

2018 Annual Drinking Water System (DWS) Quality Report for Georgina DWS

Prepared by The Regional Municipality of York pursuant to Section 11 of O.Reg. 170/03

Drinking Water System Number: 260026156

Drinking Water System Name: Georgina DWS

Drinking Water System Owner: The Regional Municipality of York

DWS Category: Large Municipal Residential

Drinking Water System Classification: Water Treatment III

Reporting period: Jan 1, 2018 - Dec 31, 2018

The Georgina DWS serves approximately 8224 people

(Population is a year-end forecasted estimate based on Statscan census data, and building permits)

This annual report is available to the public at no charge on the Region's website (york.ca/drinkingwater) and upon request. Accessible formats or communication supports are also available upon request. Please contact AccessYork@york.ca or call 1-877-464-9675.

Summary report required under O.Reg. 170/03 Schedule 22 will be available for inspection at:

The Regional Municipality of York
Administrative Centre
Environmental Services Department
17250 Yonge Street, Newmarket ON
and online, at york.ca/drinkingwater

List all Drinking Water Systems which receive their drinking water from the Georgina DWS:

Keswick-Sutton Distribution System (260062686)

A copy of York Region's annual report was provided to all Drinking Water System owners that are connected to and receive drinking water from York Region.

System users were notified that York Region's annual report is available free of charge by public access and notice through:

- Media (internet, social media)
- Public Requests at any time

Description of the Georgina DWS

Introduction

The communities of Keswick and Sutton, and other lakeshore communities are located on the south shore of Lake Simcoe. Surface water from Lake Simcoe supplies these communities. The Keswick sub-system supplies the other half of this larger system. Algae in the lake can add a harmless but musty taste. York Region operates the water supply, while the Town of Georgina maintains water quality and distributes it to users. The Province governs the Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source

Lake Simcoe

Profile of water in distribution system

Lake Simcoe

Water treatment description

The Georgina DWS includes one water treatment plant and one storage facility. Incoming water is screened and chlorine addition prevents mussel growth. Membrane filtration removes particles. Granular activated carbon improves taste and controls odour. UV light and chlorine are used for disinfection. Fluoride is added at levels recommended by Ontario's Chief Medical Officer of Health. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system

Chlorine gas (for disinfection); Granular activated carbon; Non water treatment chemical: Hydrofluosilicic Acid applied; Filtration membranes cleaned with sodium hypochlorite, citric acid, sodium hydroxide, sodium bisulfite; Dechlorination of membrane filter and GAC washwater with sulphur dioxide.

Brief description and breakdown of monetary expenses incurred

\$153,506 for general maintenance and repair and watermain replacement.

Notices submitted under Section 18(1) of the Safe Drinking Water Act or Section 16-4 of O.Reg. 170/03 and reported to MECP Spills Action Centre

Adverse Parameter	Incident Date	Adverse Test Result Units	Adverse Test Results	Corrective Action	Corrective Action Date
Chlorine Residual	23-Jun-18	mg/L	0.01	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	23-Jun-18
	24-Oct-18	mg/L	0.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	24-Oct-18
Fluoride as F	17-Feb-18	mg/L	1.69	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	17-Feb-18
	26-Jul-18	mg/L	1.69	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	26-Jul-18

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Microbiological testing completed under Schedule 10 of O.Reg. 170/03

*For additional distribution samples collected under Schedule 10, refer to the local municipality

Test Parameter	Sample Source	Count Of Samples	Count Of Presence
E. coli	Raw	53	1
	Treated	53	0
Heterotrophic Plate Count	Treated	53	5
Total Coliforms	Raw	53	12
	Treated	53	0

Operational testing completed under Schedule 7 of Regulation 170/03 during this reporting period

*8,760 is used as the number of samples for continuous analyzers

Test Parameter	Test Units	Continuous Sample Count	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.63	0.20	1.71
Free Chlorine	mg/L	8,760	1.62	0.00	2.54
Turbidity (Raw)	NTU	8,760	0.36	0.00	10.00
Turbidity (Treated)	NTU	8,760	0.04	0.00	5.00

Summary of testing pursuant to Schedule 13 of O. Reg. 170/03 and sampling carried out in accordance with the requirement of an approval, order or other legal instrument

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Test Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine Backwash	mg/L	8,760	0.001	0	4.998
Haloacetic Acids	mg/L	4	0.024	0.018	0.03
Nitrate	mg/L	8	0.500	<0.5	<0.5
Nitrite	mg/L	8	0.050	<0.05	<0.05
Sodium	mg/L	2	31.700	31.5	31.9
Total Suspended Solids Backwash	NTU	8,760	0.742	0	200
Trihalomethanes	mg/L	25	0.035	0.0193	0.0595

*Lead testing under Schedule 15.1 is conducted by the Local Municipality - refer to Local Municipality reports for results. York Region occasionally collects samples tested for lead for non-regulatory research purposes

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Organic and inorganic parameter(s) that exceeded half the standard prescribed in Schedule 2 of O.Reg. 169/03 Ontario Drinking Water Quality Standards

Test Parameter	Sample Facility	Sample Date	Test Units	Test Result	ODWS Limit
Trihalomethanes	Georgina WTP	02-Jul-18	mg/L	0.052	0.100
	Sutton ET	03-Sep-18	mg/L	0.0595	0.100

Summary of inorganic parameters tested pursuant to Schedule 23 of O.Reg. 170/03

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to five decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	No. of Samples	Test Units	Average	Minimum	Maximum	ODWS Limit
Antimony	2	mg/L	0.00050	<0.0005	<0.0005	0.006
Arsenic	2	mg/L	0.00050	0.0005	0.0005	0.01
Barium	2	mg/L	0.02295	0.0226	0.0233	1
Boron	2	mg/L	0.02025	0.02	0.0205	5
Cadmium	2	mg/L	0.00050	<0.0005	<0.0005	0.005
Chromium	2	mg/L	0.00050	<0.0005	<0.0005	0.05
Mercury	2	mg/L	0.00005	<0.00005	<0.00005	0.001
Selenium	2	mg/L	0.00050	<0.0005	<0.0005	0.05
Uranium	2	mg/L	0.00050	<0.0005	<0.0005	0.02

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Summary of organic parameters tested pursuant to Schedule 24 of O.Reg. 170/03

Values with a less than sign (" $<$ ") indicate that the test result is below the method detection limit from the accredited laboratory (i.e. non-detect). Average results include values which were returned as non-detect and are rounded to four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	No. of Samples	Test Units	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	1	mg/L	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	1	mg/L	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	1	mg/L	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	1	mg/L	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	1	mg/L	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	1	mg/L	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	1	mg/L	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	1	mg/L	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	1	mg/L	0.0005	<0.0005	<0.0005	0.005
Alachlor	1	mg/L	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	1	mg/L	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	1	mg/L	0.0003	<0.0003	<0.0003	0.02
Benzene	1	mg/L	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	1	mg/L	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	1	mg/L	0.0004	<0.0004	<0.0004	0.005
Carbaryl	1	mg/L	0.0030	<0.003	<0.003	0.09
Carbofuran	1	mg/L	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	1	mg/L	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	1	mg/L	0.0002	<0.0002	<0.0002	0.09
Diazinon	1	mg/L	0.0002	<0.0002	<0.0002	0.02
Dicamba	1	mg/L	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	1	mg/L	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	1	mg/L	0.0004	<0.0004	<0.0004	0.009
Dimethoate	1	mg/L	0.0003	<0.0003	<0.0003	0.02
Diquat	1	mg/L	0.0010	<0.001	<0.001	0.07
Diuron	1	mg/L	0.0030	<0.003	<0.003	0.15
Glyphosate	1	mg/L	0.0250	<0.025	<0.025	0.28
Malathion	1	mg/L	0.0002	<0.0002	<0.0002	0.19
Metolachlor	1	mg/L	0.0002	<0.0002	<0.0002	0.05
Metribuzin	1	mg/L	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	1	mg/L	0.0001	<0.0001	<0.0001	0.08
Paraquat	1	mg/L	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	1	mg/L	0.0004	<0.0004	<0.0004	0.06
Phorate	1	mg/L	0.0002	<0.0002	<0.0002	0.002
Picloram	1	mg/L	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	1	mg/L	0.0000	<0.00002	<0.00002	0.003
Prometryne	1	mg/L	0.0002	<0.0002	<0.0002	0.001
Simazine	1	mg/L	0.0002	<0.0002	<0.0002	0.01
Terbufos	1	mg/L	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	1	mg/L	0.0003	<0.0003	<0.0003	0.01
Triallate	1	mg/L	0.0040	<0.004	<0.004	0.23
Trichloroethylene	1	mg/L	0.0001	<0.0001	<0.0001	0.005
Trifluralin	1	mg/L	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	1	mg/L	0.0002	<0.0002	<0.0002	0.001