

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, 2020

Issued: February 26, 2021

Revision: 0

Operating Authority:



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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, 2020 - December 31, 2020

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	0		
AWQI's	1	August 19, 2020	Treated Water Sodium result of 32.0mg/L; resample result of 33.1mg/L
Number of Boil Water Advisories	0		

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 to be 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

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
August 19, 2020	151440	Treated Water	Sodium result above 20mg/L	Result of 32.0mg/L	O. Reg 170	Resample, result 33.1mg/L

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-compliance issues reported during the reporting period.				

Flows

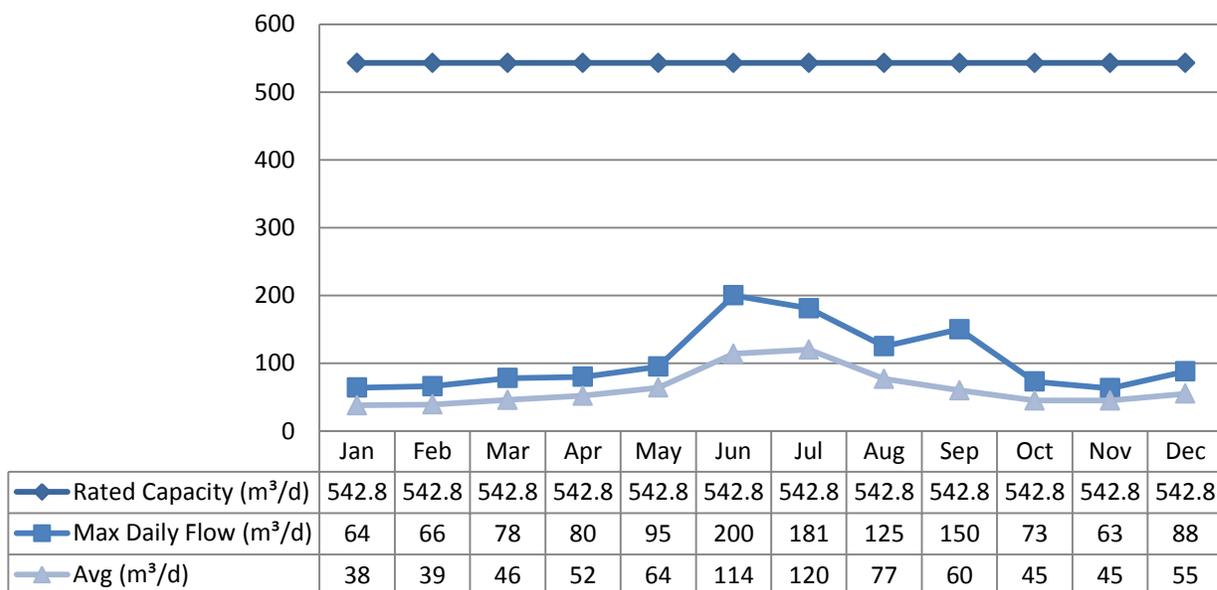
The South Ramara Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2020 Raw Flow Data was submitted to the Ministry electronically under permit #4371-9UYKYB. The confirmation and a copy of the data that was submitted are attached in Appendix A.

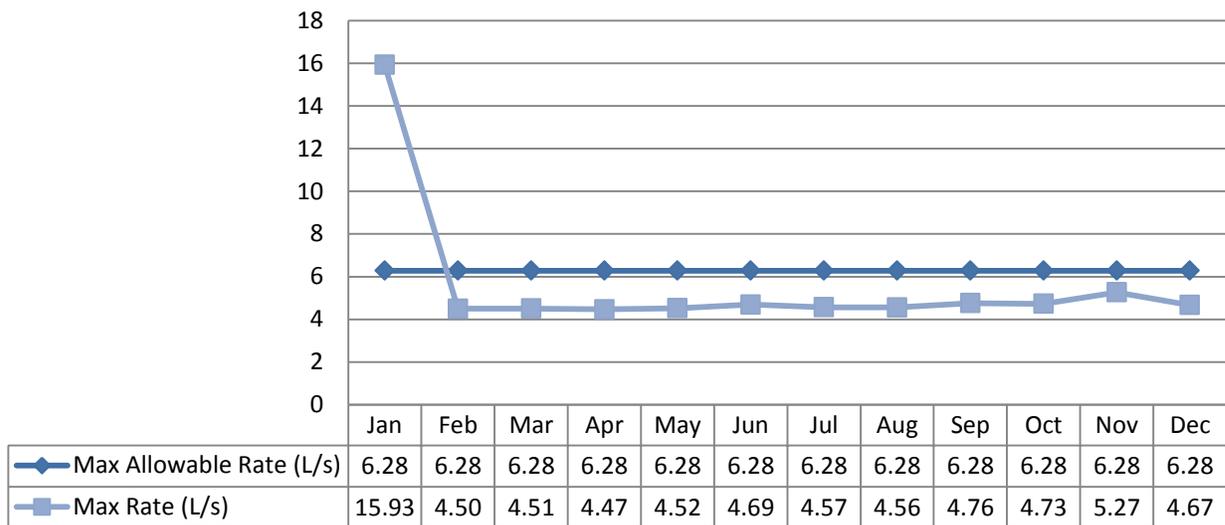
Total Monthly Flows (m³/d)

Max Allowable PTTW –Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW –Raw



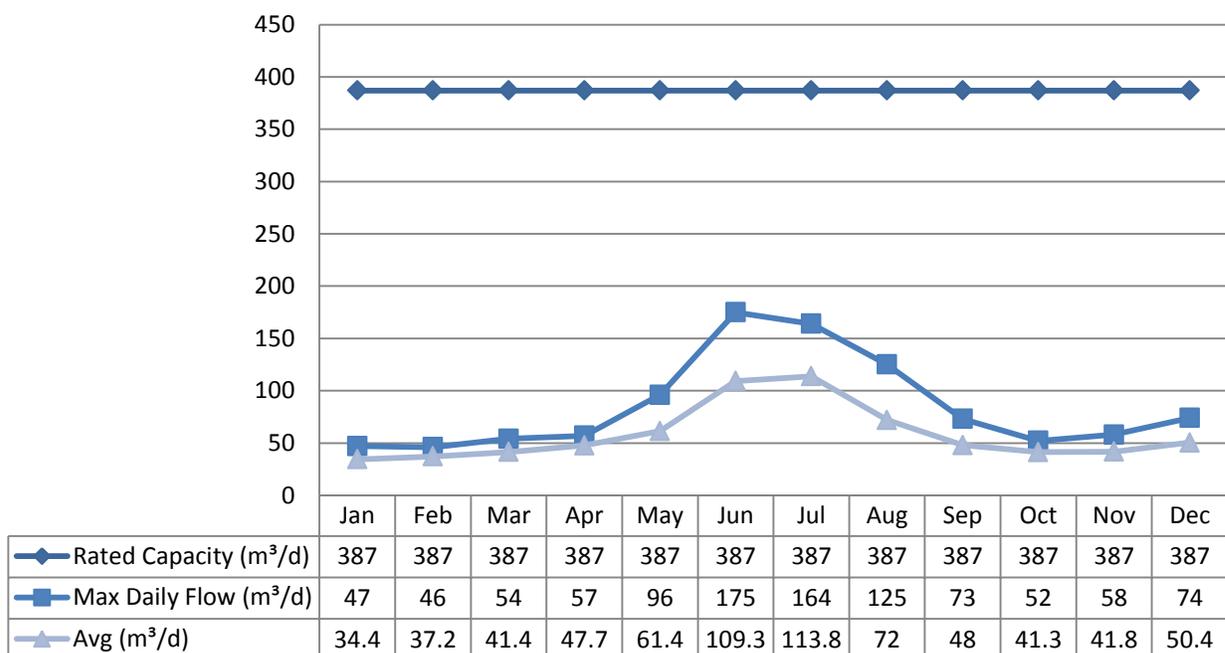
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spike in January was due to scheduled Flow Meter calibration. All spikes are reviewed for compliance.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

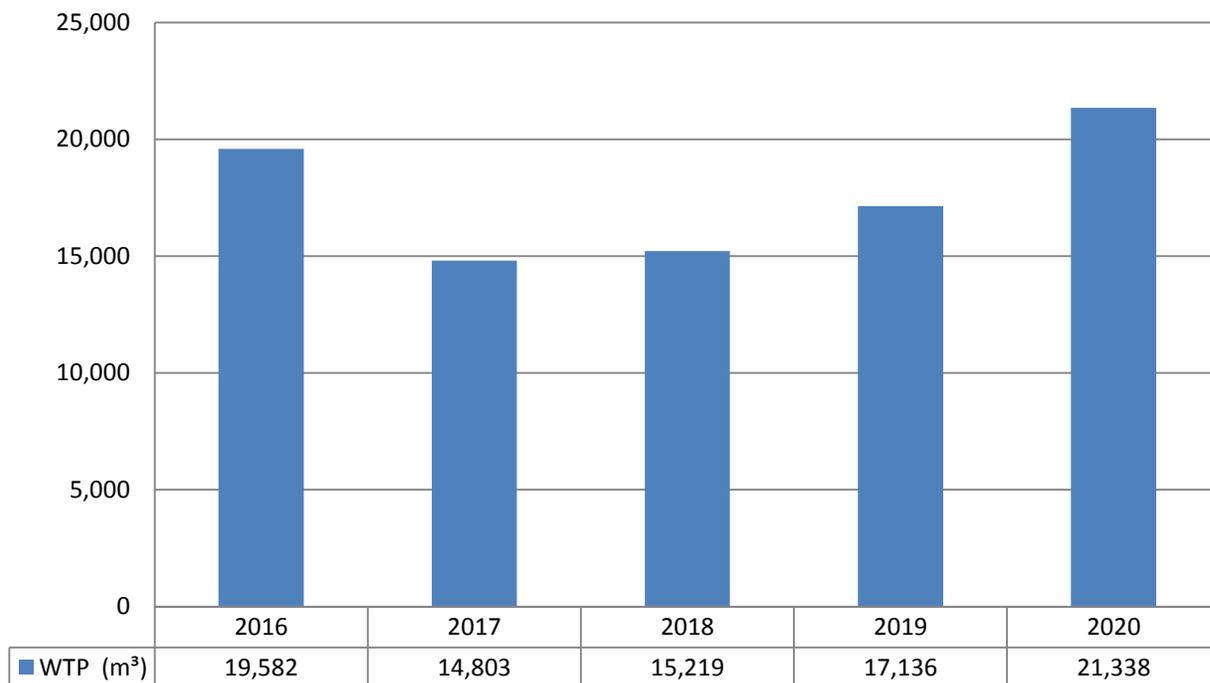
Monthly Rated Flows

Rated Capacity – MDWL



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	52	0	24	0	6500		
Treated	52	0	0	0	0	0	71
Distribution	104	0	0	0	0	0	42

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity – Filter Line 1 (NTU)	8760	0.00	3.56
Turbidity – Filter Line 2 (NTU)	8760	0.00	10.32
Turbidity-Treated (NTU)	8760	0.00	10.00
Treated Water Chlorine (mg/L)	8760	0.00	5.00
Distribution Water Chlorine (mg/L)	366	0.16	1.88
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	2020/08/12	0.13	6.0	No	No
Arsenic: As (ug/L) - TW	2020/08/12	0.3	10.0	No	No
Barium: Ba (ug/L) - TW	2020/08/12	28.1	1000.0	No	No
Boron: B (ug/L) - TW	2020/08/12	23.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/08/12	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/08/12	0.15	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/08/12	<0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/08/12	0.06	50.0	No	No
Uranium: U (ug/L) - TW	2020/08/12	0.079	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2017/08/15	0.06	1.5	No	No
Nitrite (mg/L) - TW	2020/02/26	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/05/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/08/12	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/11/19	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2020/02/26	0.240	10.0	No	No
Nitrate (mg/L) - TW	2020/05/05	0.129	10.0	No	No
Nitrate (mg/L) - TW	2020/08/12	0.027	10.0	No	No
Nitrate (mg/L) - TW	2020/11/19	0.069	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)	4	116	134	N/A	N/A
pH	4	7.20	7.78	N/A	N/A
Lead (ug/l)					

Note: Lead samples were last collected in the distribution system in 2019 as they are only required to be sampled every 36 months. Samples shown above are reflective of lead sampling period- from October 2019- October 2020.

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	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2020/08/12	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/08/12	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2020/08/12	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2020/08/12	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2020/08/12	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/08/12	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2020/08/12	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2020/08/12	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2020/08/12	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2020/08/12	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2020/08/12	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2020/08/12	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/08/12	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/08/12	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2020/08/12	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/08/12	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/08/12	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/08/12	<MDL 0.15	900.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/08/12	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2020/08/12	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2020/08/12	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2020/08/12	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2020/08/12	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2020/08/12	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2020/08/12	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2020/08/12	<MDL 0.00012	0.10	No	No
Metolachlor (ug/L) - TW	2020/08/12	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2020/08/12	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/08/12	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2020/08/12	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2020/08/12	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2020/08/12	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2020/08/12	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2020/08/12	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2020/08/12	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2020/08/12	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2020/08/12	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2020/08/12	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/08/12	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2020/08/12	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2020/08/12	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/08/12	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2020/08/12	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2020/08/12	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	71.4	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2020	60.13	80	No	Yes

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

MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water License	Parameter	Date Sampled	Result	Unit of Measure
Settling Tank Discharge Point	Filter Backwash (FBW): Suspended Solids (Composite)	January 2020	2	mg/L
		February 2020	3	mg/L
		March 2020	2	mg/L
		April 2020	20	mg/L
		May 2020	2	mg/L
		June 2020	4	mg/L
		July 2020	3	mg/L
		August 2020	3	mg/L
		September 2020	13	mg/L
		October 2020	10	mg/L
		November 2020	14	mg/L
December 2020	4	mg/L		
Annual Average	Filter Backwash (FBW): Suspended Solids	2020 Annual Average	6.7	mg/L

Note: The Suspended Solids annual average limit is 25 mg/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) Annual Average - DW	71.4	(ug/L)	2020 Annual Average
HAA Total (ug/L) Annual Average - DW	60.13	(ug/L)	2020 Annual Average

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

Item Number #	Description
1	Clean out backwash tanks. (Wessuc)
2	New motor installed on lowlift pump.
3	Filter #1 effluent control valve replacement.
4	Replace backwash tank waste pump control float.
5	Replace starter controls for distribution pump #1 and #2.

Appendix A

WTRS Data Submission Confirmation

Appendix A

WTRS Submission Confirmation



Ministry of the Environment,
Conservation and Parks

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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: 4371-9UYKYB
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF RAMARA.
Received on: Feb 12, 2021 12:15 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.