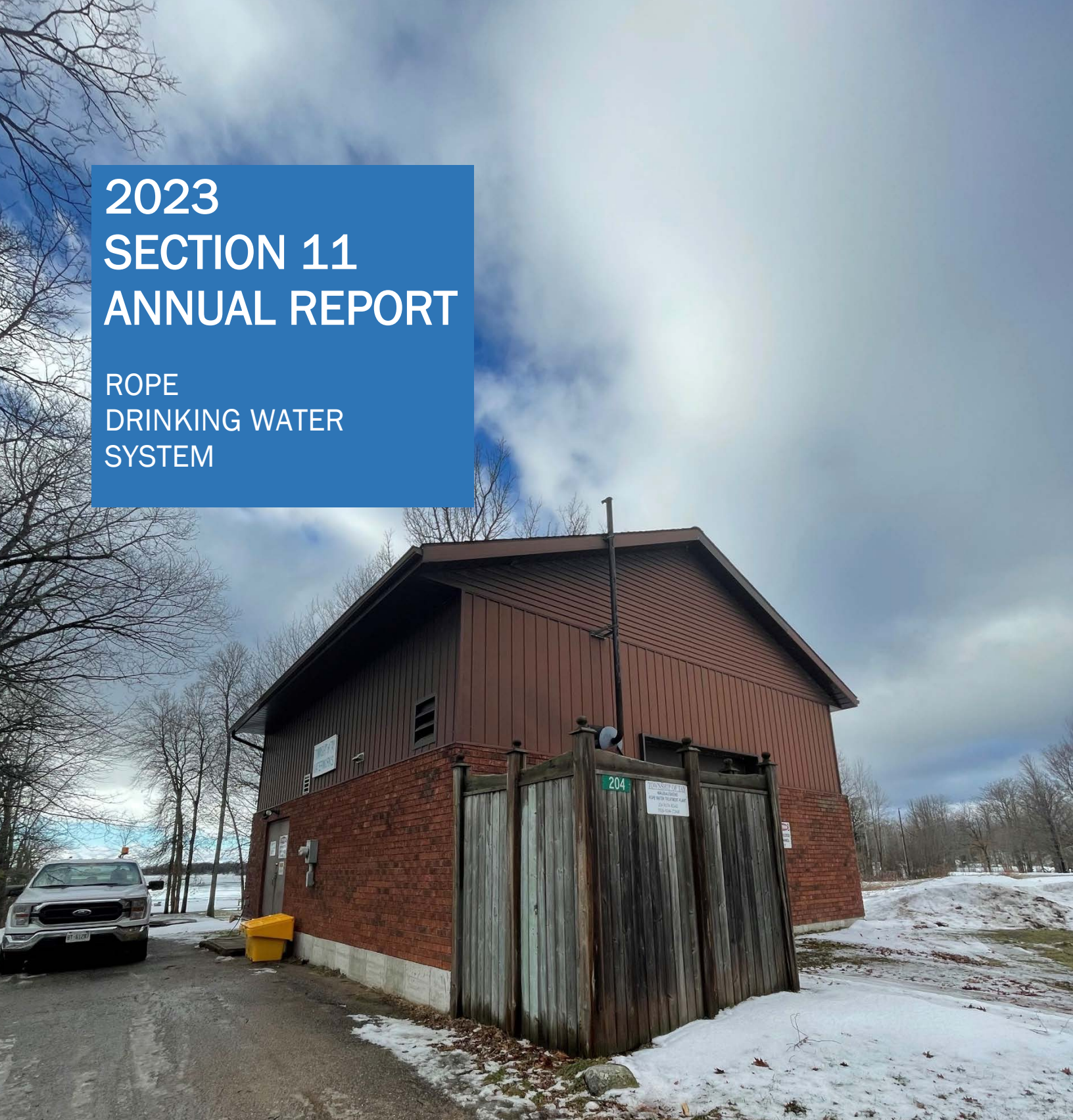


2023 SECTION 11 ANNUAL REPORT

ROPE
DRINKING WATER
SYSTEM



For the period of
January 1st, 2023 to December 31st, 2023

Prepared for the Corporation of the Township of Tay by the Ontario Clean Water Agency



This report was prepared in accordance with the requirements of [O.Reg 170/03, Section 11, Annual reports](#) for the following system and reporting period:

Drinking Water System Number:	220011323
Drinking Water System Name:	Rope Drinking Water System
Drinking Water System Owner:	The Corporation of the Township of Tay
Drinking Water System Category:	Small Municipal Residential
Reporting Period:	January 1, 2023 to December 31, 2023

Does the Drinking Water System serve more than 10,000 people?

No

Is the Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, Section 11. (10)

Location where Summary Report required under O. Reg 170/03, Schedule 22 will be available for inspection. (O. Reg 170/03, Section 11.(6)(f)):

- Township of Tay Municipal Office at 450 Park Street, Victoria Harbour, Tay Township
- <https://www.tay.ca/en/>

Note: This is required for large municipal residential systems or small municipal residential systems.

List all Drinking Water Systems (if any), which receive all of their drinking water from the system:

Drinking Water System Name	Drinking Water System Number
N/A	N/A

Is a copy of the annual report provided to all Drinking Water System owners that are connected to this system and to whom this system provides all of its drinking water?

N/A

How system users are notified that the annual report is available, and is free of charge. (O.Reg 170/03, Section 11.(7))

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Public access/notice via the web |
| <input type="checkbox"/> | Public access/notice via Government Office |
| <input type="checkbox"/> | Public access/notice via a newspaper |
| <input checked="" type="checkbox"/> | Public access/notice via Public Request |

Public access/notice via a Public Library

Public access/notice via other method: _____

Note: The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. ((O.Reg 170/03, Section 11.(7)):

Description of Drinking Water System (O.Reg 170/03, Section 11.(6)(a)):

The Rope Drinking Water System is classified as a Class II Water Treatment and Class I Water Distribution subsystem and categorized as a Small Municipal Residential Drinking Water System, servicing an approximate population of 91 persons via 27 service connections. The system is comprised of the Rope Water Treatment Plant, treated water clearwell and distribution watermain.

The raw water is drawn from Georgian Bay to the water treatment plant and treated with Sodium Hypochlorite (for Zebra Mussel control, as required), Polyaluminum Chloride (for removal of excess organics), passes through Zenon Environmental EC-04 & MDW-4 Filter System (for removal of particulates), UV (for primary disinfection) and treated with Sodium Hypochlorite (for primary and secondary treatment). The treated water is stored in a reservoir within the treatment plant prior to distribution. The treated water is distributed to the Rope subdivision. Online equipment continuously monitors filter effluent turbidity and free chlorine residual. The water treatment plant is equipped with standby power in the event of a power failure.

List of water treatment chemicals used by the system during the reporting period (O.Reg 170/03, Section 11.(6)(a)):

- Sodium Hypochlorite 12% Solution
- Stern PAC Aluminum Chloride Hydroxide Sulfate 30-35%
- Citric Acid 50%

Significant expenses were incurred to:

- Install required equipment
 Repair required equipment
 Replace required equipment
 No significant expenses were incurred

Description of major expenses during the reporting period to install, repair or replace required equipment (O.Reg 170/03, Section 11.(6)(e)):

- Filter Membrane Cartridge Replacement
- Install new blower on Train #1
- Install new UPS Unit

Summary of any reports/notices submitted to the Ministry and/or Spills Action Centre in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg 170/03 during the reporting period, including a description of any corrective actions taken under Schedule 17 or 18 (O. Reg 170/03, Section 11.(6)(b),(d):

Incident Date (yyyy/mm/dd)	Parameter/ Notice of	Result	Unit of Measure	Reporting Summary, Corrective Actions & Resolution
N/A	N/A	N/A	N/A	N/A

Table 1. Microbiological testing done under the Schedule 10, 11 or 12 (as applicable) of O.Reg 170/03 during this reporting period (O.Reg 170/03, Section 11.(6)(c)).

Location	Number of Samples	Range of E. Coli or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
Raw Water - RW	12 ^{1A}	0	1	0	152	N/A	N/A	N/A
Distribution	28 ^{1B}	0	0	0	0	28	0	18

Note: HPC = Heterotrophic Plate Count

Note: Units for E.Coli or Fecal Results are cfu/100 mL, units for Total Coliform Results are cfu/100 mL, units for HPC results are cfu/1mL

^{1A}The owner of a small municipal residential system that obtains raw water supply from surface water shall ensure that at least once every month a sample from the raw water that is supplying the system and tested for E.Coli and Total Coliforms (O.Reg. 170/03, Schedule 11-3.(1)(3)(a)(b))

^{1B}O.Reg 170/03 Schedule 11-2.(1)(2) requires at least one distribution sample be taken every two weeks and be tested for E.Coli, Total Coliforms and HPC.

Table 2. Operational testing done under Schedule 7, 8 or 9 (as applicable) O. Reg 170/03 during the period covered by this Annual Report (O. Reg 170/03, Section 11.(6)(c)).

Parameter & Location	Number of Samples	Range of Results	
		Min.	Max.
Filter Effluent Turbidity, Filter 1 (Continuous) [NTU] ^{2A}	8760	0.00	2.00 ^{2A}
Filter Effluent Turbidity, Filter 2 (Continuous) [NTU] ^{2A}	8760	0.001	2.00 ^{2A}
Free Chlorine Residual, Treated (Continuous) [mg/L] ^{2B}	8760	0.27	2.86
Free Chlorine Residual, Distribution (Grab) [mg/L] ^{2C}	532	0.22	1.36

Note: The number of samples used for continuous monitoring units is 8760.

^{2A}If a drinking water system obtains water from a raw water supply that is surface water and the system provides filtration, the owner of a system shall ensure that sampling and testing for turbidity is carried out by continuous monitoring equipment on each filter effluent line (O.Reg.170/03, Schedule 7-3.(2)(b)). Turbidity values are continuously monitored during production, maintenance and start up activities. Filter-

to-waste is implemented to ensure effluent turbidity requirements are met at all times and membrane integrity is monitored on a monthly basis. No AWQIs have occurred for turbidity during the reporting period, filtered water turbidity is less than or equal to 0.1 NTU in 99% of the measurements each month for each filter train.

^{2B}*O.Reg 170/03 Schedule 7-2.(1) requires a drinking water system that provides chlorination for primary disinfection to sample and test for free chlorine residual with continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed.*

^{2C}*O.Reg 170/03 Schedule 7-2.(5) requires a small municipal residential system that provides secondary disinfection to take at least two distribution samples each week and immediately tested for free chlorine residual, if the system provides chlorination and does not provide chloramination.*

Table 3. Summary of additional testing and sampling results carried out in accordance with the requirement of an approval, municipal drinking water licence or order (including OWRA) or other legal instrument during the reporting period and if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter (O. Reg 170/03, Section 11.(6)(c)):

Legal Instrument & Issue Date (yyyy/mm/dd)	Sample Location & Parameter	Sampling Frequency	Allowable Result	Sample Date (yyyy/mm/dd)	Sample Result(s)
MDWL #129-101, Issue 6 (2022/12/28)	Wastewater Holding Tank: Total Suspended Solids	Monthly	15 mg/L Annual Average	2023 (Monthly)	16.83 mg/L Annual Average ^{3A}

^{3A}*A non-compliance for Total Suspended Solids annual average exceedance was reported to the MECP on 2024/01/09. See Table 2 in the 2023 Schedule 22- Summary Report for Rope Drinking Water System for more information.*

Table 4. Summary of Inorganic parameters tested during this reporting period or the most recent sample results (O.Reg 170/03, Section 11.(6)(c))

Parameter & Location	Sample Date ^{4A} (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Antimony: Sb (µg/L) - TW	2023/01/09	<MDL 0.6	6.0	No
Arsenic: As (µg/L) - TW	2023/01/09	0.2	10.0	No
Barium: Ba (µg/L) - TW	2023/01/09	20.8	1000.0	No
Boron: B (µg/L) - TW	2023/01/09	27.0	5000.0	No
Cadmium: Cd (µg/L) - TW	2023/01/09	0.005	5.0	No
Chromium: Cr (µg/L) - TW	2023/01/09	0.14	50.0	No
Mercury: Hg (µg/L) - TW	2023/01/09	<MDL 0.01	1.0	No
Selenium: Se (µg/L) - TW	2023/01/09	<MDL 0.04	50.0	No

Parameter & Location	Sample Date ^{4A} (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Uranium: U (µg/L) - TW	2023/01/09	0.003	20.0	No
Fluoride (mg/L) - TW	2022/01/04 ^{4B}	<MDL 0.06	1.5	No
Nitrite (mg/L) - TW	2023/01/03	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2023/04/03	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2023/07/04	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2023/10/03	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2023/01/03	0.039	10.0	No
Nitrate (mg/L) - TW	2023/04/03	0.088	10.0	No
Nitrate (mg/L) - TW	2023/07/04	0.020	10.0	No
Nitrate (mg/L) - TW	2023/10/03	0.008	10.0	No

Note: MDL = Minimum Detection Limit, TW = Treated Water

^{4A}The owner of a small municipal residential system shall ensure that at least one water sample for inorganics is taken every 60 months (O.Reg 170/03, Schedule 13-2.(3)). The last set of samples were collected and tested in 2023, the next set of samples are scheduled to be collected and tested in 2028.

^{4B}Fluoride is reportable every 60 months. The most recent Fluoride sample was taken in January, 2022. The next set of Fluoride samples is scheduled to be collected in 2027.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) - TW	2022/01/04 ^{4C}	20.2	200	No	Yes ^{4D}

Note: MDL = Minimum Detection Limit, TW = Treated Water

Note: There is no regulatory Maximum Allowable Concentration (MAC) Sodium. The aesthetic objective (AO) for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

^{4C}Sodium is reportable every 60 months. The most recent sodium results were tested in January, 2022. The next set of sodium samples is scheduled to be collected in 2027.

^{4D}If a concentration of sodium exceeds 20 mg/L, the owner of the drinking water system shall ensure that a resample is collected and tested as soon as reasonably possible, and other steps as directed by the medical officer of health if a report under subsection 18 (1) of the Act has not been made in respect of sodium in the preceding 57 months. (O.Reg. 170/03, Schedule 16-3.(1)8.) A sample collected in 2018 exceeded 20mg/L and was reported as AWQI, therefore no notification is required for the 2022 sample as it has not exceeded 57 months since the last report was made.

Table 5: Summary of lead testing under Schedule 15.1 during this reporting period (O.Reg 170/03, Section 11.(6)(g))

Location/Type & Parameter	Number of Samples ^{5A}	Range of Results		Number of Lead Exceedances
		Min.	Max.	MAC = 10 µ/L
Period: January 1 to April 15				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO ₃)	1	49	49	N/A
Distribution – pH	1	7.49	7.49	N/A
Period: June 15 to October 15				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO ₃)	1	28	28	N/A
Distribution – pH	1	7.01	7.01	N/A
Period: December 15 to 31				
Plumbing – Lead (µg/L) ^{5B}	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) ^{5C}	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO ₃)	N/A	N/A	N/A	N/A
Distribution - pH	N/A	N/A	N/A	N/A

Note: this is required for large municipal residential systems, small municipal residential systems or non-municipal year-round residential system. (O.Reg 170/03, Section 11.(6)(g))

^{5A}*This system follows a reduced sampling schedule (O.Reg. 170/03, Section 15.1.5). The number of sampling points for the system is based on the population served by the system. The number of people served by the system is 91 persons (as confirmed with the Owner on September 28, 2022), and therefore requires one (1) distribution sampling point per sampling period.*

^{5B}*Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).*

^{5C}*This system follows a reduced sampling schedule (O.Reg 170/03, Section 15.1.5). Distribution lead samples are collected every 36 months. The most recent set of distribution lead samples were collected within the winter period of December 15, 2021 to April 15, 2022 and summer period of June 15, 2022 to October 15, 2022. The next set of distribution lead samples is scheduled to be collected within the winter period of December 15, 2024 to April 15, 2025 and summer period of June 15, 2025 to October 15, 2025.*

Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results^{6A} (O.Reg 170/03, Section 11.(6)(c)).

Parameter & Location	Sample Date (yyyy/mm/dd) ^{6A}	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Alachlor (µg/L) - TW	2023/01/09	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2023/01/09	<MDL 0.01	5.0	No
Azinphos-methyl (µg/L) - TW	2023/01/09	<MDL 0.05	20.0	No
Benzene (µg/L) - TW	2023/01/09	<MDL 0.32	1.0	No
Benzo(a)pyrene (µg/L) - TW	2023/01/09	<MDL 0.004	0.01	No
Bromoxynil (µg/L) - TW	2023/01/09	<MDL 0.33	5.0	No
Carbaryl (µg/L) - TW	2023/01/09	<MDL 0.05	90.0	No
Carbofuran (µg/L) - TW	2023/01/09	<MDL 0.01	90.0	No
Carbon Tetrachloride (µg/L) - TW	2023/01/09	<MDL 0.17	2.0	No
Chlorpyrifos (µg/L) - TW	2023/01/09	<MDL 0.02	90.0	No
Diazinon (µg/L) - TW	2023/01/09	<MDL 0.02	20.0	No
Dicamba (µg/L) - TW	2023/01/09	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (µg/L) - TW	2023/01/09	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (µg/L) - TW	2023/01/09	<MDL 0.36	5.0	No
1,2-Dichloroethane (µg/L) - TW	2023/01/09	<MDL 0.35	5.0	No
1,1-Dichloroethylene (µg/L) - TW	2023/01/09	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2023/01/09	<MDL 0.35	50.0	No
2,4-Dichlorophenol (µg/L) - TW	2023/01/09	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2023/01/09	<MDL 0.19	100.0	No
Diclofop-methyl (µg/L) - TW	2023/01/09	<MDL 0.4	9.0	No
Dimethoate (µg/L) - TW	2023/01/09	<MDL 0.06	20.0	No
Diquat (µg/L) - TW	2023/01/09	<MDL 1.0	70.0	No
Diuron (µg/L) - TW	2023/01/09	<MDL 0.02	150.0	No
Glyphosate (µg/L) - TW	2023/01/09	<MDL 0.01	280.0	No
Malathion (µg/L) - TW	2023/01/09	<MDL 0.05	190.0	No
Metolachlor (µg/L) - TW	2023/01/09	<MDL 0.32	50.0	No
Metribuzin (µg/L) - TW	2023/01/09	<MDL 0.004	80.0	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2023/01/09	<MDL 0.33	80.0	No
Paraquat (µg/L) - TW	2023/01/09	<MDL 0.05	10.0	No
PCB (µg/L) - TW	2023/01/09	<MDL 0.01	3.0	No
Pentachlorophenol (µg/L) - TW	2023/01/09	<MDL 0.17	60.0	No
Phorate (µg/L) - TW	2023/01/09	<MDL 0.02	2.0	No
Picloram (µg/L) - TW	2023/01/09	<MDL 0.02	190.0	No

Parameter & Location	Sample Date (yyyy/mm/dd) ^{6A}	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Prometryne (µg/L) - TW	2023/01/09	<MDL 0.2	1.0	No
Simazine (µg/L) - TW	2023/01/09	<MDL 0.41	10.0	No
Terbufos (µg/L) - TW	2023/01/09	<MDL 0.36	1.0	No
Tetrachloroethylene (µg/L) - TW	2023/01/09	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2023/01/09	<MDL 0.33	100.0	No
Triallate (µg/L) - TW	2023/01/09	<MDL 0.35	230.0	No
Trichloroethylene (µg/L) - TW	2023/01/09	<MDL 0.15	5.0	No
2,4,6-Trichlorophenol (µg/L) - TW	2023/01/09	<MDL 0.19	5.0	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (µg/L) - TW	2023/01/09	<MDL 0.4	100.0	No
Trifluralin (µg/L) - TW	2023/01/09	<MDL 0.06	45.0	No
Vinyl Chloride (µg/L) - TW	2023/01/09	<MDL 1.0	1.0	No
Trihalomethane: Total (µg/L) Annual Average - DW	2023 (Quarterly)	66.75	100.0	No
HAA Total (µg/L) Annual Average - DW	2023 (Quarterly)	46.95	80.0	No

Note: TW = Treated Water, DW = Distribution Water, MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration, HAA = Haloacetic Acids

^{6A}Organic Parameters (Schedule 24) are required to be tested every 60 months for a small municipal residential system or non-municipal year-round residential system (O. Reg 170/03 Schedule 13-4.(3)). The last set of samples was collected and tested in 2023, the next set of samples is scheduled to be collected and tested in 2028.

Table 7: List of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards for the reporting period.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result
Trihalomethane: Total Annual Average (µg/L) - DW	2023 (Quarterly)	66.75 µg/L
Haloacetic Acid: Total Annual Average (µg/L) - DW	2023 (Quarterly)	46.95 µg/L