ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

WTP-101 DRINKING WATER SYSTEM WATERWORKS # 210001273

LARGE MUNICIPAL RESIDENTIAL

ANNUAL WATER REPORT

PREPARED FOR
The Township of Ramara

SUBMITTED BY
Ontario Clean Water Agency
2115 Highway 12, Brechin, ON L0K 1B0

Reporting Period: January 1 – December 31, 2025

Issued: February 13, 2026

Revision: 0

Operating Authority: Ontario Clean Water Agency (OCWA)

This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22

Table of Contents

1. Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the Township of Ramara Administration Office and on the Township's website at www.ramara.ca. Notification that reports are available free of charge will be made on the Township of Ramara website. The Township of Ramara Administration Office is located at 2297 Highway 12, Brechin, ON L0K 1B0.

2. Compliance Report Card

Drinking Water System Number: 210001273

Drinking Water System Name: WTP-101 (Brechin and Lagoon City DWS)

Drinking Water System Owner: Township of Ramara.

Drinking Water System Category: Large Municipal Residential.

Period Being Reported: January 1, 2025 - December 31, 2025.

Health & Safety	# of Events	Date	Details
Number of Incidents	0	N/A	N/A

Drinking Water	# of Events	Date	Details
Ministry of the Environment Conservation and Parks (MECP) Inspections	1	November 26, 2025	Announced Focused Drinking Water Inspection for 2025 inspection cycle. Final inspection rating – 100%.
Adverse Water Quality Incidents (AWQI)	4	May 1, 2025 May 3, 2025 August 8, 2025 August 9,	AWQI 168075 – April 2025 Filter Performance not met, result = 93.84% AWQI 168095 – Category 2 Main Break AWQI 169366 – Treated Water High Sodium Result SAC #1-PAV4WO – Spill;

		2025	Distribution Main Break
Number of Non-Compliances	0	N/A	N/A
Number of Boil Water Advisories	1	May 3, 2025	Advisory Issued by Health Unit for AWQI 168095

3. System Process Description

Raw Source

The Brechin and Lagoon City DWS is supplied with surface water from Lake Simcoe.

Treatment

The treatment system is a dual train direct filtration package plant consisting of the following:

- Raw water is sourced from Lake Simcoe through an intake well with two (2) removable screens further the low lift pumping station consisting of three (3) low lift pumps
- Inlet line connected to sodium hypochlorite and a coagulant feed line diffuser
- Raw water flow meter and turbidity analyzer
- Carbon Dioxide injection system for adjusting pH to optimize coagulation process with a metering panel equipped with actuated control valve and bypass piping, gas feed flowmeter, filter, carbon dioxide gas pressure regulator and isolating manual ball valves
- Coagulant is added to the raw water intake well at the low lift pumping station
- Four (4) spiral flow flocculation tanks for floc to settlement
- Two (2) filter-absorber units each consisting of granular activated carbon over sand and gravel with three backwash troughs and two surface water agitators and an underdrain
- Continuously monitoring turbidity analyzers on each filter line
- Waste backwash holding tank with discharge to sanitary sewer
- Chlorine injection system
- Single in-ground clearwell with five (5) highlift pumps
- Chlorine residual and pH analyzers prior to distribution connection
- Water tower
- SCADA computer control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
Poly-Aluminum Chloride	Flocculation	Brenntag
Carbon Dioxide	pH Optimization	Praxair

4. Summary of Non-Compliance

Adverse Water Quality Incident

Date	AWQI #	Location	Details	Legislation	Corrective Action Taken
May 1, 2025	168075	Treatment Plant	Municipal Drinking Water License (MDWL) Monthly Filter Criteria not met. Result = 93.84%	O. Reg 170/03	Adverse resulted as poor raw water quality impacted due to a storm/runoff event. Monthly filter performance for the following month met performance criteria in MDWL.
May 3, 2025	168095	Distribution	Category 2 Main Break BWA issued by Health Unit (HU)	O. Reg 170/03	Main break repaired and samples collected at site, up stream and downstream. All results clear.
August 8, 2025	169366	Treated Water	High Sodium Result of 39.3 mg/L.	O. Reg 170/03	Re-sampled TW on August 11, 2025 result = 40.0 mg/L. Sodium Notices made public through the Township of Ramara.

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e., date(s))	Corrective Action	Status
There were no non-compliances during this period.				

Non-Compliance Identified in a Ministry of the Environment Conservation and Parks Inspection:

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e., date(s))	Corrective Action	Status
There were no non-compliances identified in a Ministry of the Environment Conservation and Parks Inspection during the reporting period.				

Community Complaints

Date	Details	Corrective Action Taken
August 9, 2025	Water Supply Taste/Colour – coloured water	Informed resident of watermain break, advised to run tap until water came clear

Flows

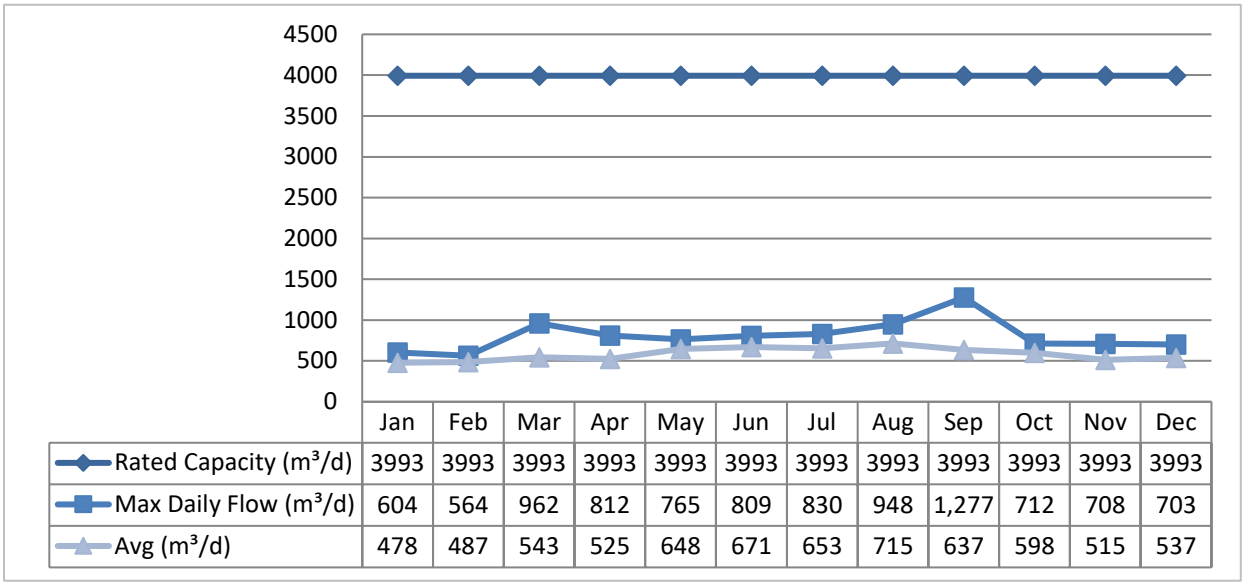
The Brechin and Lagoon City Drinking Water System is operating on average under half the rated capacity. Although the system is typically operating well under design capacity, significant weather events like snowmelt and rainfall create major operational challenges seasonally at the facility. The plant is unable to handle the substantial changes in raw water characteristics caused by these events, such as turbidity and colour. As a result, the facility cannot produce water at a rate that can meet demand during these times potentially compromising water supply, system pressure and fire protection.

Raw Water Flows

The Permit to Take Water compliance criteria is in litres per minute (L/min) but for the purposes of this report the flow rate is reported in litres per second (L/sec) based on industry standard for flow monitoring recording. The Raw Water flows are regulated under the Permit to Take Water. 2025 Raw Flow Data was submitted to the Ministry of the Environment Conservation and Parks electronically under permit No. 0278-AQ4LYS. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Total Monthly Flows (m^3/d)

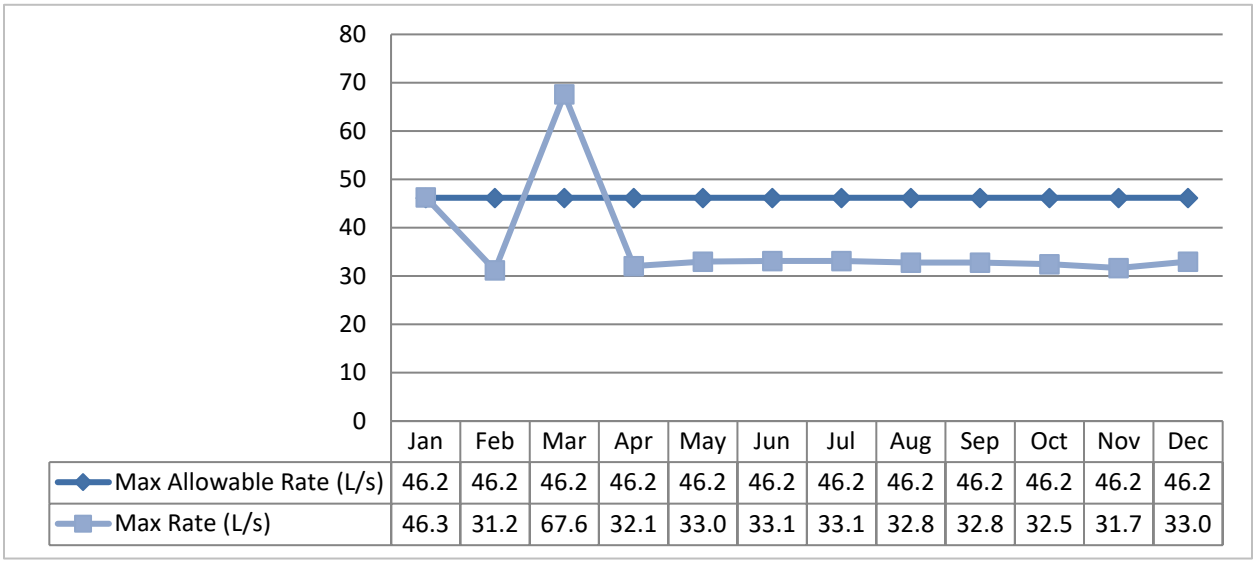
Max Allowable PTTW – Raw



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993	3993
Max Daily Flow (m^3/d)	604	564	962	812	765	809	830	948	1,277	712	708	703
Avg (m^3/d)	478	487	543	525	648	671	653	715	637	598	515	537

Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Raw



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/s)	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2
Max Rate (L/s)	46.3	31.2	67.6	32.1	33.0	33.1	33.1	32.8	32.8	32.5	31.7	33.0

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) as a result of calibrations and maintenance. All spikes are reviewed for compliance. Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence. The average water consumption for the Brechin/Lagoon City Drinking Water System during 2025 was: 598 m³/day.

Brechin Lagoon City Drinking Water System Historical Demands

Year	Number of Connections	Average Daily Demand (m³)	Maximum Daily Demand (m³/day)	Rated Capacity	Per Capita Consumption* (L/p/day)	
					Average	Maximum
2015	1261	781	1670	4000	299	639
2016	1264	837	1546	4000	320	591
2017	1269	699	1207	4000	266	459
2018	1273	870	1829	4000	329	694
2019	1274	893	1798	4000	317	681
2020	1279	676	1333	4000	242	644
2021	1279	684	1090	4000	245	390
2022	1286	719	1246	4000	269	467
2023	1288	636	1072	4000	238	401
2024	1288	657	1107	4000	246	414
2025	1288	598	1270	4000	224	476
3 Year Average/Max		630	1150	4000	236	430

*Based on estimated service connections in Lagoon City and Brechin: 1,132 and 156 single family dwellings. The estimated population in Lagoon City: 2,264 (based on a population density of 2.0 persons per dwelling), and the estimated population in Brechin: 406 (based on a population density of 2.6 persons per dwelling). Assumptions made on location of new developments for 2025 connections for population estimation.

Note: Excluding pipe leaks/breaks & system flushing

Note: This calculation was completed based on current connections in the system, growth within the drinking water system has not been considered.

System Reserve Capacity

In accordance with the MECP Procedure D-5-1, the reserve capacity is calculated by the following formula:

Reserve Capacity= Design Flow- Committed Flow

Design flow is the maximum permissible flow approved by the MDWL and/or PTTW. Brechin Lagoon City Water Works maximum daily rated capacity is 4000 m³/day.

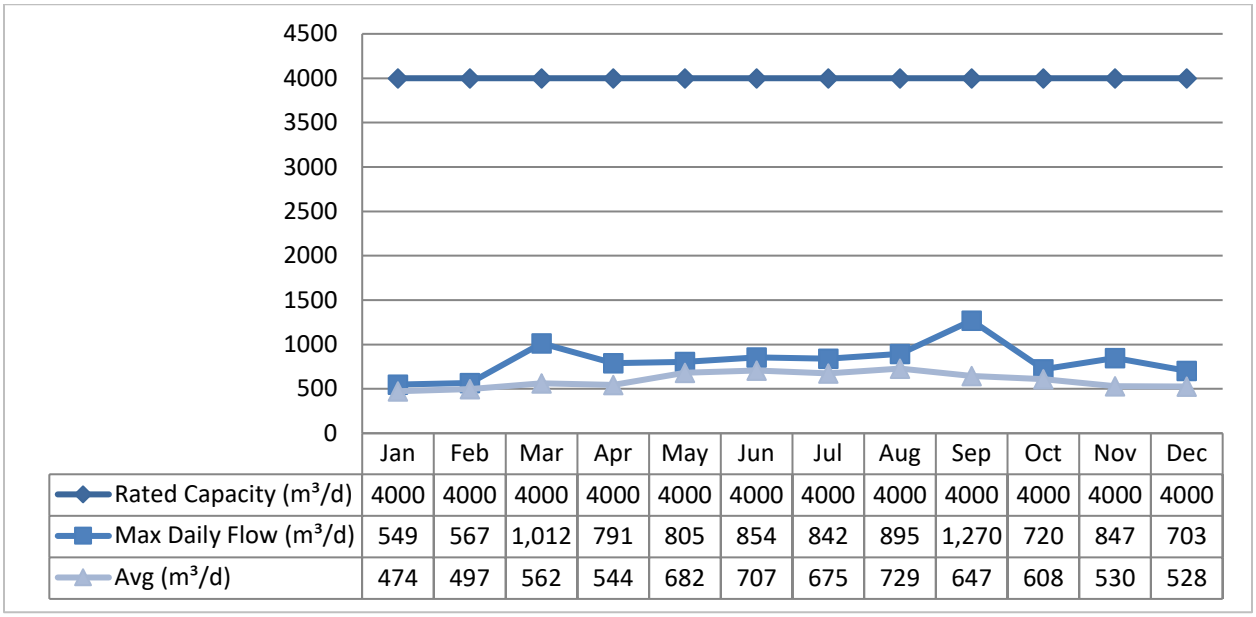
The committed flow is the total expected water demand from the existing and proposed connections based on the previous three years of data. The committed number of service connections is: 1367. The three-year (2023-2025) maximum per capita water consumption is: 430 L/p/day. At this water consumption rate, the committed flow is: 1235 m³/day.

As a result, the calculated reserve capacity is: 2765 m³/day*.

***Note**: The reserve capacity calculation is based off facility design criteria and does not take into consideration any operational challenges.

Monthly Rated Flows

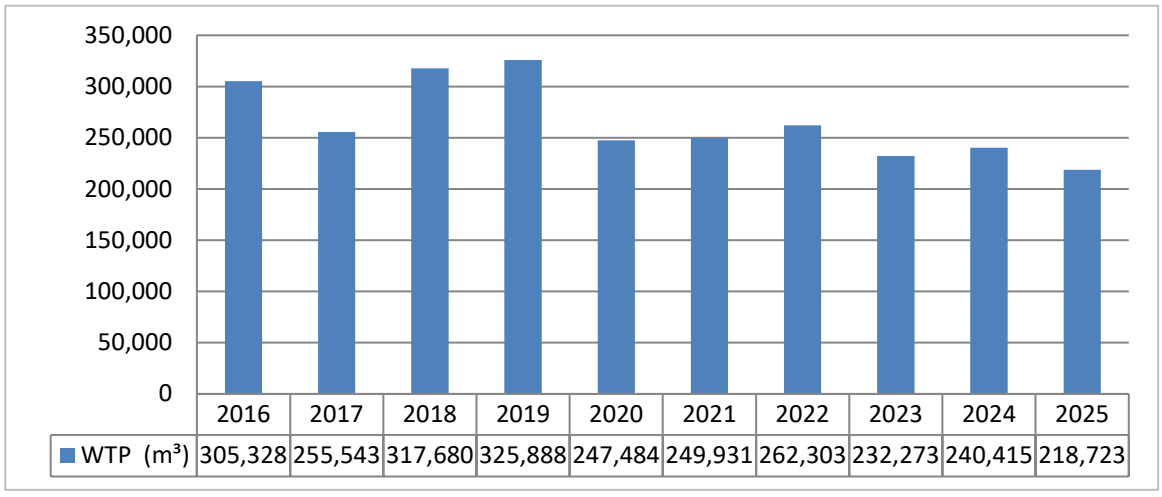
Rated Capacity – MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Max Daily Flow (m³/d)	549	567	1,012	791	805	854	842	895	1,270	720	847	703
Avg (m³/d)	474	497	562	544	682	707	675	729	647	608	530	528

Annual Total Flow Comparison

Total Annual m³



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WTP (m³)	305,328	255,543	317,680	325,888	247,484	249,931	262,303	232,273	240,415	218,723

5. Regulatory Sample Results Summary

Microbiological Testing

	Number of Samples Collected	Range of E. Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw	52	0	2*	0	219*	N/A	N/A
Treated	53	0	0	0	0	0	4
Distribution	162	0	0	0	0	0	6

***Note:** Five samples for raw water resulted in Total Coliform and E. Coli as NDOGT (No Data: Overgrown with Target Bacteria).

Operational Testing

	Number of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity – Filter Line 1 (NTU)	8760	0.00	2.00
Turbidity – Filter Line 2 (NTU)	8760	0.00	2.00
Turbidity-Treated (NTU)	8760	0.00	2.00
Treated Water Chlorine	8760	0.25	5.15
Distribution Water Chlorine	365	1.05	2.37
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is not milligrams per litre.

Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by on-line 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 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested annually as required under O. Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	2025/08/05	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L) - TW	2025/08/05	0.3	10.0	No	No
Barium: Ba (ug/L) - TW	2025/08/05	28.5	1000.0	No	No
Boron: B (ug/L) - TW	2025/08/05	21.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2025/08/05	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2025/08/05	0.21	50.0	No	No
Mercury: Hg (ug/L) - TW	2025/08/05	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2025/08/05	0.07	50.0	No	No
Uranium: U (ug/L) - TW	2025/08/0	0.138	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2022/08/03	<MDL 0.06	1.5	No	No
Nitrite (mg/L) - TW	2025/02/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2025/05/05	0.004	1.0	No	No
Nitrite (mg/L) - TW	2025/08/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2025/11/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2025/02/03	0.16	10.0	No	No
Nitrate (mg/L) - TW	2025/05/05	0.209	10.0	No	No
Nitrate (mg/L) - TW	2025/08/05	0.025	10.0	No	No
Nitrate (mg/L) - TW	2025/11/03	0.03	10.0	No	No
Sodium: Na (mg/L) - TW	2025/08/05	39.3	20*	N/A	N/A
Sodium: Na (mg/L) - TW	2025/08/11	40.0	20*	N/A	N/A

*There is no "MAC" for Sodium. The aesthetic objective 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.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O. Reg. 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	4	117	125	N/A	N/A
pH	4	7.3	7.8	N/A	N/A
Lead (ug/l)	2	0.44	0.54	10	0

Note: Lead is required to be sampled every 3 years and is scheduled to be sampled in 2028.

Organic Parameters

These parameters are tested annually as a requirement under O. Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2025/08/05	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2025/08/05	0.02	5.00	No	No
Azinphos-methyl (ug/L) - TW	2025/08/05	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2025/08/05	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2025/08/05	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2025/08/05	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2025/08/05	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2025/08/05	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2025/08/05	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2025/08/05	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2025/08/05	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2025/08/05	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2025/08/05	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2025/08/05	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2025/08/05	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2025/08/05	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2025/08/05	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2025/08/05	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2025/08/05	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2025/08/05	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2025/08/05	<MDL 0.06	20.00	No	No

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Diquat (ug/L) - TW	2025/08/05	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2025/08/05	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2025/08/05	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2025/08/05	<MDL 0.02	190.00	No	No
Metolachlor (ug/L) - TW	2025/08/05	0.01	50.00	No	No
Metribuzin (ug/L) - TW	2025/08/05	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2025/08/05	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2025/08/05	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2025/08/05	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2025/08/05	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2025/08/05	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2025/08/05	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2025/08/05	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2025/08/05	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2025/08/05	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2025/08/05	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2025/08/05	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2025/08/05	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2025/08/05	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2025/08/05	<MDL 0.25	5.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2025/08/05	<MDL 0.12	100	No	No
Trifluralin (ug/L) - TW	2025/08/05	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2025/08/05	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average – DW	2025 Annual Average	54.25	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2025 Annual Average	21.1	80	No	Yes

MAC = Maximum Allowable Concentration as per O. Reg. 169/03

MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water Licence (MDWL)	Collected Weekly June – Oct 2025	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
Harmful Algal Blooms Monitoring required June to October at a minimum. Samples collected weekly. Raw water tested for Total Microcystins.	June	<0.1 – <0.1	-	N
	July	<0.1 - <0.1	-	N
	August	<0.1 - <0.1	-	N
	September	<0.1 - <0.1	-	N
	October	<0.1 – 0.1	-	N
	November	<0.1 – < 0.1	<0.1 – <0.1	N

*Treated water is only sampled if microcystins are detected in the raw water sample.

Method Detection Limit is 0.1ug/L

Inorganic or Organic Parameter Exceedances

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Trihalomethane: Total (ug/L)	54.25	ug/L	2025 Running Annual Average
Haloacetic acids: Total (ug/L)	21.1	ug/L	2025 Running Annual Average

6. Major Maintenance Summary incurred to install, repair or replace required equipment.

Item #	Description
1	Filter #2 scrubber piping and check valve replaced
2	Replaced piping to Treated Water flow meter
3	Replaced Tower signal transmitter
4	Replaced Raw water sump pump
5	Diving inspection of intake structure
6	Distribution coupling and intake header replacement
7	Replacement of 12inch intake valve
8	Reservoir camera inspection
9	ROV Inspection of water tower

APPENDIX A
WTRS DATA SUBMISSION CONFIRMATION

WTRS Data Submission Confirmation

Ontario

environet WTRS

Ministry of the Environment, Conservation and Parks

| WT DATA | USER PROFILE | CONTACT US | HELP | HOME | LOGOUT |

Location: WTRS / WT DATA / Input WT Record WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 0278-AQ4LYS
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF RAMARA.
Received on:Feb 5, 2026 11:31 AM

This confirmation indicates that your data has been received by the Ministry,but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

Print Confirmation Return to Main Page

TOWNSHIP OF RAMARA | 2026/02/05
version: v5.0.0.01 (build#: 28)
Last modified: 2021/09/22