Lindsay Drinking Water System

Waterworks #220000175

System Category – Large Municipal Residential

Annual Drinking Water Report

Reporting Period of January 01, 2019 to December 31, 2019

Report Issued: February 20, 2020

Revision: 0

Operating Authority:

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

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Report Availability

This system serves 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. (www.kawarthalakes.ca)

Compliance Report Card

Drinking Water System Number: 220000175
Drinking Water System Name: Lindsay WTP
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
Drinking Water			
MECP Inspections	1	2019 11 22	Annual Announced Drinking Water Inspection – Final Inspection Rating of 100%
AWQI's	2	2019 01 09 2019 06 19	THM Running Annual Average of 100.75 ug/L Lindsay Street at Glenelg Street Tie-in 21TC.
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description Raw Source

The Lindsay Water Treatment Plant receives raw water from the Scugog River, which is a surface water source.

Treatment

The treatment system consists of the following:

- Two screened intake pipes
- Three low lift pumps
- CO_2 pH correction
- Coagulant and polymer addition
- Two ballasted floc/clarification units each with coagulation, flocculation, up-flow settling tank with inclined tube settlers and “micro-sand” recirculation pumps
- Five GAC/sand filters
- Chlorination
- Two clearwells, East & West Cells
- Four high lift pumps
- On-site wastewater equalization and sludge thickening
- Standby power
- SCADA system
- Thornhill Reservoir and pumping station
- Verulam elevated storage tank
- Oakwood Reservoir and pumping station

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Lavo
Sodium Hydroxide	pH Correction	PVS Benson
Aluminum Sulphate (Alum)	Coagulation	Chemtrade
Carbon Dioxide	pH Correction	Praxair
Polyaluminumchloride (PAC)	Coagulation	Kemira
Magna Floc Polymer	Coagulation	Northland Chemical

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
2019 01 30	N/A	Lindsay Distribution	THM Running Annual Average	100.75	O. Reg. 170/03	N/A
2019 06 19	145748	Lindsay Distribution	Repair Tie-in	21 TC	O. Reg. 170/03	Flushed & Re-sampled

Non-Compliance:

Legislation Requirement(s) System Failed to Meet	Duration of the Failure (i.e. Date(s))	Corrective Action	Status
N/A	N/A	N/A	N/A

There were no non-compliances identified during this 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
All Applicable	N/A	N/A	N/A

There were no non-compliances identified during this period.

Flows

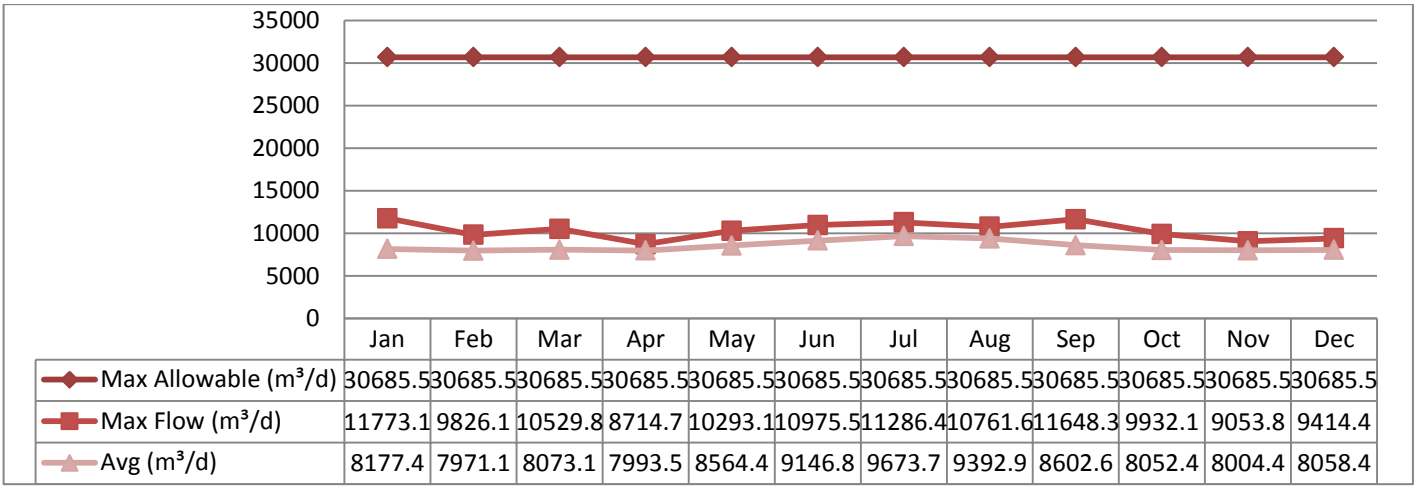
The Lindsay Drinking Water System maximum allowable water taking is 30,685.5 m^3/day. On average the plant is operating at under half this capacity.

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 permit #8160-B3MP6L. The confirmation and a copy of the data that was submitted are attached in Appendix B.

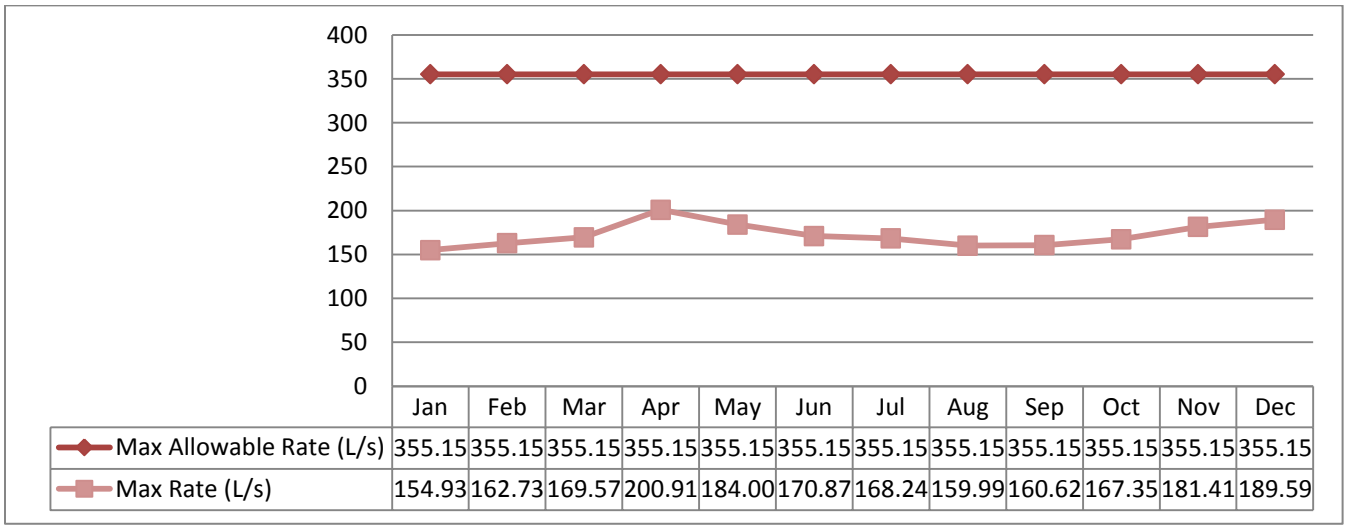
Total Monthly Flows (m³/d)

Max Allowable PTTW- Scugog River
Monthly Rated Flows (L/s)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5	30685.5
Max Flow (m³/d)	11773.1	9826.1	10529.8	8714.7	10293.1	10975.5	11286.4	10761.6	11648.3	9932.1	9053.8	9414.4
Avg (m³/d)	8177.4	7971.1	8073.1	7993.5	8564.4	9146.8	9673.7	9392.9	8602.6	8052.4	8004.4	8058.4

Max allowable rate – PTTW- Scugog River



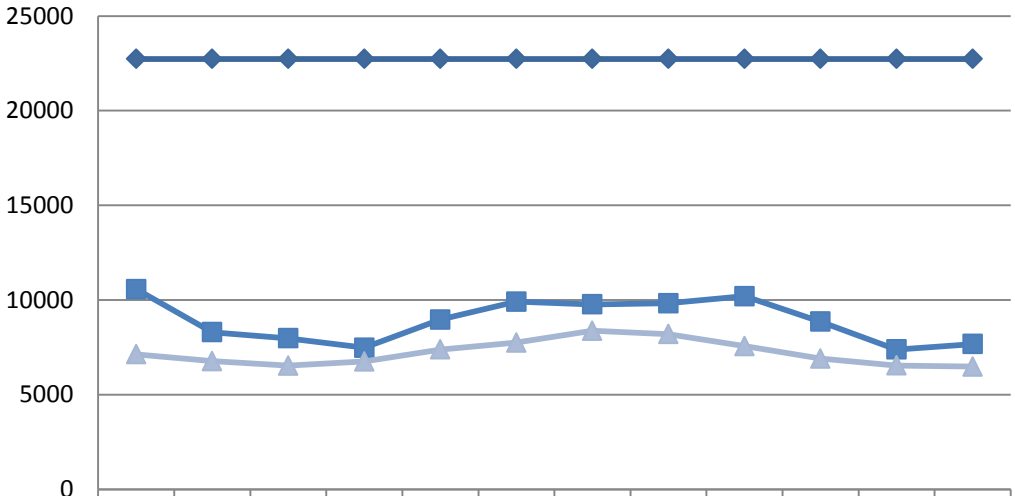
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/s)	355.15	355.15	355.15	355.15	355.15	355.15	355.15	355.15	355.15	355.15	355.15	355.15
Max Rate (L/s)	154.93	162.73	169.57	200.91	184.00	170.87	168.24	159.99	160.62	167.35	181.41	189.59

Treated Water Flows

The Treated Water flow is regulated under the Municipal Drinking Water Licence.

Monthly Rated Flows

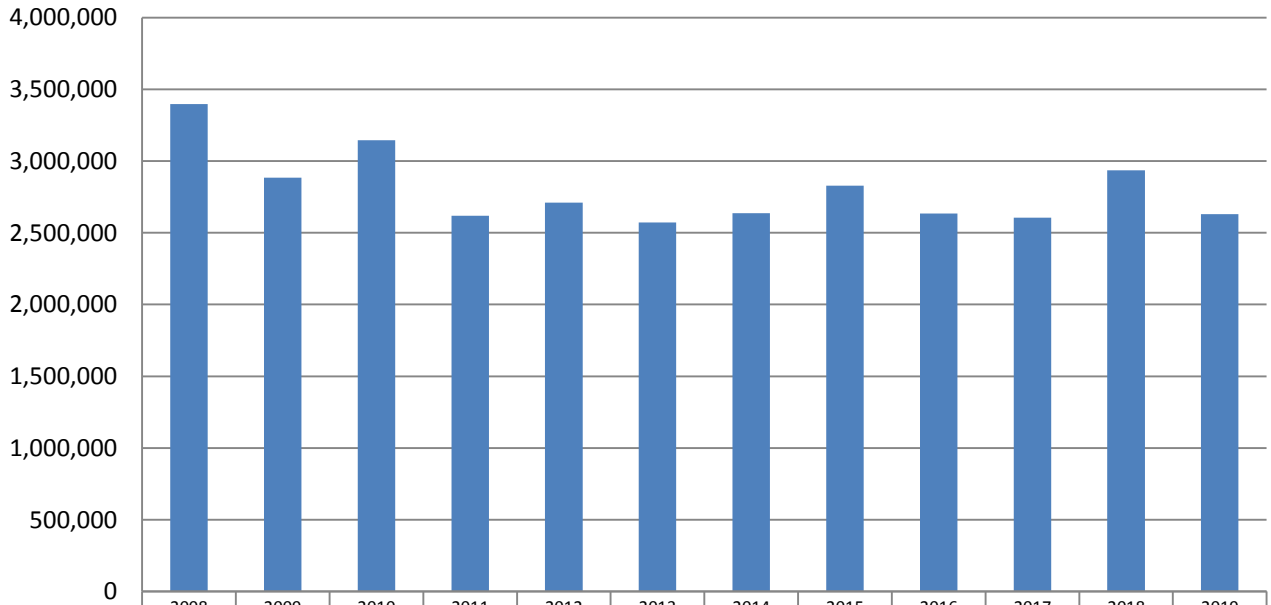
Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	22730	22730	22730	22730	22730	22730	22730	22730	22730	22730	22730	22730
Max Daily Flow (m³/d)	10571.0	8301.9	7980.6	7477.3	8970.7	9912.4	9772.0	9832.2	10201.8	8859.2	7388.8	7678.4
Avg (m³/d)	7133.1	6767.7	6534.0	6751.1	7388.7	7751.7	8379.5	8202.5	7562.6	6905.3	6546.4	6479.8

Annual Total Flow Comparison

Total Annual m³



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTP (m³)	3,397,542	2,883,549	3,144,358	2,617,928	2,710,988	2,571,191	2,637,341	2,829,091	2,635,177	2,606,043	2,934,884	2,629,563

Regulatory Sample Results Summary

The City of Kawartha Lakes adheres to operational and compliance limits however, during certain operational circumstances some results may be temporarily outside of limits. This includes but is not limited to: pump start-ups, power outages/generator tests, alarm verification, maintenance, etc. These are all normal occurrences and are listed within the report but are not indicative of a true exceedance.

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	52	3 / 1400	38 / 100000	
Treated	52	0 / 0	0 / 0	0 / 2
Distribution	655	0 / 0	0 / 0	0 / 2

Operational Testing

Parameter	No. of Collected Samples	Range of Results Minimum	Range of Results Maximum
Turbidity (NTU)	8760	0.00 NTU	2.04 NTU
Chlorine	8760	0.00 mg/L	5.00 mg/L
Fluoride (If the DWS provides fluoridation)	N/A		

The Minimum 0.00 mg/L was noted on our Monthly SCADA Reports on February 7, 2019 and May 16, 2019. All trending was reviewed and there were no 0.00mg/L chlorine residuals found.

On September 19, 2019 the minimum 0.00 mg/L was noted on our Monthly SCADA Report, this is due to annual calibration; the plant was shut off during this time.

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.

Additional Legislated Sampling

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
July 26, 2016	TSS	2019 01 08	2	mg/L
July 26, 2016	TSS	2019 02 04	4	mg/L
July 26, 2016	TSS	2019 03 04	3	mg/L
July 26, 2016	TSS	2019 04 01	6	mg/L
July 26, 2016	TSS	2019 05 06	33	mg/L
July 26, 2016	TSS	2019 06 03	3	mg/L
July 26, 2016	TSS	2019 07 02	7	mg/L
July 26, 2016	TSS	2019 08 07	11	mg/L
July 26, 2016	TSS	2019 09 09	5	mg/L
July 26, 2016	TSS	2019 10 07	22	mg/L
July 26, 2016	TSS	2019 11 04	2	mg/L
July 26, 2016	TSS	2019 12 03	<2	mg/L
Summary	**TSS**	**2019**	**Min: <2 Max: 6 AVG: 8.90901 based on 12 numerical results**	**mg/L**

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 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
- BDL = Below the laboratory detection level

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance Y/N MAC	Exceedance Y/N ½ MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2019 01 09	<MDL 0.02	6.0	No	No
Arsenic: As (ug/L) - TW	2019 01 09	0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2019 01 09	29.3	1000.0	No	No
Boron: B (ug/L) - TW	2019 01 09	13	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2019 01 09	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2019 01 09	0.13	50.0	No	No
Mercury: Hg (ug/L) - TW	2019 01 09	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2019 01 09	0.06	50.0	No	No
Uranium: U (ug/L) - TW	2019 01 09	0.010	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018 12 07	0.06	1.5	No	No
Nitrite (mg/L) - TW	2019 01 09	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019 04 01	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019 07 05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2019 10 08	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2019 01 09	0.817	10.0	No	No
Nitrate (mg/L) - TW	2019 04 01	0.624	10.0	No	No
Nitrate (mg/L) - TW	2019 07 05	0.179	10.0	No	No
Nitrate (mg/L) - TW	2019 10 08	0.024	10.0	No	No
Sodium: Na (mg/L) - TW	2016 07 11	34.9	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 who may have 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	No. of Sampling Points	No. of Samples	Range of Results MIN	Range of Results MAX	MAC (ug/L)	Number of Exceedances
Alkalinity (mg/L)	4	8	117	121	N/A	N/A
pH	4	8	7.14	7.39	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 ½ MAC
Alachlor (ug/L) - TW	2019 01 09	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2019 01 09	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2019 01 09	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2019 01 09	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2019 01 09	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2019 01 09	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2019 01 09	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2019 01 09	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2019 01 09	<MDL 0.16	2.00	No	No
Chlorpyrifos (ug/L) - TW	2019 01 09	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2019 01 09	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2019 01 09	<MDL 0.20	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2019 01 09	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2019 01 09	<MDL 0.36	5.00	No	No

1,2-Dichloroethane (ug/L) - TW	2019 01 09	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2019 01 09	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2019 01 09	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2019 01 09	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2019 01 09	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2019 01 09	<MDL 0.40	9.00	No	No
Dimethoate (ug/L) - TW	2019 01 09	<MDL 0.03	20.00	No	No
Diquat (ug/L) - TW	2019 01 09	<MDL 1	70.00	No	No
Diuron (ug/L) - TW	2019 01 09	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2019 01 09	<MDL 1	280.00	No	No
Malathion (ug/L) - TW	2019 01 09	<MDL 0.02	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2019 01 09	<MDL 0.00012	0.01	No	No
Metolachlor (ug/L) - TW	2019 01 09	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2019 01 09	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2019 01 09	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2019 01 09	<MDL 1	10.00	No	No
PCB (ug/L) - TW	2019 01 09	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2019 01 09	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2019 01 09	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2019 01 09	<MDL 1	190.00	No	No
Prometryne (ug/L) - TW	2019 01 09	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2019 01 09	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2019 01 09	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2019 01 09	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2019 01 09	<MDL 0.20	100.00	No	No
Triallate (ug/L) - TW	2019 01 09	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2019 01 09	<MDL 0.44	5.00	No	No

2,4,6-Trichlorophenol (ug/L) - TW	2019 01 09	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2019 01 09	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2019 01 09	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2019	84.5	100	No	No
HAA Total (ug/L) Annual Average - DW	2019	79.96	N/A	N/A	N/A

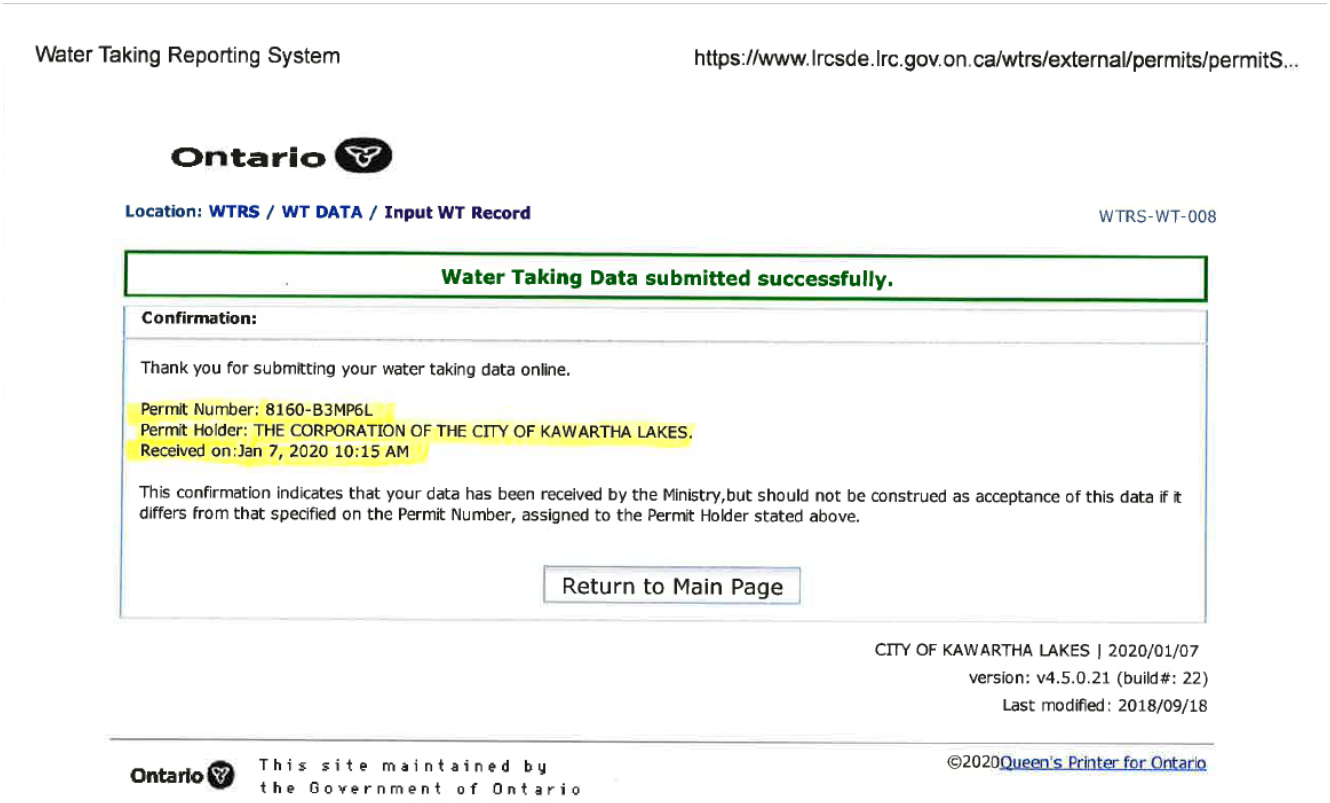
MAC = Maximum Allowable Concentration as per O. Reg.169/03
BDL = Below the laboratory detection level

Major Maintenance Summary

WO #	Description
21022	Replacement Equalization Level Controller
95968	Install Liquid Eductor Silica Sand to Actiflos
24731	Repair Booster Pump 3 at Thornhill Reservoir
26513	Replace Section of Lamellas Within Actiflo 2
23104	Replace Upper Blades Actiflo 2 Injection Mixer
28029	Replace Hach Raw pH Temp With Prominent pH Temp Meter
26958	Install VFD on Equalization Pump 1

Appendix A

WTRS Data and Submission Confirmation



Water Taking Reporting System https://www.lrcsde.lrc.gov.on.ca/wtrs/external/permits/permitS...

Ontario

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: 8160-B3MP6L
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on:Jan 7, 2020 10:15 AM

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.

Return to Main Page

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