

Manorview Drinking Water System

Waterworks # 260001864

System Category – Small Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Reporting Period of January 1st – December 31st 2020

Issued: February 16, 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: 260001864

Drinking Water System Name: Manorview DWS

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Small 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 | Aug. 12, 2020 | Unannounced - Focused Drinking Water Inspection - Final Inspection Rating of 100% |
| AWQI's | 0 | | |
| Number of Non-Compliances | 1 | Fall 2020 | Unable to complete bi-annual UV duty sensor checks and calibrations on UV system. |
| Number of Boil Water Advisories | 0 | | |

System Process Description

Raw Source

The supply for the DWS comes from two (2) groundwater wells that are designated as GUDI (Groundwater Under the Direct Influence of Surface Water).

Treatment

The treatment system consists of the following:

- a sodium hypochlorite disinfection system
- cartridge filtration
- two (2) UV reactors

- underground clearwell
- hydropneumatic tank
- high lift pumping system
- on-line monitoring of chlorine
- stand-by diesel 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

There were no Adverse Water Quality Incidents reported during the reporting period.

Non-Compliance

| Legislation | Requirement(s) system failed to meet | Duration of the failure (i.e. date(s)) | Corrective Action | Status |
|----------------------------------|--|---|---|---------------|
| Municipal Drinking Water Licence | Schedule E UV Disinfection Duty UV Sensor Checks and Calibration | Fall 2020 | The bi-annual duty UV sensor checks and calibration was completed on January 14, 2021. Was placed on hold until UV unit #1 was able to be repaired. Temporary regulatory relief due to COVID-19 was requested on December 29, 2020 to the Approvals Branch of the MECP. | Complete |

Non-Compliance Identified in a Ministry Inspection:

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

Flows

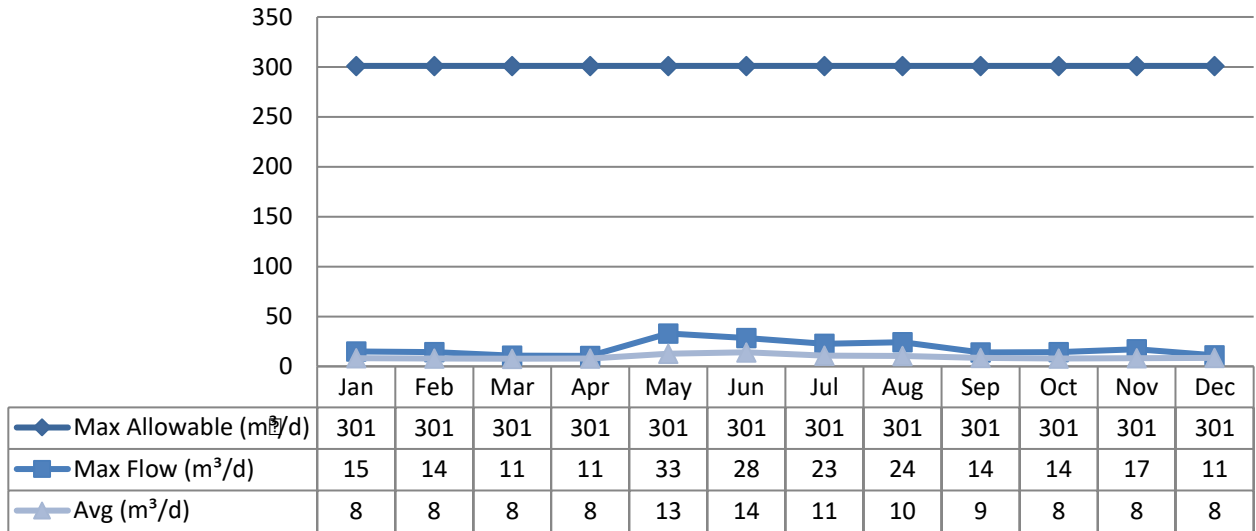
The Manorview Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2020 Raw Flow Data was submitted to the Ministry electronically under permit #1163-AYRJ36. The confirmation that the data was submitted is attached in Appendix A.

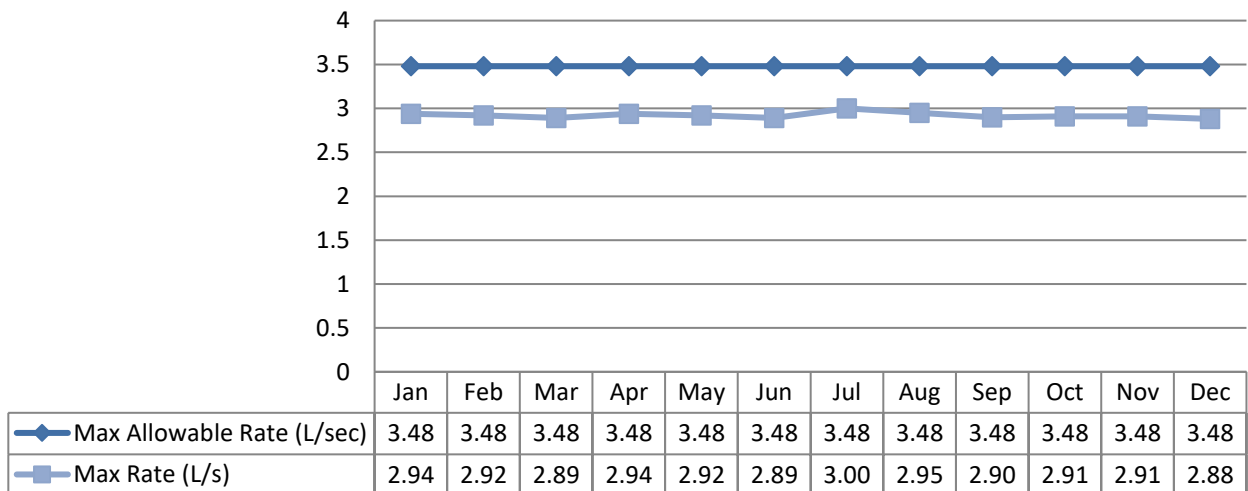
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #1



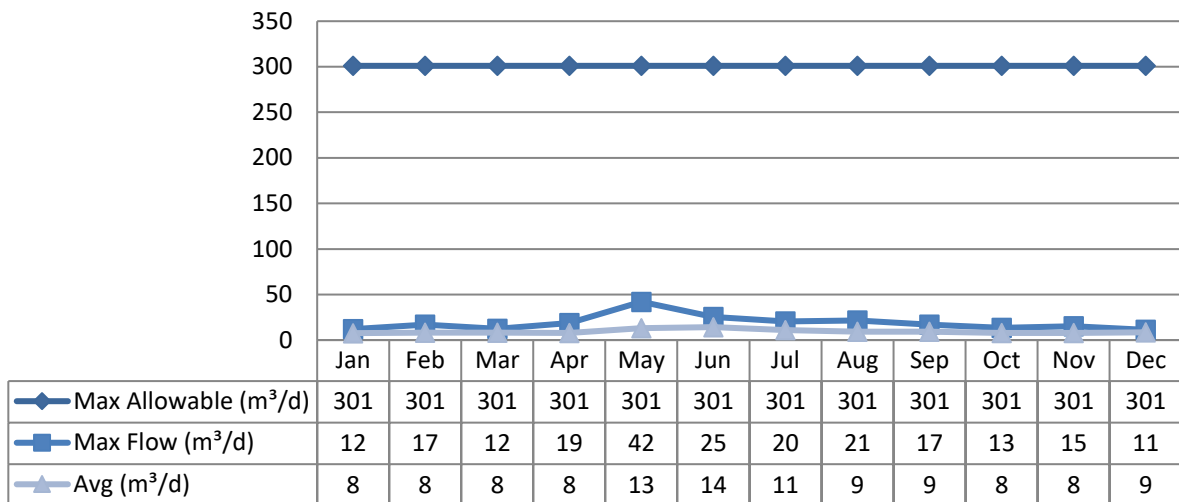
Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #1



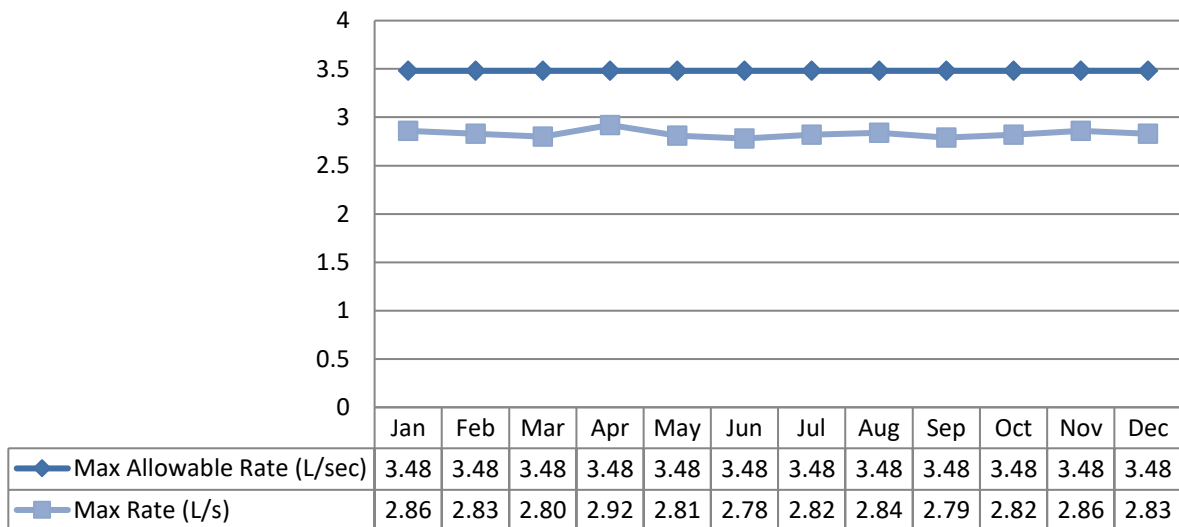
Total Monthly Flows (m³/d)

Max Allowable PTTW – Well #2



Monthly Rated Flows (L/s)

Max allowable rate – PTTW – Well #2

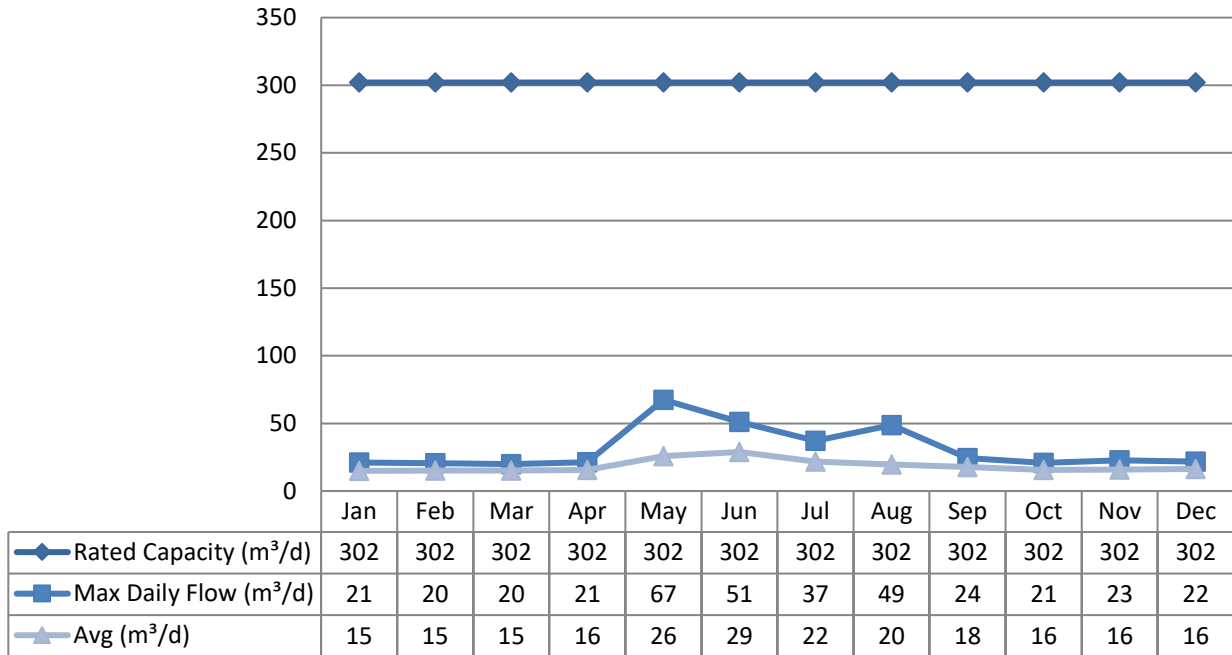


Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

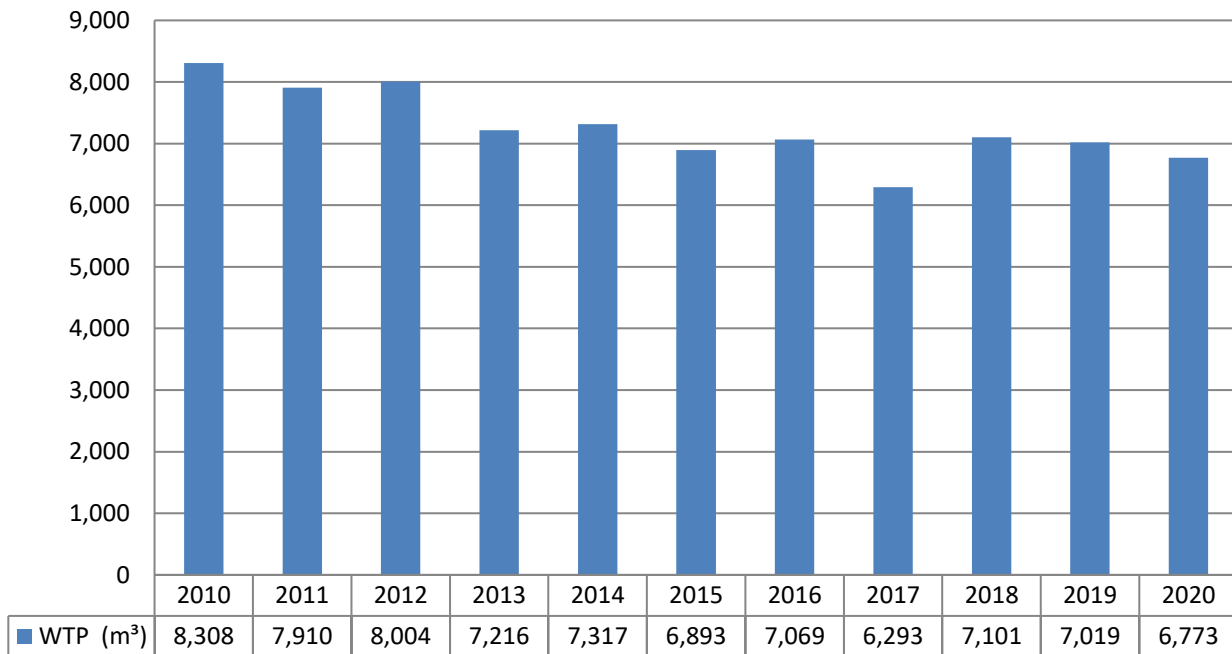
Monthly Rated Flows

Rated Capacity – MDWL



Annual Total Flow Comparison

Total Annual m³



Regulatory Sample Results Summary

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 Well 1 | 26 | 0 | 0 | 0 | 0 | | |
| Raw Well 2 | 26 | 0 | 2 | 0 | 2 | | |
| Treated | 0 | | | | | | |
| Distribution | 52 | 0 | 0 | 0 | 0 | 0 | 1 |

Operational Testing

| | No. of Samples Collected | Range of Results | Range of Results |
|---|--------------------------|------------------|------------------|
| | | Minimum | Maximum |
| Turbidity Well 1 (NTU) | 12 | 0.12 | 0.55 |
| Turbidity Well 2 (NTU) | 12 | 0.17 | 0.51 |
| Turbidity – Filter (NTU) | 8760 | 0 | 1.80 |
| Chlorine | 8760 | 0 | 1.85 |
| 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, Fluoride and metals are required to be tested every five years. Nitrate and Nitrite are tested quarterly 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

| Treated Water | Sample Date (yyyy/mm/dd) | Sample Result | MAC | No. of Exceedances | No. of Exceedances |
|--------------------------|--------------------------|---------------|--------|--------------------|--------------------|
| | | | | MAC | 1/2 MAC |
| Antimony: Sb (ug/L) - TW | 2020/01/06 | <MDL 0.09 | 6.0 | No | No |
| Arsenic: As (ug/L) - TW | 2020/01/06 | 0.4 | 10.0 | No | No |
| Barium: Ba (ug/L) - TW | 2020/01/06 | 67.7 | 1000.0 | No | No |
| Boron: B (ug/L) - TW | 2020/01/06 | 6.0 | 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 | 0.51 | 50.0 | No | No |

| Treated Water | Sample Date (yyyy/mm/dd) | Sample Result | MAC | No. of Exceedances | No. of Exceedances |
|----------------------------|-----------------------------|------------------|------|-----------------------|-----------------------|
| | | | | MAC | 1/2 MAC |
| Mercury: Hg (ug/L) – TW | 2020/01/06 | <MDL 0.01 | 1.0 | No | No |
| Selenium: Se (ug/L) - TW | 2020/01/06 | 0.18 | 50.0 | No | No |
| Uranium: U (ug/L) - TW | 2020/01/06 | 0.528 | 20.0 | No | No |
| Additional Organics | | | | | |
| Fluoride (mg/L) - TW | 2020/01/06 | 0.08 | 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 | 2020/07/07 | <MDL 0.003 | 1.0 | No | No |
| Nitrite (mg/L) - TW | 2020/10/05 | <MDL 0.003 | 1.0 | No | No |
| Nitrate (mg/L) - TW | 2020/01/06 | 0.08 | 10.0 | No | No |
| Nitrate (mg/L) - TW | 2020/04/06 | 0.081 | 10.0 | No | No |
| Nitrate (mg/L) - TW | 2020/07/07 | 0.088 | 10.0 | No | No |
| Nitrate (mg/L) - TW | 2020/10/05 | 0.086 | 10.0 | No | No |
| Sodium: Na (mg/L) - TW | 2020/01/06 | 4.64 | 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 | Number of Sampling Points | Number of Samples | Range of Results | Range of Results | MAC (ug/L) | Exceedances |
|---------------------|---------------------------|-------------------|------------------|------------------|------------|-------------|
| | | | Minimum | Maximum | | |
| Alkalinity (mg/L) | 2 | 2 | 190 | 199 | N/A | N/A |
| pH | 2 | 2 | 7.67 | 7.91 | N/A | N/A |
| Lead (µg/l) | 2 | 2 | 0.08 | 0.17 | 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.

| Treated Water | Sample Date yyyy/mm/dd | Sample Result | MAC | Exceedance | Exceedance |
|--|---------------------------|------------------|--------|------------|------------|
| | | | | MAC | 1/2 MAC |
| 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 0.01 | 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 |
| 2-Methyl-4chlorophenoxyacetic Acid (MCPA) | 2020/01/06 | <MDL 0.12 | 100.0 | 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 |

| Treated Water | Sample Date yyyy/mm/dd | Sample Result | MAC | Exceedance | Exceedance |
|---|---------------------------|------------------|--------|------------|------------|
| | | | | MAC | 1/2 MAC |
| 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 | 2020 | 7.48 | 100 | No | No |
| HAA Total (ug/L) Annual Average - DW | 2020 | 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 |
|---------|------------------------------|
| 1915803 | Replace UV Ballasts |
| 1998145 | UV Controller Fault, Replace |

Appendix A

WTRS Submission Confirmation



Ministry of the Environment,
Conservation and Parks

| [WT DATA](#) | [USER PROFILE](#) | [CONTACT US](#) | [HELP](#) | [HOME](#) | [LOGOUT](#) |

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: 1163-AYRJ36
Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.
Received on: Feb 2, 2021 8:22 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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CITY OF KAWARTHA LAKES | 2021/02/02
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