

Alpine Village/Pirates Glen Drinking Water System

Waterworks # 220011154
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The Municipality of Trent Lakes

Reporting Period of January 1st – December 31st, 2020

Issued: February 24, 2021

Revision: 0

Operating Authority:



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 residence and the annual reports will be available to residents at The Municipality of Trent Lakes Office and copies will provided free of charge if requested. The Municipality of Trent Lakes Office is located at 760 Peterborough County Road 36 Trent Lakes Ontario, KOM 1AO. A copy of the annual report is also available on the Municipality of Trent Lakes www.trentlakes.ca.

Compliance Report Card

Drinking Water System Number: 220011154

Drinking Water System Name: Alpine Village/Pirates Glen WTP

Drinking Water System Owner: Municipality of Trent 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	1	October 9, 2020	2020/2021 MECP Announced Detailed Inspection, 100% rating
AWQI's	1	March 20, 2020	AWQI 149767 Low pressure & low chlorine due to highlift pump control failure
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Alpine Village/Pirates Glen Water Treatment Plant is supplied with two wells. Well 1 is non-GUDI and Well 2 is GUDI. Well 2 was offline during the reporting year.

Treatment

The treatment system consists of the following:

- Sodium hypochlorite feed system with two metering pumps
- One continuous treated water free chlorine residual analyzer
- Three continuous online turbidity analyzers
- 1 micron cartridge filters

- Clearwell with two interconnected underground tanks
- Three Magnetic flow meters: one per well and one for treated water
- Three Centrifugal High Lift Pumps
- Six Hydropneumatic Pressure Vessels
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
March 20, 2020	149676	Highlift	Low pressure	Low pressure and low chlorine alarm due to pump control failure.	O Reg 170 Schedule 16-4	Restored pressure and verified chlorine analyzer. Flushed sample hydrants, sampled bacti and turbidity, Pressure switch on high lift pump replaced.

Non-Compliance

Legislation	Requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliance issues 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
There were no non-compliances identified in a Ministry Inspection during this period.				

Flows

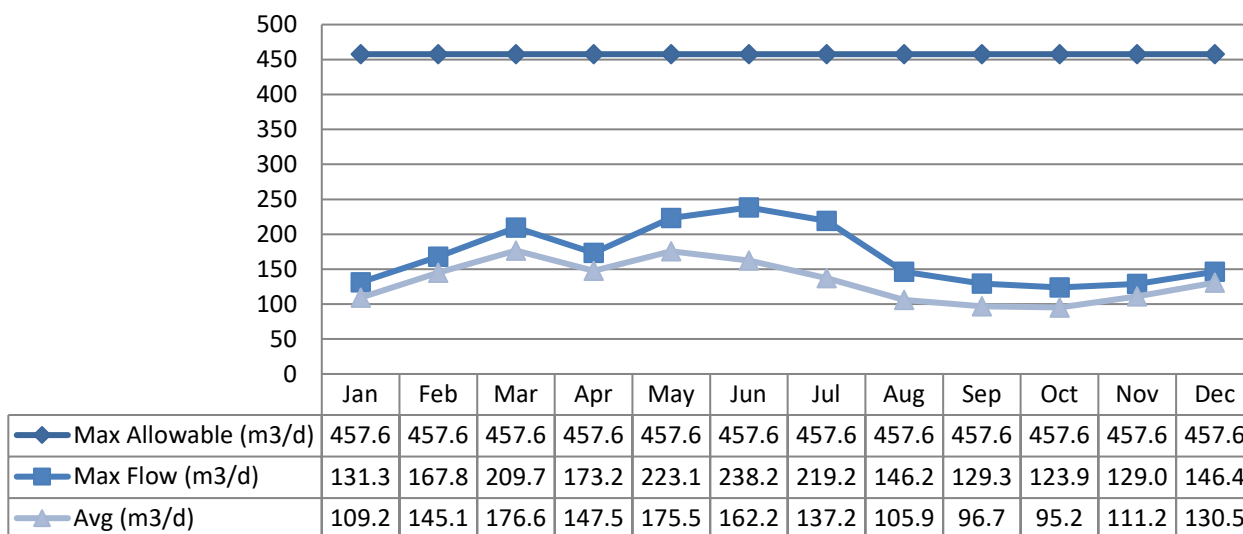
The Alpine Village/Pirates Glen Drinking Water System is operating below the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water (PTTW). 2020 Raw Flow Data was submitted to the Ministry of the Environment, Conservation and Parks electronically under permit #6572-8SRKP7. The confirmation and a copy of the data that was submitted are attached in Appendix A.

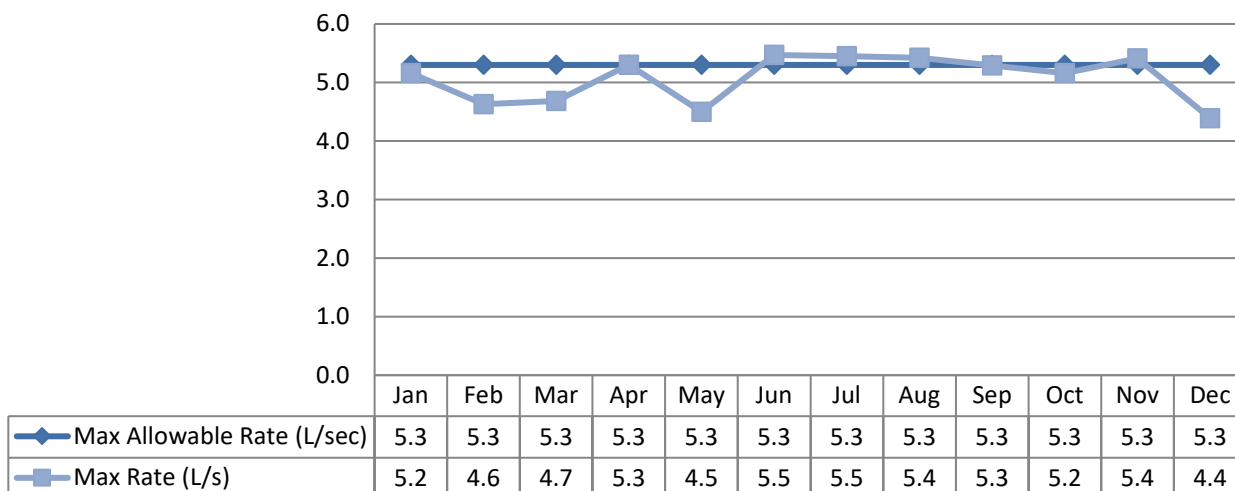
Total Monthly Flows (m3/d)

Max Allowable PTTW- Well #1



Monthly Rated Flows (L/s)

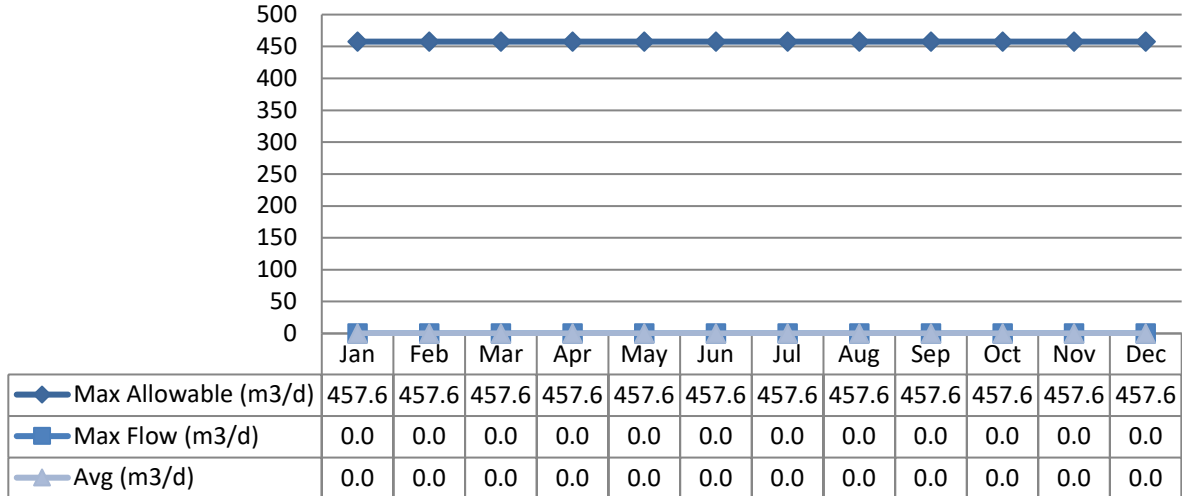
Max allowable rate – PTTW- Well #1



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

Total Monthly Flows (m3/d)

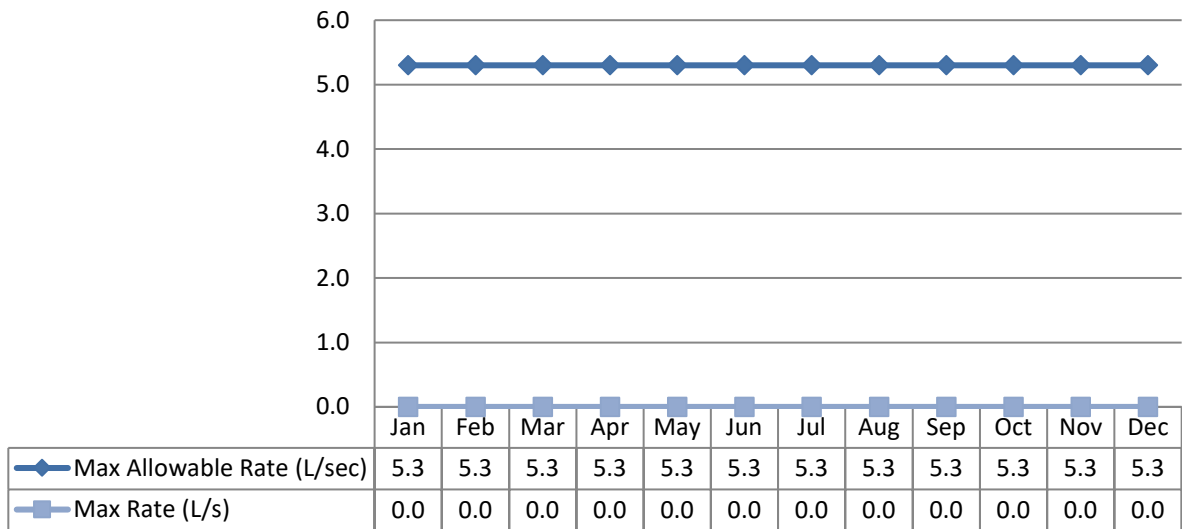
Max Allowable PTTW- Well #2



Note: Well 2 was offline during the reporting period.

Monthly Rated Flows (L/s)

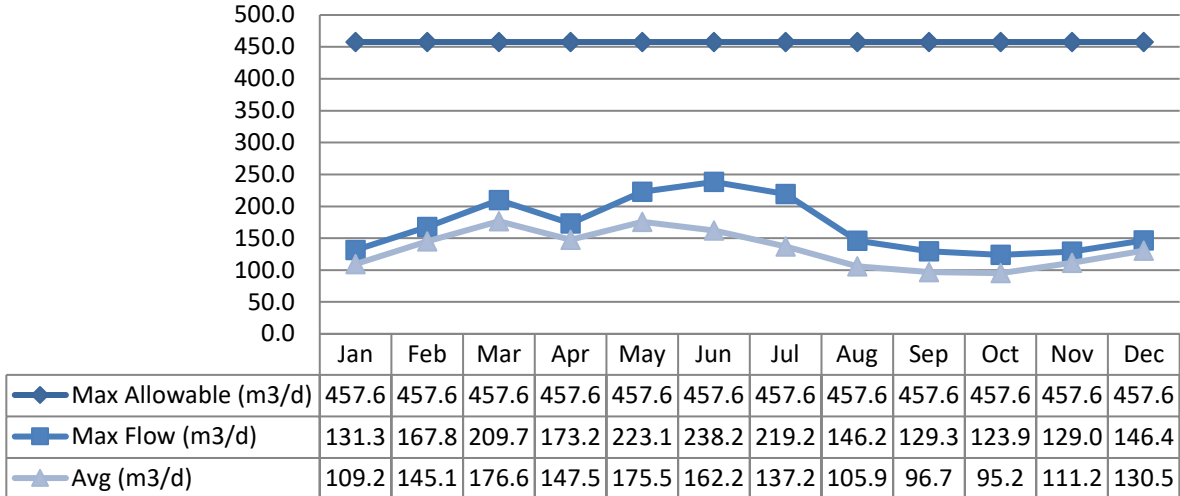
Max allowable rate – PTTW- Well #2



Note: Well 2 was offline during the reporting period.

Total Monthly Flows (m3/d)

Max Allowable PTTW- Total Raw

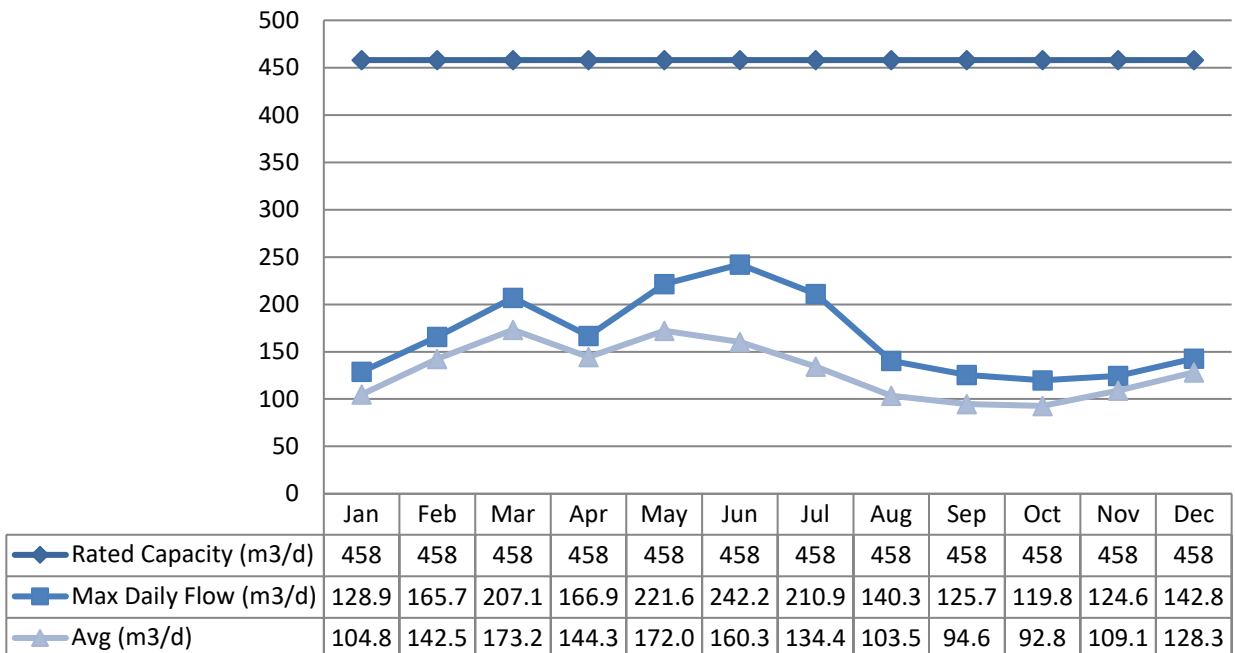


Treated Water Flows

The Treated Water flows are regulated under the Municipal Drinking Water Licence.

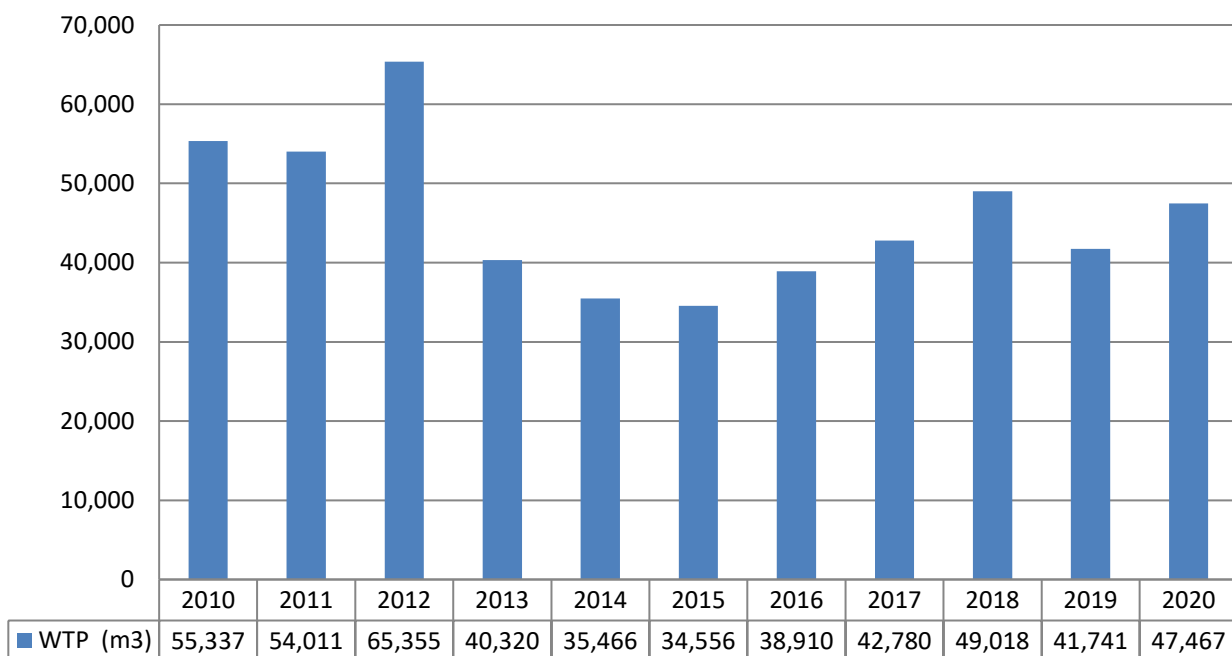
Monthly Rated Flows

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	52	0	0	0	4		
Raw Well 2	0	N/A	N/A	N/A	N/A		
Treated	52	0	0	0	0	0	1
Distribution	159	0	0	0	0	0	1220

Note: Well 2 was offline during the reporting period.

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity Well 1 (NTU)	13	0.12	0.73
Turbidity Well 2 (NTU)	0	N/A	N/A
Chlorine (mg/L)	8760	0	5.00

Note: Well 2 was offline during the reporting period.

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	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L)	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L)	2020/01/06	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L)	2020/01/06	63.8	1000.0	No	No
Boron: B (ug/L)	2020/01/06	235.0	5000.0	No	No
Cadmium: Cd (ug/L)	2020/01/06	0.003	5.0	No	No
Chromium: Cr (ug/L)	2020/01/06	0.15	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	0.07	50.0	No	No
Uranium: U (ug/L)	2020/10/05	13.4	20.0	No	Yes
Additional Inorganics					
Fluoride (mg/L)	2018/02/12	1.21	1.5	No	Yes
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)	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/10/05	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2020/01/06	0.459	10.0	No	No
Nitrate (mg/L)	2020/04/06	0.557	10.0	No	No
Nitrate (mg/L)	2020/07/06	0.211	10.0	No	No
Nitrate (mg/L)	2020/10/05	0.316	10.0	No	No
Sodium: Na (mg/L)	2018/01/12	24.8	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 and no plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	277	279		
pH	2	2	7.13	7.35		
Lead (ug/l)	2	2	0.09	0.25	10	0

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

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	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number 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 0.004	0.01	No	No
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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
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
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 (ug/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

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

Distribution Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Trihalomethane: Total (ug/L) Annual Average	2020/01/01	7.35	100.0	No	No
HAA Total (ug/L) Annual Average	2020/01/01	5.3	80.0	No	No

- MAC = Maximum Allowable Concentration as per O. Reg. 169/03
- MDL = Method Detection Limit

Additional Legislated Samples

Additional Samples required under O. Reg. 170/03 Schedule 13: Chemical Sampling and Testing.



Parameter	Location	No. of Samples Collected	Range of Results	
			Minimum	Maximum
Uranium: U (ug/L)	Treated	4	13.4	18.50

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

WO #	Description
1751159	Pirates Glen, Distribution Leak Repair
2039000	Pirates Glen, Service, Install New Water Service
1794655	Siding Repair
1624077	Install Generator Run Relay
1664563	Replace Pressure Switch
1665100	Replace Treated Turbidity Analyzer

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: 6572-8SRKP7
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF GALWAY-CAVENDISH-HARVEY.
Received on: Feb 2, 2021 12:47 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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TOWNSHIP4 GALWAY-CAVENDISH4 | 2021/02/02
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