be set back from watercourses in order to protect the natural features and functions of the watercourse and related lands, protect fish habitat, provide riparian habitat and minimize the risk to public safety and property.

*Township of Melancthon Zoning By-law 12-1979*

The subject lands are predominately zoned as *General Agricultural (A1)*; however, there is a small portion that extends through the middle of the subject lands, which is zoned as *Open Space Conservation (OS2)*. Permitted uses of the *A1* zone include farm, kennel, riding stable, nursery or commercial greenhouse, animal hospital, forestry or conservation uses, wayside pit, home occupation, and single detached dwellings. For the *OS2* zone, permitted uses include conservation uses (i.e., forestry, reforestation), public park, golf course, farm, horticultural nursery, and building or structures to be used for flood or erosion control purposes.

Being that the future proposed building area, as outlined in the initial consent application (B1-24), occurs solely in the *A1* zone, the policies of the *A1* zone will apply. A comparison between the zoning regulations under the *A1* zone and proposed consent application is provided in the table below.

<b>Table 2: Zoning Comparison</b>			
<i>Regulation</i>	<i>Required</i>	<i>Severed Lands</i>	<i>Retained Lands</i>
Min. Lot Area	18 ha	28.3 ha	37.6 ha
Min. Lot Frontage	150 m	406 m	406 m
Min. Dwelling GFA	1-storey = 93 m <sup>2</sup> 2-storey = 65 m <sup>2</sup>	Existing	Indicated by agent that it is <b>to be met.</b>
Min. Distance from any building to the nearest lot line	15 m	206 m and 167 m	~162 m and ~603 m
Max. Building Height	15 m	Existing	Indicated by agent that it is <b>to be met.</b>





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## 6.0 POLICY ANALYSIS

Township Planning staff have undertaken an extensive analysis of the overarching policy regulations associated with subject lands. Staff have determined the following findings as it relates to all overarching planning policies.

### Provincial Planning Statement, 2024

The subject lands will still maintain the agricultural intent of the *Prime Agricultural* area by continuing to use both parcels for agricultural uses. Though the applicant has indicated that the owner will likely seek to construct a rural dwelling in the future, this is a permitted use in the *Prime Agricultural* area if associated with an agricultural use, which it has been indicated it will be. While there are natural heritage features on the subject lands, the EIS submitted as part of the consent application (B1-24) indicated that no negative impacts to those features would occur if the recommendations provided in the EIS are implemented. As such, this will be a condition of approval for the consent application. The natural hazard policies of the PPS, 2024 have been addressed as the future proposed development has been illustrated to be outside of the floodplain area, which the GRCA has indicated no concerns with.

The proposed Official Plan Amendment application, therefore, is **consistent** with the PPS, 2024 based on Township of Melancthon Planning staff's review.

### County of Dufferin Official Plan

The proposed Official Plan Amendment application, as well as associated consent application, upholds the general intent of the *Prime Agricultural* designation. The application maintains the agricultural use of the subject lands and ensures that the size of the severed lands remains large enough to support agricultural uses and operations. Township of Melancthon Planning staff have also reviewed the minimum distance separation calculations submitted by the applicant and have no concerns.

Though the proposed severance is not fully outside of the floodplain area, a fact that conflicts with section 6.2.1(b), the portion of the proposed severance that does intersect with the floodplain is relatively minimal. This assertion is also supported by the fact the GRCA has reviewed both the consent application (B1-24) and Official Plan Amendment application and has indicated no concern with either application. Further to that, the proposed building envelope is also presented to be outside of the floodplain area, which ensures alignment with section 6.2.1(a).

Based on Township of Melancthon Planning staff's review, the application is **consistent** with the County of Dufferin Official Plan.

### Township of Melancthon Official Plan

The proposed application, in large part, conforms with both the *Agricultural* and *Environmental Conservation* designations that apply to the subject lands. As noted in the previous sections, the application still seeks to maintain the agricultural use of both the retained and severed parcels, a use that is permitted under both the *Agricultural* and *Environmental Conservation* designations. However, the proposed severance does not ultimately provide two lots that are "approximately 40 hectares" in size, which is required as per section 5.2.5 (b). The Official Plan Amendment application at hand, if implemented, will seemingly address that conformity issue by permitting the severed parcel to be 28.3 hectares in size. It is the opinion of Township Planning staff that such an amendment is appropriate being that the severed lands will still be large enough in size to support agricultural uses and will continue to be used as such. The discrepancy between the required "approximately 40 hectares" and the proposed 28.3 hectares for the severed lands, while noticeable, is not impactful enough to render the severed lands as unable to be used for agricultural uses. Even more, the retained lands will also still



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be utilized for agricultural purposes, therefore, ensuring the agricultural output from the original parcel is being maintained.

It must be mentioned that under section 3.5.1 it is stated that "...the creation of new lots by consent or by plan of subdivision will be prohibited within the flooding hazard limit or erosion hazard limit". Though the proposed severance does intersect with the floodplain, all future development on the retained parcel has been proposed to be outside of the floodplain in accordance with the Floodplain Assessment prepared by Wilson-Ford Surveying and Engineering. The GRCA has also confirmed that they have no concerns with the proposed consent or Official Plan Amendment applications. In the opinion of the Township of Melancthon Planning staff, though conflict does exist between the proposed application and section 3.5.1, the general intent of the Township Official Plan is still maintained. Despite section 3.5.1, the proposed application in general remains consistent with all other policies of the Township Official Plan, especially those of the *Agricultural* designation. The maintaining of the Township Official Plan's general intent, in combination with the fact that the proposed severance minimally intersects with the floodplain, the GRCA has no concerns with either the consent or Official Plan Amendment applications, and the future proposed development on the retained lands is planned to occur outside of that area, satisfies Township Planning staff's belief that the application represents 'good planning'.

Therefore, it is the opinion of Township of Melancthon Planning staff that the proposed Official Plan Amendment application maintains the general intent of the Township Official Plan.

Township of Melancthon Zoning By-law 12-1979

The resulting parcels from the proposed application, if approved, will conform with the zoning regulations of the A1 zone, as per Zoning By-law 12-1979.

**7.0 SUMMARY OF TECHNICAL REPORTS SUBMITTED**

The planning consultant has submitted the following technical reports and information to the Township in support of the proposed Official Plan amendment:

- Addendum to Planning Justification Letter, prepared by *Loft Planning Inc.*
- Consent Sketch, prepared by *Wilson-Ford Surveying and Engineering*
- Official Plan Amendment Application Form, prepared by *Loft Planning Inc.*
- Official Plan Amendment Draft Schedule, prepared by *Loft Planning Inc.*

**8.0 SUMMARY OF COMMENTS RECEIVED**

To date, comments have been provided by four (4) agencies. Those agencies, and a high-level summary of their respective comments, are further outlined below.

*8.1. County of Dufferin*

Comments were issued by the County of Dufferin on March 5<sup>th</sup>, 2025. The comment package submitted by the County included comments from Building Services, Planning, Waste Services, and Engineering. All four (4) internal divisions had no comments pertaining to the Official Plan Amendment application.

*8.2. Grand River Conservation Authority (GRCA)*



The Corporation of

**THE TOWNSHIP OF MELANCTHON**

157101 Highway 10, Melancthon, Ontario, L9V 2E6

The GRCA issued comments to the Township on February 27<sup>th</sup>, 2025. In the comments provided it was indicated that the GRCA had no objections to the proposed Official Plan Amendment. This agency requested to be notified should any future development be proposed for either parcel in order to determine whether the proposed development is in a GRCA regulated area and, subsequently, whether a GRCA development permit would be required.

*8.3. Enbridge Gas*

Comments were provided by Enbridge Gas on February 10<sup>th</sup>, 2025. This agency indicated that they did not object to the proposed application; however, they do reserve the right to amend or remove development conditions.

*8.4. Mississaugas of the Credit First Nation (MCFN)*

The Township received comments from MCFN on February 7<sup>th</sup>, 2025. Comments provided by MCFN declared that they had no questions or comments pertaining to the Official Plan Amendment. MCFN did emphasize in their comments that they should be notified, invited to participate in, and provided the opportunity to review any environmental and/or archaeological assessments submitted as part of a planning application.

**9.0 CONCLUSION**

Township of Melancthon Planning staff undertook an extensive review of the information provided by the applicant as part of both the consent application (B1-24) and Official Plan Amendment application. The proposed Official Plan Amendment seeks to reduce the lot size requirement of "approximately 40 hectares" under section 5.2.5.b(i) to 28.3 hectares for the proposed severed lands. A recommendation report on the associated consent application (B1-24) will be put forward at a future Council/Committee of Adjustment meeting should the Official Plan Amendment be approved.

Upon review of all overarching planning policies, in combination with comments received from both internal departments and external agencies, the proposed Official Plan Amendment is appropriate and does represent 'good planning'.

Prepared by:

A handwritten signature in black ink, appearing to read "LM".

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**Liam Morgan**

Development Planner

Township of Melancthon

**Attachments:**

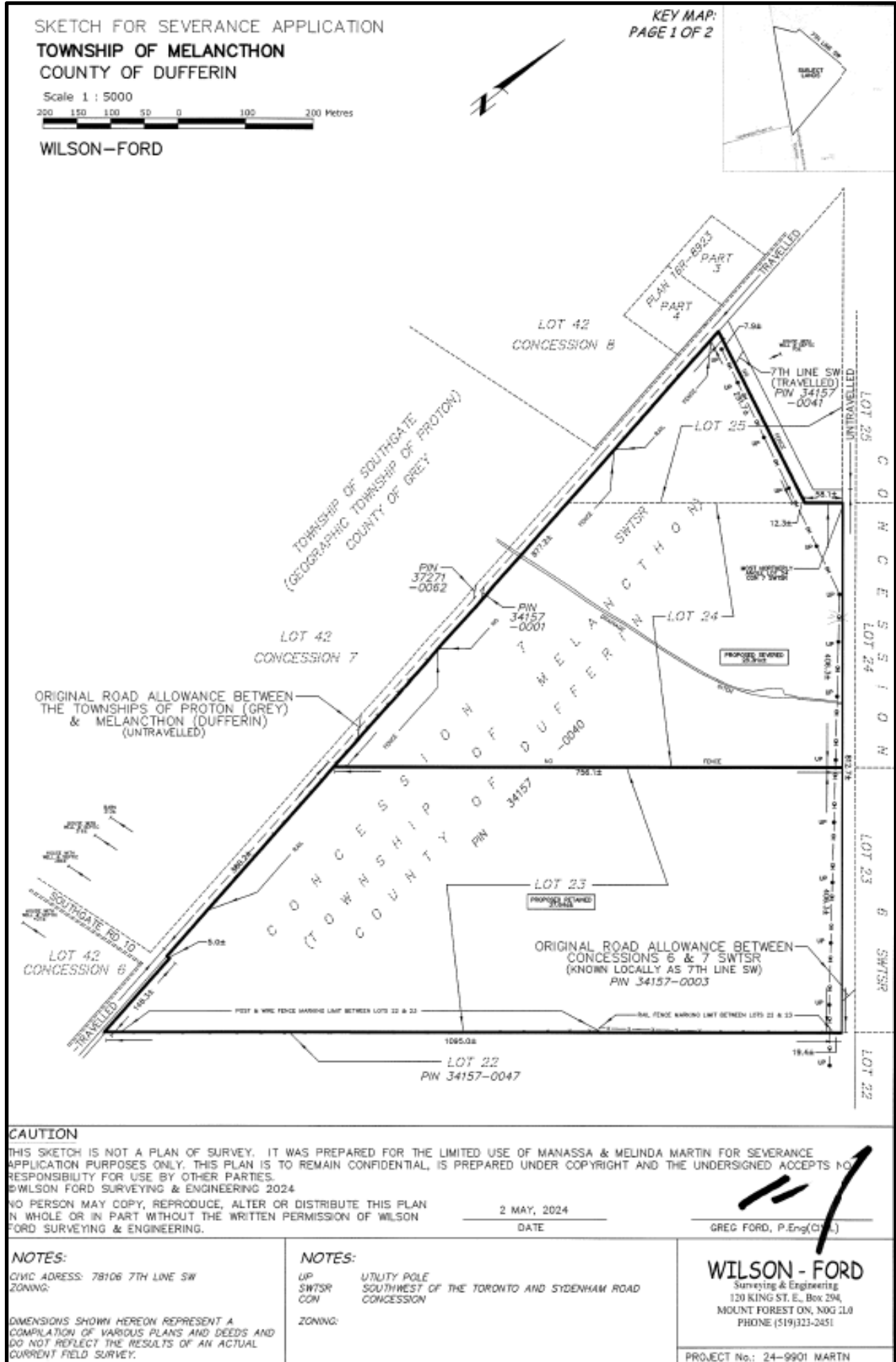
- Appendix 1 – Consent Sketch





The Corporation of  
**THE TOWNSHIP OF MELANCTHON**  
 157101 Highway 10, Melancthon, Ontario, L9V 2E6

**Appendix 1 – Consent Sketch**



**AMENDMENT NO. FIVE (5)**  
**TO THE OFFICIAL PLAN**  
**FOR THE**  
**TOWNSHIP OF MELANCTHON**

**INDEX**

**PART A – THE PREAMBLE**

- 1.0 LOCATION
- 2.0 PURPOSE OF THE AMENDMENT
- 3.0 BASIS OF THE AMENDMENT

**PART B – THE AMENDMENT**

- 4.0 INTRODUCTION TO THE AMENDMENT
- 5.0 DETAILS OF THE AMENDMENT
- 6.0 IMPLEMENTATION
- 7.0 INTERPRETATION

**PART C – THE APPENDICIES**

- 8.0 APPENDICIES

## **THE CONSTITUTIONAL STATEMENT**

**PART A – THE PREAMBLE:** The Preamble provides an explanation of Amendment No. 5 to the Official Plan for the Township of Melancthon, including purpose, location and background information, but does not form part of this amendment.

**PART B – THE AMENDMENT:** The Amendment, consisting of text, designates the proposed changes to the Official Plan for the Township of Melancthon and constitutes Amendment No. 5.

**PART C – THE APPENDICIES:** The appendices, if included herein, provide related information to the amendment but do not constitute part of this amendment.

**AMENDMENT NO. FIVE (5)**  
**TO THE OFFICIAL PLAN**  
**FOR THE**  
**TOWNSHIP OF MELANCTHON**

**PART A – THE PREAMBLE**

1.0 LOCATION

This Amendment applies to a portion of the lands known as 078106 7<sup>th</sup> Line SW, Lot 24, Part Lot 23, and Part Lot 25, Concession 7 SW,. The land is located on the west side of 7<sup>th</sup> Line SW and east of Melancthon Proton Townline.

2.0 PURPOSE OF THE AMENDMENT

The purpose of this Amendment is to apply a site-specific policy to the future proposed severed parcel, allowing lot with an area of 28.3 hectares, whereas Township Official Plan Policy 5.2.5 (b) (i) requires a minimum lot size of approximately 40 hectares. The reduced size will allow for the establishment of two parcels that will continue to be utilized for agricultural purposes. The property will continue to be designated as *Agricultural* in the Official Plan.

3.0 BASIS OF THE AMENDMENT

The basis for the application is that the proposed severed lot in a related consent application (B1-24) will be less than the minimum required lot size for new agricultural lots that are created as a result of the lands being severed. The proposed consent application otherwise maintains the general intent of the Township Official Plan and reflects the Agricultural character of the surrounding area.

**AMENDMENT NO. FIVE (5)**  
**TO THE OFFICIAL PLAN**  
**FOR THE**  
**TOWNSHIP OF MELANCTHON**

**PART B – THE AMENDMENT**

4.0 INTRODUCTION TO THE AMENDMENT

The Amendment is to permit the establishment of a lot with an area of 28.3 hectares, whereas Township Official Plan Policy 5.2.5 (b) (i) requires a minimum lot size of approximately 40 hectares. The reduced size will allow for the establishment of two parcels that will continue to be utilized for agricultural purposes. The property will continue to be designated as *Agricultural* in the Official Plan.

5.0 DETAILS OF THE AMENDMENT

The Official Plan for the Township of Melancthon is hereby amended as follows:

1. Schedule 'A-4' to the Official Plan of the Township of Melancthon is amended for lands municipally known as 078106 7<sup>th</sup> Line SW, Concession 7 SW, Lot 24, Part Lot 23, and Part Lot 25 from *Agricultural* to *Agricultural – Site Specific 1* as per Appendix 1 attached to this by-law.
2. By adding a new section to the text of the Official Plan of the Township of Melancthon as per the below:

5.2.7 Agricultural – Site Specific 1

For the lands municipally known as 078106 7<sup>th</sup> Line SW, Lot 24, Part Lot 23, and Part Lot 25, Concession 7 SW, only one (1) new lot may be created with a minimum lot area of 28.3 hectares.

6.0 IMPLEMENTATION

Section 7.0 "Implementation" of the Official Plan shall apply to the implementation of this Amendment.

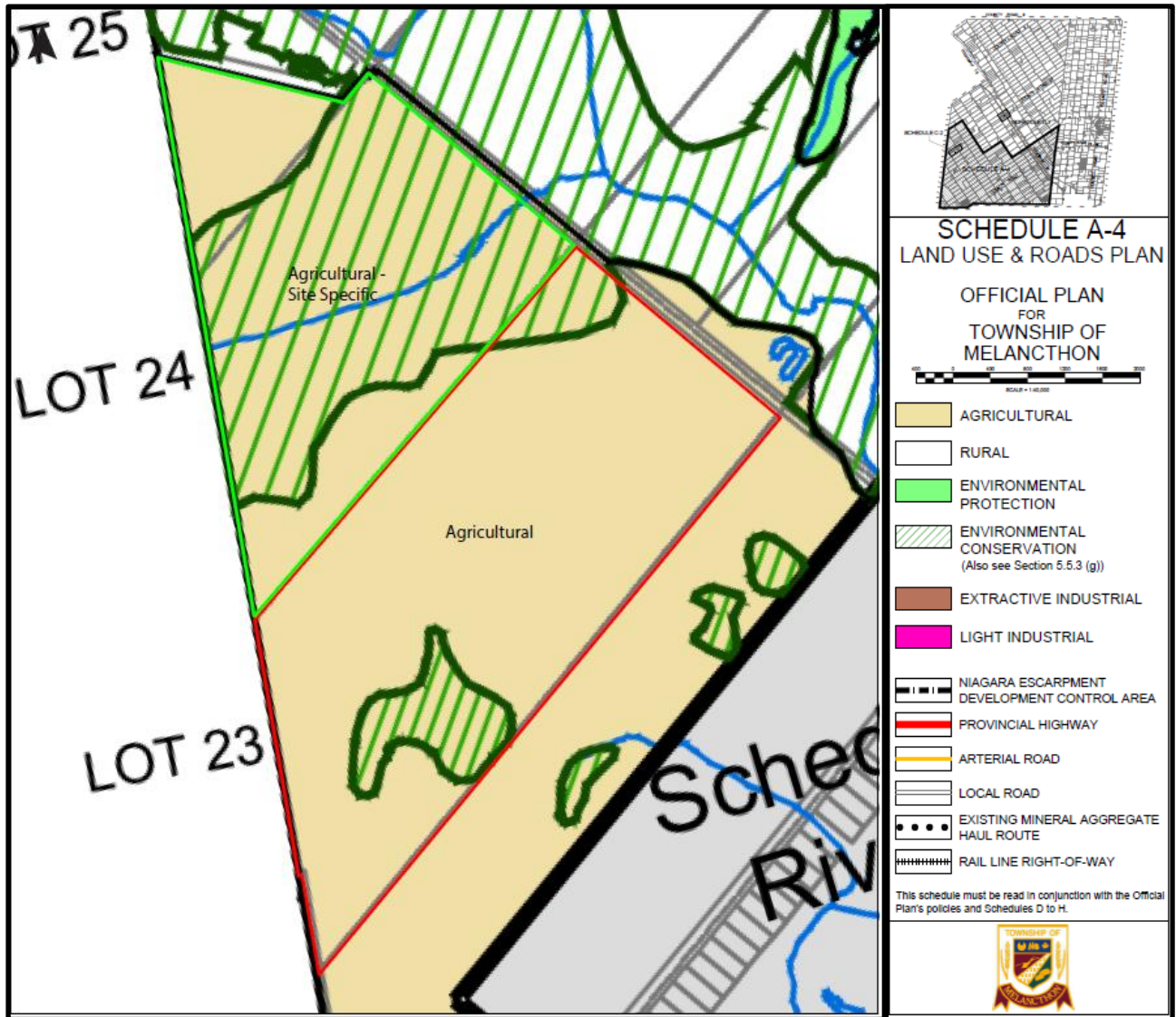
7.0 INTERPRETATION

The provisions of the Official Plan, as amended from time to time, regarding the interpretation of the Official Plan, shall apply with respect to this Amendment.

**AMENDMENT NO. FIVE (5)**  
**TO THE OFFICIAL PLAN**  
**FOR THE**  
**TOWNSHIP OF MELANCTHON**

**PART C – THE APPENDICES**

8.0 APPENDICES



**THE CORPORATION OF THE TOWNSHIP OF MELANCTHON**

**BY-LAW NO. \_\_\_\_\_**

Being a By-law to adopt an Official Plan Amendment 5 (OPA 5), to the Township of Melancthon Official Plan with respect to the lands legally known as Lot 24, Part Lot 23, and Part Lot 25, Concession 7 SW, 078106 7<sup>th</sup> Line SW, Township of Melancthon. (Subject Lands) as shown on the attached Part C – The Appendices.

WHEREAS the Owner of the subject lands submitted an application to amend the official plan; and

WHEREAS the Council of the Corporation of the Township of Melancthon held a public meeting for the Official Plan Amendment in accordance with the provisions of the Planning Act;

NOW THEREFORE the Council of the Corporation of the Township of Melancthon in accordance with the provisions of the Planning Act, R.S.O., 1990, c.P. 13, as amended, hereby enacts as follows:

1. That Official Plan Amendment 5 (OPA 5) to the Township of Melancthon Official Plan, being the attached text and Schedule "A", is hereby adopted.
2. That the Clerk is hereby authorized and directed to make application to the County of Dufferin for approval of the Official Plan Amendment for the Township of Melancthon and to provide such information as required by Section 17 (2) of the Planning Act, R.S.O., 1990, as amended.
3. That this By-law shall come into force and take effect upon approval by the Dufferin County subject to the appeal provisions under the Planning Act.

BY-LAW READ A FIRST, SECOND AND THIRD TIME AND PASSED THIS 20<sup>TH</sup> DAY OF MAY, 2025.

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MAYOR

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CLERK



The Corporation of  
**THE TOWNSHIP OF MELANCTHON**  
157101 Highway 10, Melancthon, Ontario, L9V 2E6

**NOTICE OF STATUTORY PUBLIC MEETING  
ZONING BY-LAW AMENDMENT – FILE NO. Z25-01**

**RECEIPT OF COMPLETE APPLICATION**

**TAKE NOTICE** that the Township of Melancthon has received a complete application for a Zoning By-law Amendment for the lands legally described as Part of Lot 291, Concession 1 SW, and municipally referred to as 582404 Dufferin County Road 17.

**AND PURSUANT** to Section 34 of the *Planning Act*, the application file is available for review at the Municipal Office. Please contact the Township Office to arrange to review this file.

**PUBLIC MEETING:** The Council for the Corporation of the Township of Melancthon will be holding a public meeting described below under Section 34 of the *Planning Act*, R.S.O. 1990, C.P.13 as amended, to allow the public to comment on a proposed Zoning By-law Amendment.

**DATE AND LOCATION OF PUBLIC MEETING**

*Date and Time*                      Thursday, March 20, 2025 at 5:45 p.m.  
*Location*                              Council Chambers – 157101 Highway 10 or Virtual via Zoom

If you wish to attend virtually, please email the Clerk prior to the day of the public meeting so you can be provided with the link to the meeting.

**THE PURPOSE** of the application is to seek a site-specific amendment to Zoning By-law 40-2021, as amended, to permit the establishment of an Accessory Dwelling Unit accessory to the existing Single Detached Dwelling, with a floor area exceeding the maximum permitted by the By-law and on a lot size smaller than the minimum required by the By-law.

**FURTHER INFORMATION AND MAP OF LAND SUBJECT TO THE APPLICATION**

A key map has been appended (see *Appendix A*) that identifies the lands that are subject to the Zoning By-law Amendment application.

Additional information and materials regarding the proposed Zoning By-law Amendment application are available for review by contacting the Township Office by telephone at 519-925-5525, by email to the Clerk at [dholmes@melancthontownship.ca](mailto:dholmes@melancthontownship.ca), or by visiting the Township Office located at 157101 Highway 10, Melancthon, ON during regular business hours Monday – Friday, 8:30 a.m. – 4:30 p.m. (the Office is closed between 12:00 p.m. and 1:00 p.m.).

**IF YOU WISH TO BE NOTIFIED** of the decision of the Council for the Corporation of the Township of Melancthon in respect to the proposed amendment, you must submit a written request to the Clerk of the Township of Melancthon at 157101 Highway 10, Melancthon, Ontario, L9V 2E6, email - [dholmes@melancthontownship.ca](mailto:dholmes@melancthontownship.ca).

If a person or public body does not make oral submissions at a public meeting or make written submissions to Council before the proposed amendments are approved, the person or public body is not entitled to appeal the decision of Council to the Ontario Land Tribunal.

DEL 17.2

MAR 20 2025





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157101 Highway 10, Melancthon, Ontario, L9V 2E6

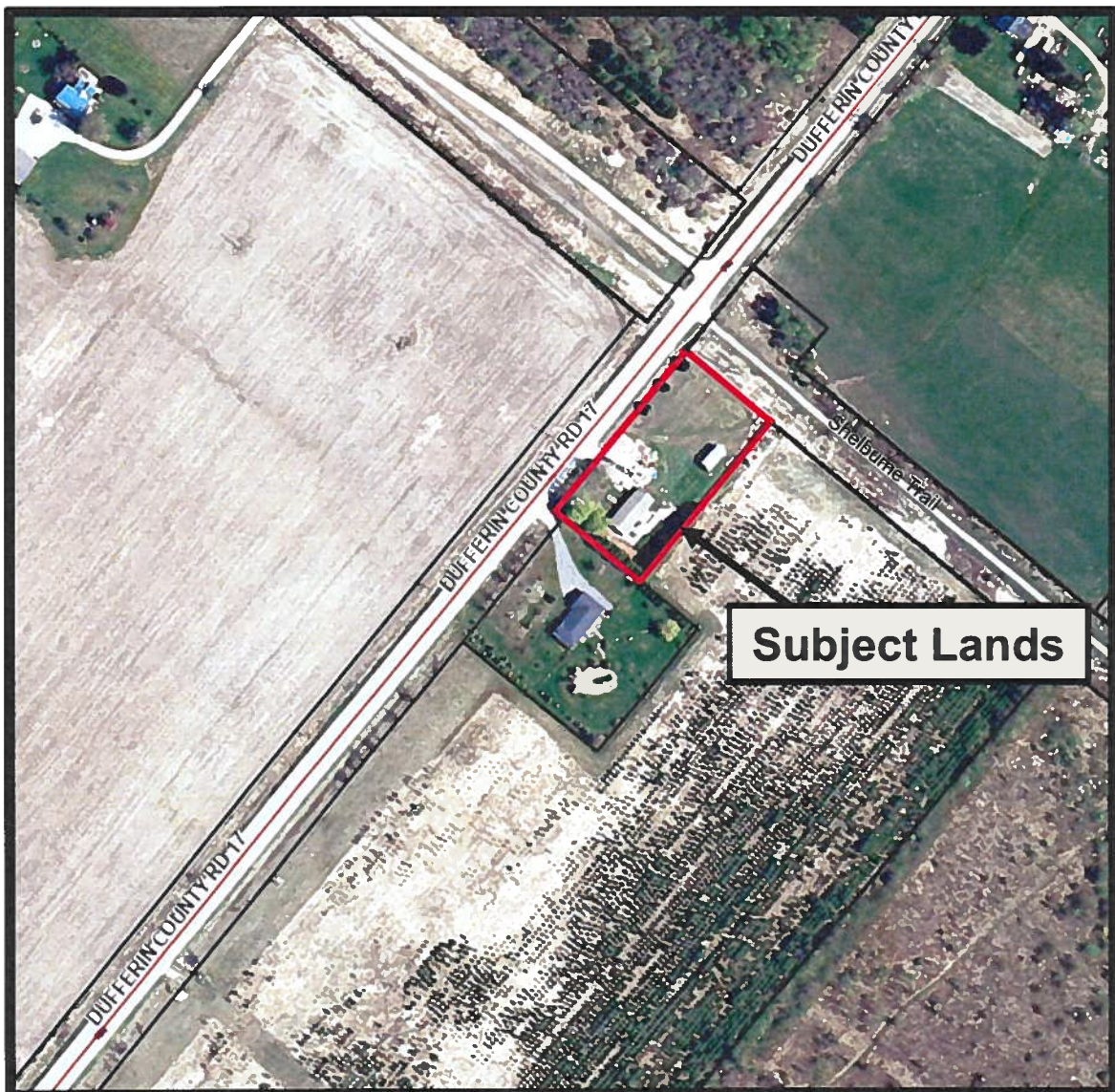
If a person or public body does not make oral submissions at a public meeting or make written submissions to Council before the proposed amendments are approved, the person or public body may not be added as a party to the hearing of an appeal before the Ontario Land Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.

**Mailing Date of this Notice: February 19<sup>th</sup>, 2025**

A handwritten signature in black ink that reads 'Denise B. Holmes'.

**Denise B. Holmes, AMCT**  
CAO/Clerk  
Township of Melancthon

**Appendix A – Lands Subject to Zoning By-law Amendment Application**





The Corporation of

**THE TOWNSHIP OF MELANCTHON**

157101 Highway 10, Melancthon, Ontario, L9V 2E6

**MEMORANDUM**

**To:** Mayor White and Members of Council  
**Copy:** Ms. Denise Holmes, CAO/Clerk  
**From:** Liam Morgan, Development Planner  
**Date:** March 20<sup>th</sup>, 2025  
**Re:** Planning Report – Zoning By-law Amendment – Z25-01 – 582404 County Road 17

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**1.0 RECOMMENDATIONS**

**THAT Planning Report – Zoning By-law Amendment – Z25-01 – 582404 County Road 17 be received;**

**AND THAT Zoning By-law Amendment Application Zoning By-law Amendment – Z25-01 be approved.**

**2.0 BACKGROUND**

The Township received an application from Colin Way and Kristi Way (herein referred to as the ‘applicant’) seeking an amendment to the Township Zoning By-law 12-1979. The proposed amendment aims to implement site-specific zoning for the subject lands that will adjust certain zoning regulations under the *General Agricultural (A1)* zone to permit the establishment of an Additional Residential Unit (ARU) accessory to the existing Single Detached Dwelling, with a floor area exceeding the maximum permitted by Zoning By-law 40-2021, and on a lot size smaller than the minimum required by the Zoning By-law 40-2021.

The Zoning By-law amendment application was submitted by the applicant on December 19<sup>th</sup>, 2024; however, a complete application was only finalized as of February 11<sup>th</sup>, 2025. A circulation of the submitted materials for comments by internal and external agencies was conducted by Township of Melancthon Planning staff on February 19<sup>th</sup>, 2025. To date, comments have been received from three (3) agencies, which are further outlined in section 7.0.

The purpose of the following report is to provide Council with a recommendation on whether the proposed zoning by-law amendment application should be approved or denied. It is the aim of this report to provide Council with a detailed analysis of the proposed application and determination on whether it in fact represents ‘good planning’. Using this report Council will be tasked to conclude if the proposed application should be accepted or refused.

**3.0 DESCRIPTION OF SUBJECT LANDS**

The lands subject to the Zoning By-law Amendment application are municipally known as 582404 Dufferin County Road 17 and legally described as Part of Lot 291, Concession 1 SW (Roll Number: 221900000614000).

Presently on the subject lands, which are approximately 0.39 hectares (0.97 acres) in size and have a lot frontage of approximately 85.56 metres, is a single-family detached dwelling with a





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deck, an attached garage, and a shed. Surrounding land uses include predominately agricultural, as well as other single-family detached residential homes.

An aerial of the subject lands has been provided for reference below in *Figure 1*.

**Figure 1: Aerial of Subject Lands**



#### **4.0 PROPONENT APPLICATION**

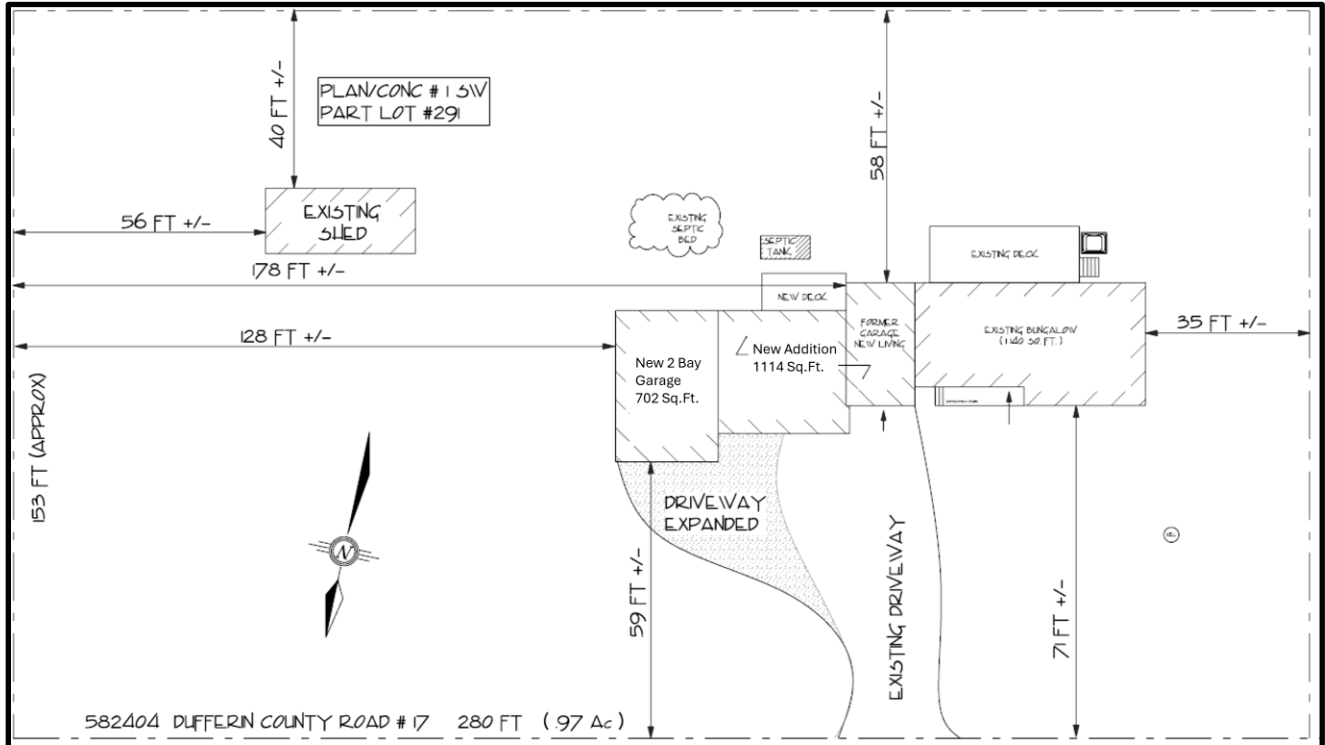
The purpose of the application is to construct an ARU with an attached garage. The existing garage is proposed to be converted to a living area and incorporated into the new accessory dwelling unit. Both the dwelling units will share the existing driveway. To permit the ARU the applicant is seeking to rezone the subject lands from *General Agricultural (A1)* to *General Agricultural – Exception*.

An illustration of the site plan has been provided below in *Figure 2*.



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**Figure 2: Site Plan for Subject Lands**



## 5.0 POLICY OVERVIEW

*Provincial Planning Statement, 2024*

The *Provincial Planning Statement, 2024* (herein referred to as the 'PPS, 2024') provides numerous overarching policies that are of relevance to the proposed zoning by-law amendment application.

**Section 2.1.6.** states that "Planning authorities should support the achievement of complete communities by accommodating an appropriate range and mix of land uses, housing options, transportation options with multimodal access, employment, public service facilities and other institutional uses (including schools and associated child care facilities, long term care facilities, places of worship and cemeteries), recreation, parks and open space, and other uses to meet long-term needs...".

**Section 2.2.1 b)** states that "Planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected needs of current and future residents of the regional market area by: permitting and facilitating: all housing options required to meet the social, health, economic and wellbeing requirements of current and future residents, including additional needs housing and needs arising from demographic changes and employment opportunities...".

**Section 3.6.4.** states that "Where municipal sewage services and municipal water services or private communal sewage services and private communal water services are not available, planned or feasible, individual onsite sewage services and individual on-site water services may be used provided that site conditions are suitable for the long-term provision of such services with no negative impacts...".





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**Section 4.3.2.5.** states that *“Where a residential dwelling is permitted on a lot in a prime agricultural area, up to two additional residential units shall be permitted in accordance with provincial guidance...”*.

*County of Dufferin Official Plan*

The County of Dufferin Official Plan, which has been recently (October 2024) modified through Official Plan Amendments #2 and #3, designates the subject lands as *Prime Agricultural*. Permitted uses include agricultural uses, agriculture-related uses, on-farm diversified uses, home occupations, home industries, and residential dwellings (one per lot).

The County of Dufferin Official Plan also provides guidance as it relates to ARU’s. Section 3.7.4, in fact, states that, *“additional residential units and garden suites are a means to provide a greater diversity of housing types, sizes and tenures, additional income, and housing affordability. An additional residential unit may take the form of a basement apartment, secondary suite, coach house dwelling, or other secondary residential dwelling unit located on the same lot as a primary residential dwelling”*. Further guiding policies on the development of ARU’s is also provided under section 3.7.4, which are further discussed below:

Section 3.7.4 – Additional Residential Units and Garden Suites

- a. *“Up to two additional residential units shall be permitted within single-detached house, semi-detached house, and townhouse”*.
- b. *“Up to one Additional Residential Unit shall be permitted within an accessory structure secondary to a single-detached house, semi-detached house or townhouse provided there is no more than one Additional Residential Unit within the primary house”*.

Though the County of Dufferin Official Plan also provides direction on natural heritage features, this is not applicable to the current application being that there are no notable natural heritage features on the subject lands.

*Township of Melancthon Official Plan*

The Township of Melancthon Official Plan designates the subject lands *Rural*, as per Schedule A-1. Permitted uses under the *Rural* designation include agricultural uses, agriculture-related uses, on-farm diversified uses, residential development (i.e., detached dwellings, secondary dwelling units within a detached dwelling, garden suites), and uses that cannot be located in settlement areas.

Similar to the County of Dufferin Official Plan, the Township of Melancthon Official Plan also provides policy direction as it relates to ARU’s but referenced in the Township of Melancthon Official Plan as secondary dwelling units. These policies are provided under section 3.12 and include the following:

- a. *A second dwelling unit is permitted in specific types of residential uses through either:*



The Corporation of

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- i. *The use of two dwelling units in a detached dwelling or semi-detached dwelling if no building or structure accessory to the detached dwelling or semi-detached dwelling contains a dwelling unit*
- ii. *The use of a dwelling unit in a building or structure ancillary to a detached dwelling or semi-detached dwelling if the detached dwelling or semi-detached dwelling contains a single dwelling unit”.*
- b. *The development of second dwelling units shall comply with the applicable policies of this section including the criteria of subsection (c) immediately below, all other relevant policies of this Plan, including those relating to servicing, hazardous lands and floodplains, and the provisions of the implementing Zoning By-law.*
- c. *All second-dwelling units shall meet the following criteria:*
  - i. *There is compliance with all applicable Zoning By-law provisions;*
  - ii. *There is compliance with all Building Code and Fire Code provisions;*
  - iii. *There is sufficient room on the subject property for any required services*
  - iv. *Including individual on-site water and sewage services and all associated approvals have been obtained;*
  - v. *The site is not within any area subject to natural hazards such as floodplains or erosion hazards and any permits required from a conservation authority have been obtained;*
  - vi. *Sufficient on-site parking and amenity areas are provided;*
  - vii. *No new vehicular access facility is required from the abutting public road; and,*
  - viii. *There is no substantial alteration to the exterior appearance of the building as a detached or semi-detached dwelling.*

The subject lands were also determined to have no notable natural heritage features (i.e., woodlands, wetlands, wildlife habitat) or natural and human-made hazards, as per Schedules D, E, and F of the Township of Melancthon Official Plan.

*Township of Melancthon Zoning By-law 12-1979*

The subject lands are zoned as *General Agricultural (A1)* under Zoning By-law 12-1979. Permitted uses in the *A1* zone include a farm, kennel, riding stable, nursery or commercial greenhouse, animal hospital, forestry or conservation uses, wayside pit, home occupation, single family detached home, and accessory uses.

Though the regulations under the *A1* zone of Zoning By-law 12-1979 are applicable to the subject lands, the lands are also subject to the provisions under By-law 40-201 relating to



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Accessory Dwelling Units. A zoning comparison, which includes regulations under By-law 12-1979, By-law 40-2021, and the proposed changes, has been provided below.

<b>Table 1: Zoning Comparison Chart</b>		
<i>Zoning Regulation</i>	<i>Requirement</i>	<i>Proposed</i>
<i>By-law 40-2021 (Accessory Dwelling Units)</i>		
Min. Lot Area	8,000 m <sup>2</sup>	3,925.45 m <sup>2</sup>
Min. Ground Floor Area of Principle Dwelling	75 m <sup>2</sup>	105.90 m <sup>2</sup>
Max. Floor Area of Secondary Dwelling Unit	75 m <sup>2</sup>	168.71 m <sup>2</sup>
<i>By-law 12-1979 (Zoning)</i>		
Min. Lot Frontage	30 m	86 m
Min. Distance from any building to the nearest lot line	8 m	10.7 m
Max. Lot Coverage	15%	4%
Max. Building Height	10 m	4.6 m

**Note:** Text highlighted **yellow** indicates provisions to be addressed by zoning amendment.

## 6.0 POLICY ANALYSIS

Township Planning staff have undertaken an extensive analysis of the overarching policy regulations associated with subject lands. Staff have determined the following findings as it relates to all overarching planning policies.

- The application not only complies with, but promotes, the policies set out under the PPS, 2024.
- The application conforms to the County of Dufferin Official Plan, especially as it relates to policies related to ARUs.
- The application is consistent with the policies under the Township Official Plan, especially as it relates to regulations related to secondary dwelling units.
- In the opinion of Township of Melancthon Planning staff, the application still maintains the general intent of the A1 zone. While Township Planning staff acknowledge the reduction in minimum lot area is significant, Planning staff also understand that the current provision for minimum lot area would be challenging for smaller parcels zoned as A1 to meet. The inability for smaller parcels to not achieve the minimum lot area should not be reason for such parcels to be unable to construct ARU's. Further to that, Township Planning staff are also of the belief that the proposed increase in the maximum floor area of a secondary dwelling unit is appropriate. Even with the increase in maximum floor area for the secondary dwelling unit, the resulting development is still significantly below the maximum lot coverage for the subject lands.

## 7.0 SUMMARY OF COMMENTS RECEIVED

To date, comments have been provided by three (3) agencies. Those agencies, and a high-level summary of their respective comments, are further outlined below.



The Corporation of

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7.1. *County of Dufferin*

Comments were issued by the County of Dufferin on March 5<sup>th</sup>, 2025. The comment package submitted by the County included comments from Building Services, Planning, and Engineering. All three divisions had no concerns with the zoning by-law amendment application; however, comments related to additional permits were provided by the Engineering and Building Services divisions. Those comments are outlined below.

**Building Services** – A separate building permit is required.

**Engineering** – An entrance permit has not been issued for the existing entrance and, as such, an entrance permit shall be submitted to the County of Dufferin.

7.2. *Enbridge Gas*

Comments were provided by Enbridge Gas on February 24<sup>th</sup>, 2025. This agency indicated that they did not object to the proposed application; however, they do reserve the right to amend or remove development conditions.

7.3. *Municipal Property Assessment Corporation (MPAC)*

MPAC issued comments to the Township of Melancthon on February 20<sup>th</sup>, 2025. No concerns were raised.

**8.0 CONCLUSION**

Township of Melancthon Planning staff undertook an extensive review of the zoning by-law amendment application submitted by the applicant. It is the goal of the applicant to implement site specific provisions, which address lot area and floor area requirements under By-law 40-2021. This site-specific exception would allow for the applicant to construct an ARU.

Based on Township of Melancthon Planning staff's review, the proposed zoning by-law amendment is appropriate. The proposed application is not only consistent, but promotes policies under the PPS, 2024 and County of Dufferin Official Plan. In addition, the application also maintains the general intent of both the Township of Melancthon Official Plan and Zoning By-law 12-1979.

Prepared by:

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**Liam Morgan**  
Planner  
Township of Melancthon



**THE CORPORATION OF THE TOWNSHIP OF MELANCTHON**

**BY-LAW NO. \_\_\_\_\_**

Being a By-law to amend By-law No. 12-79, as amended, the Zoning By-law for the Township of Melancthon as it affects property known municipally as municipally known as 582404 Dufferin County Road 17 and legally described as Part of Lot 291, Concession 1 SW, as shown on attached Schedule "A".

WHEREAS the Council of the Corporation of the Township of Melancthon is empowered to pass By-laws to regulate the use of land pursuant to Section 34 of the Planning Act, 1990, as amended;

AND WHEREAS the Council of the Corporation of the Township of Melancthon deems it advisable to amend By-Law 12-79, as amended;

NOW THEREFORE the Council of the Corporation of the Township of Melancthon enacts as follows:

1. By-law Number 12-1979, as amended, is hereby further amended by changing the applicable zone on the lands denoted on Schedule 'A' attached, from General Agricultural (A1) to General Agricultural – Exception (A1-151).
2. Land zoned General Agricultural – Exception (A1-151) as denoted on Schedule "A" attached, shall be subject to the following:

Notwithstanding any other provision of this Zoning By-law to the contrary, the following special provisions shall apply:

- i. An accessory dwelling unit of up to 170 m<sup>2</sup> in area is permitted (accessory to a single detached dwelling)
- ii. A minimum lot area of 3,926 m<sup>2</sup> is permitted.

This By-law shall come into effect upon the date of passage hereof, subject to the provisions of Section 34 (30) and (31) of the Planning Act (Ontario), as amended.

BY-LAW READ A FIRST AND SECOND TIME THIS 20<sup>TH</sup> DAY OF MARCH, 2025.

BY-LAW READ A THIRD TIME AND PASSED THIS 20<sup>TH</sup> DAY OF MARCH, 2025.

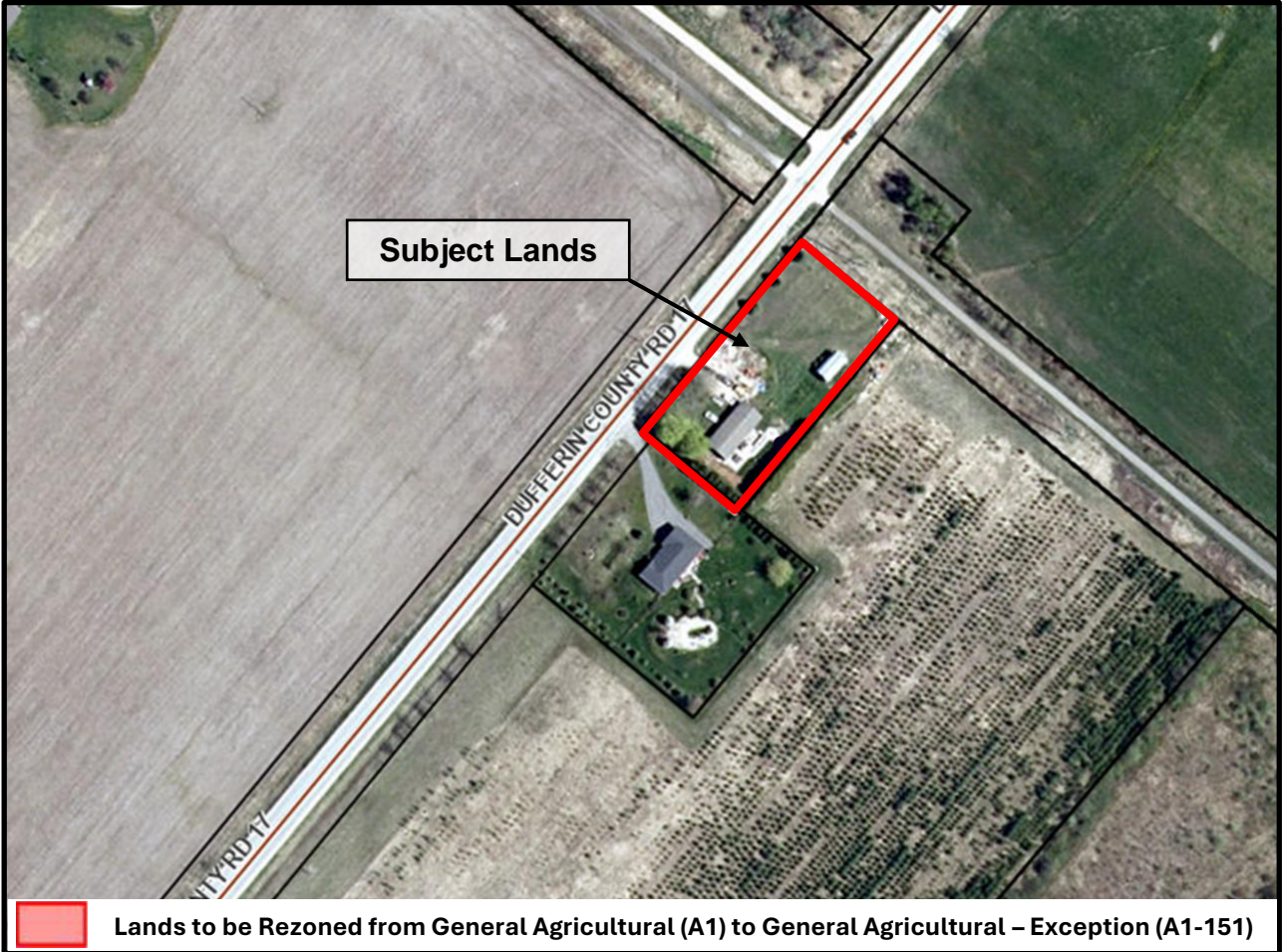
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MAYOR

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CLERK

**SCHEDULE A – LANDS TO BE REZONED**





# Township of Melancthon – Parking By-law Proposal

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# Proposal and Purpose

- The purpose of this presentation is to provide Council and staff an overview of introducing and implementing a parking control by-law for the municipality.
  - Origin
  - Analysis & historical data
  - Key topics for consideration
  - Options for Council
  - Fiscal Responsibility
  - Summary
  - Recommendation
-

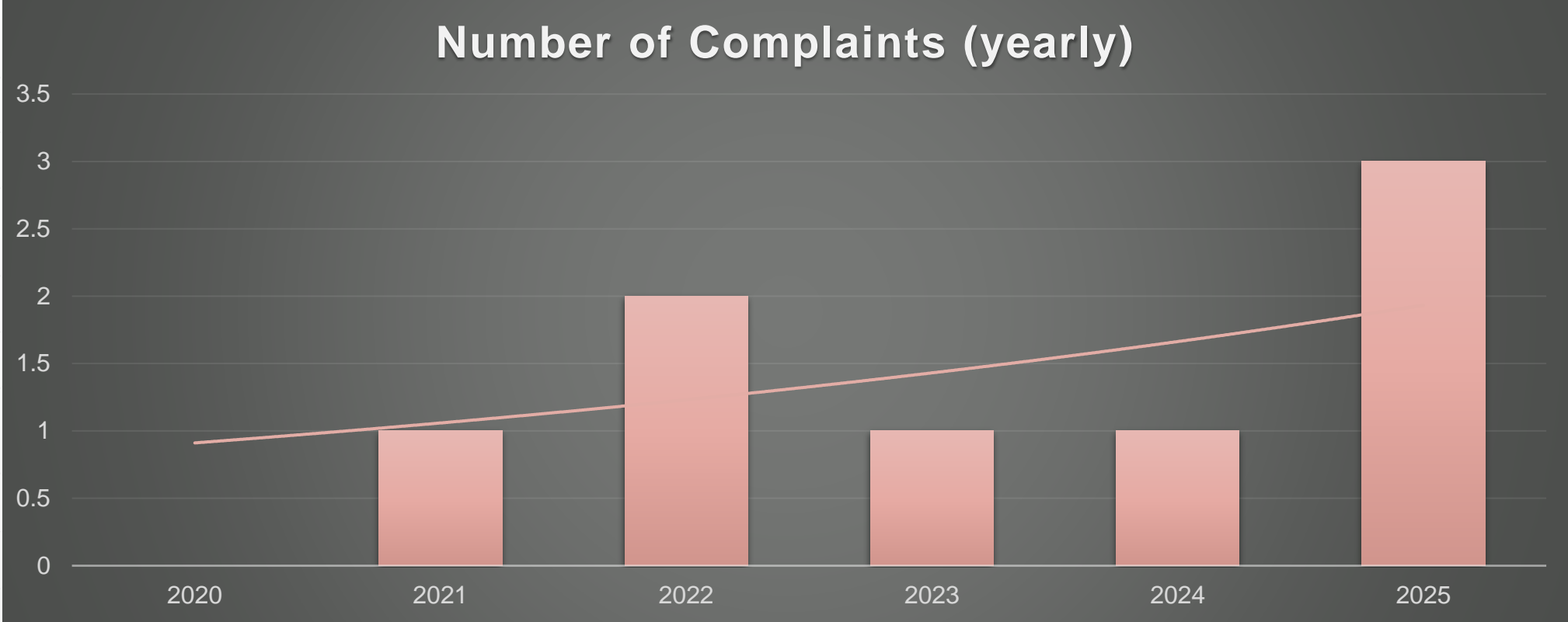
# Origin

- In February 2025, due to concerns surrounding pedestrian safety and the influx of on street parking within the municipality, members of Council sought options to regulate on street parking through a formal By-law.
-

# Analysis

- The Township of Melancthon is a predominately rural agricultural setting with various hamlets and newer subdivisions showing a higher concentration of population density.
  - According to 2021 Stats Canada report, the current population of the Township of Melancthon is 3132.
  - Since 2020, the Township expanded its By-law enforcement program to capture ongoing Property Standards, Zoning, Site Alteration and Salvage Yard complaints.
  - The Township currently does not have in place a traditional parking control by-law.
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# Statistical Service Demands



# Options for Consideration

## Option 1 – Introduce Regulatory Framework

### Considerations:

#### 1) Service level expectations

- a) Reactive vs proactive response procedure
- b) Expanding staffing complement
- c) After-hours and weekend enforcement
- d) Purchase and installation of signage, additionally the maintenance of signs

#### 2) Drafting new regulatory By-law.

- a) Framework to capture the entire municipality OR various areas
- b) Hosting of public meetings and media campaign
- c) Meeting stakeholders to obtain input (County of Dufferin, O.P.P., resident groups etc.)

#### 3) Administration of program

- a) Obtain an agreement with the MTO for plate searches
- b) Staff responsible for conducting plate searches for vehicles who fail to pay tickets
- c) Staff responsible for data entry of tickets and collection of payment
- d) Payment processing options
- e) Retention of tickets for historical data, FOI, and Court



## **Option 2 – Expand existing restrictions to Heavy Vehicle By-law**

### **Considerations:**

#### **1) Service level expectations**

- a) No significant changes to service levels;
- b) Complaint response protocol could remain at reactive level

#### **2) Enforcement and Regulations**

- a) Expand the By-law to include specific streets to eliminate heavy vehicles or by weight category
- b) Enforcement would not include the traditional parking ticket process.

#### **3) Administration of program**

- a) Signage would need to be installed at specific streets
- b) Additional impact for staffing would be at the intake and customer service level
- c) Fees and fines would be factored when amending the existing legislation.

### **Option 3 – Remain status quo (Recommended Option)**

#### **Considerations:**

#### **1) Service level expectations**

a) Make no changes to the existing framework and allow for zero on-street parking restrictions.

#### **2) Enforcement and Regulations**

a) Enforcement not applicable

#### **3) Administration of program**

a) No changes reported

# Fiscal Responsibility

## Cost Analysis

### Option 1

- 1) Drafting of By-law - \$1500.00 - \$3000.00 (including legal review)
- 2) Public Consultation and media campaign - \$500.00 - \$1000.00
- 3) Increase in staffing demands and recruitment – TBD
- 4) Potential Revenue;
  - a) Proactive Parking Model – 100 tickets per year at \$35.00 per ticket (\$3500.00)
  - b) Reactive Parking Model – 10 tickets per year at \$35.00 per ticket (\$350.00)
- 5) Administrative Costs
  - a) Court Costs – averaging 3-5 court dates per year, at \$500.00 per day. (Range - \$1500.00 - \$2500.00 – legal fees)
- 6) Operational Costs
  - a) Parking Ticket booklets - \$250.00
  - b) Filing and storage equipment - \$300.00
- 7) Recommend phasing in the program as this will allow residents to be fully educated on the by-law and allowing for operations staff to erect the appropriate signage throughout the municipality.

# Fiscal Responsibility

## Cost Analysis

### Option 2

- 1) Drafting of By-law - \$1500.00 - \$3000.00 (including legal review)
- 2) Public Consultation and media campaign - \$500.00 - \$1000.00
- 3) Increase in staffing demands and recruitment – N/A
- 4) Potential Revenue;
  - a) Fines would be determined by number of complaints that proceeded by way of prosecution
- 5) Administrative Costs
  - a) Court Costs – averaging 3-5 court dates per year, at \$500.00 per day. (Range - \$1500.00 - \$2500.00 – legal fees)
- 6) Operational Costs
  - a) N/A

# Fiscal Responsibility

## Cost Analysis

### Option 3

- 1) No direct monetary impact

# Summary

- Since 2020 the Township of Melancthon has seen an increase in the total number of parking complaints received.
- The introduction of a regulatory framework would pose a significant cost to the Township at both the introductory phase and the ongoing maintenance of the program. Notable expenditures would include;
  - The recruitment of an additional administrative staff member (PTE or FTE) to alleviate any additional workloads on the current compliment
  - Determining the expectations for enforcement (proactive vs. reactive) carries various operational and enforcement costs.
  - Capital expenditures would see an increase as signage would need to be erected and maintained on streets/locations identified by by-law to advise motorists/residents of the restrictions.

To ensure fiscal responsibility and in keeping with the Township of Melancthon 2024-2029 Strategic Plan, good governance and organizational management and while utilizing a service-oriented lens it is recommended that Council proceed with Option 3 and further that staff continue to monitor and track the number of complaints received and report back to Council in 2026.

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# Recommendation

- It is recommended that Council proceed with Option 3 (status quo) and that staff continue to monitor and track the number of complaints received and report to Council in 2026.
  - This is a good governance approach that will ensure fiscal responsibility and is in keeping with the Township of Melancthon 2024-2029 Strategic Plan.
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# Questions

