South Ramara Drinking Water System

Waterworks # 220010681
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The Township of Ramara

Reporting Period of January 1st – December 31st, 2024

Issued: February 26, 2025

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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

Table of Contents

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.

Compliance Report Card

Drinking Water System Number: 220010681
Drinking Water System Name: South Ramara DWS
Drinking Water System Owner: Township of Ramara
Drinking Water System Category: Large Municipal Residential
Period Being Reported: January 1, 2024 - December 31, 2024

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

Drinking Water	# of Events	Date	Details
MECP Inspections	1	February 13, 2024	Inspection report for 2024 cycle not yet received at time of report issuance.
			Inspection for 2023 inspection cycle completed in February 2024. Inspection rating 100%
AWQI's	0	N/A	N/A
Number of Boil Water Advisories	0	N/A	N/A

System Process Description

Raw Source

The South Ramara DWS is supplied with surface water from Lake Simcoe.

Treatment

The treatment system consists of the following:

- Raw water is sourced from Lake Simcoe through an intake crib with an inlet screen further the low lift pumping station consisting of two (2) low lift pumps
- Inlet line connected to sodium hypochlorite feed line diffuser
- Raw water flow meter

- 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
- Sodium hypochlorite is added for pre-chlorination
- Coagulant is added to the raw water header before a static mixer
- Two (2) package treatment units each consisting of a flocculation tanks with variable speed flocculators, settling tanks and dual media filter with rotary surface wash and backwash pumps
- Backwash waste storage/decant tank system. Supernatant is de-chlorinated before being pumped to Lake Simcoe
- Continuously monitoring turbidity analyzers on each filter line
- Chlorine injection system
- Two (2) above ground clearwells with two highlift pumps
- Chlorine residual and pH analyzers prior to distribution connection
- 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
Calcium Thiosulphate	De-chlorination	ClearTech

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse water quality incidents during the reporting period.						

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues reported during the reporting period.				

Non-Compliance Identified in a Ministry 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 inspection during the reporting period.				

Flows

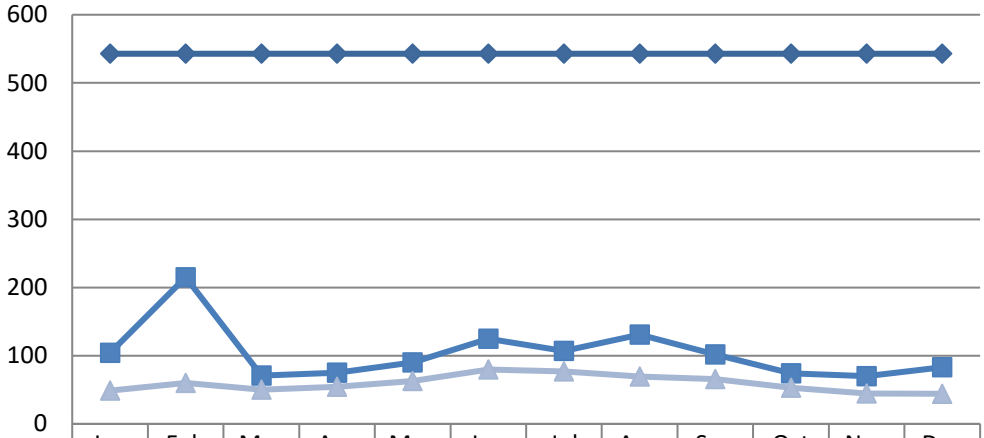
The South Ramara Drinking Water System is operating on average under half the rated capacity.

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. 2024 Raw Flow Data was submitted to the Ministry electronically under permit #4371-9UYKYB for January 1 – December 6, 2024 and under permit #P-300-1030655871 for December 7–31, 2024. The confirmation of the data that was submitted are attached in Appendix A.

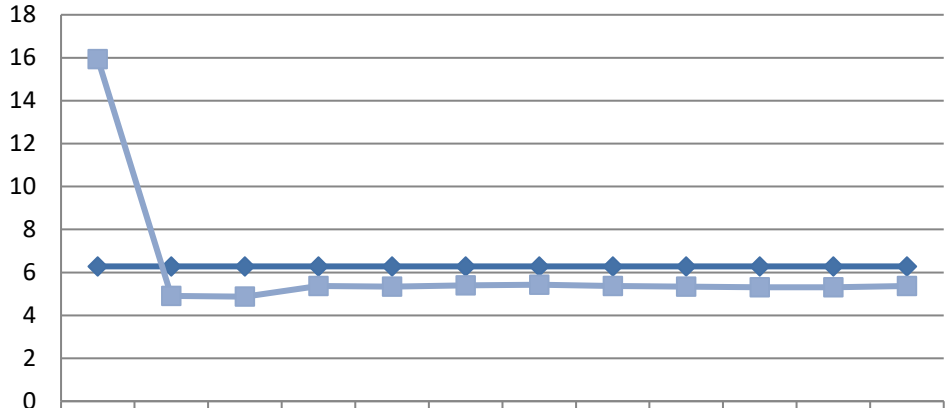
Total Monthly Flows (m³/d)

Max Allowable PTTW –Raw



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8	542.8
Max Daily Flow (m³/d)	104	215	71	75	90	125	107	131	102	74	70	83
Avg (m³/d)	49	60	50	54	63	80	77	70	66	53	44	44

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)	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28	6.28
Max Rate (L/s)	15.94	4.90	4.87	5.37	5.34	5.39	5.42	5.36	5.33	5.31	5.30	5.37

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) which were caused by flow meter calibrations. All spikes are reviewed for compliance.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence. The average water consumption for the South Ramara Drinking Water System during 2024 was: 39 m³/day.

South Ramara 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
2014	100	59	181	387	227	696
2015	102	51	124	387	193	468
2016	104	54	148	387	200	547
2017	104	40.5	104	387	150	385
2018	106	41.7	111	387	151	402
2019	114	46.9	135	387	158	689
2020	115	58.2	175	387	195	585
2021	115	53	128	387	177	428
2022	132	52	124	387	153	361
2023	132	48	97	387	140	283
2024	133	39	107	387	113	309
3 Year Average/Max		43	124	387	135	361

*Based on 2.6 people per dwelling

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

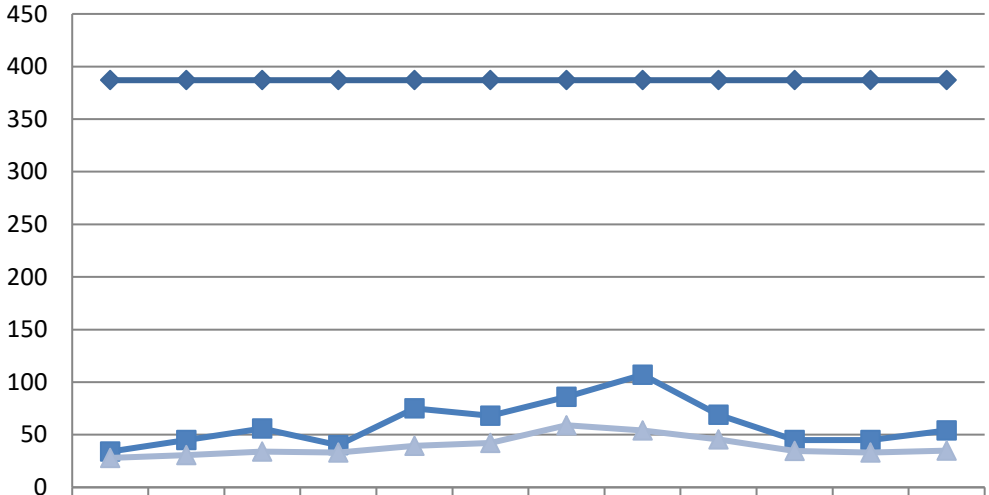
Design flow is the maximum permissible flow approved by the MDWL and/or PTTW. South Ramara Water Works maximum daily rated capacity is 387 m^3/day.

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: 155. The three-year (2022-2024) maximum per capita water consumption is: 361 L/p/day. At this water consumption rate, the committed flow is: 145 m^3/day.

As a result, the calculated reserve capacity is: 242 m^3/day.

Monthly Rated Flows

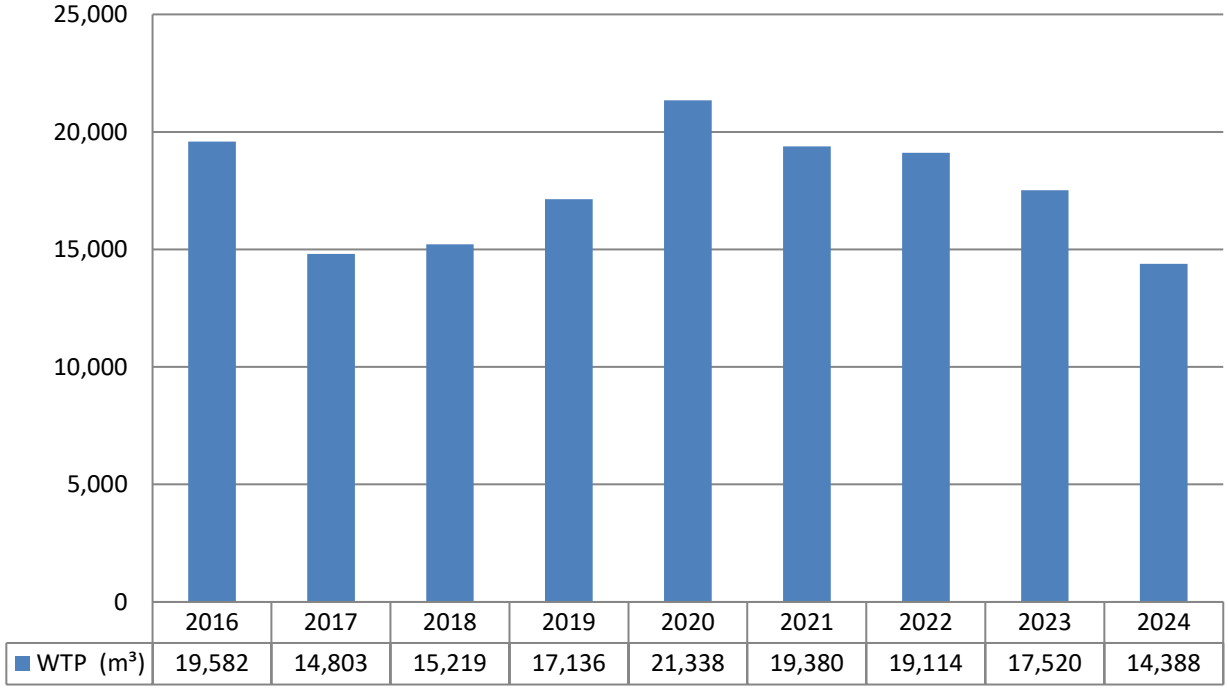
Rated Capacity – MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/d)	387	387	387	387	387	387	387	387	387	387	387	387
Max Daily Flow (m^3/d)	34	45	56	40	75	68	86	107	69	45	45	54
Avg (m^3/d)	28.0	30.6	33.8	32.9	39.6	42.2	59.0	54.1	45.4	34.6	33.0	35.0

Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E. Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw	53	0	60	0	1120		
Treated	54	0	0	0	0	0	3
Distribution	106	0	0	0	0	0	1

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity – Filter Line 1 (NTU)	8760	0.04	5.35
Turbidity – Filter Line 2 (NTU)	8760	0.01	10.32
Turbidity-Treated (NTU)	8760	0.50	2.84
Treated Water Chlorine	8760	0.25	5.00
Distribution Water Chlorine	365	0.68	2.50
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

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2024/08/06	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L) - TW	2024/08/06	0.4	10.0	No	No
Barium: Ba (ug/L) - TW	2024/08/06	27.1	1000.0	No	No
Boron: B (ug/L) - TW	2024/08/06	20	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2024/08/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2024/08/06	0.26	50.0	No	No
Mercury: Hg (ug/L) - TW	2024/08/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2024/08/06	0.12	50.0	No	No
Uranium: U (ug/L) - TW	2024/08/06	0.066	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2022/08/03	<MDL 0.06	1.5	No	No
Nitrite (mg/L) - TW	2024/02/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/05/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/08/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2024/11/04	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2024/02/04	0.202	10.0	No	No
Nitrate (mg/L) - TW	2024/05/06	0.372	10.0	No	No
Nitrate (mg/L) - TW	2024/08/06	0.025	10.0	No	No
Nitrate (mg/L) - TW	2022/11/04	0.02	10.0	No	No
Sodium: Na (mg/L) - TW	2020/08/12	32.0	20*	Yes	Yes
Sodium: Na (mg/L) - TW	2020/08/24	33.1	20*	Yes	Yes

*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)	2	112	123	N/A	N/A
pH	2	7.40	7.80	N/A	N/A
Lead (ug/l)	0	-	-	10	0

Note: Lead is required to be sampled every 3 years and was last sampled in 2022.

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.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2024/08/06	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/08/06	0.02	5.00	No	No
Azinphos-methyl (ug/L) - TW	2024/08/06	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2024/08/06	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2024/08/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2024/08/06	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2024/08/06	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2024/08/06	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2024/08/06	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2024/08/06	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2024/08/06	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2024/08/06	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2024/08/06	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2024/08/06	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2024/08/06	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2024/08/06	<MDL 0.33	14.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/08/06	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2024/08/06	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/08/06	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2024/08/06	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2024/08/06	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2024/08/06	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2024/08/06	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2024/08/06	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2024/08/06	<MDL 0.02	190.00	No	No
Metolachlor (ug/L) - TW	2024/08/06	0.01	50.00	No	No
Metribuzin (ug/L) - TW	2024/08/06	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/08/06	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2024/08/06	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2024/08/06	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2024/08/06	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2024/08/06	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2024/08/06	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2024/08/06	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2024/08/06	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2024/08/06	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2024/08/06	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/08/06	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2024/08/06	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2024/08/06	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2024/08/06	<MDL 0.25	5.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2024/08/06	<MDL 0.12	100	No	No
Trifluralin (ug/L) - TW	2024/08/06	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2024/08/06	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2024	78.75	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2024	53.23	80	No	Yes

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

Additional Legislated Samples

Municipal Drinking Water License (MDWL)	Date Sampled	Total Suspended Solids Result (mg/L)	Total Chlorine Residual Result (mg/L)
Settling Tank Discharge Point	January 2024	53	N/A
	February 2024	3	0.00
	March 2024	14	0.00
	April 2024	2	0.00
	May 2024	2	0.00
	June 2024	6	0.00
	July 2024	5	0.00
	August 2024	8	0.00
	September 2024	10	0.00
	October 2024	2	0.00
	November 2024	11	0.00
	December 2024	93	0.00
Annual Average	2024 Annual Average	17.42	0.00

Note: The Suspended Solids annual average limit is 25 mg/L.
Note: The Total Chlorine Residual annual average limit is 0.02 mg/L. (Total chlorine sampling requirement came into effect February 2024).

MDWL	Parameter	Date Sampled	Result	Unit of Measure
Settling Tank Discharge Pont	Filter Backwash (FBW): pH	February 2024	7.51	No unit
	Filter Backwash (FBW): Aluminum	February 2024	0.057	mg/L

Municipal Drinking Water Licence (MDWL)	Collected Weekly June – Oct 2024	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

Method Detection Limit is 0.1ug/L
* Treated water is only sampled if microcystins detected in the raw water sample.

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) Annual Average - DW	78.75	(ug/L)	2024 Annual Average
HAA Total (ug/L) Annual Average - DW	53.23	(ug/L)	2024 Annual Average

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

Item #	Description
1	Replaced low lift pump
2	Replaced post-filter chemical pump control board
3	Replaced chemical pump card
4	Replaced carbon media in filters
5	Hydrant flushing

Appendix A

WTRS Data Submission Confirmation

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 4371-9UYKYB
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF RAMARA.
Received on:Jan 23, 2025 12:55 PM

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.

Return to Main Page

Ontario Regulatory Self-Reporting System Ministry of the Environment, Conservation and Parks

Client Name: CORPORATION OF THE TOWNSHIP OF RAMARA **Reporting Year**: 2024 **Service**: PTTW **Permit Number**: P-300-1030655871 **Permit Version**: 1.0 **New or Updated Submission**: NEW

Site Name: South Ramara Drinking Water System
Source ID: 500000789667 **Source Name**: Lake Simcoe **Source Type**: Lake
UTM(Zone/Easting/Northing): 17/643528.0/4927529.0 **Method of Determination**: Metered **Unit of Measure**: Litre
Description: Lake Simcoe **Purpose Category**: Other services (except public administration) **Specific Category**: Municipal Supply **Activity**: Water Supply

Name of Attester
First Name: Megan
Last Name: Lockwood
Company: Ontario Clean Water Agency
Date Certified/Submitted(yyyy/mm/dd): 2025/01/23