Fenelon Falls Drinking Water System

2025 Annual Water Report

Drinking Water System Number: 210000327

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

Drinking Water System Category: Large 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: 210000327
Drinking Water System Name: Fenelon Falls Drinking Water System
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large 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	2	2025 01 22	2024/2025 Announced Detailed Inspection – Final Inspection Rating 100%
		2026 01 07	2025/2026 Announced Focused Inspection completed – Final Inspection Rating not received at time of issuance of report.

	Number of Events	Date (yyyy/mm/dd)	Details
Adverse Water Quality Incidents (AWQIs)	1	2025 07 04	Filter 1 – Filter Performance criteria not met for June 2025
Non-Compliances	0		
Boil Water Advisories	0		
Health and Safety	0		

Drinking Water System Description

The Fenelon Falls drinking water system is a large municipal residential drinking water system serving the Village of Fenelon Falls, Ontario within the City of Kawartha Lakes. The drinking water system is classified as a Class II 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 Cameron Lake, which is classified as a surface water source.

Water Treatment Facility

The Fenelon Falls water treatment facility includes pre-treatment for Zebra Mussel control, followed by coagulation and flocculation processes. Water then undergoes membrane filtration prior to primary disinfection using ultraviolet (UV) disinfection. Sodium hypochlorite is applied following UV treatment, and chloramination is utilized to provide secondary disinfection.

Treated water is directed to one clearwell prior to distribution. 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 eighteen kilometres of watermains and one elevated standpipe with a total storage capacity of approximately 2,450 cubic metres. The standpipe provides pressure control, pressure monitoring, treated water storage, and firefighting flow capacity. The system is rated for fire protection.

Watermain materials within the Fenelon Falls Distribution System are primarily asbestos cement, and also include PVC, ductile iron, and welded steel pipe.

Table 2. Treatment Chemicals Used

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag UnivarSolutions
Polyaluminum Chloride	Coagulation	Kemira
Ammonium Sulphate	Secondary Disinfection (Chloramination)	UnivarSolutions

Summary of Non-Compliance

Adverse Water Quality Incidents

Table 3. Adverse Water Quality Incidents

Date (yyyy/mm/dd)	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
2025 07 04	1-OOPWS2	Filtration	Monthly filter effluent turbidity <=0.1 NTU performance criteria of 99% not met.	98.9% Filter 1 –air introduced from filter maintenance	O. Reg. 170/03	Remove entrapped air out of system.

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.

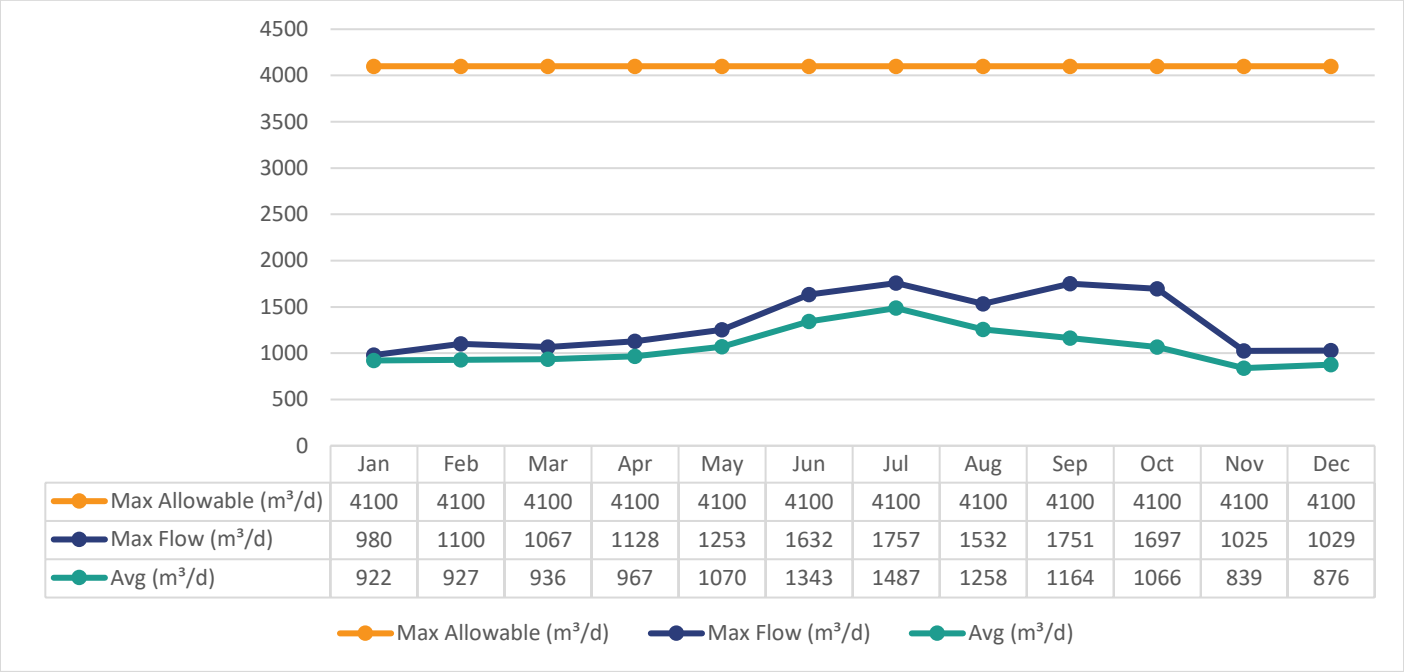
Flows

The Fenelon Falls Drinking Water System is operating on average under half the rated capacity. The rated capacity of the system (treated water flows) is 4,100 m^3/day.

Raw Water Flows

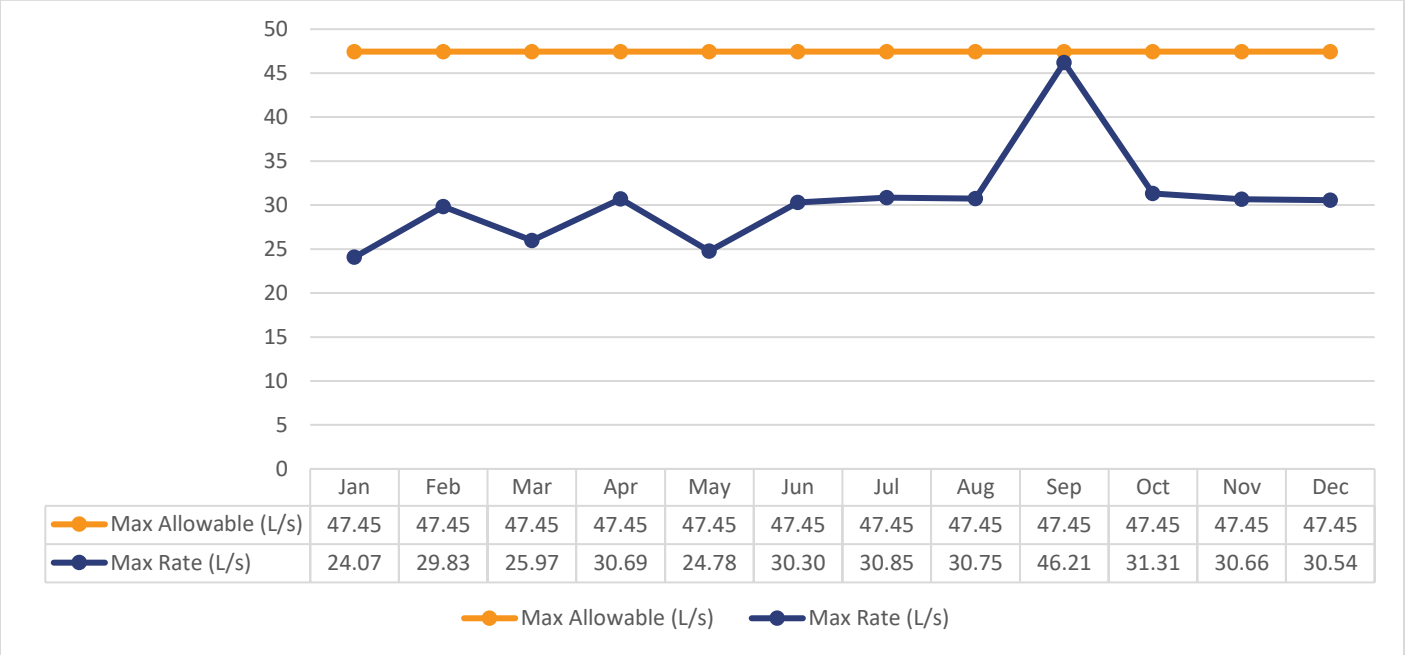
The raw water flows are regulated under the Permit to Take Water. Raw flow data for 2025 was submitted to the Ministry of Environment, Conservation and Parks (MECP) electronically under permit #5830-AQFGZR. The confirmation of the data that was submitted is attached in Appendix A.

Graph 1. Total Monthly Flows (m³/d) – Cameron Lake (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100
Max Flow (m³/d)	980	1100	1067	1128	1253	1632	1757	1532	1751	1697	1025	1029
Avg (m³/d)	922	927	936	967	1070	1343	1487	1258	1164	1066	839	876

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

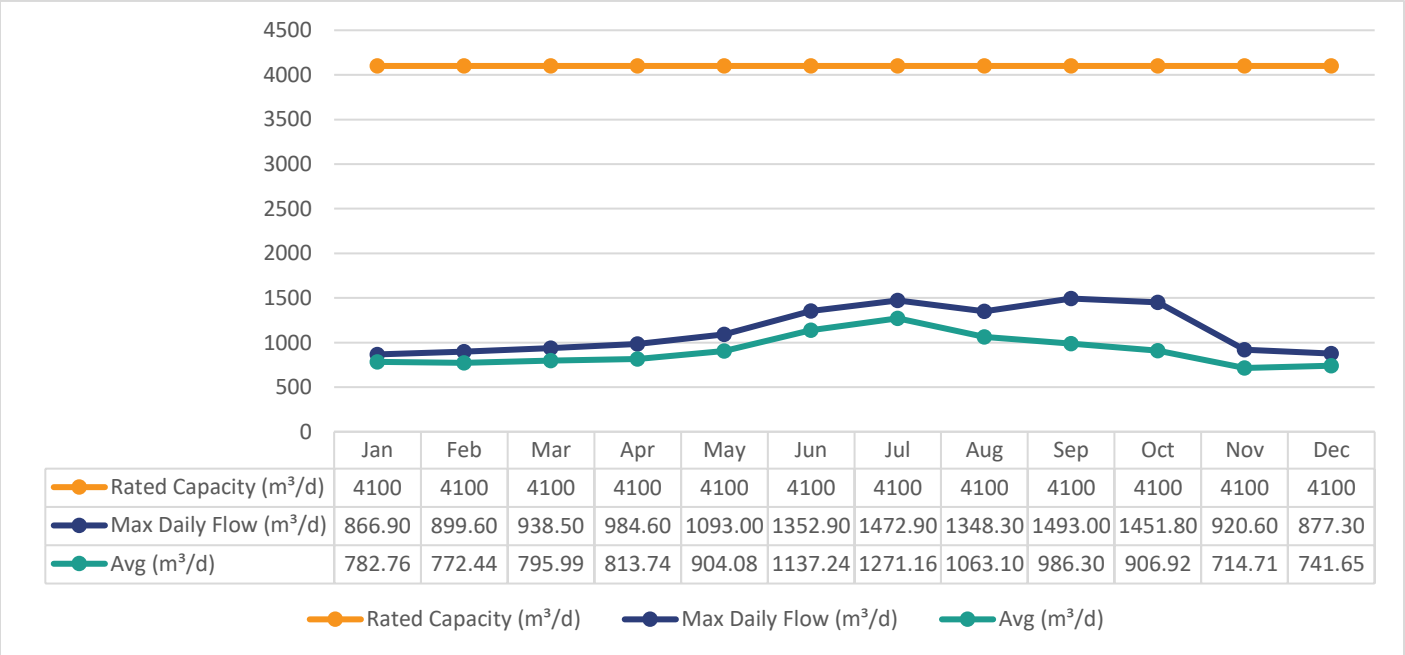


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	47.45	47.45	47.45	47.45	47.45	47.45	47.45	47.45	47.45	47.45	47.45	47.45
Max Rate (L/s)	24.07	29.83	25.97	30.69	24.78	30.30	30.85	30.75	46.21	31.31	30.66	30.54

Treated Water Flows

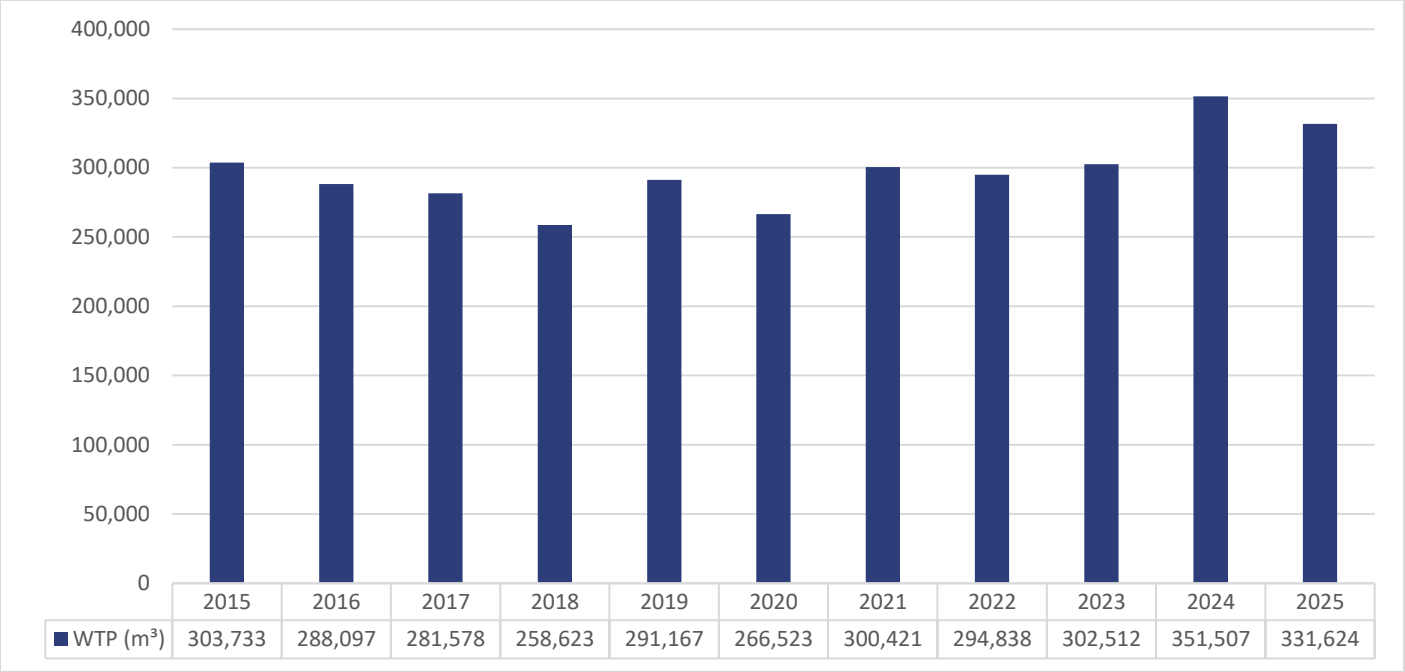
The Treated Water flows are regulated under the Municipal Drinking Water Licence 141-104.

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)	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100
Max Daily Flow (m³/d)	866.90	899.60	938.50	984.60	1093.00	1352.90	1472.90	1348.30	1493.00	1451.80	920.60	877.30
Avg (m³/d)	782.76	772.44	795.99	813.74	904.08	1137.24	1271.16	1063.10	986.30	906.92	714.71	741.65

Graph 4. Annual Total Flow Comparison (m³)



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	52	0	NDOGT	1	NDOGT	N/A	N/A
Treated	60	0	0	0	0	0	3
Distribution	156	0	0	0	0	0	52

OG = Overgrowth
HPC = Heterotrophic Plate Count
NDOGT = No Data: Overgrown with Target Bacteria

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	2.07
Turbidity Filter 2 (NTU)	8760	0.00	2.07
Chlorine	8760	0.26	2.57
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 annually 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 06	<MDL 0.6	µg/L	6.0	No
Arsenic	2025 01 06	<MDL 0.2	µg/L	10.0	No
Barium	2025 01 06	19.9	µg/L	1000.0	No
Boron	2025 01 06	6.0	µg/L	5000.0	No
Cadmium	2025 01 06	0.004	µg/L	5.0	No
Chromium	2025 01 06	<MDL 0.08	µg/L	50.0	No
Mercury	2025 01 06	<MDL 0.01	µg/L	1.0	No
Selenium	2025 01 06	<MDL 0.04	µg/L	50.0	No
Uranium	2025 01 06	0.045	µg/L	20.0	No
Additional Inorganics					
Fluoride	2023 01 04	<MDL 0.06	mg/L	1.5	No
Nitrite	2025 01 06	<MDL 0.003	mg/L	1.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Nitrite	2025 04 15	<MDL 0.003	mg/L	1.0	No
Nitrite	2025 07 08	<MDL 0.003	mg/L	1.0	No
Nitrite	2025 10 07	<MDL 0.003	mg/L	1.0	No
Nitrate	2025 01 06	0.048	mg/L	10.0	No
Nitrate	2025 04 15	0.117	mg/L	10.0	No
Nitrate	2025 07 08	0.02	mg/L	10.0	No
Nitrate	2025 10 07	0.016	mg/L	10.0	No
Sodium	2023 01 04	7.52	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)	2	4	42	55	N/A	N/A
pH	2	4	7.59	8.45	N/A	N/A
Lead (µg/L)	N/A	N/A	N/A	N/A	10.0	N/A

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 16	<MDL 0.02	µg/L	5.0	No
Atrazine + N-dealkylated metabolites	2025 01 16	<MDL 0.01	µg/L	5.0	No
Azinphos-methyl	2025 01 16	<MDL 0.05	µg/L	20.0	No
Benzene	2025 01 16	<MDL 0.32	µg/L	1.0	No
Benzo(a)pyrene	2025 01 16	<MDL 0.004	µg/L	0.01	No
Bromoxynil	2025 01 16	<MDL 0.33	µg/L	5.0	No
Carbaryl	2025 01 16	<MDL 0.05	µg/L	90.0	No
Carbofuran	2025 01 16	<MDL 0.01	µg/L	90.0	No
Carbon Tetrachloride	2025 01 16	<MDL 0.17	µg/L	2.0	No
Chlorpyrifos	2025 01 16	<MDL 0.02	µg/L	90.0	No
Diazinon	2025 01 16	<MDL 0.02	µg/L	20.0	No
Dicamba	2025 01 16	<MDL 0.2	µg/L	120.0	No
1,2-Dichlorobenzene	2025 01 16	<MDL 0.41	µg/L	200.0	No
1,4-Dichlorobenzene	2025 01 16	<MDL 0.36	µg/L	5.0	No
1,2-Dichloroethane	2025 01 16	<MDL 0.35	µg/L	5.0	No
1,1-Dichloroethylene	2025 01 16	<MDL 0.33	µg/L	14.0	No
Dichloromethane (Methylene Chloride)	2025 01 16	<MDL 0.35	µg/L	50.0	No
2,4-Dichlorophenol	2025 01 16	<MDL 0.15	µg/L	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2025 01 16	<MDL 0.19	µg/L	100.0	No
Diclofop-methyl	2025 01 16	<MDL 0.4	µg/L	9.0	No
Dimethoate	2025 01 16	<MDL 0.06	µg/L	20.0	No
Diquat	2025 01 16	<MDL 1.0	µg/L	70.0	No
Diuron	2025 01 16	<MDL 0.03	µg/L	150.0	No
Glyphosate	2025 01 16	<MDL 1.0	µg/L	280.0	No
Malathion	2025 01 16	<MDL 0.02	µg/L	190.0	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2025 01 16	<MDL 0.12	µg/L	100.0	No
Metolachlor	2025 01 16	<MDL 0.01	µg/L	50.0	No
Metribuzin	2025 01 16	<MDL 0.02	µg/L	80.0	No
Monochlorobenzene (Chlorobenzene)	2025 01 16	<MDL 0.3	µg/L	80.0	No
Paraquat	2025 01 16	<MDL 1.0	µg/L	10.0	No
PCB	2025 01 16	<MDL 0.04	µg/L	3.0	No
Pentachlorophenol	2025 01 16	<MDL 0.15	µg/L	60.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Phorate	2025 01 16	<MDL 0.01	µg/L	2.0	No
Picloram	2025 01 16	<MDL 1.0	µg/L	190.0	No
Prometryne	2025 01 16	<MDL 0.03	µg/L	1.0	No
Simazine	2025 01 16	<MDL 0.01	µg/L	10.0	No
Terbufos	2025 01 16	<MDL 0.01	µg/L	1.0	No
Tetrachloroethylene	2025 01 16	<MDL 0.35	µg/L	10.0	No
2,3,4,6-Tetrachlorophenol	2025 01 16	<MDL 0.2	µg/L	100.0	No
Triallate	2025 01 16	<MDL 0.01	µg/L	230.0	No
Trichloroethylene	2025 01 16	<MDL 0.44	µg/L	5.0	No
2,4,6-Trichlorophenol	2025 01 16	<MDL 0.25	µg/L	5.0	No
Trifluralin	2025 01 16	<MDL 0.02	µg/L	45.0	No
Vinyl Chloride	2025 01 16	<MDL 0.17	µg/L	1.0	No
Distribution Water					
Trihalomethane Total Annual Average Q1	2025 01 06	89.50	µg/L	100.0	No
Trihalomethane Total Annual Average Q2	2025 04 14	86.00	µg/L	100.0	No
Trihalomethane Total Annual Average Q3	2025 07 08	80.25	µg/L	100.0	No
Trihalomethane Total Annual Average Q4	2025 10 06	77.75	µg/L	100.0	No
HAA Total Annual Average Q1	2025 01 06	52.98	µg/L	80.0	No
HAA Total Annual Average Q2	2025 04 14	48.98	µg/L	80.0	No
HAA Total Annual Average Q3	2025 07 08	43.75	µg/L	80.0	No
HAA Total Annual Average Q4	2025 10 06	43.83	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. Settling Tank Discharge Point Sample Results

Municipal Drinking Water Licence	Date Collected	Suspended Solids to Sanitary Sewer (mg/L)
Settling Tank Discharge Point	January	44
	February	33
	March	37
	April	51
	May	32
	June	37
	July	49
	August	41
	September	35
	October	28
	November	20
	December	43
	Average	37.50

Note: The Suspended Solids 12 month running average limit of 25 mg/L applies to effluent discharged into the natural environment. Effluent is typically discharged to the sewer system. During the reporting period, all effluent was discharged to the sewer system.

Table 11. Nitrosodimethylamine (NDMA) Sample Results

Municipal Drinking Water Licence	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Nitrosodimethylamine (NDMA)	2025 01 06	0.0010	µg/L	0.009	No
	2025 04 14	0.0010	µg/L	0.009	No

Municipal Drinking Water Licence	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
	2025 07 03	0.0010	µg/L	0.009	No
	2025 10 16	0.0019	µg/L	0.009	No

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

Minor Maintenance

- Engineering study on piping vacuum issues
- Reject water pump #1 replacement
- Replace reject pump #2 VFD
- Replace sanitary pump
- Obtain Filter Membrane Repair Kit
- Chlorine analyzer feed pump replacement
- Replace Filter Pressure Gauge and Solenoids
- Obtain replacement wiper assembly for UV
- VFD for remaining blowers
- Obtain replacement quartz sleeves and lamps for UV
- Replace back pressure valves
- Stealth valve replacement

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:

Fenelon Falls Water Treatment Plant

- Fenelon Falls Membrane Expansion
- Fenelon Falls Highlift Pump Replacements

Fenelon Falls Distribution System

- Fenelon Falls Standpipe Rehabilitation Work

APPENDIX A

WTR Submission Confirmation