

Birch Point Drinking Water System

Waterworks # 220012572
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: 220012572

Drinking Water System Name: Birch Point DWS

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	0	Jan. 17, 2023	2022/2023 Announced, Focused Drinking Water Inspection
AWQI's	0		
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The water supply for the DWS comes from three (3) groundwater wells that are designated as non-GUDI (groundwater under direct influence).

Treatment

The treatment system consists of the following:

- A sodium hypochlorite feed system
- A cartridge filtration system for iron removal consisting of two treatment trains
- A treated water storage reservoirs
- Three centrifugal high lift pumps with variable frequency drives
- Four hydropneumatic tanks
- Raw water and treated water flow meters

- Stand-by power generator on site
- Remote distribution monitoring station (located in Highview Acres)

Treatment Chemicals used during the reporting year

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents

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

Non-Compliance(s)

There were no non-compliance issues reported during the reporting period.

Non-Compliance(s) Identified in a Ministry Inspection:

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

Flows

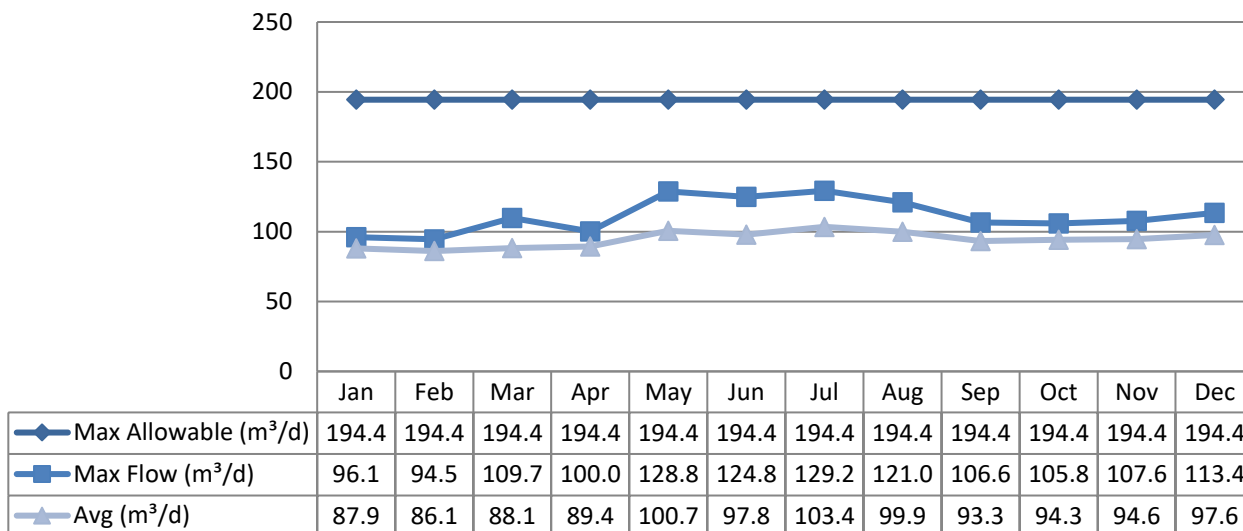
The Birch Point Drinking Water System is operating on average under half the rated capacity.

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 #7147-9Y7HWV. The confirmation of the data that was submitted is attached in Appendix A.

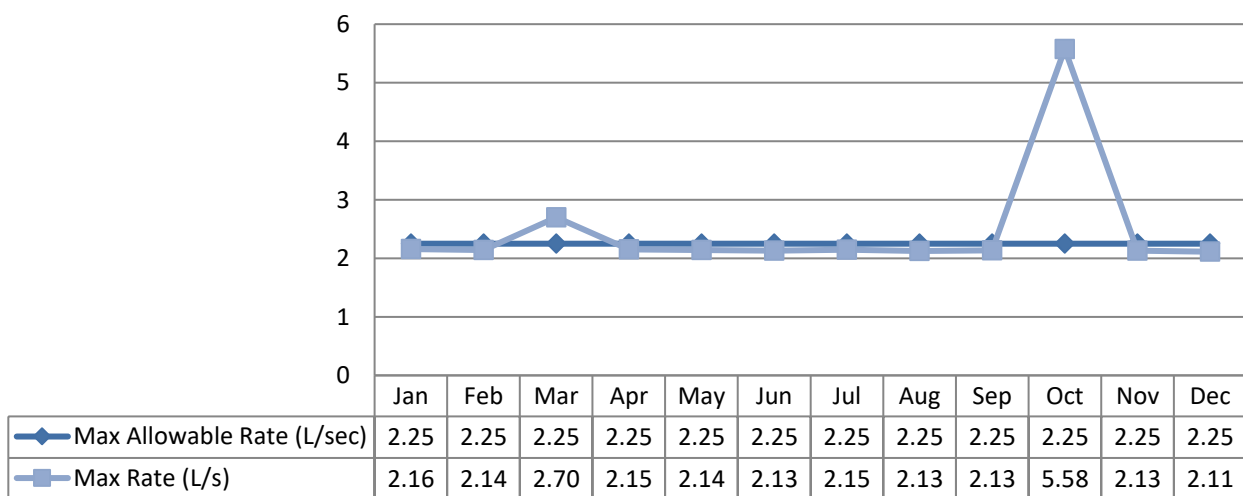
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #3



Monthly Rated Flows (L/s)

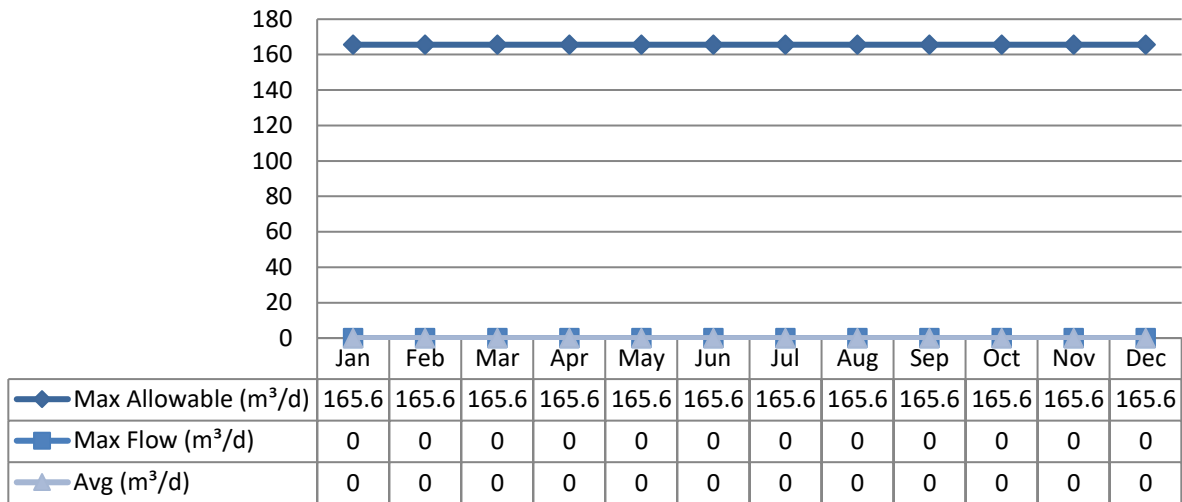
Max allowable rate – PTTW – Well #3



Note: The above table shows there was an exceedance in instantaneous peak flow rate (L/s). The significant spike in October was due to scheduled Flow Meter calibration.

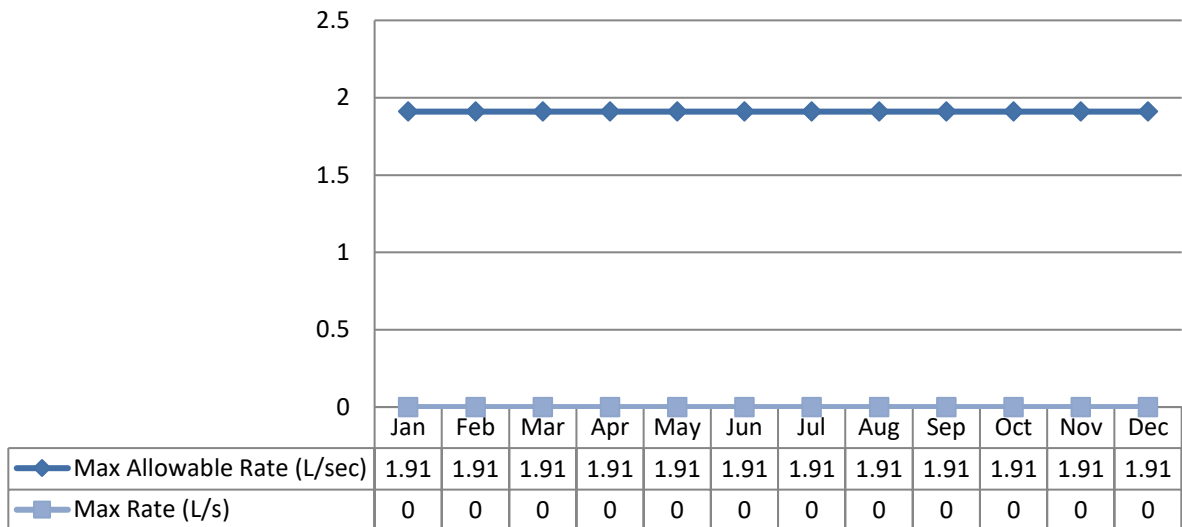
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #4



Monthly Rated Flows (L/s)

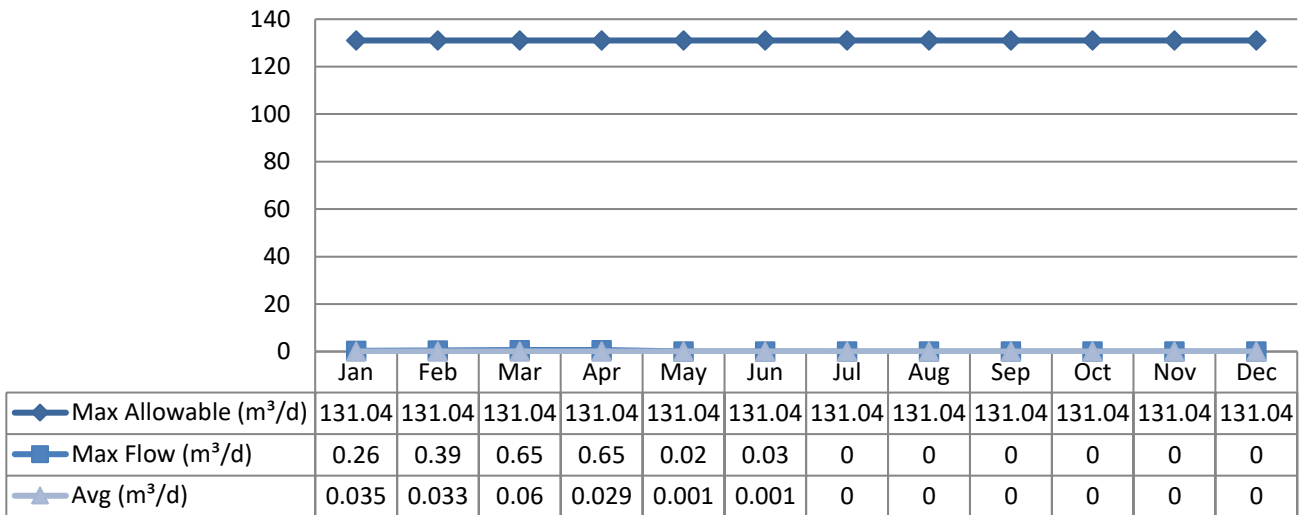
Max allowable rate – PTTW – Well #4



Note: Well 4 was not in production during the reporting period.

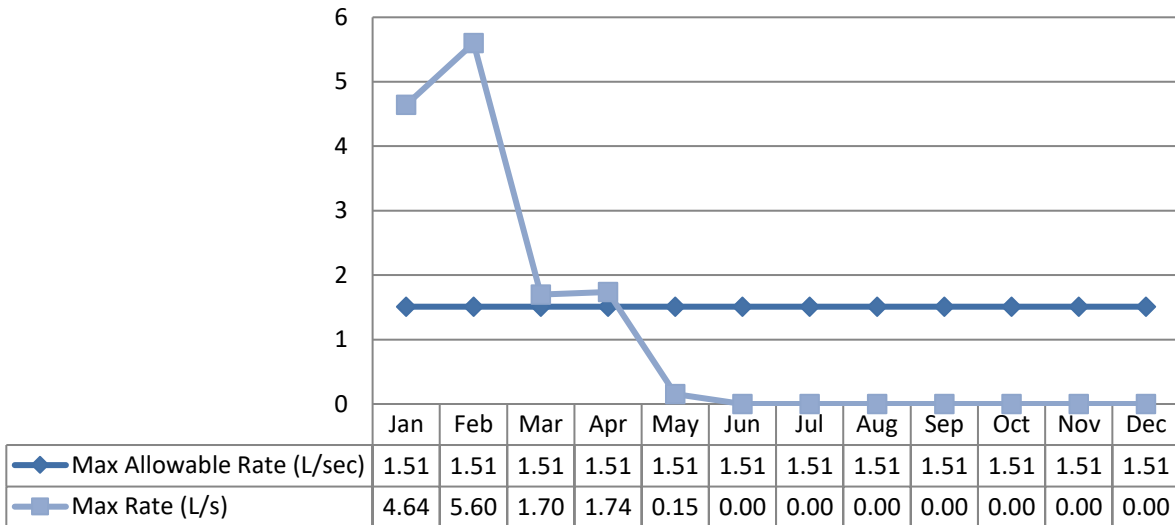
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #5



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #5



Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) this is due to well pump start-up.

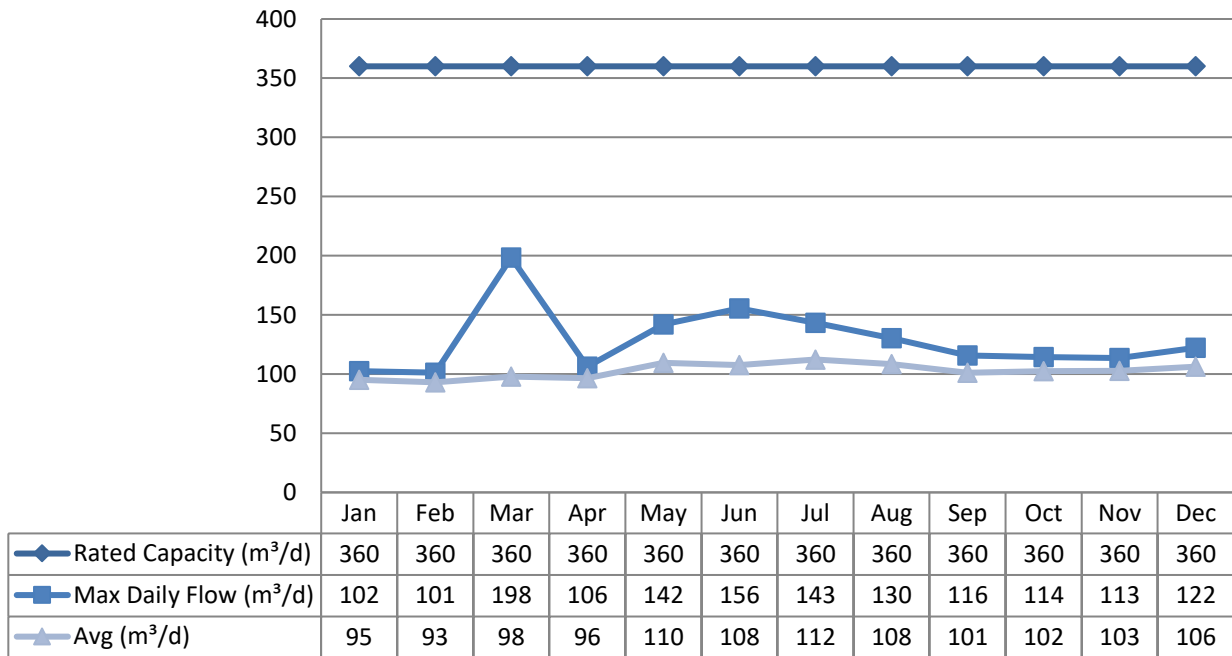
Note: Well 5 having production issues and taken out of service June 2022.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

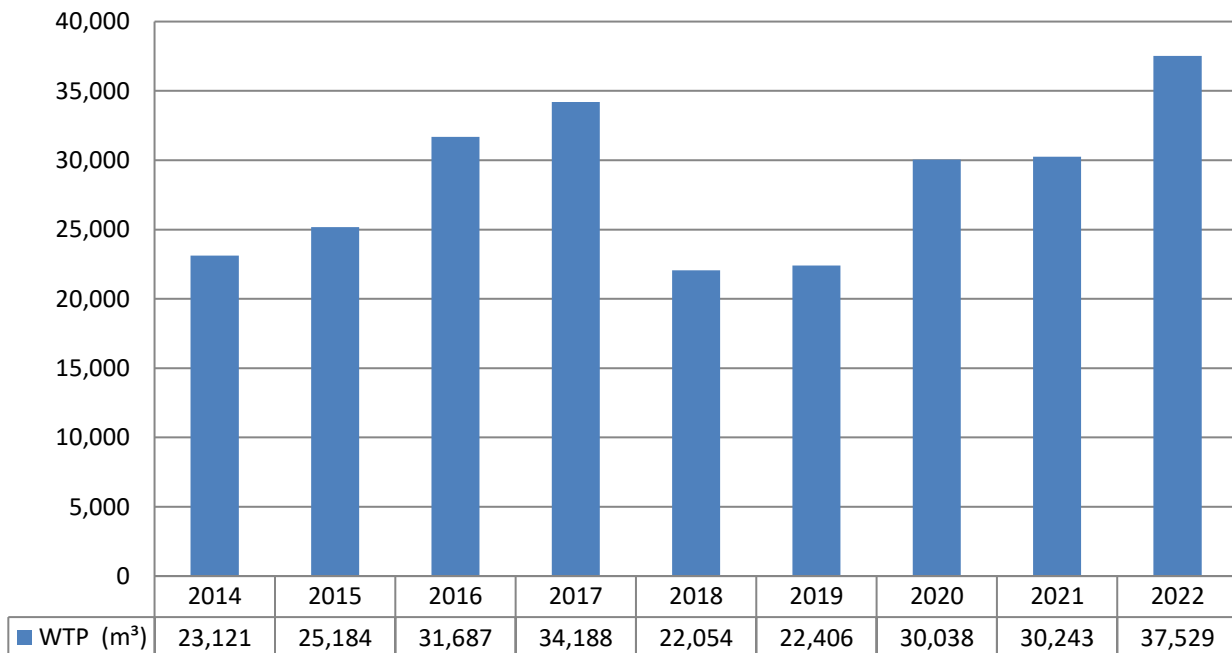
Monthly Rated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

		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
Source	# of Samples	Min	Max	Min	Max	Min	Max
Raw Well 3	52	0	0	0	0		
Raw Well 4	6	0	0	0	20		
Raw Well 5	23	0	0	0	0		
Treated	60	0	0	0	0	0	9
Distribution	156	0	0	0	0	0	25

Note: Well 4 was not in production during the reporting period but was sampled as part of well maintenance and testing.

Operational Testing

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 3 (NTU)	17	0.09	0.77
Turbidity Well 4 (NTU)	0	N/A	N/A
Turbidity Well 5 (NTU)	9	0.19	1.18
Chlorine	8760	0	5.00
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Well 4 was not in production during the reporting period.

Note: Well 5 was not in production beginning June 2022.

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.

Note: More than the required number of raw water turbidity samples were collected on Well 3 as a best management practice for monitoring cartridge filters (non-regulatory).

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 every three years 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	Exceedance MAC	Exceedance ½ MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	2020/01/06	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/06	204.0	1000.0	No	No
Boron: B (ug/L) - TW	2020/01/06	77.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2020/01/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TW	2020/01/06	0.15	50.0	No	No
Mercury: Hg (ug/L) - TW	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2020/01/06	0.08	50.0	No	No
Uranium: U (ug/L) - TW	2020/01/06	0.928	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2018/12/10	0.12	1.5	No	No
Nitrite (mg/L) - TW	2022/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/04/07	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/07/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2022/10/03	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2022/01/06	3.1	10.0	No	No
Nitrate (mg/L) - TW	2022/04/07	3.02	10.0	No	No
Nitrate (mg/L) - TW	2022/07/04	2.95	10.0	No	No
Nitrate (mg/L) - TW	2022/10/03	2.7	10.0	No	No
Sodium: Na (mg/L) - TW	2022/01/06	54.1	20*	Yes	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	No. of Sampling Points	No. of Samples	Range of Results Minimum	Range of Results Maximum	MAC (ug/L)	Exceedances
Alkalinity (mg/L)	2	2	284	301	N/A	N/A
pH	2	2	6.86	7.14	N/A	N/A
Lead (ug/l)	0	0	N/A	N/A	10	No

Organic Parameters

These parameters are tested 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	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
Treated Water					
Alachlor (ug/L) - TW	2020/01/06	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2020/01/06	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L) - TW	2020/01/06	<MDL 0.05	20.00	No	No
Benzene (ug/L) - TW	2020/01/06	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2020/01/06	<MDL 0.33	5.00	No	No
Carbaryl (ug/L) - TW	2020/01/06	<MDL 0.05	90.00	No	No
Carbofuran (ug/L) - TW	2020/01/06	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2020/01/06	<MDL 0.17	2.00	No	No
Chlorpyrifos (ug/L) - TW	2020/01/06	<MDL 0.02	90.00	No	No
Diazinon (ug/L) - TW	2020/01/06	<MDL 0.02	20.00	No	No
Dicamba (ug/L) - TW	2020/01/06	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2020/01/06	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2020/01/06	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2020/01/06	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2020/01/06	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	2020/01/06	<MDL 0.4	9.00	No	No
Dimethoate (ug/L) - TW	2020/01/06	<MDL 0.06	20.00	No	No
Diquat (ug/L) - TW	2020/01/06	<MDL 1.0	70.00	No	No
Diuron (ug/L) - TW	2020/01/06	<MDL 0.03	150.00	No	No
Glyphosate (ug/L) - TW	2020/01/06	<MDL 1.0	280.00	No	No
Malathion (ug/L) - TW	2020/01/06	<MDL 0.02	190.00	No	No

	Sample Date	Sample Result	MAC	Exceedance MAC	Exceedance ½ MAC
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2020/01/06	<MDL 0.12	100.00	No	No
Metolachlor (ug/L) - TW	2020/01/06	<MDL 0.01	50.00	No	No
Metribuzin (ug/L) - TW	2020/01/06	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2020/01/06	<MDL 0.3	80.00	No	No
Paraquat (ug/L) - TW	2020/01/06	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2020/01/06	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.15	60.00	No	No
Phorate (ug/L) - TW	2020/01/06	<MDL 0.01	2.00	No	No
Picloram (ug/L) - TW	2020/01/06	<MDL 1.0	190.00	No	No
Prometryne (ug/L) - TW	2020/01/06	<MDL 0.03	1.00	No	No
Simazine (ug/L) - TW	2020/01/06	<MDL 0.01	10.00	No	No
Terbufos (ug/L) - TW	2020/01/06	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2020/01/06	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2020/01/06	<MDL 0.2	100.00	No	No
Triallate (ug/L) - TW	2020/01/06	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	2020/01/06	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2020/01/06	<MDL 0.25	5.00	No	No
Trifluralin (ug/L) - TW	2020/01/06	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	2020/01/06	<MDL 0.17	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2022	21.25	100	No	No
HAA Total (ug/L) Annual Average - DW	2022	5.3	80	No	No

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

MDL = Method Detection Limit

Additional Legislated Samples

There were no additional legislated samples required to report during this reporting period.

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



WO #	Description
3104261	Flow Meter, Well 4, Replace
3146223	Analyzer Feed Pump, Replace
2582913	High Lift Check Valves, Repair
2582914	High Lift 3 VFD, Repair
2676282	Clearwell Sample Pump Repair
2721629	Chlorine Back Pressure Valves

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WO #	Description
2722754	Well 3 Drain Valve, Repair
2722790	New BTP Panel, Installation
2727016	Well 5, Troubleshoot and Inspection
2777757	Highview Acres Chlorine Trend, Repair
2820039	Chlorine Pump, Suction and Discharge Tubing
2866590	Cellular Communication, Troubleshoot
2919286	Chlorine Pump, Spare Back Pressure Valve, Replacement
2919595	Well #5 Rehab by Contractor
2922331	Filter Drain Ball Valve, Repair

Appendix A

WTRS 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: 7147-9Y7HWV
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Jan 23, 2023 1:59 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.

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