

Davy Drive Subdivision Drinking Water System

Waterworks # 220007141
System Category – Small 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: 220007141

Drinking Water System Name: Davy Drive Subdivision DWS

Drinking Water System Owner: Township of Ramara

Drinking Water System Category: Small 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	1	November 17, 2020	Announced - Focused Drinking Water Inspection – not complete at time of issuance.
AWQI's	2	March 26, 2020	Not meeting monthly filter performance requirements for March 2020
		August 19, 2020	Treated Water Sodium result of 25.2mg/L; resample result of 23.4mg/L
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The water supply for the DWS comes from four (4) groundwater wells that are considered to be GUDI (Groundwater Under the Direct Influence of Surface Water).

Treatment

The treatment system consists of the following:

- Pre-chlorination system and potassium permanganate system for iron and manganese oxidation
- Two (2) greensand filters with backwash equipment and backwash waste storage/decant tank system
- Cartridge filtration systems
- Ultraviolet Light Disinfection for primary disinfection
- Sodium hypochlorite secondary disinfection system
- One (1) standpipe reservoir for potable water storage
- A high lift pumping system
- Stand-by propane generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
Potassium Permanganate	Iron and Manganese Oxidation	Carus Chemical Company

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
March 26, 2020	149798	After Filters	Filter #2 not meeting 0.2NTU 95% of the time for the month of March	Filter #2 not meeting requirements of achieving monthly filter performance	O. Reg. 170/03	Filter #2 and wells #3, & 4 supplying the filter taken offline. Raw water samples collected.
August 19, 2020	151438	Treated Water	Sodium result above 20mg/L	Result of 25.2mg/L	O. Reg 170	Resample, result 23.4mg/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-compliances identified in a Ministry Inspection during this period.				

Flows

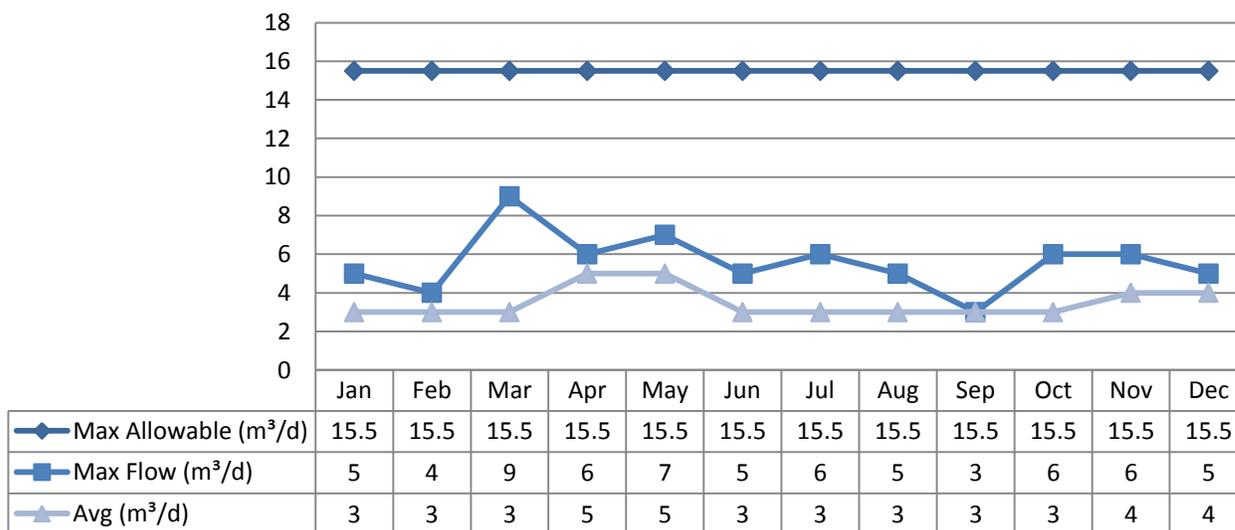
The Davy Drive Drinking Water System is operating on average under half the rated capacity.

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 #7187-AQPS6B. The confirmation and a copy of the data that was submitted are attached in Appendix A.

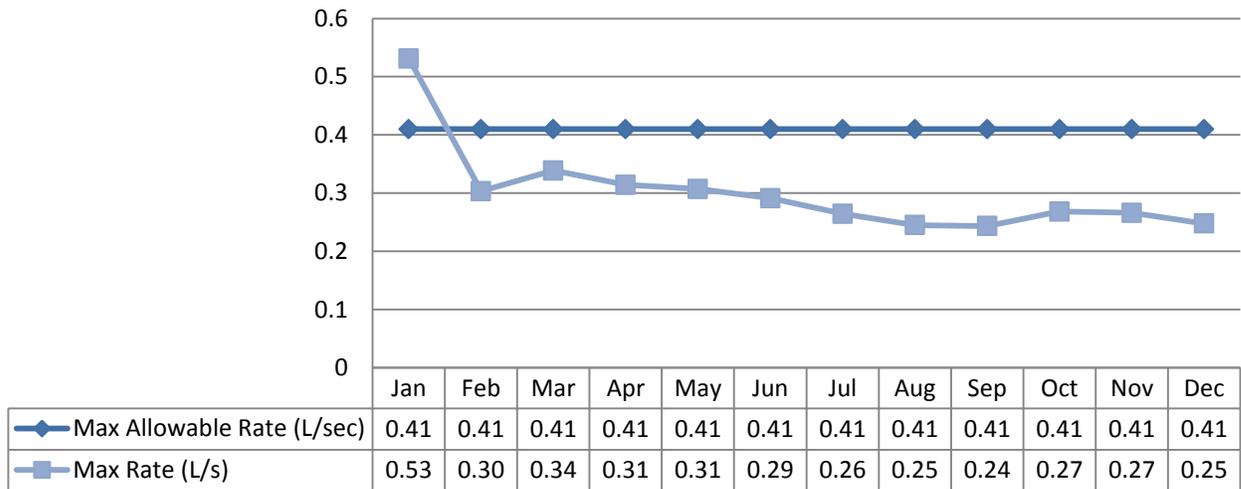
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

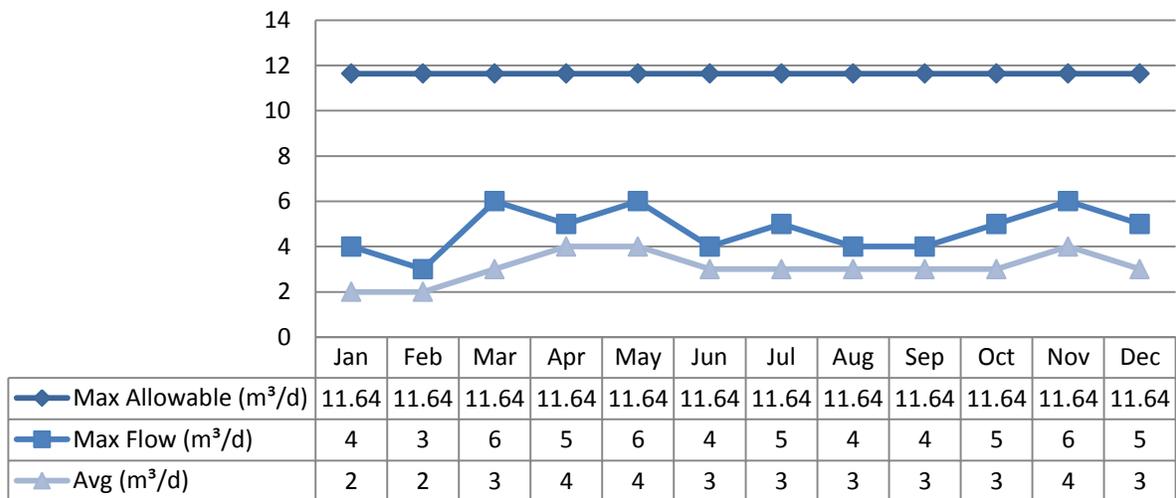
Max allowable rate – PTTW – Well #1



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.

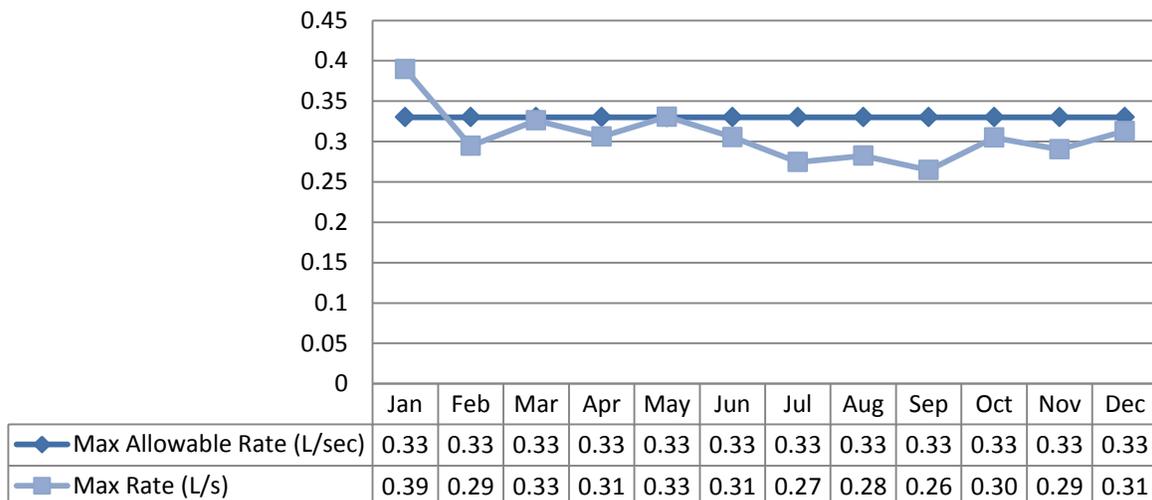
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

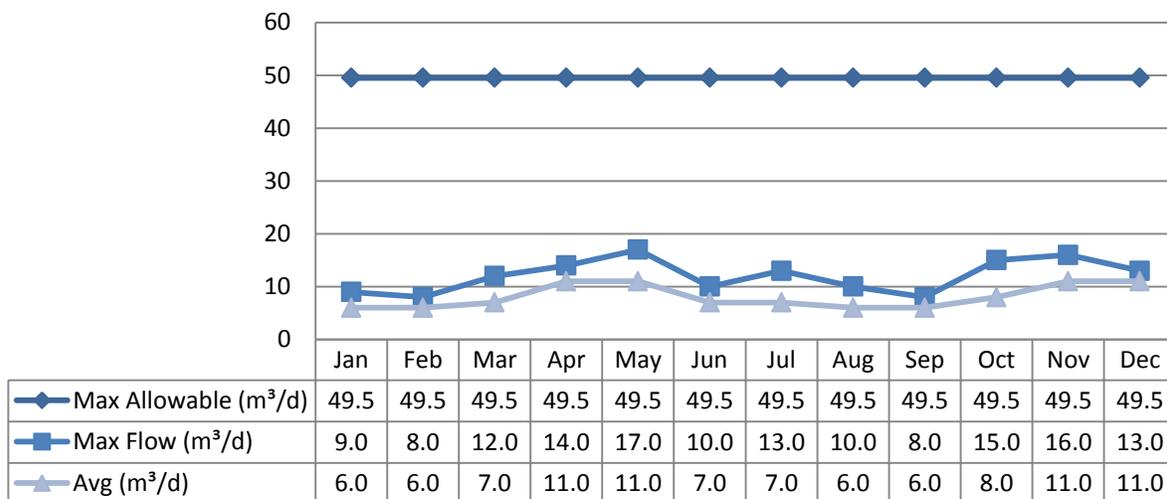
Max allowable rate – PTTW – Well #2



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. Other spikes shown are caused by well pump start up. All spikes are reviewed for compliance.

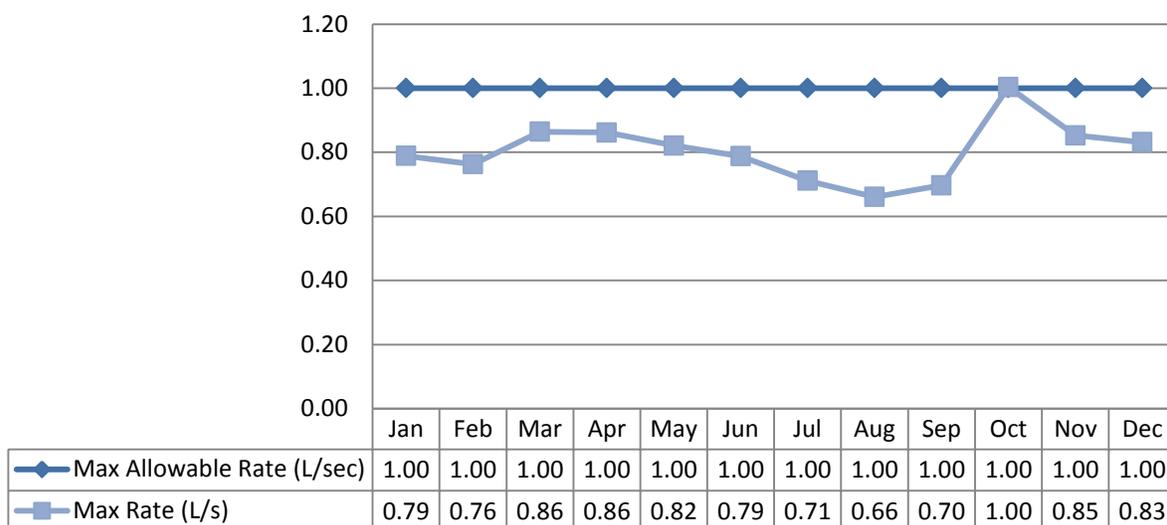
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #3



Monthly Rated Flows (L/s)

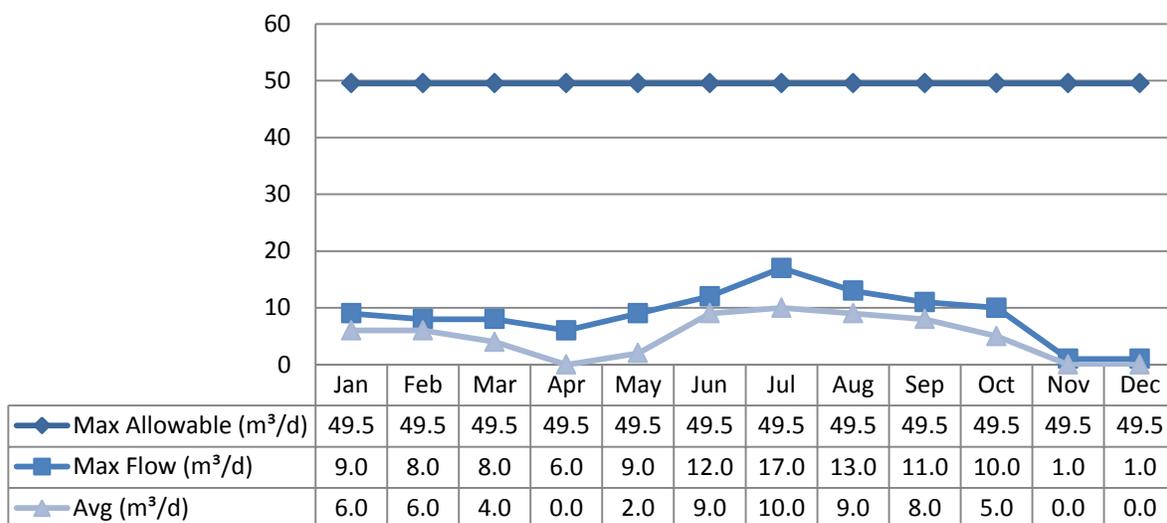
Max allowable rate – PTTW – Well #3



Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) this is due to well pump start-up. All spikes are reviewed for compliance.

Total Monthly Flows (m³/d)

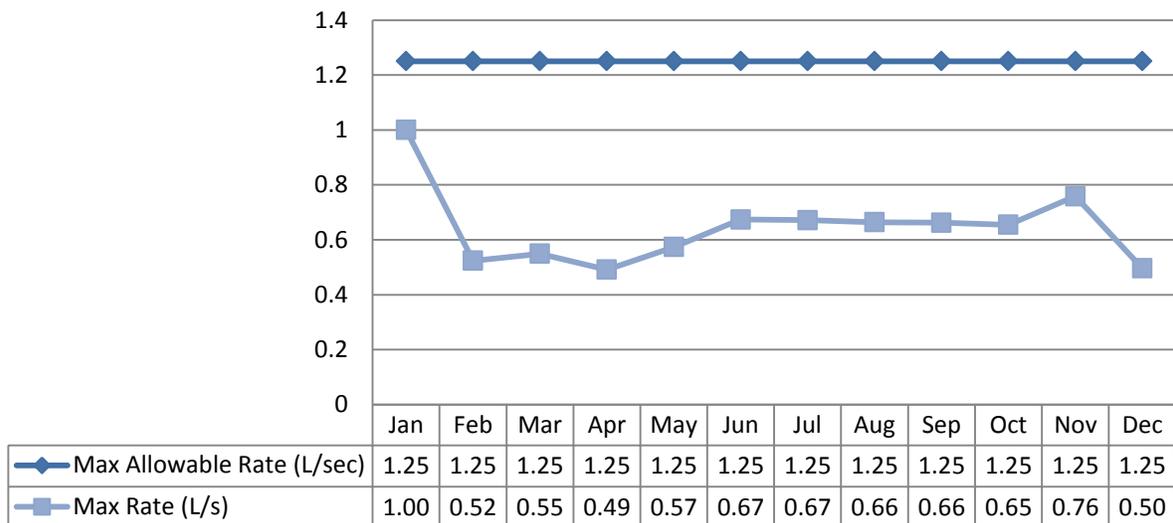
Max Allowable PTTW – Well #4



Note: Well 4 not in production April, May, October, November and December.

Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #4



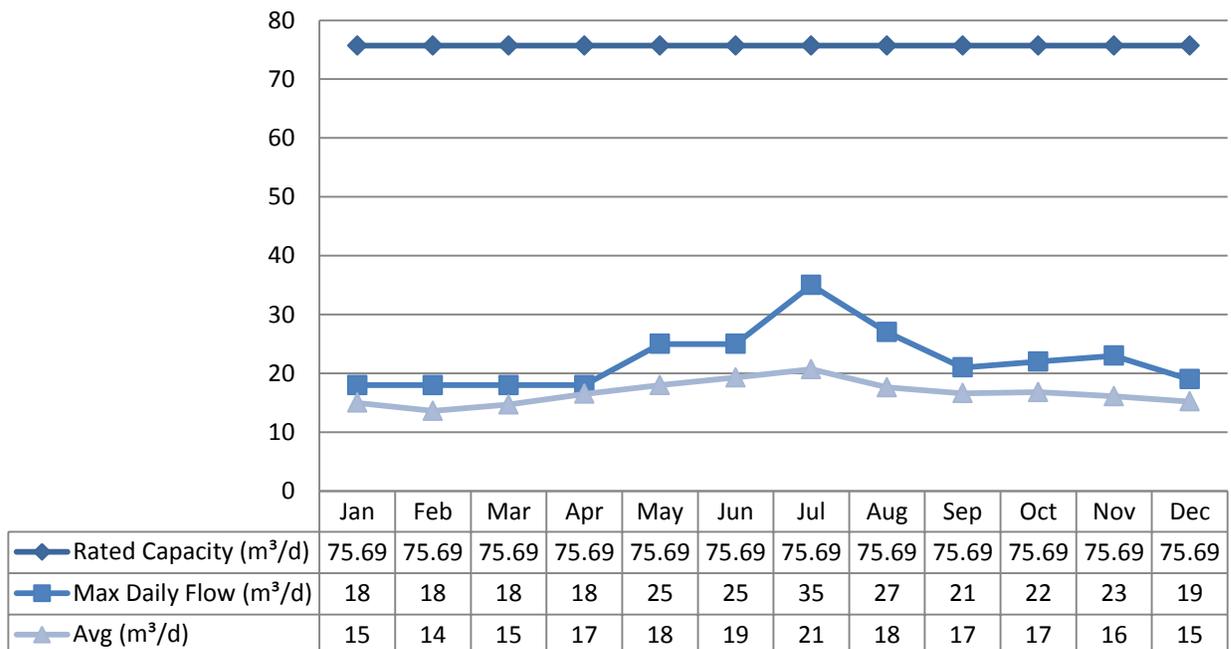
Note: Well 4 not in production April, May, October, November and December.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

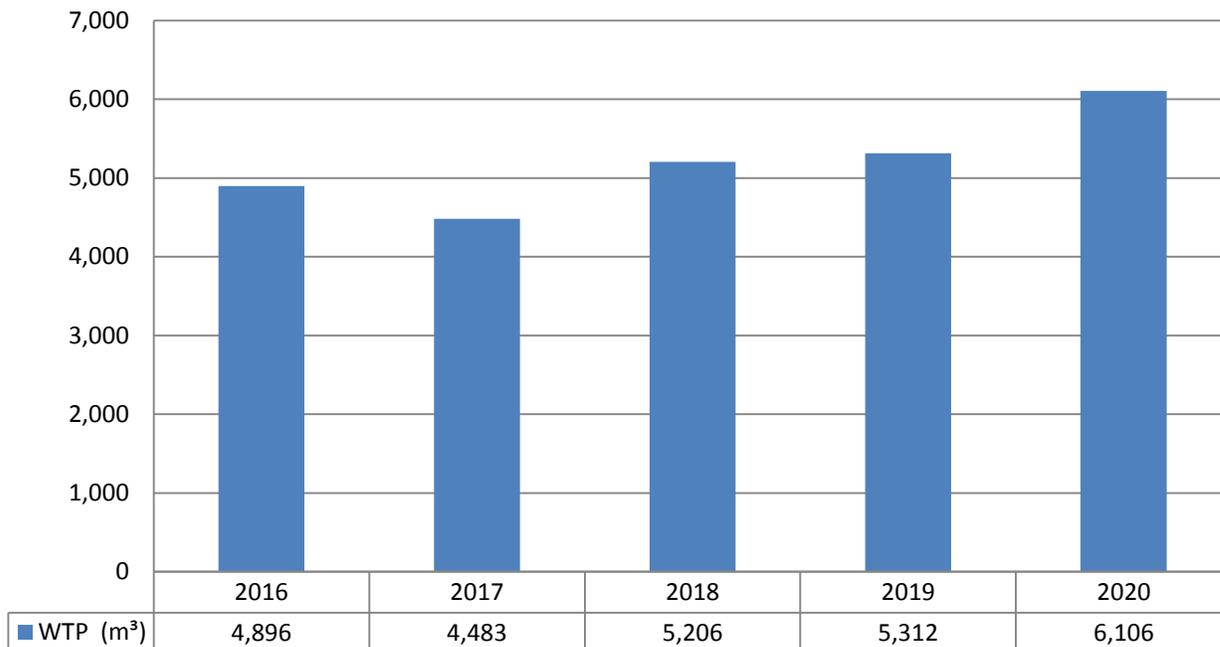
Monthly Rated Flows

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 Well 1	38	0	0	0	4		
Raw Well 2	38	0	1	0	5		
Raw Well 3	38	0	5	0	31		
Raw Well 4	38	0	27	0	280		
Treated	36	0	0	0	0	0	2
Distribution	79	0	0	0	0	0	2

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 1 (NTU)	11	0.65	6.75
Turbidity Well 2 (NTU)	11	0.53	4.43
Turbidity Well 3 (NTU)	11	0.49	5.58
Turbidity Well 4 (NTU)	6	0.69	3.42
Turbidity – Filter Line 1 (NTU)	8760	0.00	2.00

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity – Filter Line 2 (NTU)	8760	0.00	2.00
Turbidity – Treated Water (NTU)	8760	0.00	1.91
Treated Water Chlorine (mg/L)	8760	0.00	4.57
Distribution Water Chlorine (mg/L)	113	0.55	2.06
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Well 4 not in production April, May, October, November and December.

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	2019/08/21	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2019/08/21	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019/08/21	134.0	1000.0	No	No
Boron: B (ug/L) - TW	2019/08/21	87.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/08/21	0.004	5.0	No	No
Chromium: Cr (ug/L) - TW	2019/08/21	0.19	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/08/21	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/08/21	0.1	50.0	No	No
Uranium: U (ug/L) - TW	2019/08/21	1.19	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2017/08/15	0.23	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	0.036	10.0	No	No
Nitrate (mg/L) - TW	2020/05/05	0.047	10.0	No	No
Nitrate (mg/L) - TW	2020/08/12	0.020	10.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Nitrate (mg/L) - TW	2020/11/19	0.063	10.0	No	No
Sodium: Na (mg/L) - TW	2020/08/12	25.2	20*	Yes	Yes
Sodium: Na (mg/L) - TW	2020/08/24	23.4	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	127	154	N/A	N/A
pH	4	7.32	7.75	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 every 5 years 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	2019/08/21	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/08/21	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019/08/21	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019/08/21	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019/08/21	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019/08/21	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019/08/21	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019/08/21	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019/08/21	<MDL 0.17	2.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Chlorpyrifos (ug/L) - TW	2019/08/21	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019/08/21	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2019/08/21	<MDL 0.20	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/08/21	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/08/21	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2019/08/21	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2019/08/21	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/08/21	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/08/21	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4- D) (ug/L) - TW	2019/08/21	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019/08/21	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2019/08/21	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2019/08/21	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2019/08/21	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019/08/21	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2019/08/21	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2019/08/21	<MDL 0.00012	1.00	No	No
Metolachlor (ug/L) - TW	2019/08/21	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2019/08/21	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/08/21	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2019/08/21	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2019/08/21	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019/08/21	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2019/08/21	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2019/08/21	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2019/08/21	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2019/08/21	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019/08/21	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019/08/21	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/08/21	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2019/08/21	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2019/08/21	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/08/21	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2019/08/21	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019/08/21	<MDL 0.17	1.00	No	No
Distribution Water					

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Trihalomethane: Total (ug/L) Annual Average - DW	2020	61.3	100	No	Yes
HAA Total (ug/L) Annual Average - DW	2020	69.2	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)	February 2020	6.0	mg/L
	Filter Backwash (FBW): Suspended Solids (Composite)	May 2020	6.0	mg/L
	Filter Backwash (FBW): Suspended Solids (Composite)	August 2020	6.0	mg/L
	Filter Backwash (FBW): Suspended Solids (Composite)	November 2020	3.0	mg/L
2020 Annual Average	Filter Backwash (FBW): Suspended Solids (Composite)	2020 Annual Average	5.3	mg/L

Note: The Suspended Solids annual average limit is 15 mg/L.

Municipal Drinking Water License	Parameter	Date Sampled	Result	Unit of Measure
Settling Tank Discharge Point	Filter Backwash (FBW): Iron (Composite)	February 2020	1.030	mg/L
	Filter Backwash (FBW): Iron (Composite)	May 2020	1.016	mg/L
	Filter Backwash (FBW): Iron (Composite)	August 2020	1.130	mg/L
	Filter Backwash (FBW): Iron (Composite)	November 2020	1.170	mg/L
2020 Annual Average	Filter Backwash (FBW): Iron (Composite)	2020 Annual Average	1.09	mg/L

Note: The Iron annual average limit is 1 mg/L. Iron levels were exceeded in 2020 with an average of 1.09 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	61.3	(ug/L)	2020 Annual Average
HAA Total (ug/L) Annual Average - DW	69.2	(ug/L)	2020 Annual Average

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

Item Number #	Description
1	Clean backwash tanks.
2	New backwash pump control float installed.

Appendix A

WTRS Data Submission Confirmation

Appendix A

WTRS Submission Confirmation



Ministry of the Environment,
Conservation and Parks

| [WT DATA](#) | [REPORTS](#) | [SEARCH WT DATA](#) | [ADMINISTRATION](#) | [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: 7187-AQPS6B
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF RAMARA.
Received on: Feb 12, 2021 1:20 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.