2024 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Treatment III
Reporting period: Jan 1, 2024 - Dec 31, 2024

The Georgina DWS serves approximately 9,350 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Georgina DWS:
Keswick-Sutton Distribution System (260062686)

This annual report is available to the public at no charge on York 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.

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

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

The Regional Municipality of York
Administrative Centre
Public Works Department
17250 Yonge Street, Newmarket ON L3Y 6Z1

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. York Region operates the water supply, while the Town of Georgina maintains water quality and distributes it to users. The Province governs York 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 and Aqueous Ammonia for disinfection; Granular activated carbon (for taste and odour control); 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:
$3,886,543 for for treatment facility rehabilitation and upgrades design and upgrades, storage facility replacement design, design of valve chamber upgrades, new regional remote operations center construction, general maintenance and repairs.

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

Not Applicable

Intentionally blank. No notices were submitted for this report period.

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	51	0
Total Coliforms	51	11

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	53	0
Heterotrophic Plate Count	53	16
Total Coliforms	53	0

Operational testing completed under Schedule 7 of O. Reg. 170/03 during this reporting period

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.69	0.20	1.49
Free Chlorine	mg/L	8,760	1.65	0.00	2.39
Turbidity (Raw)	NTU	8,760	0.37	0.00	10.00
Turbidity (Treated)	NTU	8,760	0.03	0.00	5.00

[1] 8,760 is used as the number of samples for continuous analyzers.

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 (i.e. the "<" is omitted) and are rounded to three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine Backwash	mg/L	8,760	0.007	0.000	0.500
Haloacetic Acids (Treated)	ug/L	2	8.700	8.000	9.400
Haloacetic Acids (Distribution)	ug/L	4	18.500	13.000	23.000
Microcystin (Raw)	ug/L	36	0.150	<0.150	<0.150
Microcystin (Treated)	ug/L	36	0.150	<0.150	<0.150
Nitrate (Treated)	mg/L	4	0.500	<0.500	<0.500
Nitrate (Distribution)	mg/L	4	0.500	<0.500	<0.500
Nitrite (Treated)	mg/L	4	0.050	<0.050	<0.050
Nitrite (Distribution)	mg/L	4	0.050	<0.050	<0.050
Sodium	mg/L	2	35.700	35.600	35.800
Total Suspended Solids Backwash	mg/L	8,760	1.458	0.000	40.000
Trihalomethanes (Treated)	ug/L	14	19.446	10.600	25.700
Trihalomethanes (Distribution)	ug/L	14	30.381	20.300	38.600

*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.

[1] 8,760 is used as the number of samples for continuous analyzers.

[2] The Average for Haloacetic Acids and Trihalomethanes is calculated as the running annual average of quarterly results in accordance with O. Reg 170/03. The Minimum and Maximum values reflect individual test results.

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems and include at least one facility from every subsystem.

Organic and inorganic parameter(s), from Schedule 23 and 24, that exceeded half the standard prescribed in Schedule 2 of O. Reg. 169/03 Ontario Drinking Water Quality Standards

Not Applicable
Intentionally blank. There were no applicable test results.

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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0005	<0.0005	<0.0005	0.006
Arsenic	mg/L	2	0.0010	<0.0010	<0.0010	0.01
Barium	mg/L	2	0.0270	0.0270	0.0270	1
Boron	mg/L	2	0.0160	0.0150	0.0170	5
Cadmium	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Chromium	mg/L	2	0.0050	<0.0050	<0.0050	0.05
Mercury	ug/L	2	0.0500	<0.0500	<0.0500	1
Selenium	mg/L	2	0.0020	<0.0020	<0.0020	0.05
Uranium	mg/L	2	0.0004	0.0004	0.0004	0.02

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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	15	0.300	<0.300	<0.300	14
1,2-(o-dcb) Dichlorobenzene	ug/L	15	0.100	<0.100	<0.100	200
1,2-Dichloroethane	ug/L	15	0.100	<0.100	<0.100	5
1,4-(p-dcb) Dichlorobenzene	ug/L	15	0.113	<0.100	<0.200	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.500	<0.500	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.500	<0.500	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.700	<0.700	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.800	<0.800	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5.000	<5.000	100
Alachlor	ug/L	1	0.400	<0.400	<0.400	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.200	<0.200	5
Azinphos-methyl	ug/L	1	0.300	<0.300	<0.300	20
Benzene	ug/L	15	0.107	<0.100	0.200	1
Benzo(a)pyrene	ug/L	1	0.010	<0.010	<0.010	0.01
Bromoxynil	ug/L	1	0.400	<0.400	<0.400	5
Carbaryl	ug/L	1	3.000	<3.000	<3.000	90
Carbofuran	ug/L	1	3.000	<3.000	<3.000	90
Carbon Tetrachloride	ug/L	15	0.200	<0.200	<0.200	2
Chlorpyrifos	ug/L	1	0.200	<0.200	<0.200	90
Diazinon	ug/L	1	0.200	<0.200	<0.200	20
Dicamba	ug/L	1	0.400	<0.400	<0.400	120
Dichloromethane	ug/L	15	4.000	<4.000	<4.000	50
Diclofop-methyl	ug/L	1	0.400	<0.400	<0.400	9
Dimethoate	ug/L	1	0.300	<0.300	<0.300	20
Diquat	ug/L	1	1.000	<1.000	<1.000	70
Diuron	ug/L	1	3.000	<3.000	<3.000	150
Glyphosate	ug/L	1	25.000	<25.000	<25.000	280
Malathion	ug/L	1	0.200	<0.200	<0.200	190
Metolachlor	ug/L	1	0.200	<0.200	<0.200	50
Metribuzin	ug/L	1	0.300	<0.300	<0.300	80
Monochlorobenzene	ug/L	15	0.100	<0.100	<0.100	80
Paraquat	ug/L	1	1.000	<1.000	<1.000	10
Pentachlorophenol	ug/L	1	0.400	<0.400	<0.400	60
Phorate	ug/L	1	0.200	<0.200	<0.200	2
Picloram	ug/L	1	0.700	<0.700	<0.700	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.100	<0.100	<0.100	3
Prometryne	ug/L	1	0.200	<0.200	<0.200	1
Simazine	ug/L	1	0.200	<0.200	<0.200	10
Terbufos	ug/L	1	0.200	<0.200	<0.200	1
Tetrachloroethylene (perchloroethylene)	ug/L	15	0.300	<0.300	<0.300	10
Triallate	ug/L	1	4.000	<4.000	<4.000	230
Trichloroethylene	ug/L	15	0.100	<0.100	<0.100	5
Trifluralin	ug/L	1	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	15	0.200	<0.200	<0.200	1