

Bobcaygeon Drinking Water System

Waterworks # 210000318
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st, 2022

Issued: February 17, 2023

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 by appointment and on the [City's website](#). 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 322 Kent Street West in Lindsay, Ontario.

Compliance Report Card

Drinking Water System Number: 210000318

Drinking Water System Name: Bobcaygeon WTP

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Large Municipal Residential

Period Being Reported: January 1, 2022 - December 31, 2022

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	September 21, 2022	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 Bobcaygeon WTP sources its water from the Big Bob River.

Treatment

The treatment system consists of the following:

- Three lowlifts
- SternPAC feed system with metering pumps
- Two solids re-circulating reactivator type flocculator/clarifier units in parallel which includes flash mixing, flocculation and sedimentation chambers
- Two dual media (anthracite/sand) high rate gravity filters in parallel
- Continuous online turbidity analyzers

- Sodium hypochlorite feed system with metering pumps
- Continuous online chlorine analyzers
- Four clear wells
- Ammonium sulfate feed system with metering pumps
- Continuous online flow meters
- Three highlifts
- Water storage standpipe with a capacity of 4400 m³
- One surge equalization tank for the sludge from the settling tanks and the backwash wastewater from the filters
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
SternPAC	Coagulant	Kemira
Ammonium Sulphate	Chloramination	FloChem

Summary of Non-Compliance

Adverse Water Quality Incidents

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

Non-Compliance

There were no non-compliances identified during this period

Non-Compliance Identified in a Ministry Inspection:

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

Flows

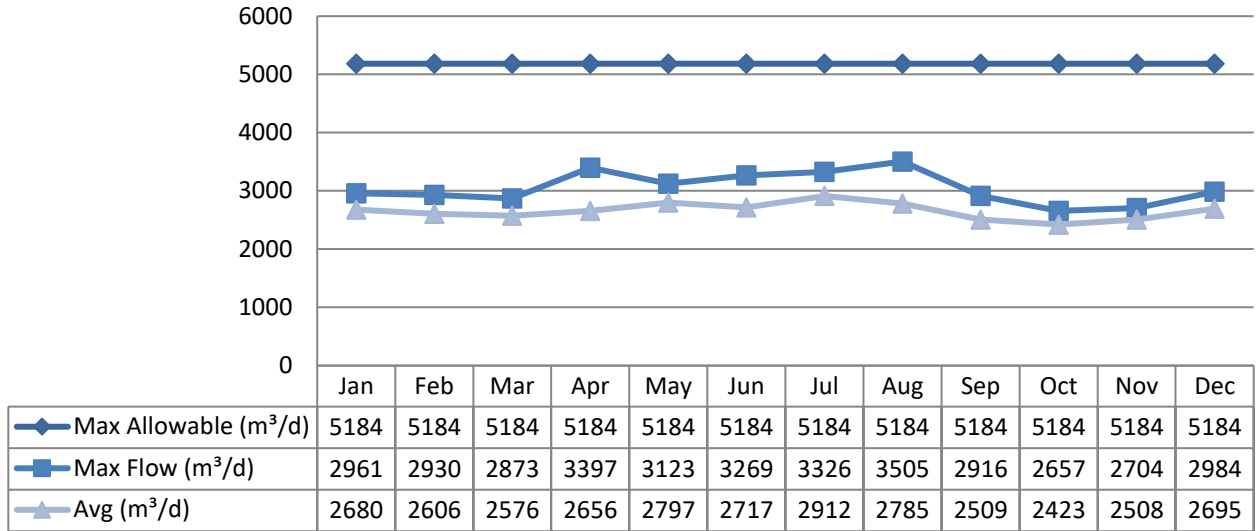
The Bobcaygeon Drinking Water System is operating near or over half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2022 Raw Flow Data was submitted to the Ministry electronically under permit #7640-AQJHCV. The confirmation and a copy of the data that was submitted are attached in Appendix A.

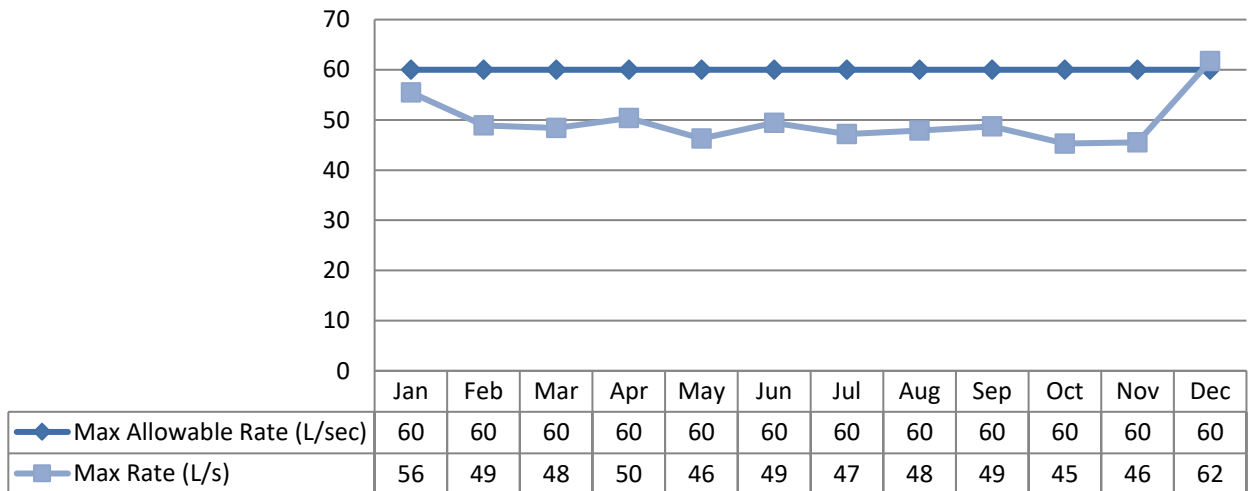
Total Monthly Flows (m³/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



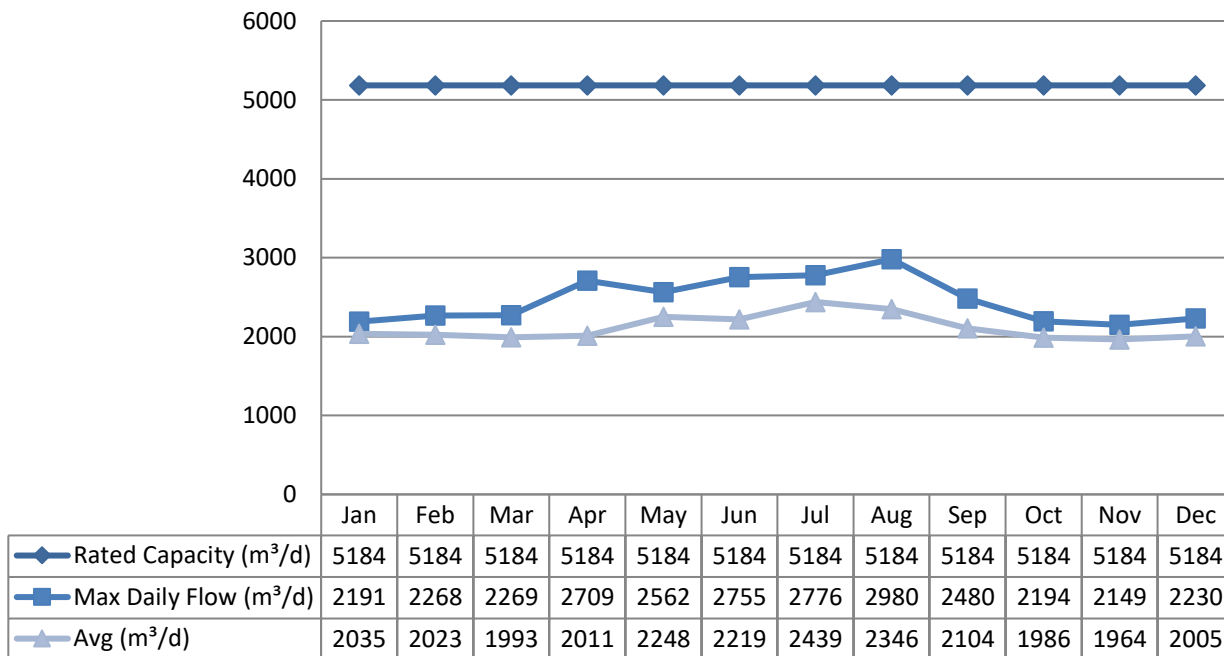
Note: The above table shows there was an exceedance in instantaneous peak flow rate (L/s) which were short in duration.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

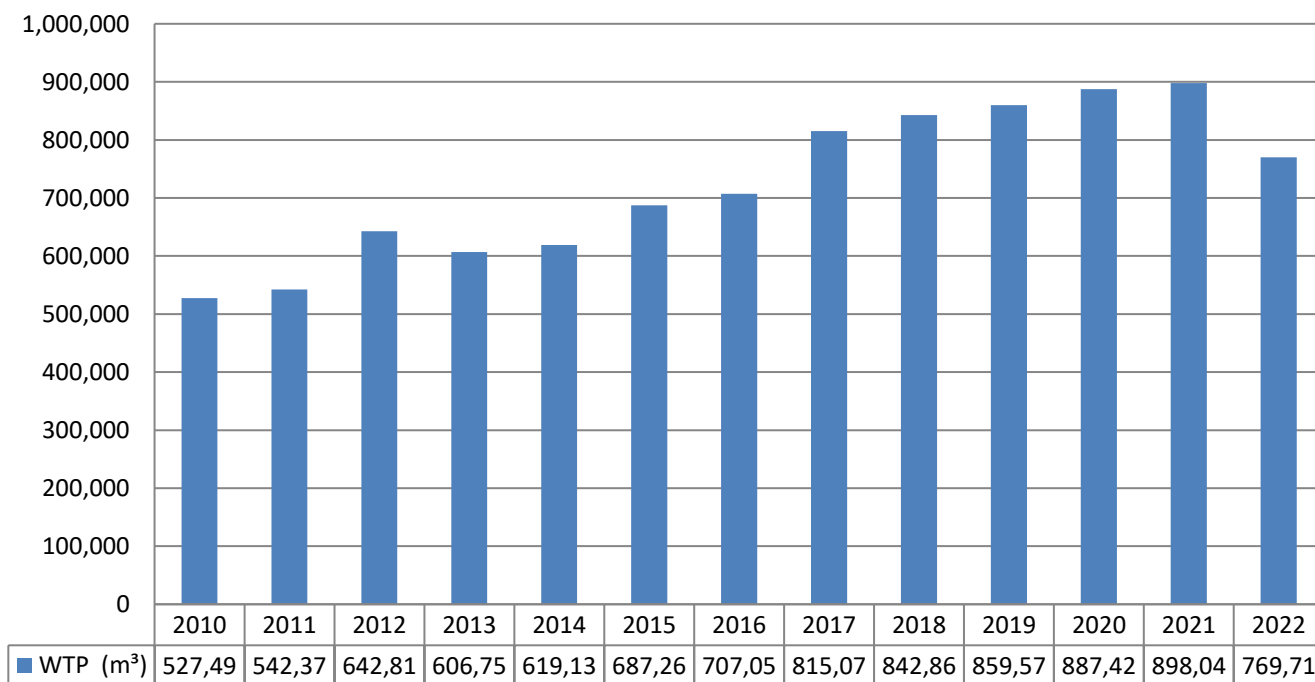
Monthly Rated Flows

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 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	52	0	24	5	300		
Treated	52	0	0	0	0	0	28
Distribution	156	0	0	0	0	0	38

Operational Testing

	No. of Samples Collected	Range of Results MIN	Range of Results MAX
Turbidity Raw	47	0.41	1.67
Turbidity Filter 1	8760	0.002	1.67
Turbidity Filter 2	8760	0.003	1.73
Chlorine	8760	0	6.01
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 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 Results	MAC	Exceedances MAC	Exceedances ½ MAC
Treated Water					
Antimony: Sb (ug/L)	2022/01/11	<MDL 0.6	6.0	No	No
Arsenic: As (ug/L)	2022/01/11	<MDL	10.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Results	MAC	Exceedances MAC	Exceedances ½ MAC
		0.2			
Treated Water					
Barium: Ba (ug/L)	2022/01/11	20.8	1000.0	No	No
Boron: B (ug/L)	2022/01/11	<MDL 2.0	5000.0	No	No
Cadmium: Cd (ug/L)	2022/01/11	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L)	2022/01/11	<MDL 0.08	50.0	No	No
Mercury: Hg (ug/L)	2022/01/11	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2022/01/11	<MDL 0.04	50.0	No	No
Uranium: U (ug/L)	2022/01/11	<MDL 0.002	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2018/01/08	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2022/01/11	0.003	1.0	No	No
Nitrite (mg/L)	2022/04/12	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2022/07/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2022/10/12	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2022/01/11	0.334	10.0	No	No
Nitrate (mg/L)	2022/04/12	0.412	10.0	No	No
Nitrate (mg/L)	2022/07/05	0.136	10.0	No	No
Nitrate (mg/L)	2022/10/12	0.041	10.0	No	No
Sodium: Na (mg/L)	2018/01/08	8.54	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.

Distribution System	No. of Sampling Point	No. of Samples	Range of Results MIN	Range of Results MAX	MAC (ug/L)	No. of Exceedances
Alkalinity (mg/L)	6	4	59	301	N/A	N/A
pH	6	4	6.86	7.40	N/A	N/A
Lead (ug/L)	6	0	N/A	N/A	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.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Treated Water					
Alachlor (ug/L)	2022/01/11	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2022/01/11	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2022/01/11	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2022/01/11	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2022/01/11	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2022/01/11	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2022/01/11	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2022/01/11	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2022/01/11	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2022/01/11	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2022/01/11	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2022/01/11	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2022/01/11	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2022/01/11	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2022/01/11	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2022/01/11	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2022/01/11	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2022/01/11	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2022/01/11	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2022/01/11	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2022/01/11	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2022/01/11	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2022/01/11	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2022/01/11	<MDL 1.0	280.0	No	No

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	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Malathion (ug/L)	2022/01/11	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2022/01/11	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2022/01/11	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2022/01/11	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2022/01/11	<MDL 1.0	10.0	No	No
PCB (ug/L)	2022/01/11	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2022/01/11	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2022/01/11	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2022/01/11	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2022/01/11	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2022/01/11	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2022/01/11	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2022/01/11	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2022/01/11	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2022/01/11	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2022/01/11	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2022/01/11	<MDL 0.25	5.0	No	No
2-methyl-4- chlorophenoxyacetic acid (MCPA) (ug/L)	2022/01/11	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2022/01/11	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2022/01/11	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2022	41.25	100.0	No	No
HAA Total (ug/L) Annual Average - DW	2022	35.95	80.0	No	No

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

MDL = Method Detection Limit

Additional Legislated Samples

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
Harmful Algal Blooms Monitoring required June to October at a minimum. Treated	June	<0.1 – <0.1	<0.1 - <0.1	N

Municipal Drinking Water Licence	Collected Weekly June – Oct	Total Microcystin Raw Results Range (ug/L)	Total Microcystin Treated Water Results Range (ug/L)	Treated Water Total Microcystin Limit 1.5 ug/L Exceeded Y/N
and Raw Water Samples collected weekly.				
	July	<0.1 - <0.1	<0.1 - <0.1	N
	August	<0.1 - <0.1	<0.1 - <0.1	N
	September	<0.1 - <0.1	<0.1 - <0.1	N
	October	<0.1 - <0.1	<0.1 - <0.1	N
	November	<0.1 - <0.1	<0.1 - <0.1	N

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



WO #	Description
2225019	Replace Turbidity Analyzers
2868362	Sternpac (Coagulant) Flow Meter, Purchase
2917374	Laneway Branches, Trim
3066169	Sodium Hypochlorite Line Strainer and Flush Valve, Install
3105991	Filter Train 2, Backwash Float Sticking, Repair
3107712	SCADA Troubleshooting, Repair
3231615	Weather-Stripping on Exterior Door, Install
1750767	Install Smoke Detectors
2267152	Heater Replacement
2500962	Site Tube For Stern Pac Not Reading, Repair
2542903	Heater in Office, Install
2635212	Mixer Manual Starters, Repair
2636220	Water Distribution, Emergency Light, Repair
2677571	Loading Dock Guard Chains, Repair/Reinforce
2678120	Optimization by Consultant
2678709	Install Alarm on Ammonia Sulphate Pumps
2679362	Kick Plates on Catwalk, Install
2712665	Highlift 2 Repair
2725208	UPS/PLC, Failure
2727063	Purchase New Valve Actuator
2775852	Snow and Ice, Removal
2777755	Chlorine Pump, Fittings, Spare
2818122	HMI, Replacement
2823577	Troubleshoot Ammonium Sulphate Pump Faults, Repair
2868307	Bobcaygeon Water Tower Painting
2964243	Chlorine Pump 2, MP502, Replace Foot Valve

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WO #	Description
2965071	Turbidity Analyzer, Failure, Troubleshoot
2965610	AC Unit, Admin Office, Repair
3015198	Facility Cleaning, Maintenance
980710	Intake Pipe and Chamber Cleaning

Appendix A

WTRS Data and 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:

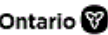
Thank you for submitting your water taking data online.

Permit Number: 7640-AQJHCV
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 1, 2023 11:53 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.

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