

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 2020

Issued: February 4 2021

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 are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 322 Kent Street West in Lindsay, Ontario. The reports are also available online at the [Water and Wastewater pages of the City of Kawartha Lakes website](#).

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, 2020 - December 31, 2020

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	July 23, 2020	Announced-Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	1	August 10, 2020	System pressure loss due to weather induced power issues. Restored power, pressure, flushed & sampled.
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

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 10, 2020	151271	Distribution	Pressure loss	System pressure loss due to weather induced power issues. No flow of water to chlorine analyzer caused highlift lockout.	O. Reg. 170/03	Restored power, restored pressure, flushed & sampled.

Non-Compliance

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

Non-Compliance Identified in a Ministry Inspection:

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

Flows

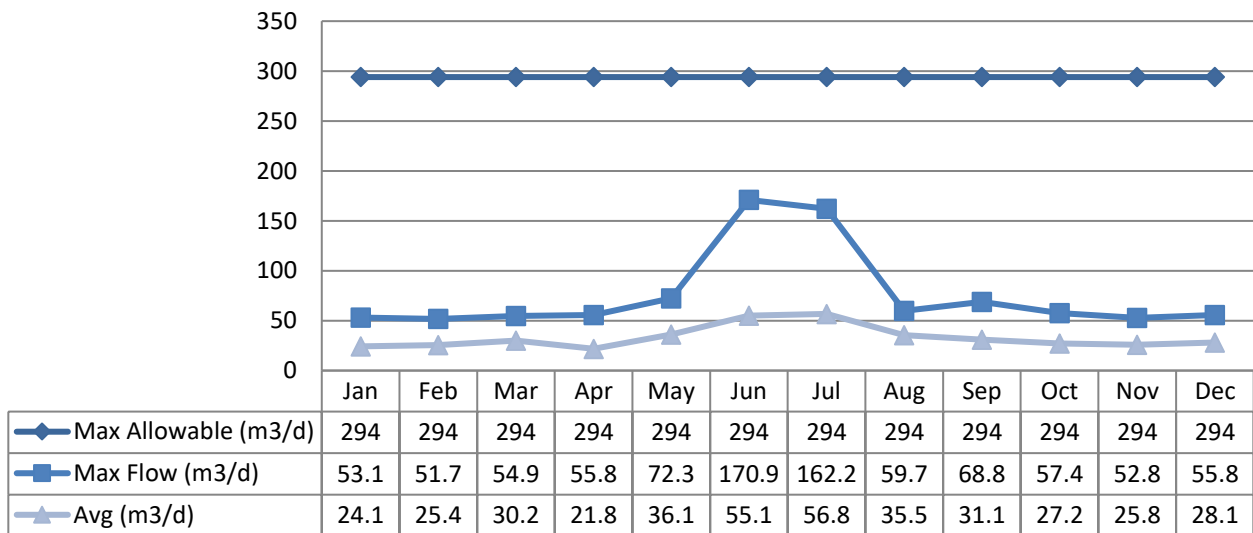
The Western Trent/Palmina Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water takings are regulated by the Permit to Take Water (PTTW). 2020 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.

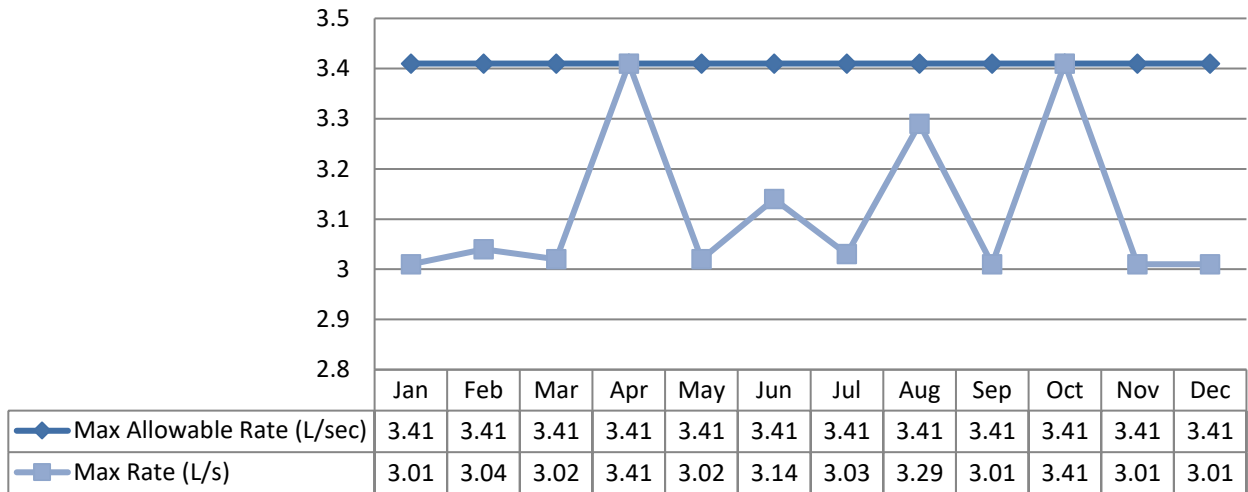
Total Monthly Flows (m3/d)

Max Allowable PTTW- Well #1

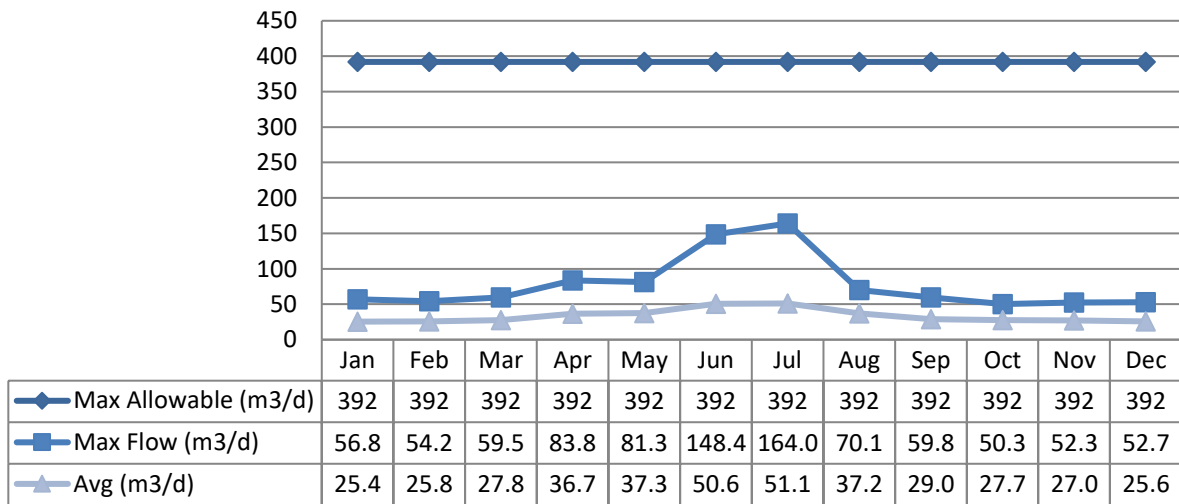


Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Well #1

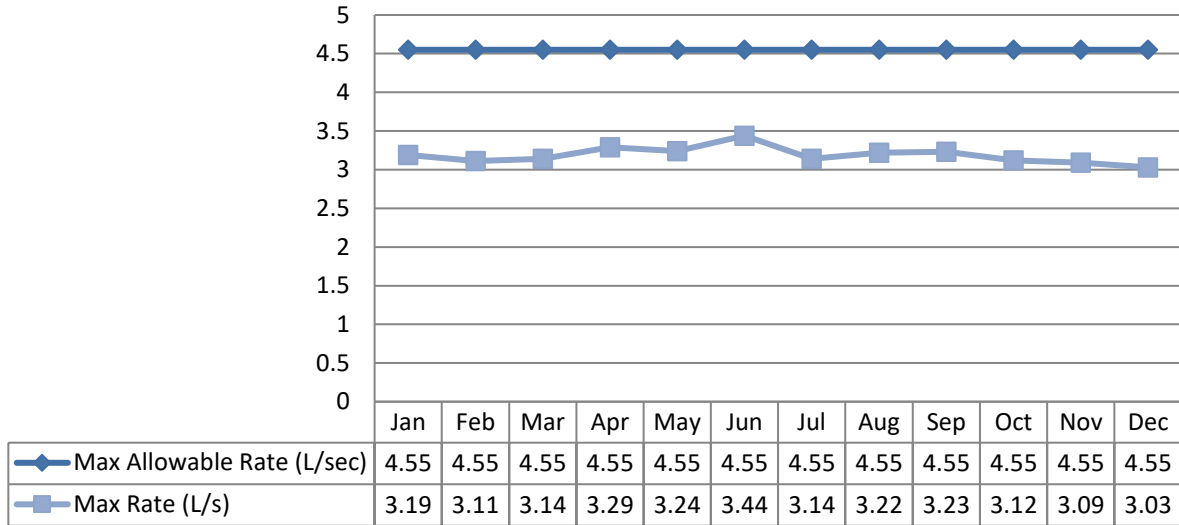


Total Monthly Flows (m3/d)
Max Allowable PTTW- Well #2



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Well #2

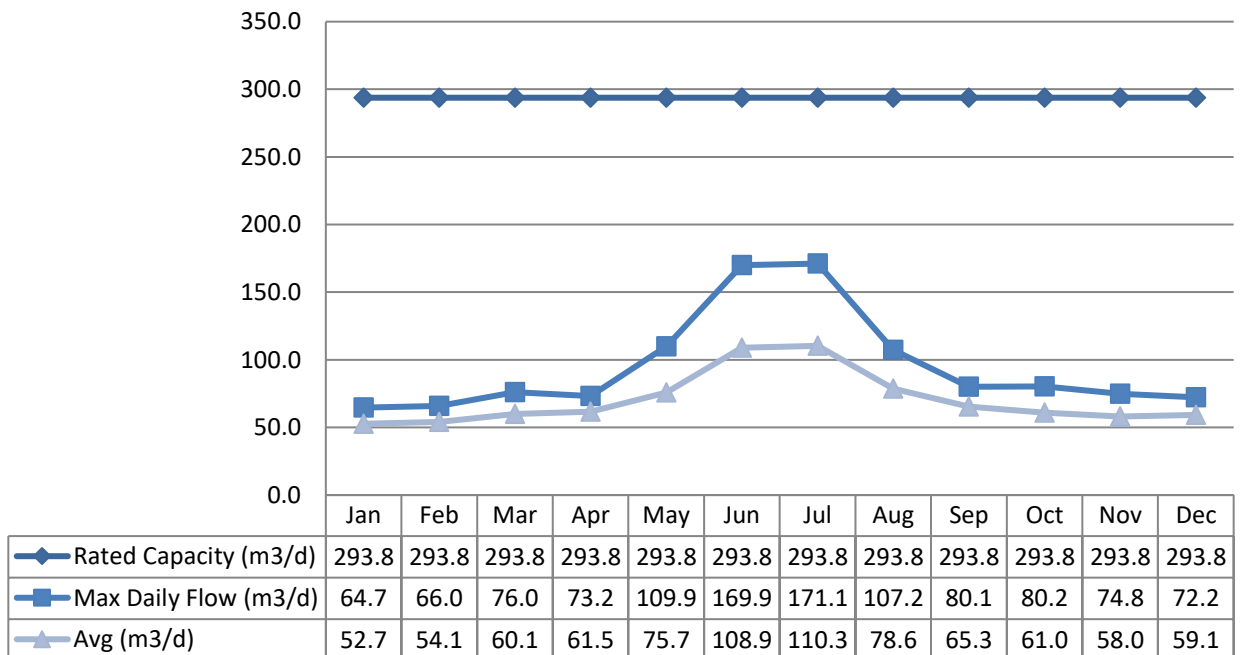


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

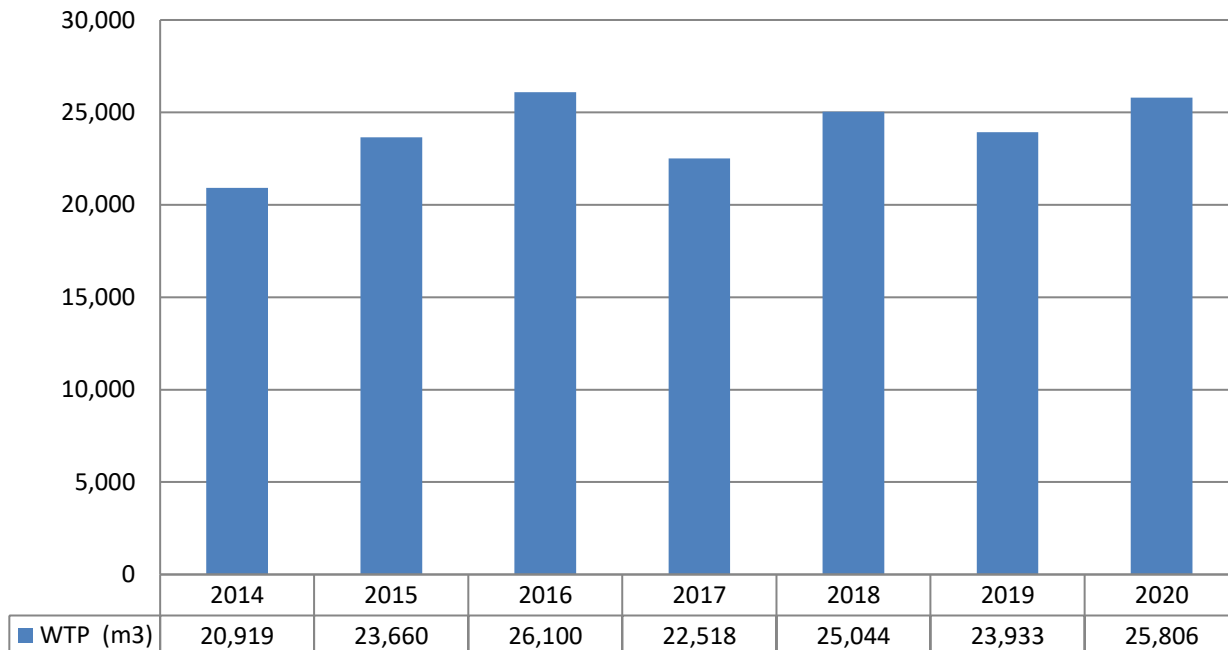
Monthly Rated Flows

Rated Capacity - MDWL



Annual Total Flow Comparison

Total Annual m3



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

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E.coli Results	Range of E.coli Results	Range of Total Coliform Results	Range of Total Coliform Results	No. of Samples Collected	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max		Min	Max
Raw Well 1	54	0	1	0	7			
Raw Well 2	52	0	5	0	20			
Treated	53	0	0	0	0	52	0	4
Distribution	159	0	0	0	0	158	0	26

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Turbidity Filter 1 (NTU)	8760	0.00	1.50
Turbidity Filter 2 (NTU)	8760	0.00	1.50
Chlorine	8760	0.00	5.00
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 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 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	1/2 MAC
Antimony: Sb (ug/L) - TW	2020/09/09	0.21	6.0	No	No
Arsenic: As (ug/L) - TW	2020/09/09	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2020/09/09	52.4	1000.0	No	No
Boron: B (ug/L) - TW	2020/09/09	54.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/09/09	0.019	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/09/09	2.18	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/09/09	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/09/09	0.11	50.0	No	No
Uranium: U (ug/L) - TW	2020/09/09	0.184	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/12/03	0.21	1.5	No	No
Nitrite (mg/L) - TW	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/07/08	<MDL	1.0	No	No

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
		0.003			
Nitrite (mg/L) - TW	2020/10/05	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2020/01/06	0.106	10.0	No	No
Nitrate (mg/L) - TW	2020/04/06	0.064	10.0	No	No
Nitrate (mg/L) - TW	2020/07/08	0.182	10.0	No	No
Nitrate (mg/L) - TW	2020/10/05	0.194	10.0	No	No
Sodium: Na (mg/L) - TW	2018/12/07	18.1	20*	No	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 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.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	209	223	N/A	N/A
pH	2	2	7.12	7.42	N/A	N/A
Lead (ug/l)	2	2	0.55	0.73	10	0

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.

Treated Water Parameters	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	2019/09/06	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019/09/06	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2019/09/06	<MDL 0.05	20.0	No	No

Treated Water Parameters	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Benzene (ug/L) - TW	2019/09/06	<MDL 0.32	1.0	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	5.0	No	No
Carbaryl (ug/L) - TW	2019/09/06	<MDL 0.05	90.0	No	No
Carbofuran (ug/L) - TW	2019/09/06	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2019/09/06	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2019/09/06	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2019/09/06	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2019/09/06	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019/09/06	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019/09/06	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2019/09/06	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2019/09/06	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019/09/06	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2019/09/06	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019/09/06	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2019/09/06	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2019/09/06	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2019/09/06	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2019/09/06	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2019/09/06	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2019/09/06	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2019/09/06	<MDL	50.0	No	No

Treated Water Parameters	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
		0.01			
Metribuzin (ug/L) - TW	2019/09/06	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019/09/06	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2019/09/06	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2019/09/06	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2019/09/06	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2019/09/06	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2019/09/06	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2019/09/06	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2019/09/06	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW	2019/09/06	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2019/09/06	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019/09/06	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2019/09/06	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2019/09/06	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2019/09/06	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2019/09/06	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2019/09/06	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2019/09/06	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	46	100	No	No
HAA Total (ug/L) Annual Average - DW	2020	11	80	No	No

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

MDL = Method Detection Limit

Additional Legislated Samples


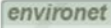

There was no additional sampling required.

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

WO #	Description
1536453	Roof Replaced
1621788	Generator Fuel System Assessment
1621789	Generator Fuel System Repaired
1835573	Waste pump repaired
1835930	Repaired Pumps MP-03 & MP-04
1873966	Replacement of Desiccant for Turbidimeter
1917521	Filter Turbidimeter Controller Replaced
2040395	Chlorine Pump Repaired
1873644	Highlift Pump Repaired

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 1, 2021 2:04 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.