

Southview Estates Drinking Water System

Waterworks # 220012260

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 11, 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 page on the City of Kawartha Lakes website](#).

Compliance Report Card

Drinking Water System Number: 220012260

Drinking Water System Name: Southview Estates WTP

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	2	January 23, 2020	2019/2020 Announced Focused Drinking Water Inspection, 98.4% rating.
		December 10, 2020	2020/2021 Unannounced Focused Drinking Water Inspection, 100% rating.
AWQI's	3	January 7, 2020	The four-quarter Rolling Annual Average (RAA) for THM was 109 µg/L. The RAA limit is 100 µg/L.
		April 3, 2020	The four-quarter Rolling Annual Average (RAA) for THM was 104 µg/L. The RAA limit is 100 µg/L.
		July 3, 2020	The four quarter Rolling Annual Average (RAA) for THM was 105 µg/L. The RAA limit is 100 µg/L.
Number of Non-Compliances	1	March 3, 2020	During the review period the operating authority did not collect the 3 month samples for arsenic as required under O. Reg.

	# of Events	Date	Details
			170/03 Schedule 13-5 for a half exceedance.
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Southview Estates Drinking Water System draws water from Sturgeon Lake.

Treatment

The treatment system consists of the following:

- Dual train conventional filtration package plant
- Inline static mixer
- Coagulant feed system with addition of SternPAC
- Coagulant aid feed system with addition of polymer
- Two mono-media upflow clarifier units
- Two dual media rapid gravity filters
- Sodium hypochlorite feed system for primary disinfection
- Dual celled chlorine contact tanks (274 m³) located beneath the plant
- Two highlift pump chambers housing five pumps; three highlift and two backwash
- Sodium hypochlorite feed system for post chlorination
- Online analyzers to monitor both free treated chlorine and filter effluent turbidity
- Wastewater treatment system that consists of two backwash pumps and two settling tanks that receive backwash water and clarifier sludge
- SCADA computer control system
- Zebra mussel control system
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
SternPAC	Coagulant	Kemira
Magnafloc	Coagulant Aid	BASF

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
Jan 07, 21	149394	Distribution	109.52 µg/L	The RAA limit is 100 µg/L.	O. Reg. 170/03 Schedule 16 Section 10	Reduced chlorine residual. Lowered clearwell level to reduce detention time. Change rotation of highlifts to promote better mixing. Clearwell cleaning to reduce THM production in clearwell Conducting jar tests & additional sampling for chemical dosage optimization
Apr 03, 21	149824	Distribution	104.02 µg/L			
Jul 03, 21	150490	Distribution	105.77 µg/L			

Non-Compliance

There were no non-compliances reported during the reporting 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
O. Reg. 170/03 Schedule 13-5	The owner was required to increase frequency of sampling of arsenic and that increased monitoring was not conducted.	Identified March 6, 2020. Resolved July 7, 2020.	The owner/operator is required to continue to collect a sample for arsenic every calendar quarter, until four consecutive results are less than the half standard for arsenic	Complete

Flows

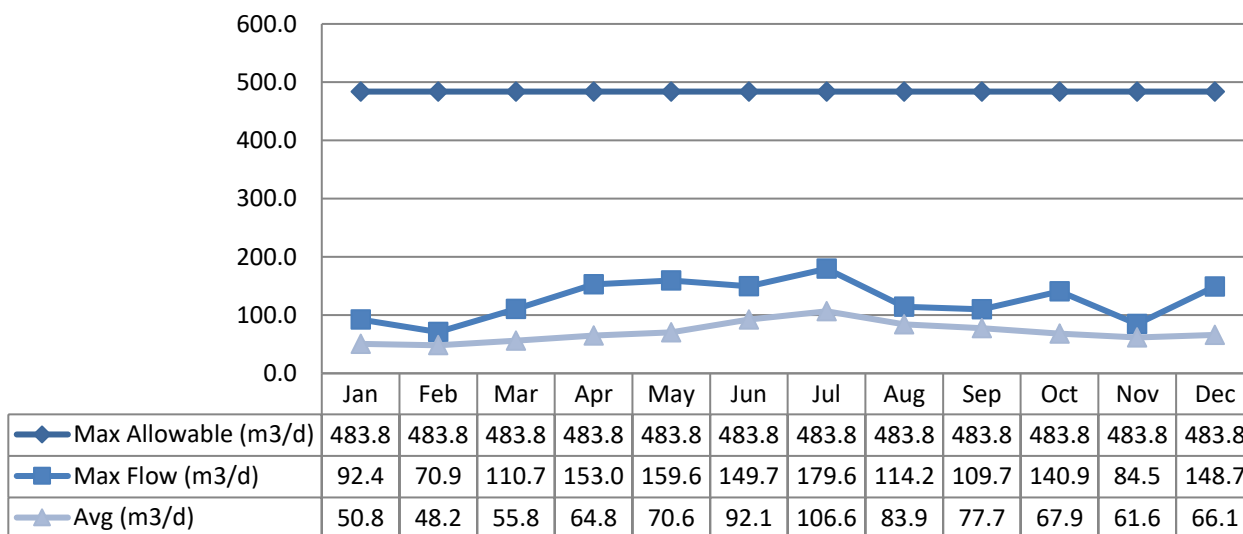
The Southview Estates Drinking Water System is operating under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2020 Raw Flow Data was submitted to the Ministry electronically under permit #8118-AW2NZT. The confirmation and a copy of the data that was submitted are attached in Appendix A.

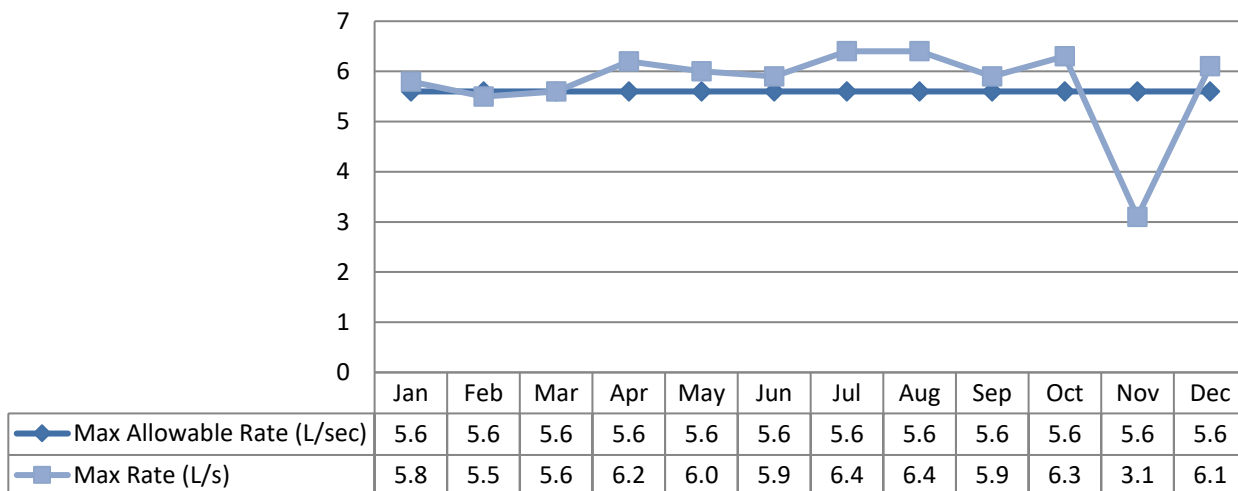
Total Monthly Flows (m3/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



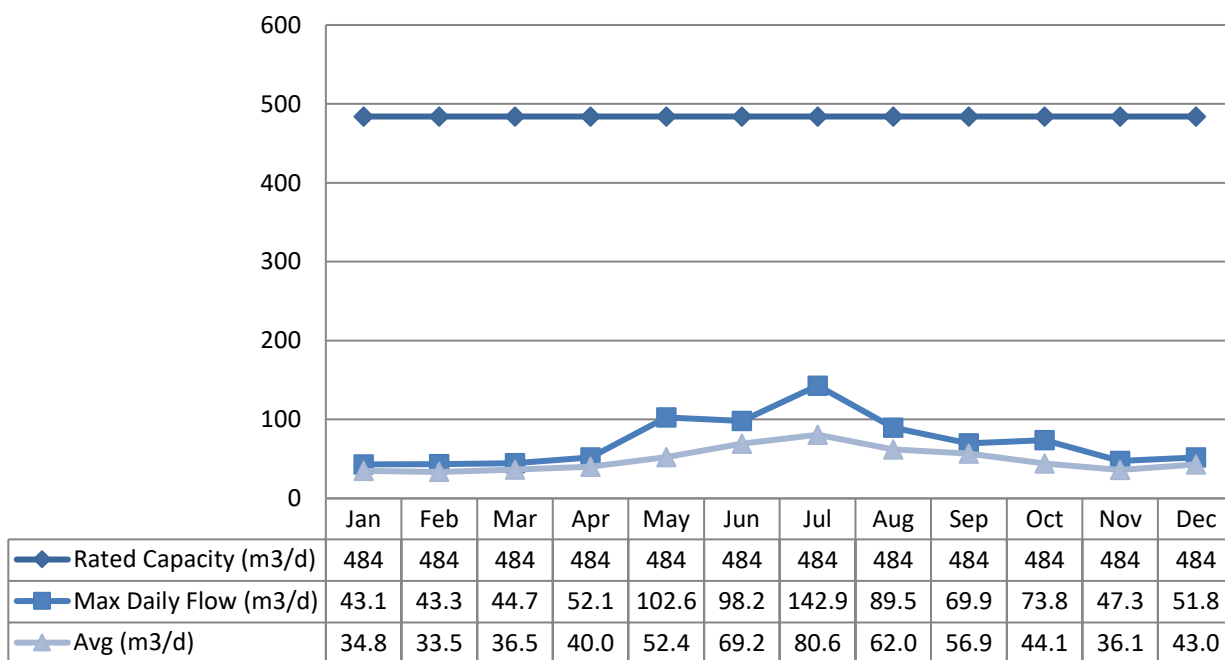
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) and exceedances were short in duration. The scheduled Flow Meter calibration was in August.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

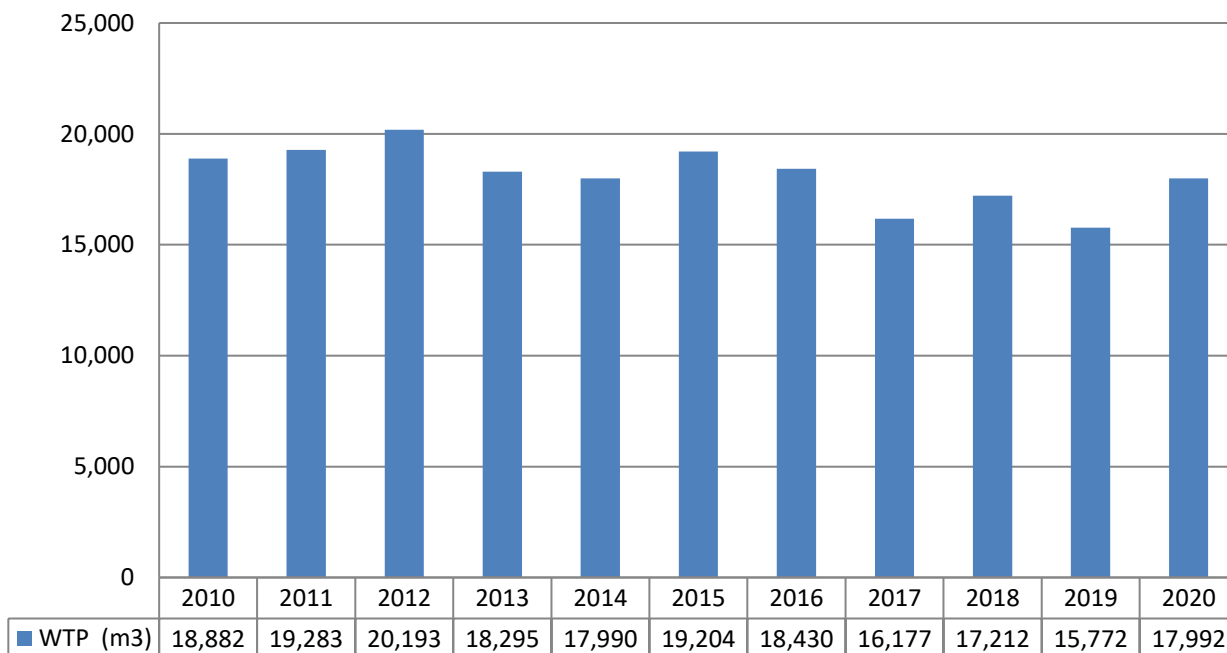
Monthly Rated Flows (m3/d)

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	Range of E.coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw	52	0	10	0	68		
Treated	53	0	0	0	0	0	1
Distribution	158	0	0	0	0	0	2000

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Turbidity Raw (NTU)	57	0.15	2.49
Turbidity Filter 1 (NTU)	8760	0	6.05
Turbidity Filter 2 (NTU)	8760	0	2.34
Chlorine	8760	0.06	6.22

	No. of Samples Collected	Range of Results	Range of Results
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

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Antimony: Sb (ug/L)	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L)	2020/07/07	<MDL 0.2	10.0	No	No
Barium: Ba (µg/L)	2020/01/06	22.2	1000.0	No	No
Boron: B (ug/L)	2020/01/06	11.0	5000.0	No	No
Cadmium: Cd (ug/L)	2020/01/06	0.004	5.0	No	No
Chromium: Cr (ug/L)	2020/01/06	0.18	50.0	No	No
Mercury: Hg (ug/L)	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2020/01/06	0.04	50.0	No	No
Uranium: U (ug/L)	2020/01/06	0.029	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2018/01/15	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/07/07	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/10/05	<MDL 0.003	1.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Exceedances	Exceedances
				MAC	1/2 MAC
Nitrate (mg/L)	2020/01/06	0.592	10.0	No	No
Nitrate (mg/L)	2020/04/06	0.401	10.0	No	No
Nitrate (mg/L)	2020/07/07	0.105	10.0	No	No
Nitrate (mg/L)	2020/10/05	0.243	10.0	No	No
Sodium: Na (mg/L)	2018/01/15	10.7	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 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	Range of Results	MAC (µg/L)	No. of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	79	95	N/A	N/A
pH	2	2	7.53	8.14	N/A	N/A
Lead (µg/l)	2	2	0.06	0.33	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	No. of Exceedances	No. of Exceedances
				MAC	1/2 MAC
Alachlor (ug/L)	2020/01/06	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2020/01/06	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2020/01/06	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2020/01/06	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2020/01/06	<MDL	0.01	No	No

Treated Water Parameters	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	No. of Exceedances
				MAC	1/2 MAC
		0.004			
Bromoxynil (ug/L)	2020/01/06	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2020/01/06	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2020/01/06	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2020/01/06	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2020/01/06	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2020/01/06	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2020/01/06	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2020/01/06	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2020/01/06	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2020/01/06	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2020/01/06	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2020/01/06	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2020/01/06	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2020/01/06	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2020/01/06	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2020/01/06	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2020/01/06	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2020/01/06	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2020/01/06	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2020/01/06	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2020/01/06	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2020/01/06	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2020/01/06	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2020/01/06	<MDL 1.0	10.0	No	No
PCB (ug/L)	2020/01/06	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2020/01/06	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2020/01/06	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2020/01/06	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2020/01/06	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2020/01/06	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2020/01/06	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2020/01/06	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2020/01/06	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2020/01/06	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2020/01/06	<MDL 0.44	5.0	No	No

Treated Water Parameters	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	No. of Exceedances
				MAC	1/2 MAC
2,4,6-Trichlorophenol (ug/L)	2020/01/06	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2020/01/06	<MDL 0.12	100.0	No	No
Trifluralin (µg/L)	2020/01/06	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2020/01/06	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average	2020/01/01	87.857	100.0	No	Yes
HAA Total (ug/L) Annual Average	2020/01/01	69.55	80.0*	No	Yes

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

MDL = Method Detection Limit

Additional Legislated Samples

Parameter	Location	No. of Samples Collected	Range of Results	Range of Results
			Minimum	Maximum
Alkalinity (mg/L as CaCO ₃)	Point of Entrance to Distribution System	4	69.0	89.0
Aluminum (µg/L)	Point of Entrance to Distribution System	4	27.0	107.0
Dissolved Organic Carbon (mg/L)	Point of Entrance to Distribution System	26	2.0	4.0
Total Suspended Solids (mg/L)	Settling Tank Discharge Point	12	<2.0	10.0

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

WO #	Description
1534997	Replace Milltronics Level Indicator #2
1750028	Pressure Gauges, Replace
1708383	6263, Southview Estates WT, Highlift Pump 3, Overhaul
1339139	Highlift Pump # 1, Overhaul
1586476	Highlift Pump 3, VFD, Purchase/Install
1624454	Generator Block Heater Replacement

WO #	Description
1873936	Ductless Air Conditioner, Install
1535311	Replace Faulty Heater
1342364	Replace Chainfall Lifting Device - Inspection Fail

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: 8118-AW2NZT
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 27, 2021 11:34 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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