

Drinking-Water Systems Regulation O. Reg. 170/03

SECTION 11 ANNUAL REPORT

Drinking Water System Number: 220011154

Drinking Water System Name: Alpine Village/Pirates Glen

Drinking Water System Owner: Municipality of Trent Lakes

Drinking Water System Category: Large Municipal Residential

Period Being Reported: January 1, 2017 to December 31, 2017

Does the Drinking Water System serve more than 10,000 people? No

Is the annual report available to the public at no charge on a web site on the Internet? Yes

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:

Municipality of Trent Lakes
760 Peterborough County Road 36
Trent Lakes ON K0M 1A0

<http://www.trentlakes.ca/>

Describe the Drinking-Water System

The Alpine Village/Pirates Glen Drinking Water System includes the following:

- Two production wells with pumps: One GUDI, one non-GUDI
- 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, each 450 L nominal volume
- Standby power generator on site

List all water treatment chemicals used over this reporting period:

Sodium Hypochlorite

Summary of significant expenses incurred to install, repair or replace equipment:

- Replace chlorine pumps
- Replace back pressure valve
- Replace alarm dialer

Equipment was maintained in a fit state of repair as per legislation.

Details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
January 6, 2017	Uranium	20.7	ug/L	Collected two Treated water resamples. Resample 1 – 20.2 ug/L Resample 2 – 16.1 ug/L Continue with quarterly sampling. Resample 1 was adverse: see below.	January 17, 2017
January 11, 2017	Uranium	20.2	ug/L	Collected Treated water resample. Resample 1 – 16.1 ug/L Continue with quarterly sampling	January 17, 2017
May 25, 2017	Total Coliform (Distribution)	50	cfu/100mL	Flushed sample tap and collect three distribution samples.	May 29, 2017
August 2, 2017	Pressure	<20	psi	Loss of pressure at a house during a service line repair. Flushed system and collected bacteriological samples through distribution system.	August 4, 2017
October 18, 2017	Total Coliform (Distribution)	1000	cfu/100mL	Flushed sample tap and collected distribution samples at location, upstream and downstream. Increase chlorine dosage. Resample was adverse: see below.	October 25, 2017

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
October 20, 2017	Total Coliform (Distribution)	800	cfu/100mL	Super chlorinated sample tap, flushed and collected distribution samples at location, upstream and downstream along with raw and treated samples. Samples were sent to two different laboratories for analysis.	October 25, 2017

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E. coli Results (min - max)	Range of Total Coliform Results (min - max)	Number of HPC Samples	Range of HPC Results (min -max)
Raw Well 1	52	0 - 0	0 - 1	0	N/A
Raw Well 2	0	N/A	N/A	0	N/A
Treated	52	0 - 0	0 - 0	53	0 - 1
Distribution	175	0 - 0	0 - 800	169	0 - 380

Well 2 was not in service in 2017.

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min - max)
Turbidity Well 1 (NTU)	12	0.09 – 0.45
Chlorine (mg/L)	8760	0 - 2
Fluoride (If the DWS provides fluoridation)	N/A	N/A

Note: For continuous monitors 8760 is used as the number of samples. Equipment maintenance data is included in range of results.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Legal Instrument	Parameter	Date Sampled	Result	Unit of Measure
O. Reg. 170/03	Uranium	January 3, 2017	20.70	ug/L
O. Reg. 170/03	Uranium	January 6, 2017	20.20	ug/L
O. Reg. 170/03	Uranium	January 11, 2017	16.10	ug/L
O. Reg. 170/03	Uranium	April 10, 2017	16.90	ug/L
O. Reg. 170/03	Uranium	July 4, 2017	14.60	ug/L
O. Reg. 170/03	Uranium	October 10, 2017	15.80	ug/L

Summary of Inorganic parameters tested during this reporting period (2017) or the most recent sample results.

Treated Water

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Antimony (ug/L)	January 3, 2017	0.03	6.0	No	No
Arsenic (ug/L)	January 3, 2017	<MDL 0.2	25.0	No	No
Barium (ug/L)	January 3, 2017	72.1	1000.0	No	No
Boron (ug/L)	January 3, 2017	307.0	5000.0	No	No
Cadmium (ug/L)	January 3, 2017	0.008	5.0	No	No
Chromium (ug/L)	January 3, 2017	0.57	50.0	No	No
Mercury (ug/L)	January 3, 2017	<MDL 0.01	1.0	No	No
Selenium (ug/L)	January 3, 2017	0.04	50.0	No	No
Uranium (ug/L)	October 10, 2017	15.8	20.0	No	Yes
Fluoride (mg/L)	January 3, 2013	0.49	1.5	No	No
Nitrite (mg/L)	January 4, 2017	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	April 3, 2017	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	July 4, 2017	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	October 10, 2017	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	January 4, 2017	0.169	10.0	No	No

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Nitrate (mg/L)	April 3, 2017	0.435	10.0	No	No
Nitrate (mg/L)	July 4, 2017	0.387	10.0	No	No
Nitrate (mg/L)	October 10, 2017	0.289	10.0	No	No
Sodium (mg/L)	January 3, 2013	17.2	20*	No	Yes

*There is no Maximum Acceptable Concentration 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

Summary of lead testing under Schedule 15.1 during this reporting period

- * 2 rounds completed (distribution)
- * Under plumbing exemption

Location Type:

Plumbing – zero samples completed because the system has plumbing exemption

Distribution – two samples completed with zero exceedances, results ranging from 0.48 ug/L to 0.64 ug/L.

Summary of Organic parameters sampled during this reporting period (enter year) or the most recent sample results.

Treated

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Alachlor (ug/L)	January 3, 2017	<MDL 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L)	January 3, 2017	<MDL 0.01	5.00	No	No
Azinphos-methyl (ug/L)	January 3, 2017	<MDL 0.05	20.00	No	No
Benzene (ug/L)	January 3, 2017	<MDL 0.32	1.00	No	No
Benzo(a)pyrene (ug/L)	January 3, 2017	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	January 3, 2017	<MDL 0.33	5.00	No	No
Carbaryl (ug/L)	January 3, 2017	<MDL 0.05	90.00	No	No
Carbofuran (ug/L)	January 3, 2017	<MDL 0.01	90.00	No	No
Carbon Tetrachloride (ug/L)	January 3, 2017	<MDL 0.16	2.00	No	No

Parameter	Sample Date	Result Value	MAC	Exceedence	
				MAC	½ MAC
Chlorpyrifos (ug/L)	January 3, 2017	<MDL 0.02	90.00	No	No
Diazinon (ug/L)	January 3, 2017	<MDL 0.02	20.00	No	No
Dicamba (ug/L)	January 3, 2017	<MDL 0.2	120.00	No	No
1,2-Dichlorobenzene (ug/L)	January 3, 2017	<MDL 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L)	January 3, 2017	<MDL 0.36	5.00	No	No
1,2-Dichloroethane (ug/L)	January 3, 2017	<MDL 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L)	January 3, 2017	<MDL 0.33	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L)	January 3, 2017	<MDL 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L)	January 3, 2017	<MDL 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	January 3, 2017	<MDL 0.19	100.00	No	No
Diclofop-methyl (ug/L)	January 3, 2017	<MDL 0.4	9.00	No	No
Dimethoate (ug/L)	January 3, 2017	<MDL 0.03	20.00	No	No
Diquat (ug/L)	January 3, 2017	<MDL 1.0	70.00	No	No
Diuron (ug/L)	January 3, 2017	<MDL 0.03	150.00	No	No
Glyphosate (ug/L)	January 3, 2017	<MDL 1.0	280.00	No	No
Malathion (ug/L)	January 3, 2017	<MDL 0.02	190.00	No	No
Metolachlor (ug/L)	January 3, 2017	<MDL 0.01	50.00	No	No
Metribuzin (ug/L)	January 3, 2017	<MDL 0.02	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	January 3, 2017	<MDL 0.3	80.00	No	No
Paraquat (ug/L)	January 3, 2017	<MDL 1.0	10.00	No	No
PCB (ug/L)	January 3, 2017	<MDL 0.04	3.00	No	No
Pentachlorophenol (ug/L)	January 3, 2017	<MDL 0.15	60.00	No	No
Phorate (ug/L)	January 3, 2017	<MDL 0.01	2.00	No	No
Picloram (ug/L)	January 3, 2017	<MDL 1.0	190.00	No	No
Prometryne (ug/L)	January 3, 2017	<MDL 0.03	1.00	No	No
Simazine (ug/L)	January 3, 2017	<MDL 0.01	10.00	No	No
Terbufos (ug/L)	January 3, 2017	<MDL 0.01	1.00	No	No
Tetrachloroethylene (ug/L)	January 3, 2017	<MDL 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	January 3, 2017	<MDL 0.2	100.00	No	No
Triallate (ug/L)	January 3, 2017	<MDL 0.01	230.00	No	No
Trichloroethylene (ug/L)	January 3, 2017	<MDL 0.44	5.00	No	No
2,4,6-Trichlorophenol	January 3, 2017	<MDL 0.25	5.00	No	No

Parameter	Sample Date	Result Value	MAC	Exceedence	
				MAC	½ MAC
(ug/L)					
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	January 3, 2017	<MDL 0.12	100.00	No	No
Trifluralin (ug/L)	January 3, 2017	<MDL 0.02	45.00	No	No
Vinyl Chloride (ug/L)	January 3, 2017	<MDL 0.17	1.00	No	No

Distribution

Parameter	Sample Date	Result Value	MAC	Exceedence	
				MAC	½ MAC
Trihalomethane (ug/L)	January 3, 2017	7.20	100.00	No	No
Trihalomethane (ug/L)	April 3, 2017	6.80	100.00	No	No
Trihalomethane (ug/L)	July 4, 2017	8.40	100.00	No	No
Trihalomethane (ug/L)	October 10, 2017	9.60	100.00	No	No
Trihalomethane: Total Annual Average (ug/L)	2017	8.0	100.00	No	No
HAA Total	January 3, 2017	<MDL 5.30	N/A	N/A	N/A
HAA Total	April 3, 2017	<MDL 5.30	N/A	N/A	N/A
HAA Total	July 4, 2017	<MDL 5.30	N/A	N/A	N/A
HAA Total	October 10, 2017	<MDL 5.30	N/A	N/A	N/A
HAA Total Annual Average (ug/L)	2017	<MDL 5.3	N/A	N/A	N/A

Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Sodium	17.2	mg/L	January 3, 2013
Uranium	20.70	ug/L	January 3, 2017
Uranium	20.20	ug/L	January 6, 2017
Uranium	16.10	ug/L	January 11, 2017
Uranium	16.90	ug/L	April 10, 2017
Uranium	14.60	ug/L	July 4, 2017
Uranium	15.80	ug/L	October 10, 2017

Note: Sodium is not in Schedule 2 of the Ontario Drinking Water Quality Standards but is being included in this section as results over 20 mg/L are required to be

reported to the local Medical Officer of Health and the Ministry of the Environment and Climate Change (Spills Action Centre).

The Ontario Clean Water Agency aims to strictly adhere to operational and compliance limits, however certain operational circumstances may cause results to be temporarily outside of the limits. Limits that are momentarily surpassed as a result of pump start-ups, power outages/generator tests, pump rotation, calibrations, alarm verification, etc are a normal part of operations and do not indicate a true exceedance. A true exceedance will be noted and documented within the report.