

King's Bay Drinking Water System

Waterworks # 260002954
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2019

Issued: February 18, 2020

Revision: 0

Operating Authorities:



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

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Report Availability

This system does not serve more than 10,000 residences. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office and online at [the City's website](http://www.kawarthalakes.ca) (www.kawarthalakes.ca.) Notification that reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 12 Peel Street in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 260002954

Drinking Water System Name: King's Bay DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Large Municipal Residential

Period Being Reported: January 1, 2019 - December 31, 2019

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	Nov. 14, 2019	Unannounced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	2	Aug. 14, 2019	24 Total Coliforms Distribution
		Aug. 14, 2019	8 Total Coliforms Distribution
Number of Non-Compliances	0		
Number of Boil Water Advisories	1	Aug. 14 to Aug. 16, 2019	Issued as a result of two adverse incidents on Aug. 14, 2019

System Process Description

Raw Source

The water supply for the DWS comes from three (3) groundwater wells that are considered to be non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- a sodium hypochlorite disinfection system
- reservoir
- high lift pumping station
- Stand-by diesel 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
Aug. 14, 2019	147265	Distribution	Total Coliforms	24	O. Reg. 169/03	Flush, two sets of resamples and test.
Aug. 14, 2019	147266	Distribution	Total Coliforms	8	O. Reg. 169/03	Flush, two sets of resamples and test.

Non-Compliance

There were no non-compliances identified during this reporting period.

Non-Compliance Identified in a Ministry Inspection

There were no non-compliances identified in a Ministry Inspection during this reporting period.

Flows

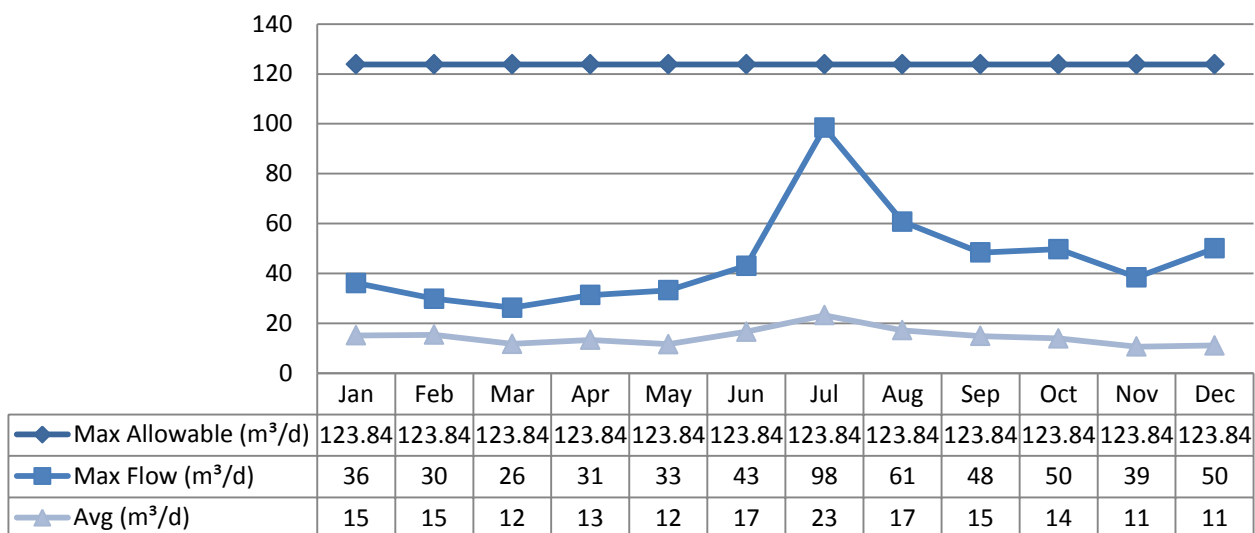
The King's Bay Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

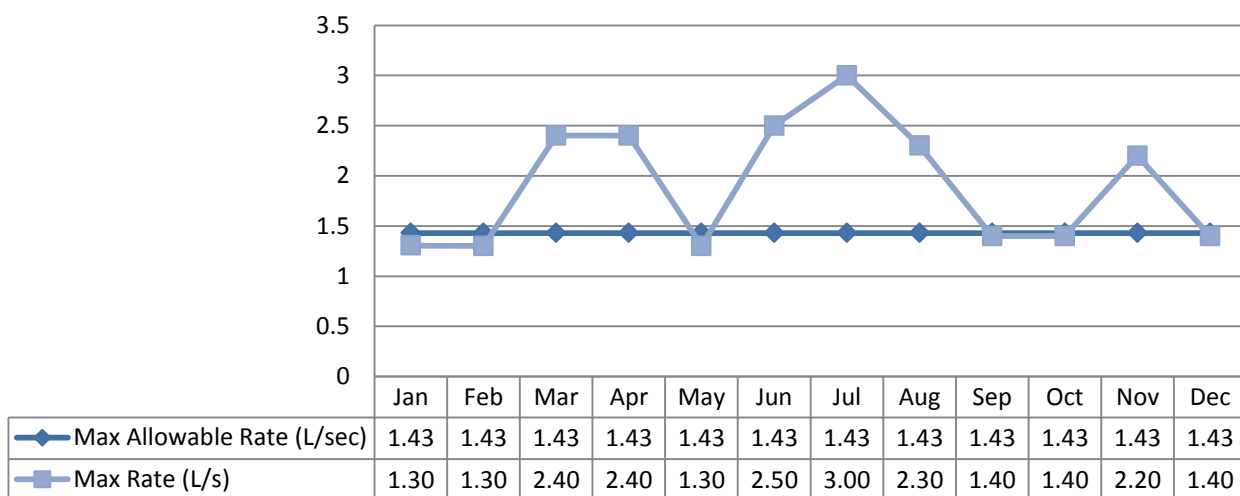
The Raw Water flows are regulated under the Permit to Take Water. 2019 Raw Flow Data was submitted to the Ministry electronically under permits #1087-AYSGRN. The confirmation that the data was submitted is attached in Appendix A.

Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2

Monthly Rated Flows (L/s)

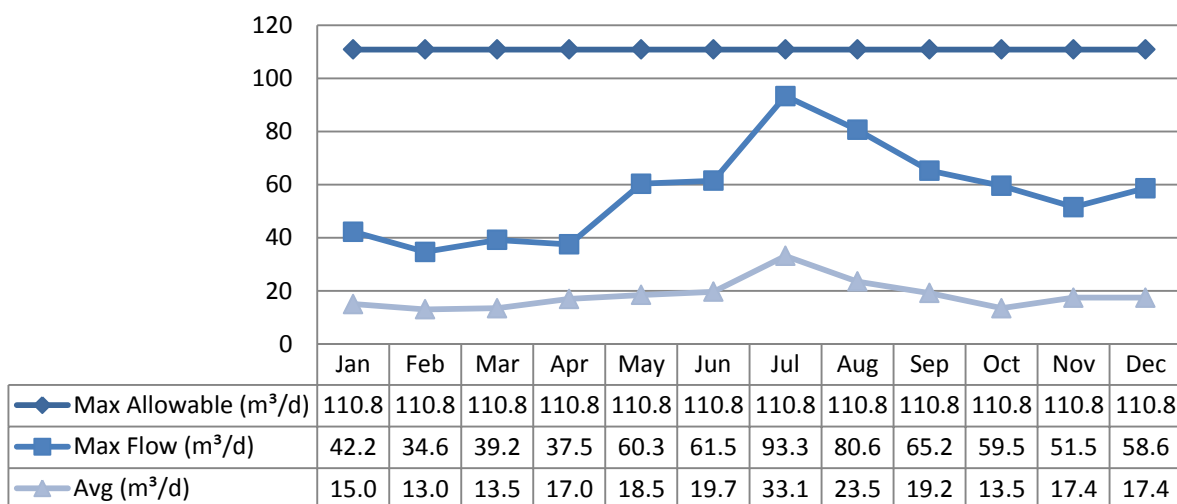
Max allowable rate – PTTW – Well #2



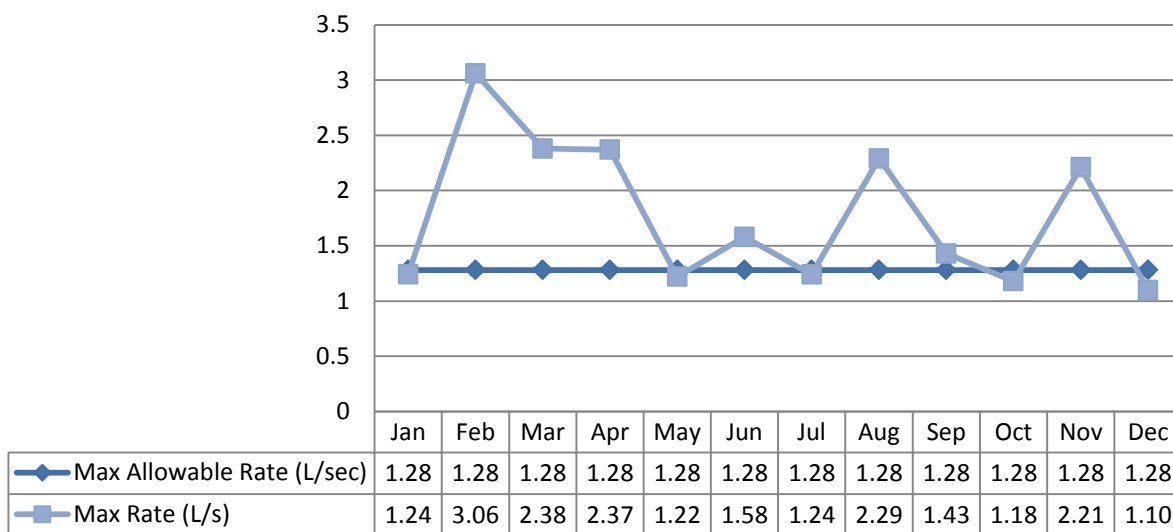
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #3

Monthly Rated Flows (L/s)

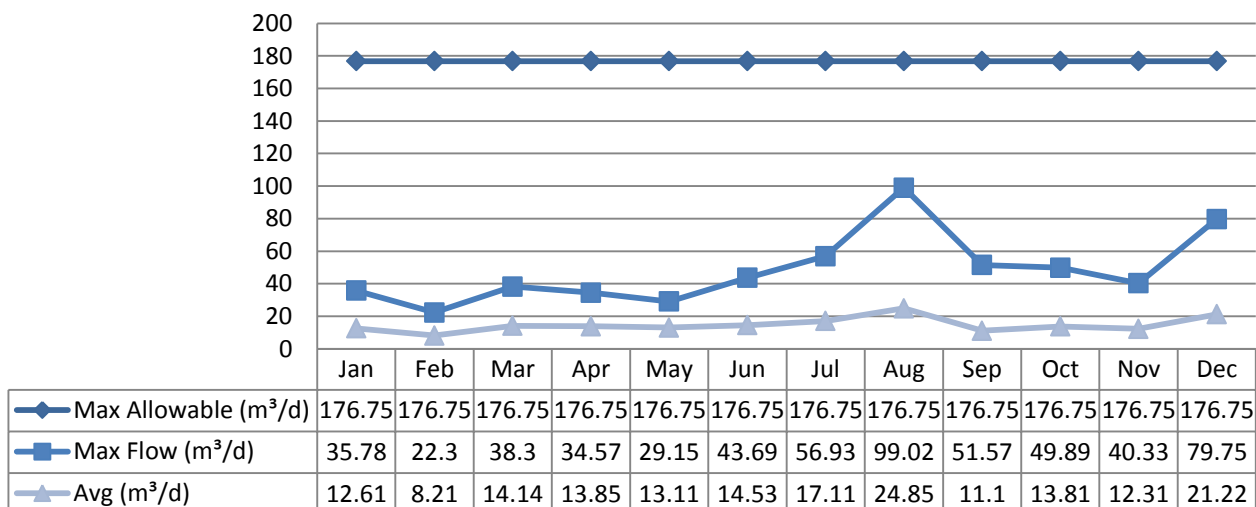
Max allowable rate – PTTW – Well #3



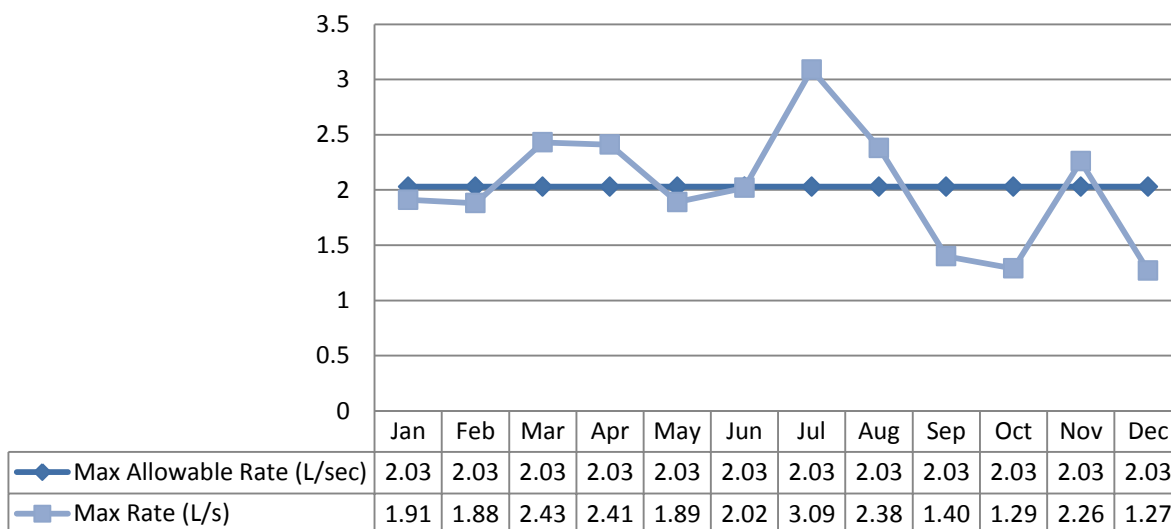
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #4

Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #4



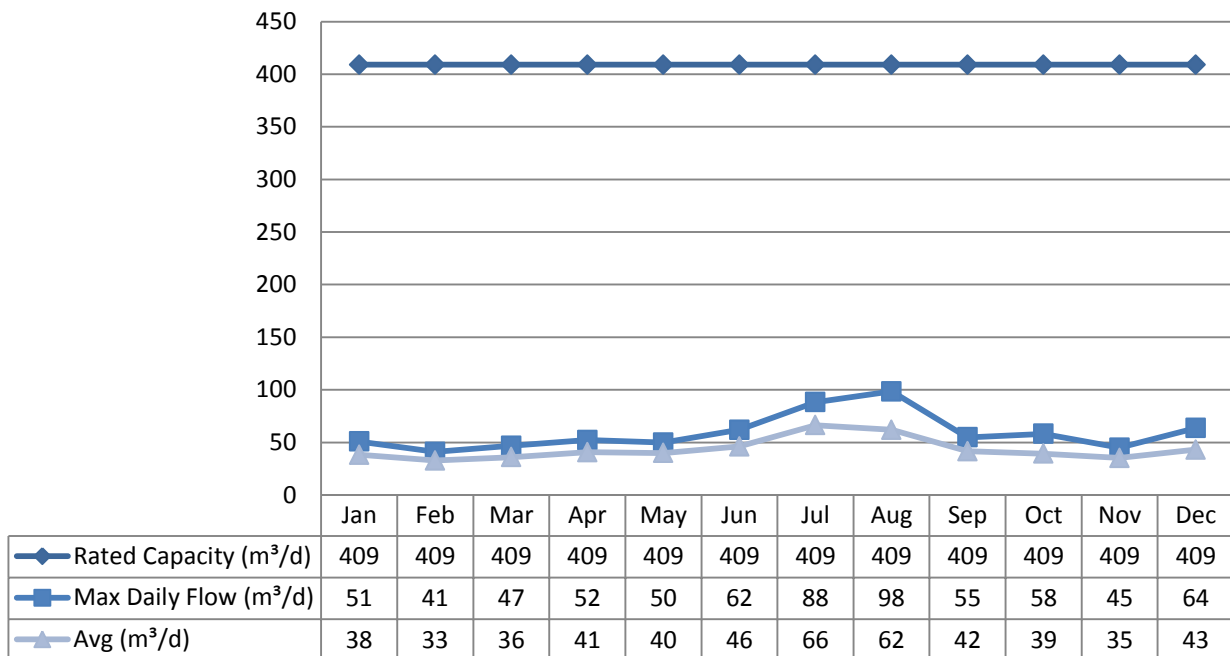
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spikes are instantaneous and are due to pump start-up.

Treated Water Flows

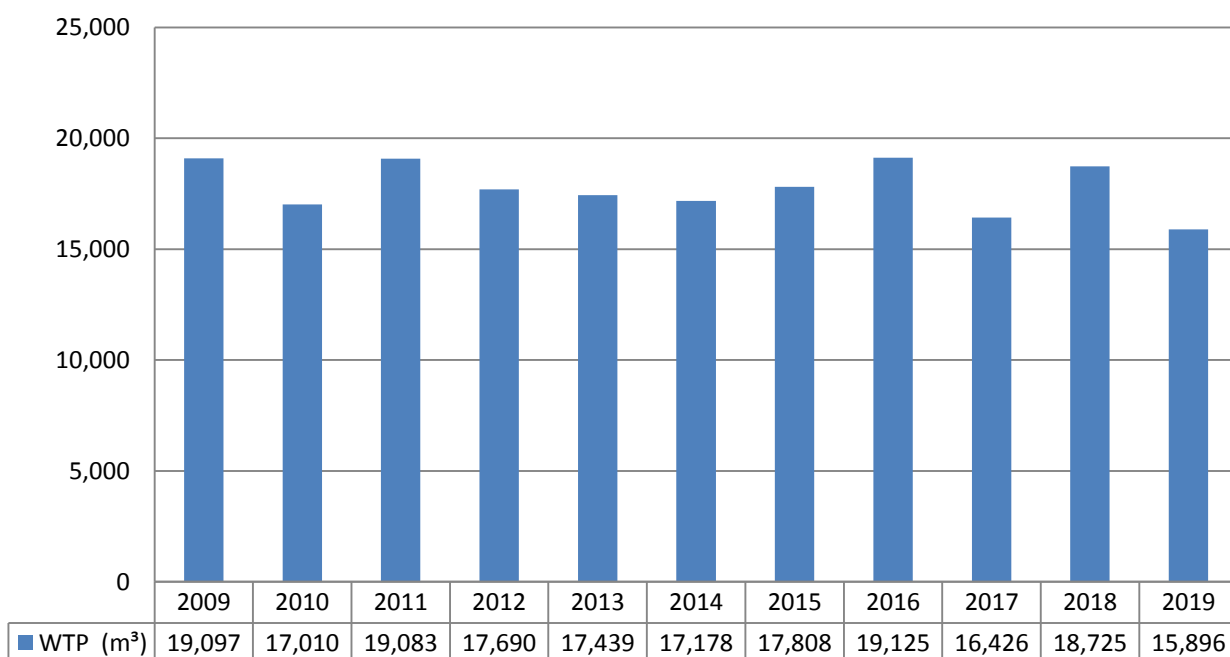
The Treated Water flows are regulated under the Municipal Licence.

Monthly Rated Flows

Rated Capacity – MDWL

**Annual Total Flow Comparison**

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

Location	No. of Samples Collected	Range of E.coli Results (MIN)	Range of E.coli Results (MAX)	Range of Total Coliform Results (MIN)	Range of Total Coliform Results (MAX)	Range of HPC Results (MIN)	Range of HPC Results (MAX)
Raw Well 2	54	0	0	0	1		
Raw Well 3	54	0	0	0	3		
Raw Well 4	54	0	0	0	1		
Treated	52	0	0	0	0	0	2
Distribution	164	0	0	0	24	0	22

Operational Testing

Location	No. of Samples Collected	Range of Results (MIN)	Range of Results (MAX)
Turbidity Well 2 (NTU)	12	0.19	0.71
Turbidity Well 3 (NTU)	12	0.31	0.83
Turbidity Well 4 (NTU)	13	0.26	0.81
Turbidity - TW (NTU)	8760	0	1.99
Chlorine	8760	0.08	5
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 five years. Nitrate was tested monthly, while Nitrite was tested quarterly and the metals are tested every three years 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

Parameters (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances ½ MAC
Antimony: Sb (ug/L) - TW	2019/01/07	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2019/01/07	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019/01/07	74.6	1000.0	No	No
Boron: B (ug/L) - TW	2019/01/07	9.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/01/07	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2019/01/07	0.37	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/01/07	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/01/07	0.1	50.0	No	No
Uranium: U (ug/L) - TW	2019/01/07	0.856	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2015/01/06	0.1	1.5	No	No
Nitrite (mg/L) - TW	2019/03/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/06/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/09/03	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/12/02	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2019/03/04	2.37	10.0	No	No
Nitrate (mg/L) - TW	2019/06/03	2.31	10.0	No	No
Nitrate (mg/L) - TW	2019/09/03	4.0	10.0	No	No
Nitrate (mg/L) - TW	2019/12/02	3.54	10.0	No	No
Sodium: Na (mg/L) - TW	2020/01/06	7.06	20*	No	No

*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.

Parameters Distribution System	No. of Sampling Points	No. of Samples	Range of Results	MAC (ug/L)	Exceedances (MIN)	Exceedances (MAX)
Alkalinity (mg/L)	2	2	287	296	N/A	N/A
pH	2	2	7.28	7.63	N/A	N/A
Lead (ug/l)	N/A	N/A				

Organic Parameters

These parameters are tested 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.

Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances ½ MAC
Alachlor (ug/L) - TW	2019/01/07	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/01/07	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019/01/07	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019/01/07	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019/01/07	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019/01/07	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019/01/07	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019/01/07	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019/01/07	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2019/01/07	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019/01/07	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2019/01/07	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/01/07	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/01/07	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2019/01/07	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2019/01/07	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/01/07	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/01/07	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019/01/07	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019/01/07	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2019/01/07	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2019/01/07	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2019/01/07	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019/01/07	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2019/01/07	<MDL 0.02	190.00	No	No

Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances MAC	Exceedances ½ MAC
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2019/01/07	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2019/01/07	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2019/01/07	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/01/07	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2019/01/07	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2019/01/07	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019/01/07	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2019/01/07	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2019/01/07	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2019/01/07	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2019/01/07	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019/01/07	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019/01/07	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/01/07	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2019/01/07	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2019/01/07	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/01/07	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2019/01/07	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019/01/07	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2019	7.65	100	No	No
HAA Total (ug/L) Annual Average - DW	2019	5.3	N/A	N/A	N/A

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
MDWL 141-119 (July 26, 2016)	Nitrate	Jan. 7, 2019	2.01	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Feb. 5, 2019	1.92	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Mar. 4, 2019	2.37	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Apr. 1, 2019	3.28	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	May 6, 2019	2.59	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jun. 3, 2019	2.31	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Jul. 2, 2019	2.45	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Aug. 6, 2019	3.9	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Sep. 3, 2019	4	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Oct. 7, 2019	2.92	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Nov. 4, 2019	2.98	mg/L
MDWL 141-119 (July 26, 2016)	Nitrate	Dec. 2, 2019	3.54	mg/L



Major Maintenance Summary incurred to install, repair or replace required

Equipment was maintained in a fit state of repair as per legislation.

Appendix A

WTRS Submission Confirmation





Ministry of the Environment,
Conservation and Parks

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Location: [WTR](#)

[Change Password](#)

[Submit WT Record](#)

WTRS-WT-008

Water Taking Data submitted successfully.


Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 1087-AYSGRN
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 10, 2020 12:51 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.

[Print Confirmation](#) [Return to Main Page](#)

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