

Western Trent/Palmina Drinking Water System

Waterworks # 220008131
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 13, 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 residents. The annual reports are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 12 Peel Street in Lindsay, Ontario. The reports are also available online at the [City of Kawartha Lakes website](http://www.kawarthalakes.ca). (www.kawarthalakes.ca)

Compliance Report Card

Drinking Water System Number: 220008131

Drinking Water System Name: Western Trent/Palmina 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	May 7, 2019	Announced-Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Western Trent/Palmina Water Treatment Plant is supplied with raw groundwater from two GUDI wells: Well # 1 (Palmina Well) and Well # 2 (Western Trent Well).

Treatment

The treatment system consists of the following:

- Two drilled groundwater production wells deemed GUDI
- Raw and treated water flow meters
- Cartridge filtration system
- Chlorine contact chamber
- Treated water storage reservoir
- Two vertical turbine high lift pumps
- Chemical feed system consisting of four metering pumps for pre and post-chlorination and two sodium hypochlorite storage tanks with spill containment
- Standby power generator on site

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Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance**Adverse Water Quality Incidents**

There were no adverse water quality incidents identified during the reporting period.

Non-Compliance

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

Non-Compliance Identified in a Ministry Inspection

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

Flows

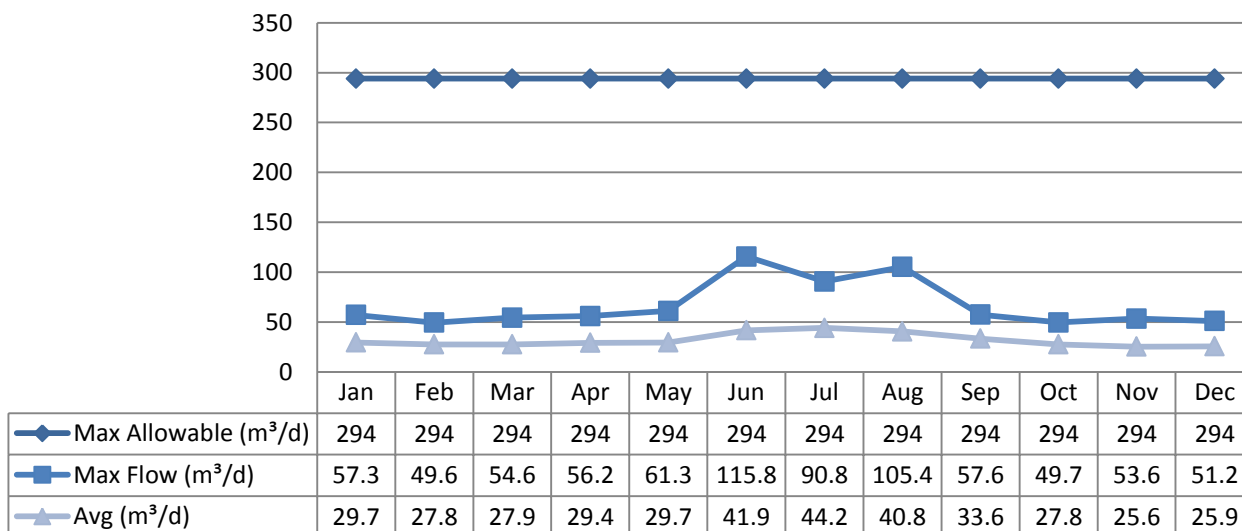
The Western Trent/Palmina Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water takings are regulated by the Permit to Take Water (PTTW). 2019 Raw Flow Data was submitted to the Ministry electronically under permit PTTW # 2180-B4CKK3. The confirmation for the data that was submitted is attached in Appendix A.

Total Monthly Flows (m³/d)

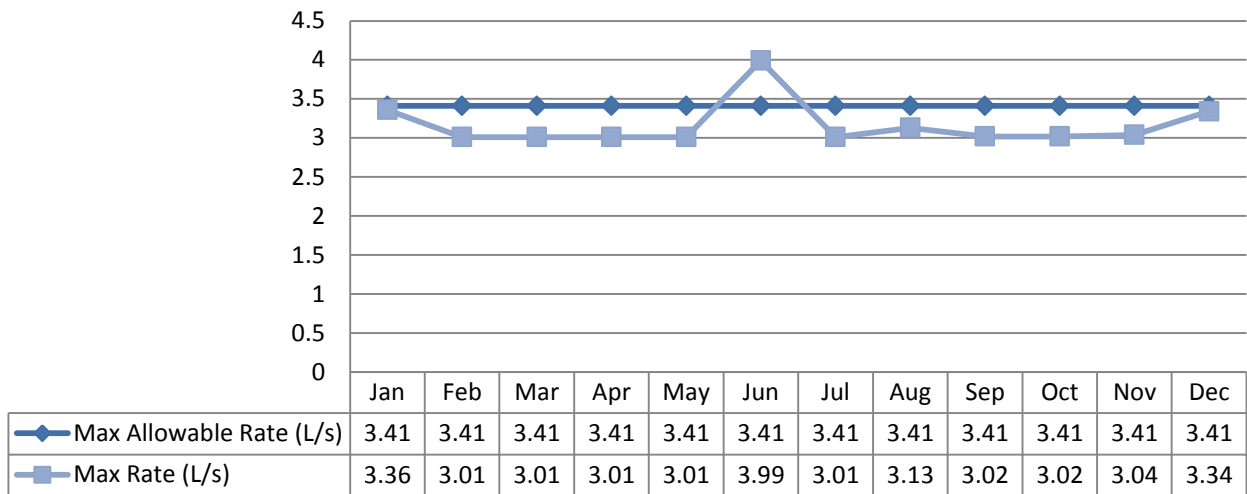
Max Allowable PTTW- Well #1



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Monthly Rated Flows (L/s)

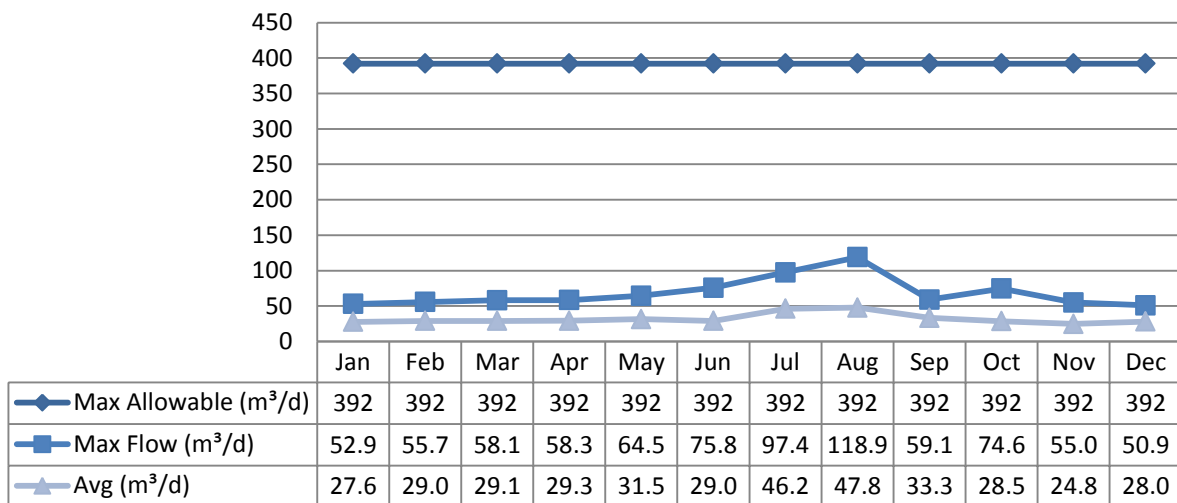
Max allowable rate – PTTW- Well #1



Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s). The spike in June was due to scheduled Flow Meter calibration.

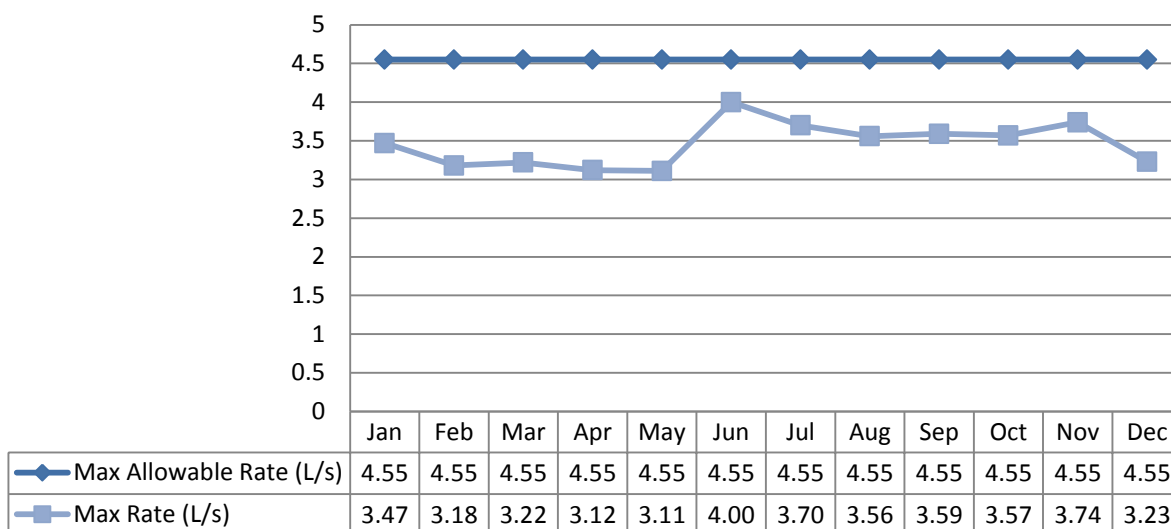
Total Monthly Flows (m³/d)

Max Allowable PTTW- Well #2



Monthly Rated Flows (L/s)

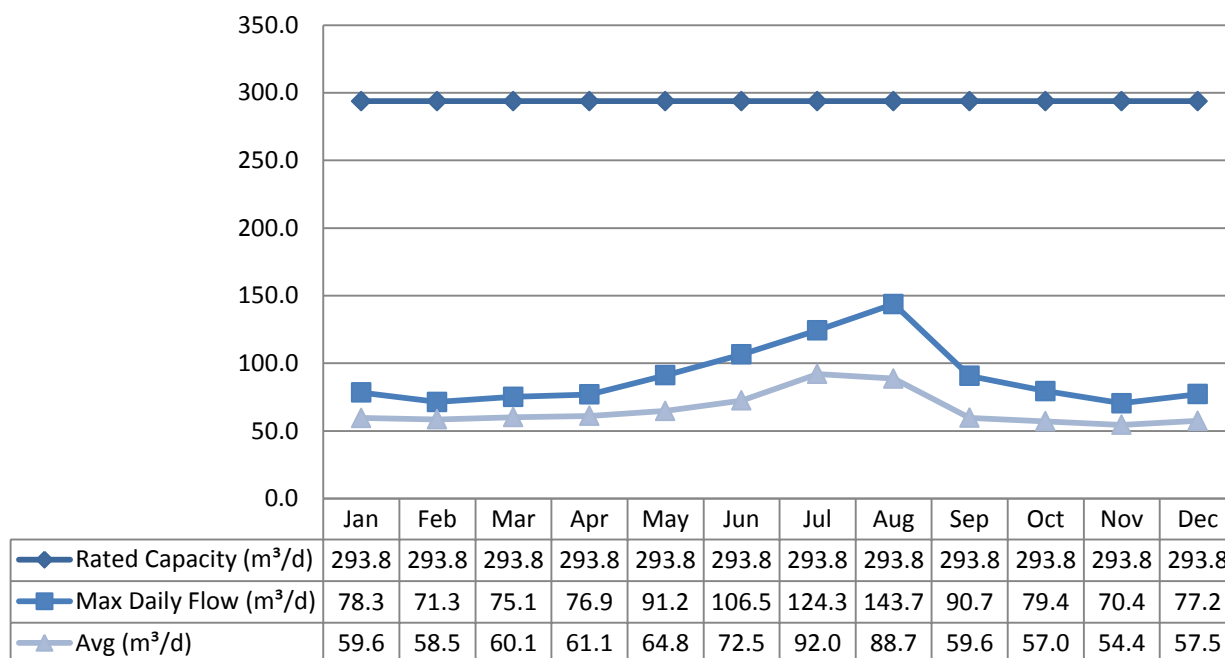
Max allowable rate – PTTW- Well #2

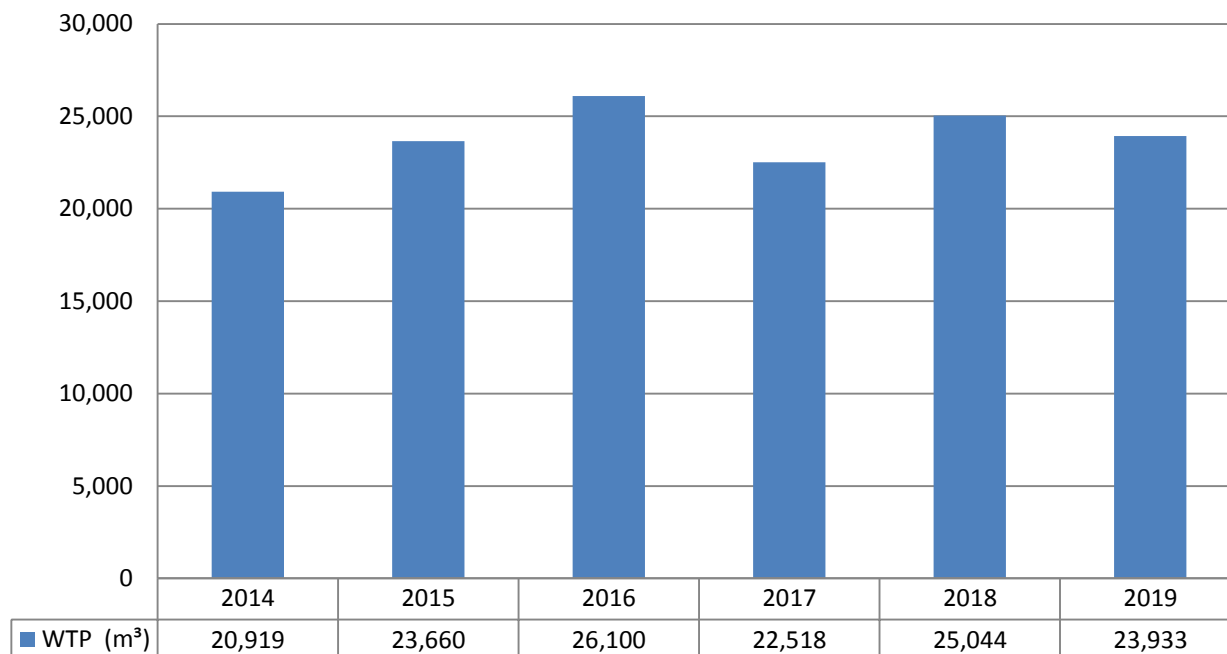
**Treated Water Flows**

The Treated Water flows are regulated under the Municipal Licence.

Monthly Rated Flows

Rated Capacity - MDWL



Annual Total Flow ComparisonTotal Annual m³

NOTE: 2014 data for March to December as DWS operated by the City until Feb 2014.

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 1	52	0	0	0	4		
Raw Well 2	54	0	2	0	20		
Treated	52	0	0	0	0	0	4
Distribution	155	0	0	0	0	0	2

Operational Testing

Parameter	No. of Samples Collected	Range of Results (MIN)	Range of Results (MAX)
Turbidity Filter 1 (NTU)	8760	0.00	1.50
Turbidity Filter 2 (NTU)	8760	0.00	1.50
Chlorine	8760	0.00	4.91
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.

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Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by online 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

Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances MAC	No. of Exceedances ½ MAC
Antimony: Sb (ug/L) - TW	2019/09/06	0.10	6.0	No	No
Arsenic: As (ug/L) - TW	2019/09/06	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019/09/06	65.1	1000.0	No	No
Boron: B (ug/L) - TW	2019/09/06	67.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019/09/06	0.01	5.0	No	No
Chromium: Cr (ug/L) - TW	2019/09/06	0.75	50.0	No	No
Mercury: Hg (ug/L) - TW	2019/09/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019/09/06	<MDL 0.04	50.0	No	No
Uranium: U (ug/L) - TW	2019/09/06	0.288	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/12/03	0.21	1.5	No	No
Nitrite (mg/L) - TW	2019/01/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/04/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019/07/02	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2018/10/07	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2019/01/09	0.101	10.0	No	No
Nitrate (mg/L) - TW	2019/04/08	0.115	10.0	No	No
Nitrate (mg/L) - TW	2019/07/02	0.093	10.0	No	No
Nitrate (mg/L) - TW	2018/10/07	0.508	10.0	No	No
Sodium: Na (mg/L) - TW	2018/12/07	18.1	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 mg/L 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.

Parameter (Distribution System)	No. of Sampling Points	No. of Samples	Range of Results (MIN)	Range of Results (MAX)	MAC	No. of Exceedances
Alkalinity (mg/L)	2	2	203	217	N/A	N/A
pH	2	2	7.28	7.51	N/A	N/A
Lead (ug/l)	N/A	N/A				

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.

Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances MAC	No. of Exceedances $\frac{1}{2}$ MAC
Alachlor (ug/L) - TW	2019/09/06	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/09/06	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019/09/06	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019/09/06	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019/09/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019/09/06	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019/09/06	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019/09/06	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019/09/06	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2019/09/06	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019/09/06	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2019/09/06	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/09/06	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/09/06	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2019/09/06	<MDL 0.35	5.00	No	No

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Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances MAC	No. of Exceedances $\frac{1}{2}$ MAC
1,1-Dichloroethylene (ug/L) - TW	2019/09/06	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/09/06	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/09/06	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019/09/06	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019/09/06	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2019/09/06	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2019/09/06	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2019/09/06	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019/09/06	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2019/09/06	<MDL 0.02	190.00	No	No
Metolachlor (ug/L) - TW	2019/09/06	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2019/09/06	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/09/06	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2019/09/06	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2019/09/06	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019/09/06	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2019/09/06	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2019/09/06	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2019/09/06	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2019/09/06	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019/09/06	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019/09/06	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/09/06	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2019/09/06	<MDL 0.01	230.00	No	No

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Parameter (Treated Water)	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances MAC	No. of Exceedances $\frac{1}{2}$ MAC
Trichloroethylene (ug/L) - TW	2019/09/06	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/09/06	<MDL 0.25	5.00	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2019/09/06	<MDL 0.12	100.00	No	No
Trifluralin (ug/L) - TW	2019/09/06	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019/09/06	<MDL 0.17	1.00	No	No
Distribution Water					No
Trihalomethane: Total (ug/L) Annual Average - DW	2019	48	100	No	No
HAA Total (ug/L) Annual Average - DW	2019	11	N/A	N/A	N/A

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

MDL = Method Detection Limit

Additional Legislated Samples



There was no additional sampling required.

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

WO #	Description
1138034	Water Damage to Filter Turbidity Analyzer Sensor AIT03 Replaced under Warranty
1217807	ScadaPack Upgrade
1259163	Air Relief Valve Rebuild Kit
1380811	Repaired Leaking Pressure Regulating Valve
767846	Clear well inspected and cleaned

Appendix A

WTRS Data 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: 2180-B4CKK3
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 6, 2020 2:40 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.