Norland Drinking Water System

2025 Annual Water Report

Drinking Water System Number: 250001910

Drinking Water System Operating Authorities: City of Kawartha Lakes and Ontario Clean Water Agency

Drinking Water System Category: Small Municipal Residential

Reporting Period: January 1st – December 31st, 2025

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Annual Drinking Water Report
City of Kawartha Lakes

Kawartha Lakes
Jump In

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2025 Annual Drinking Water System Summary Report

General Information

The City of Kawartha Lakes prepares a report summarizing system operation and water quality for every municipal drinking water system annually. This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office by appointment and the City's website. Notification that the reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 322 Kent Street West in Lindsay, Ontario.

This system does not serve more than 10,000 residences.

Drinking Water System Number: 250001910
Drinking Water System Name: Norland Drinking Water System
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Small Municipal Residential
Reporting Period: January 1, 2025 – December 31, 2025

Compliance Summary

Table 1. Drinking Water Compliance Summary

	Number of Events	Date (yyyy/mm/dd)	Details
Ministry (MECP) Inspections	1	2025 06 19	2025/2026 Unannounced Detailed Drinking Water Inspection – Final Inspection Rating of 100%
Adverse Water Quality Incidents (AWQIs)	1	2025 03 30	Low System Pressure due to backup generator fault during a power outage
Non-Compliances	0		
Boil Water Advisories	1	2025 03 30	Issued for AWQI noted above
Health and Safety	0		

Drinking Water System Description

The Norland drinking water system is a small municipal residential drinking water system serving the Village of Norland, Ontario, within the City of Kawartha Lakes. The drinking water system is classified as a Class III Water Treatment and Class I Water Distribution subsystems in accordance with O. Reg. 128/04.

Source Water

The water supply for the system is obtained from the Gull River, which is classified as a surface water source.

Water Treatment Facility

The Norland water treatment facility consists of a dual-train conventional filtration package system. Each treatment train includes a two-stage variable speed flocculator, a tube settler clarifier, and one dual media rapid gravity filter. Sodium hypochlorite is utilized for both primary and secondary disinfection.

Chlorine contact time is achieved through a twin-cell clearwell. Treated water is pumped directly to the distribution system using four high lift vertical turbine pumps.

The backwash wastewater system includes a concrete settling tank that receives filter backwash wastewater and clarifier desludging waste. A composite sampler monitors the quality of the supernatant prior to discharge to ensure regulatory compliance.

A diesel generator is located onsite to provide standby power to the water treatment facility in the event of a power failure.

Distribution System

The distribution system consists of approximately 3.1 kilometres of PVC watermain and is not rated for fire protection. There are no treated water storage facilities, chlorine boosting stations, secondary disinfection processes, or pressure boosting capabilities within the control of the distribution system.

Table 2. Treatment Chemicals Used

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi Water Technology
Polyaluminum Chloride	Flocculation	Univar Solutions
Polymer	Flocculation	Basf
Sodium Hydroxide	pH Adjustment	Not required in 2025

Summary of Non-Compliance

Adverse Water Quality Incidents

Table 3. Adverse Water Quality Incidents

Date (yyy/mm/dd)	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
2025 03 30	167687	Distribution	Low system pressure	Due to backup generator fault during a power outage	O. Reg. 170/03	Boil Water Order issued by MOH, BWA delivered to residents. Once power restored flushed, samples collected

Non-Compliance

There were no non-compliances reported during the reporting period.

Non-Compliance Identified in a Ministry Inspection

There were no non-compliances identified in a Ministry Inspection during this period.

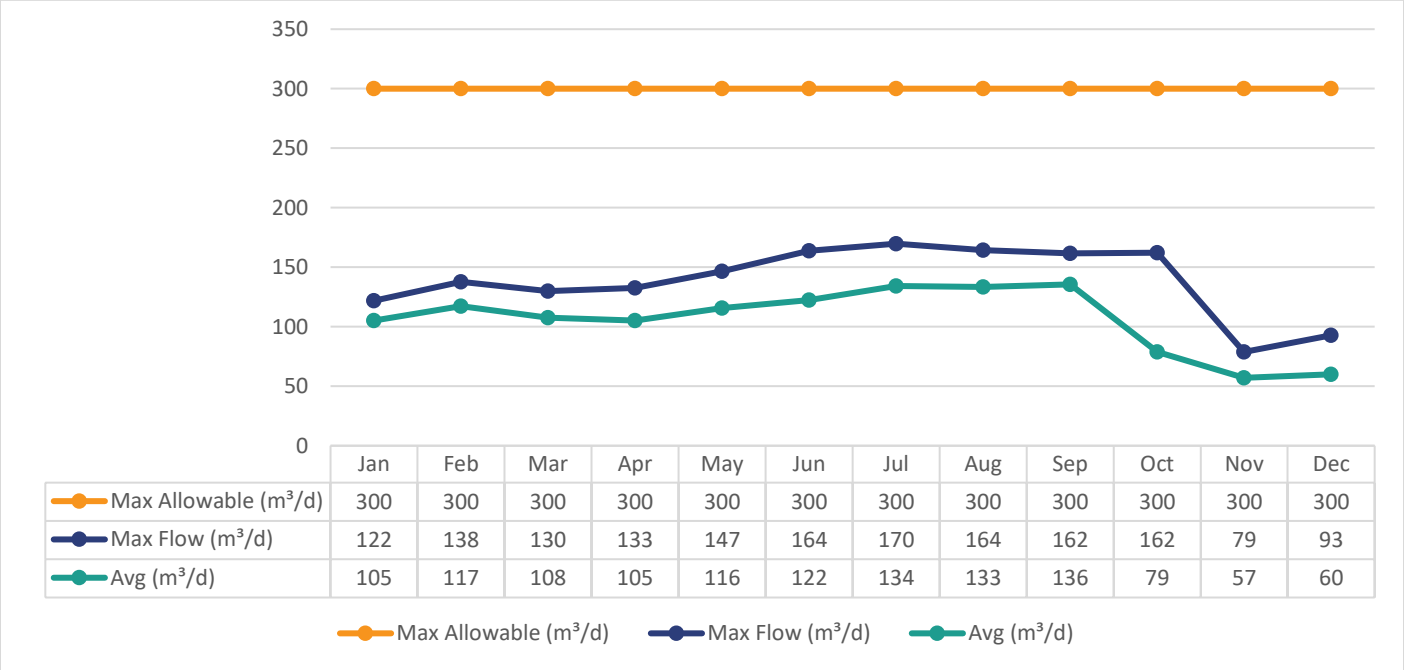
Flows

The Norland Drinking Water System is operating on average under half the rated capacity. The rated capacity of the system (treated water flows) is 264 m^3/day.

Raw Water Flows

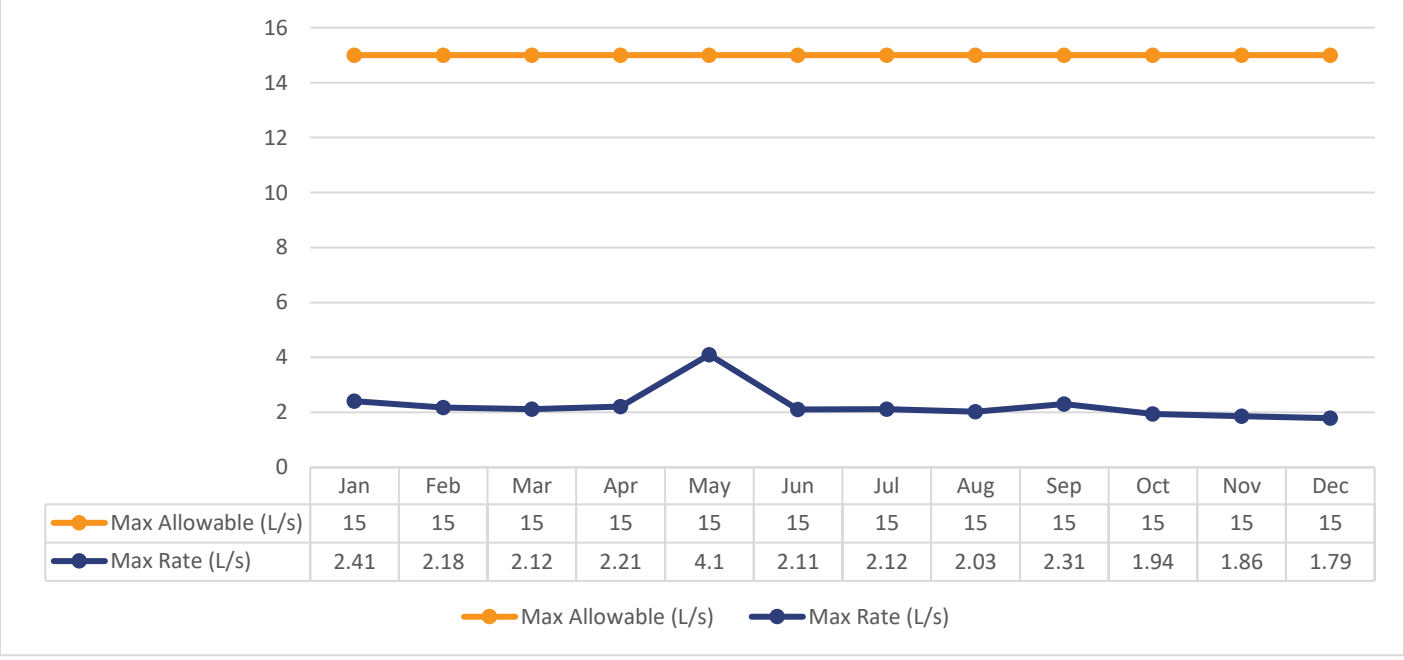
The raw water flows are regulated under the Permit to Take Water. Raw flow data for 2025 was submitted to the Ministry of Environment, Conservation and Parks (MECP) electronically under permit #6033-AQ5HFW. The confirmation of the data that was submitted is attached in Appendix A.

Graph 1. Total Monthly Flows (m³/d) – Gull River (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	300	300	300	300	300	300	300	300	300	300	300	300
Max Flow (m³/d)	122	138	130	133	147	164	170	164	162	162	79	93
Avg (m³/d)	105	117	108	105	116	122	134	133	136	79	57	60

Graph 2. Monthly Rated Flows (L/s) – Gull River (Max Allowable Rate PTTW)

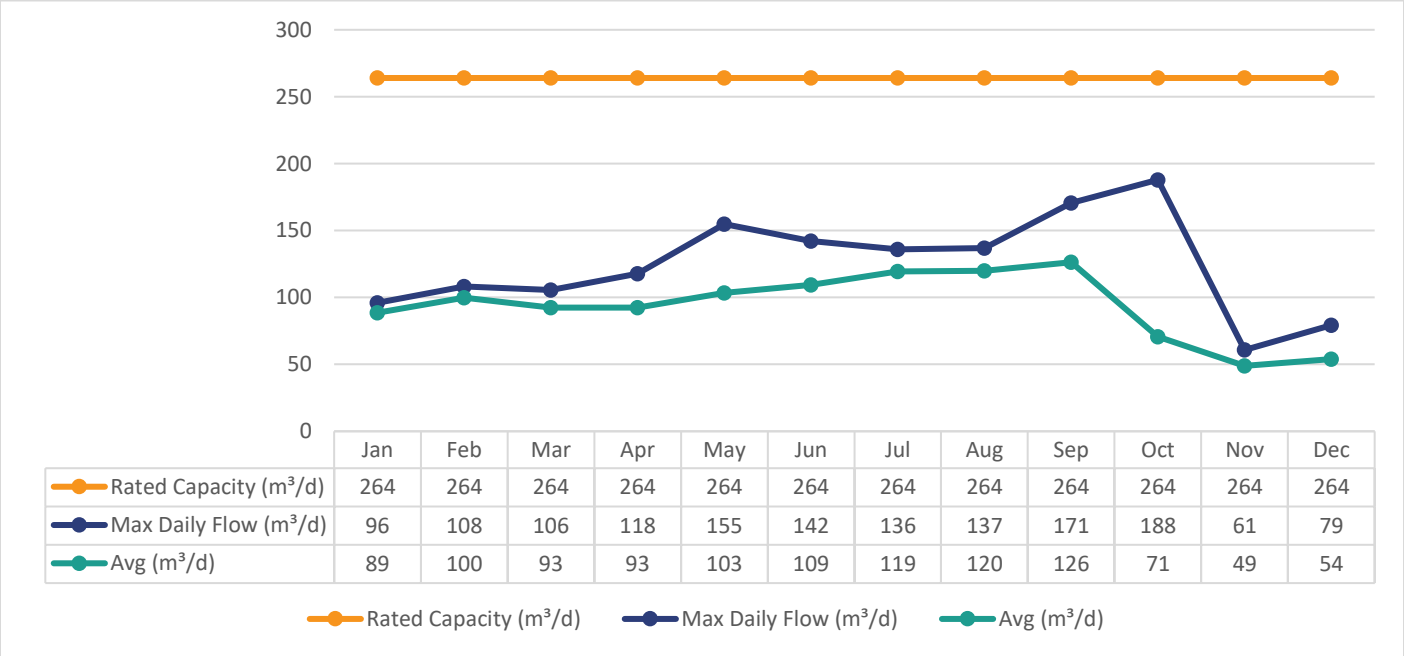


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	15	15	15	15	15	15	15	15	15	15	15	15
Max Rate (L/s)	2.41	2.18	2.12	2.21	4.1	2.11	2.12	2.03	2.31	1.94	1.86	1.79

Treated Water Flows

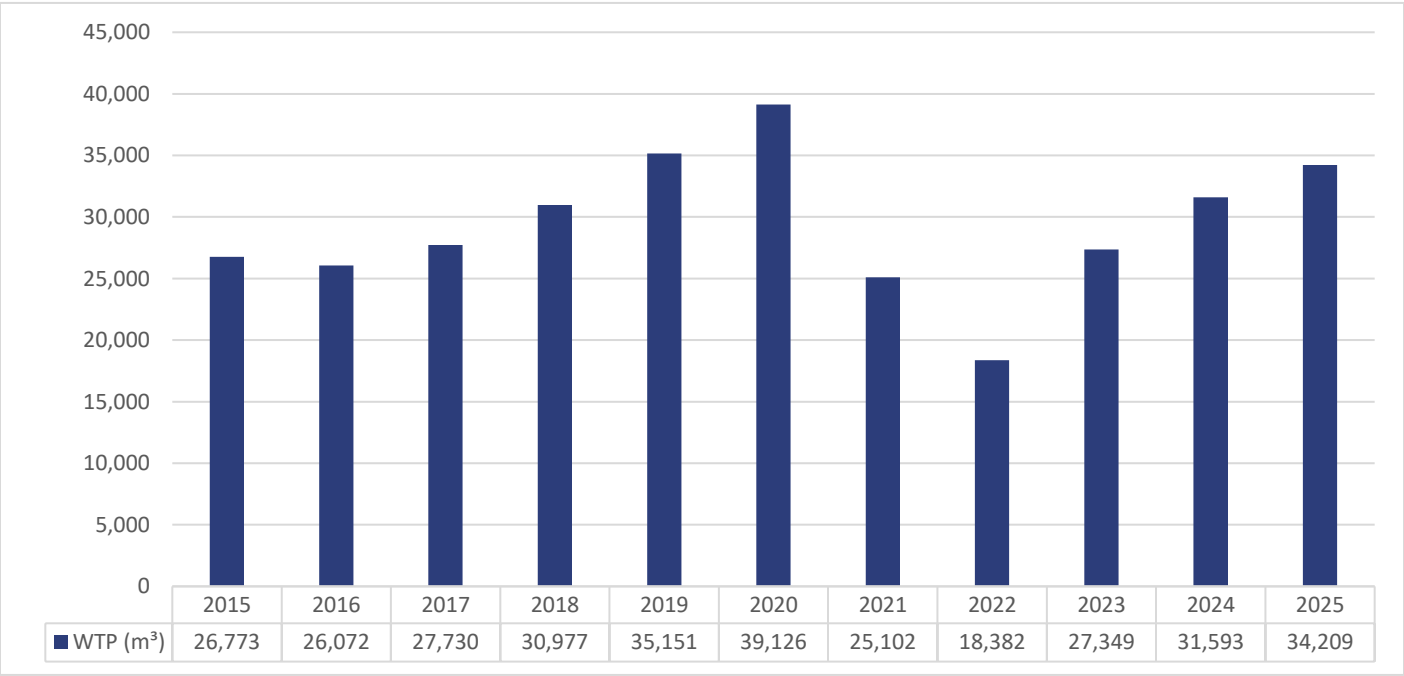
The Treated Water flows are regulated under the Municipal Drinking Water Licence 141-103.

Graph 3. Monthly Rated Flows (m³/d) – Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	264	264	264	264	264	264	264	264	264	264	264	264
Max Daily Flow (m³/d)	96	108	106	118	155	142	136	137	171	188	61	79
Avg (m³/d)	89	100	93	93	103	109	119	120	126	71	49	54

Graph 4. Annual Total Flow Comparison (m³)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WTP (m³)	26,773	26,072	27,730	30,977	35,151	39,126	25,102	18,382	27,349	31,593	34,209

Regulatory Sample Results Summary

Microbiological Testing

Table 4. Microbiological Test Results

	Number of Samples Collected	Range of E. Coli Results	Range of E. Coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw	26	0	13	5	98	N/A	N/A
Distribution	53	0	0	0	0	0	6

OG = Overgrowth
HPC = Heterotrophic Plate Count

Operational Testing

Table 5. Operational Test Results

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Filter 1 (NTU)	8760	0.00	2.00
Turbidity Filter 2 (NTU)	8760	0.00	2.00
Chlorine	8760	0.00	2.39
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measurement if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by online instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every five years. Nitrate and Nitrate are tested quarterly and the metals are tested every five years as required under O. Reg. 170/03. In the event any of the parameters listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 6. Inorganic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Antimony	2025 01 20	<MDL 0.6	µg/L	6.0	No
Arsenic	2025 01 20	<MDL 0.2	µg/L	10.0	No
Barium	2025 01 20	17.2	µg/L	1000.0	No
Boron	2025 01 20	6.0	µg/L	5000.0	No
Cadmium	2025 01 20	<MDL 0.003	µg/L	5.0	No
Chromium	2025 01 20	0.13	µg/L	50.0	No
Mercury	2025 01 20	<MDL 0.01	µg/L	1.0	No
Selenium	2025 01 20	<MDL 0.04	µg/L	50.0	No
Uranium	2025 01 20	0.065	µg/L	20.0	No
Additional Inorganics					
Fluoride	2025 01 27	<MDL 0.06	mg/L	1.5	No
Nitrite	2025 01 06	<MDL 0.003	mg/L	1.0	No
Nitrite	2025 04 14	<MDL 0.003	mg/L	1.0	No
Nitrite	2025 07 07	<MDL 0.003	mg/L	1.0	No
Nitrite	2025 10 06	<MDL 0.003	mg/L	1.0	No
Nitrate	2025 01 06	0.097	mg/L	10.0	No
Nitrate	2025 04 14	0.125	mg/L	10.0	No
Nitrate	2025 07 07	0.025	mg/L	10.0	No
Nitrate	2025 10 06	0.011	mg/L	10.0	No
Sodium	2025 01 27	6.13	mg/L	20*	No

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
MDL = Method Detection Limit
*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. Sodium results exceeding 20 mg/L are to be reported to the Medical Officer of Health as per Schedule 16-3 (8) of O. Reg. 170/03.

Schedule 15 Sampling (Lead)

The Schedule 15 sampling is required under O. Reg. 170/03. This system is under reduced sampling. Only distribution samples were collected, and no plumbing samples were collected.

Table 7. Schedule 15 Test Results (Lead)

	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (µg/L)	Number of Exceedances
Alkalinity (mg/L)	1	2	15	33	N/A	N/A
pH	1	2	6.81	7.35	N/A	N/A
Lead (µg/L)	N/A	N/A	N/A	N/A	10.0	

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 8. Organic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Alachlor	2025 01 20	<MDL 0.02	µg/L	5.0	No
Atrazine + N-dealkylated metabolites	2025 01 20	<MDL 0.01	µg/L	5.0	No
Azinphos-methyl	2025 01 20	<MDL 0.05	µg/L	20.0	No
Benzene	2025 01 20	<MDL 0.32	µg/L	1.0	No
Benzo(a)pyrene	2025 01 20	<MDL 0.004	µg/L	0.01	No
Bromoxynil	2025 01 20	<MDL 0.33	µg/L	5.0	No
Carbaryl	2025 01 20	<MDL 0.05	µg/L	90.0	No
Carbofuran	2025 01 20	<MDL 0.01	µg/L	90.0	No
Carbon Tetrachloride	2025 01 20	<MDL 0.17	µg/L	2.0	No
Chlorpyrifos	2025 01 20	<MDL 0.02	µg/L	90.0	No
Diazinon	2025 01 20	<MDL 0.02	µg/L	20.0	No
Dicamba	2025 01 20	<MDL 0.2	µg/L	120.0	No
1,2-Dichlorobenzene	2025 01 20	<MDL 0.41	µg/L	200.0	No
1,4-Dichlorobenzene	2025 01 20	<MDL 0.36	µg/L	5.0	No
1,2-Dichloroethane	2025 01 20	<MDL 0.35	µg/L	5.0	No
1,1-Dichloroethylene	2025 01 20	<MDL 0.33	µg/L	14.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Dichloromethane (Methylene Chloride)	2025 01 20	<MDL 0.35	µg/L	50.0	No
2,4-Dichlorophenol	2025 01 20	<MDL 0.15	µg/L	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2025 01 20	<MDL 0.19	µg/L	100.0	No
Diclofop-methyl	2025 01 20	<MDL 0.4	µg/L	9.0	No
Dimethoate	2025 01 20	<MDL 0.06	µg/L	20.0	No
Diquat	2025 01 20	<MDL 1.0	µg/L	70.0	No
Diuron	2025 01 20	<MDL 0.03	µg/L	150.0	No
Glyphosate	2025 01 20	<MDL 1.0	µg/L	280.0	No
Malathion	2025 01 20	<MDL 0.02	µg/L	190.0	No
2-Methyl-4-chlorophenoxyacetic Acid (MCPA)	2025 01 20	<MDL 0.12	µg/L	100.0	No
Metolachlor	2025 01 20	<MDL 0.01	µg/L	50.0	No
Metribuzin	2025 01 20	<MDL 0.02	µg/L	80.0	No
Monochlorobenzene (Chlorobenzene)	2025 01 20	<MDL 0.3	µg/L	80.0	No
Paraquat	2025 01 20	<MDL 1.0	µg/L	10.0	No
PCB	2025 01 20	<MDL 0.04	µg/L	3.0	No
Pentachlorophenol	2025 01 20	<MDL 0.15	µg/L	60.0	No
Phorate	2025 01 20	<MDL 0.01	µg/L	2.0	No
Picloram	2025 01 20	<MDL 1.0	µg/L	190.0	No
Prometryne	2025 01 20	<MDL 0.03	µg/L	1.0	No
Simazine	2025 01 20	<MDL 0.01	µg/L	10.0	No
Terbufos	2025 01 20	<MDL 0.01	µg/L	1.0	No
Tetrachloroethylene	2025 01 20	<MDL 0.35	µg/L	10.0	No
2,3,4,6-Tetrachlorophenol	2025 01 20	<MDL 0.2	µg/L	100.0	No
Triallate	2025 01 20	<MDL 0.01	µg/L	230.0	No
Trichloroethylene	2025 01 20	<MDL 0.44	µg/L	5.0	No
2,4,6-Trichlorophenol	2025 01 20	<MDL 0.25	µg/L	5.0	No
Trifluralin	2025 01 20	<MDL 0.02	µg/L	45.0	No
Vinyl Chloride	2025 01 20	<MDL 0.17	µg/L	1.0	No
Distribution Water					
Trihalomethane Total Annual Average Q1	2025 01 06	30.83	µg/L	100.0	No
Trihalomethane Total Annual Average Q2	2025 04 14	31.28	µg/L	100.0	No
Trihalomethane Total Annual Average Q3	2025 07 07	29.70	µg/L	100.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Trihalomethane Total Annual Average Q4	2025 10 06	31.30	µg/L	100.0	No
HAA Total Annual Average Q1	2025 01 06	30.83	µg/L	80.0	No
HAA Total Annual Average Q2	2025 04 14	31.28	µg/L	80.0	No
HAA Total Annual Average Q3	2025 07 07	29.70	µg/L	80.0	No
HAA Total Annual Average Q4	2025 10 06	30.53	µg/L	80.0	No

MAC = Maximum Allowable Concentration as O. Reg. 169/03
MDL = Method Detection Limit

Additional Legislated Samples

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Harmful Algal Blooms monitoring is required as a condition within the Municipal Drinking Water Licence between June and October of each reporting year at a minimum. Treated and Raw samples are collected weekly during this time period and tested for Microcystin, which is an indicator for harmful algal blooms.

Table 9. Microcystin Sample Results

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (µg/L)	Total Microcystin Treated Water Results Range (µg/L)	Treated Water Total Microcystin Limit 1.5 µg/L Exceeded
Harmful Algal Blooms Monitoring	June	0.1 - <0.1	<0.1 - <0.1	N
	July	<0.1 - <0.1	<0.1 - <0.1	N
	August	<0.1 - <0.1	<0.1 - <0.1	N
	September	<0.1 - <0.1	<0.1 - <0.1	N
	October	<0.1 - <0.1	<0.1 - <0.1	N

Method Detection Limit is 0.1 µg/L

Table 10. Suspended Solids Sample Results

Municipal Drinking Water Licence	Date Collected	Suspended Solids to Sanitary Sewer (mg/L)	Free Chlorine Residual (mg/L)
Settling Tank Discharge Point	January	2	0.02
	February	36	0.01
	March	5	0.00
	April	13	0.02
	May	39	0.03
	June	<2	0.02
	July	<2	0.00
	August	8	0.02
	September	52	0.04
	October	<2	0.02
	November	2	0.03
	December	3	0.04
	Average	13.83	

Note: The Suspended Solids 12 month running average limit is 25 mg/L.

Minor Maintenance

- Tree Clean-up
- Move IT Equipment Out of PLC
- Haul Water for Distribution Leak
- HLP 4 Check Valve Replacement
- Plumbing Modification to Remove Analyzer Drain Water from Septic Tank
- Change Outdoor Plug at Front of Building to GFI

Major Maintenance Expense (above $10,000)

Under Section 11 of O. Reg. 170/03, a description of any major expenses incurred during this reporting period to install, repair or replace required equipment must be included in the annual report. The details of the major expenses for this drinking water system are as follows:

- PLC Upgrade
- HLP 3 Replacement
- Diagnose and Replace Transfer Switch

APPENDIX A

WTR Submission Confirmation