

Val Harbour Subdivision Drinking Water System

Waterworks # 220010690
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:



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

Table of Contents

Annual Water Report	1
Report Availability	1
Compliance Report Card	1
System Process Description	1
Raw Source	1
Treatment	2
Treatment Chemicals used during the reporting year:	2
Summary of Non-Compliance.....	2
Adverse Water Quality Incidents.....	2
Non-Compliance	3
Non-Compliance Identified in a Ministry Inspection:	3
Flows	3
Raw Water Flows.....	3
Total Monthly Flows (m ³ /d)-Well #1	4
Monthly Rated Flows (L/s)-Well #1	4
Total Monthly Flows (m ³ /d)-Well #2	5
Monthly Rated Flows (L/s)-Well #2	5
Total Monthly Flows- (m ³ /d)-Well #3R	6
Monthly Rated Flows (L/s)-Well #3R	6
Treated Water Flows	7
Monthly Rated Flows	7
Annual Total Flow Comparison.....	7
Regulatory Sample Results Summary	8
Microbiological Testing	8
Operational Testing	8
Inorganic Parameters	8, 9
Schedule 15 Sampling:	9
Organic Parameters.....	10, 11
Additional Legislated Samples.....	11
Inorganic or Organic Parameter Exceedances	11
Major Maintenance Summary.....	11
WTRS Submission Confirmation	A

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: 220010690

Drinking Water System Name: Val Harbour 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	July 14, 2020	Announced - Focused Drinking Water Inspection – Final Inspection Rating of 100%
AWQI	3	August 19, 2020	Treated Water Sodium result of 26.0mg/L; resample result of 21.4mg/L
		November 02, 2020	Low system pressure due to power outage
		December 10, 2020	Low system pressure due to plumbing repair
Number of Non-Compliances	1	September and October, 2020	Monthly raw water turbidity handheld samples were missed for all 3 wells in September and October of 2020
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Val Harbour DWS is supplied with raw groundwater from three non-GUDI wells: Well # 1, # 2 and #3R.

Treatment

The treatment system consists of the following:

- Sodium hypochlorite primary disinfection system
- Two (2) below grade reservoir for potable water storage
- A high lift pumping system
- Sodium hypochlorite secondary disinfection system
- Stand-by propane generator on-site

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
August 19, 2020	151439	Treated Water	Sodium result above 20mg/L	Result of 26.0mg/L	O. Reg 170	Resample, result 21.4mg/L
November 02, 2020	152795	Distribution	Pressure Loss	A power outage occurred and the standby generator failed to transfer.	O.Reg 170/03	Chlorine residual confirmed at the plant, verified system had pressure once power restored. A contractor inspected the generator the following day.
December 10, 2020	153217	Distribution	Pressure Loss	While completing maintenance, a distribution pump air locked	O.Reg 170/03	The air in the pump was removed, distribution system flushed and distribution chlorine residuals were taken.

Non-Compliance

Legislation	Requirement(s) system failed to meet	Duration of the failure (i.e. date(s))	Corrective Action	Status
O. Reg 170/03	Schedule 7.3 of O.Reg 170/03- Monthly Raw Water Turbidity Samples	September and October 2020	Operations Staff are provided and trained on facility sampling calendars which list the requirement for monthly raw turbidity sampling form each raw water source. A monthly work order is being created to provide additional direction.	Ongoing

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

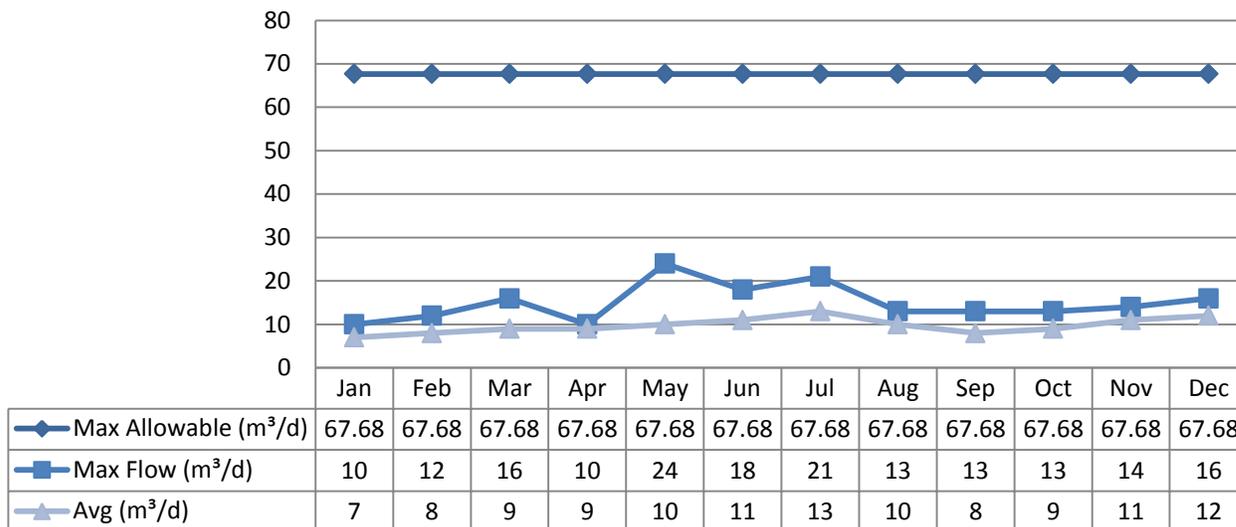
The Val Harbour Drinking Water System is operating on average under half the rated capacity.

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 permits #7653-87TS7U (January 01, 2020-December 03, 2020) and P-300-9104539203 (December 04, 2020-December 31, 2020). The confirmation and a copy of the data that was submitted are attached in Appendix A.

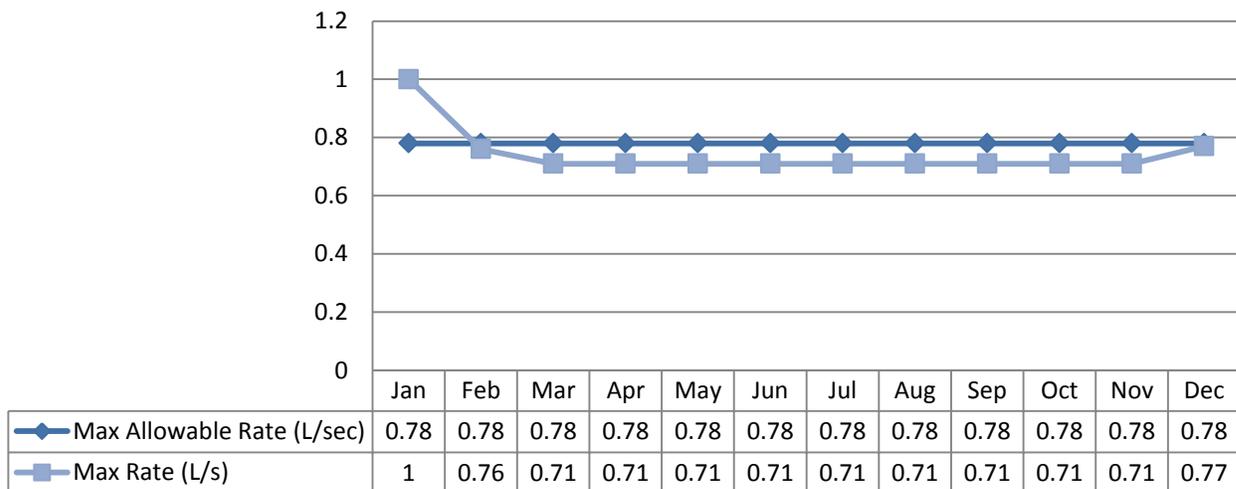
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



Monthly Rated Flows (L/s)

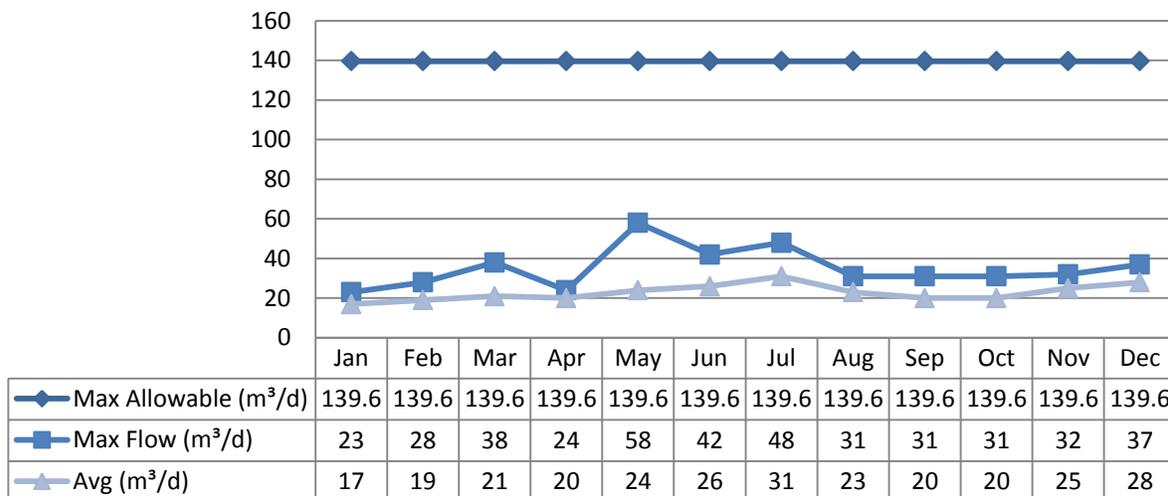
Max allowable rate – PTTW – Well #1



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.

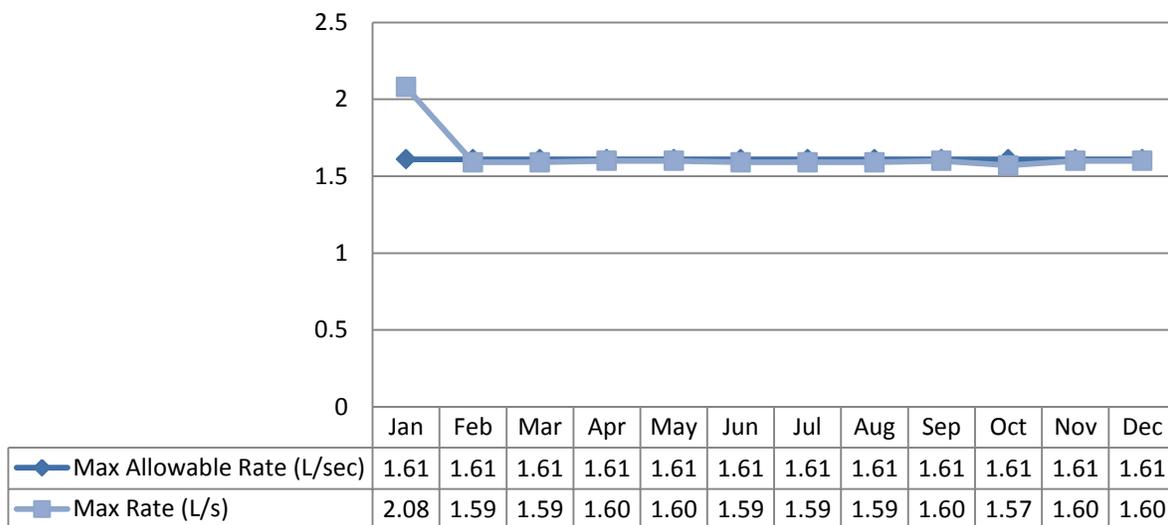
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

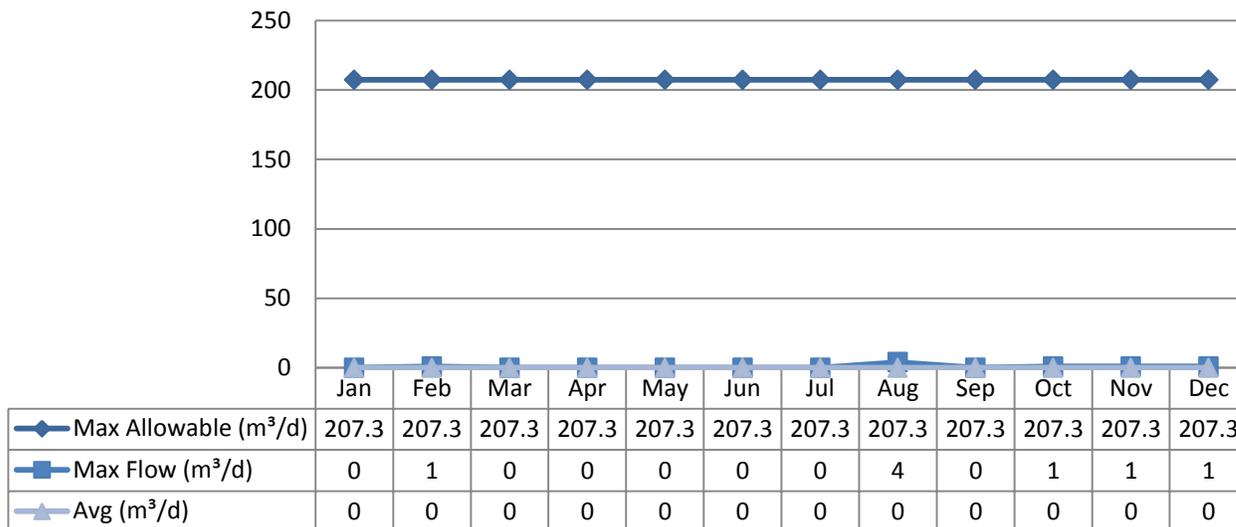
Max allowable rate – PTTW – Well #2



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. All spikes are reviewed for compliance.

Total Monthly Flows (m³/d)

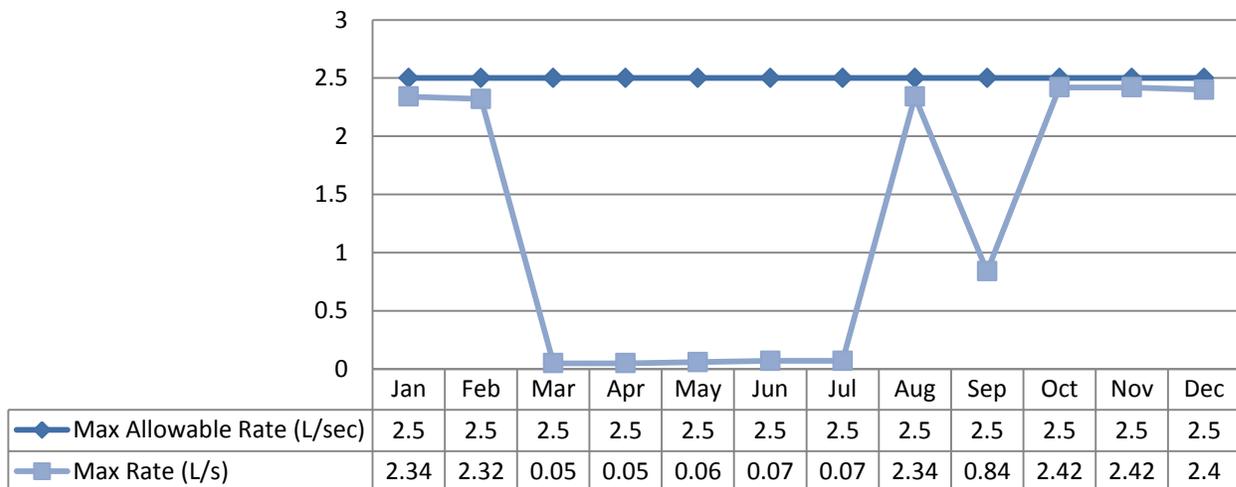
Max Allowable PTTW – Well #3R



Note: Well #3R not in production during reporting period other than for sampling purposes.

Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #3R



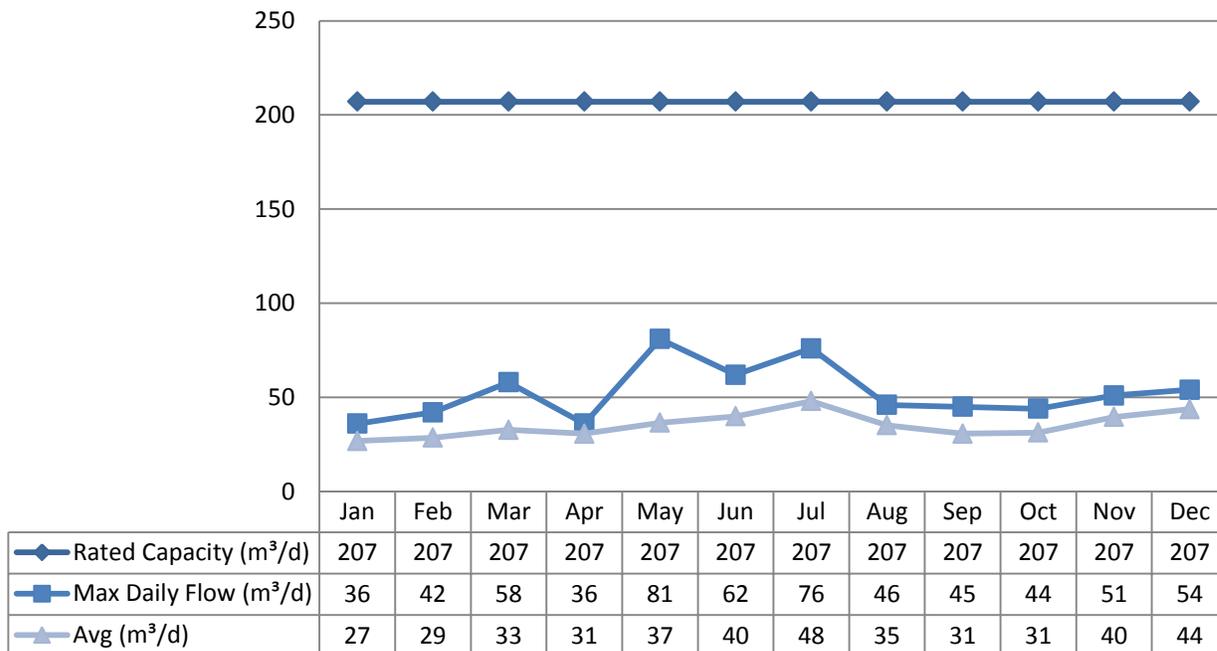
Note: Well #3R not in production during reporting period other than for sampling purposes.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

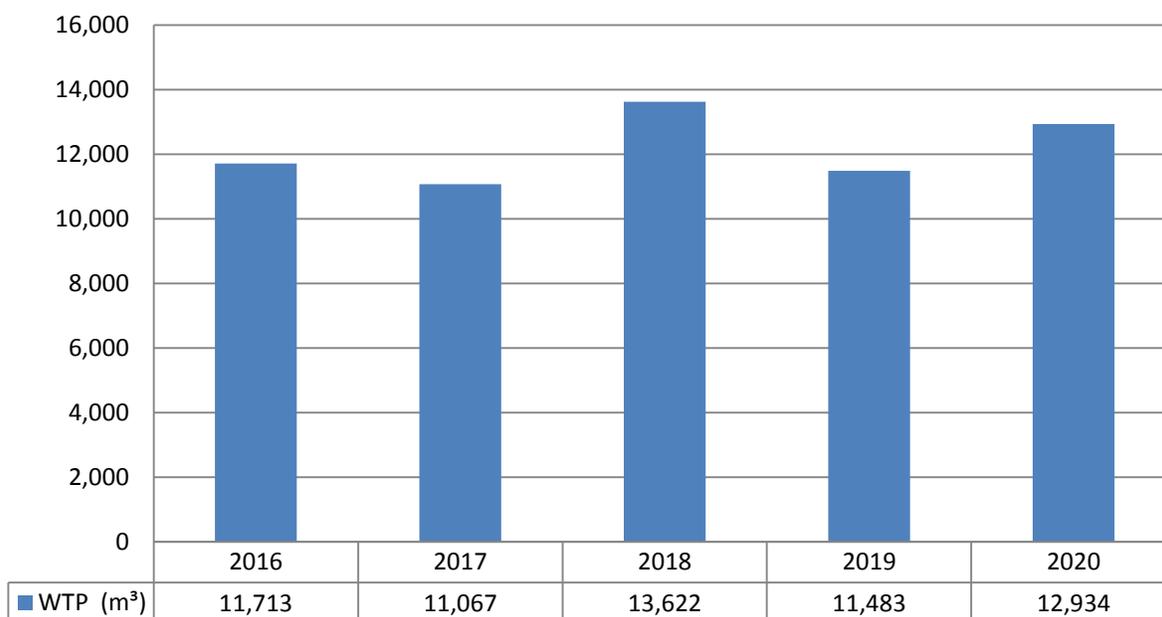
Monthly Rated Flows

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	39	0	0	0	3		
Raw Well 2	39	0	0	0	1		
Raw Well 3R	38	0	0	0	1		
Treated	36	0	0	0	0	0	2
Distribution	79	0	0	0	0	0	1

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 1 (NTU)	10	0.17	0.34
Turbidity Well 2 (NTU)	10	0.17	0.28
Turbidity Well 3R (NTU)	9	0.18	0.29
Turbidity – Treated Water (NTU)	8760	0.00	2.08
Treated Water Chlorine (mg/L)	8760	0.00	5.16
Distribution Water Chlorine (mg/L)	147	0.36	1.48
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.

Note: Well #3R not in production during reporting period other than for sampling purposes.

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	129.0	1000.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Boron: B (ug/L) - TW	2019/08/21	59.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/08/21	0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2019/08/21	0.12	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	0.07	50.0	No	No
Uranium: U (ug/L) - TW	2019/08/21	0.385	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2017/08/15	0.14	1.5	No	No
Nitrite (mg/L) - TW	2020/02/26	0.005	1.0	No	No
Nitrite (mg/L) - TW	2020/05/05	0.005	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	2.55	10.0	No	No
Nitrate (mg/L) - TW	2020/05/05	2.58	10.0	No	No
Nitrate (mg/L) - TW	2020/08/12	1.73	10.0	No	No
Nitrate (mg/L) - TW	2020/11/19	2.80	10.0	No	No
Sodium: Na (mg/L) - TW	2020/08/12	26.0	20*	Yes	Yes
Sodium: Na (mg/L) - TW	2020/08/24	21.4	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	247	252	N/A	N/A
pH	4	7.22	7.53	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
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

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
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					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	22.9	100	No	No
HAA Total (ug/L) Annual Average - DW	2020	7.08	80	No	No

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

Additional Legislated Samples

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
No additional legislated samples required.				

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
No exceedances.			

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

Item Number #	Description
1	Replace treated chlorine probe.
2	Replace distribution pump primer lines.

Appendix A

WTRS Data Submission Confirmation

