2017 Annual Drinking Water System (DWS) Quality Report for Ansnorveldt DWS

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

Drinking Water System Number: 260002213
Drinking Water System Name: Ansnorveldt DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Ansnorveldt DWS serves approximately 118 people

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 Ansnorveldt DWS:
Ansnorveldt Distribution System (260034372)

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 Ansnorveldt DWS

Introduction
Ansnorveldt is located in King Township. The residential community served by the Ansnorveldt Drinking Water System is centred on Dufferin Street, north of Highway 9. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Township of King 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
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Two wells share one pumphouse. Water is disinfected with chlorine. No other treatment chemicals are used. Raw water test results show the health of the aquifer and help staff confirm optimal treatment. Water is stored and kept fresh on site for high demand times. Operators test the water and inspect the process regularly. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (Sodium Hypochlorite)

Brief description and breakdown of monetary expenses incurred
$60,556 for general maintenance and repair.

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

Not Applicable

There were no reported adverse water quality incidents or observations of improper disinfection that occured in the Ansnorveldt DWS during 2017

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw		
	Treated		
Heterotrophic Plate Count	Treated		
Total Coliforms	Raw		
	Treated		

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.68	0.99	2.52
Turbidity (Treated)	NTU	8,760	0.14	0.04	3.21

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	4	0.233	0.17	0.263
Haloacetic Acids	mg/L	4	0.020	<0.02	<0.02
Nitrate	mg/L	4	0.505	0.019	<1
Nitrate + Nitrite	mg/L	4	0.505	0.019	<1
Nitrite	mg/L	4	0.052	<0.008	<0.1
Sodium	mg/L	1	40.000	40	40
Trihalomethanes	mg/L	5	0.047	0.0435	0.0511

*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

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	Units	Test Result	ODWS Limit
Trihalomethanes	Ansnorveldt Well 2,3 Treated	08-Oct-17	mg/L	0.0511	0.1

Summary of inorganic parameters teste 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	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	1	0.0005	0.0005	0.0005	0.006
Arsenic	mg/L	1	0.0005	<0.0005	<0.0005	0.025
Barium	mg/L	1	0.1260	0.126	0.126	1
Boron	mg/L	1	0.1600	0.16	0.16	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	1	0.0012	0.0012	0.0012	0.05
Mercury	mg/L	1	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	1	0.0010	0.001	0.001	0.01
Uranium	mg/L	1	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	1	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	1	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	1	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	1	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	1	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	1	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	1	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	1	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	1	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	1	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	1	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	1	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	1	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	1	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	1	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	1	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	1	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	1	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	1	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	1	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	1	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	1	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	1	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Aurora DWS

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

Drinking Water System Number: 220002440
Drinking Water System Name: Aurora DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Aurora DWS serves approximately 60000 people

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 Aurora DWS:
Town of Aurora Distribution System (260003227); Newmarket Distribution System (260003188)

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 Aurora DWS

Introduction
The Town of Aurora is located in the centre of York Region. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water from the York DWS. York Region operates the water supply, while the Town of Aurora 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
Aurora DWS includes six wells, six storage facilities, and three booster pumping stations. Two of these facilities also re-disinfect the water. Chloramine disinfects the water. Sodium silicate manages iron and manganese. Storage facilities hold water and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine Gas; Ammonia solution (Ammonium Sulphate); Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$2,032,794 for general maintenance and repair, and Ridge Road Pumping Station upgrades.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	22-Feb-17	mg/L	5.00	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	22-Feb-17
	30-Apr-17	mg/L	5.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	30-Apr-17
	13-May-17	mg/L	5.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	13-May-17
	01-Aug-17	mg/L	4.91	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	01-Aug-17
	01-Aug-17	mg/L	4.21	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	01-Aug-17
	09-Aug-17	mg/L	4.72	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	09-Aug-17
	10-Aug-17	mg/L	4.11	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	10-Aug-17
	29-Aug-17	mg/L	4.99	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-Aug-17
	31-Aug-17	mg/L	4.10	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	31-Aug-17
	10-Sep-17	mg/L	4.14	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	10-Sep-17
	13-Sep-17	mg/L	4.03	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	13-Sep-17
	04-Oct-17	mg/L	4.17	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	04-Oct-17
	19-Oct-17	mg/L	4.42	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Oct-17
	22-Nov-17	mg/L	4.58	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	22-Nov-17
	04-Dec-17	mg/L	4.76	Operator attended site. Resample taken.	04-Dec-17
	06-Dec-17	mg/L	4.20	Operator attended site. Resample taken.	06-Dec-17
	21-Dec-17	mg/L	4.15	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	21-Dec-17
	26-Dec-17	mg/L	4.06	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	26-Dec-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	268	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	7
Total Coliforms	Raw	268	5
	Treated	52	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	2.43	0.00	5.00
Turbidity (Treated)	NTU	8,760	0.08	0.03	3.61

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	40	0.341	0.12	0.67
Haloacetic Acids	mg/L	23	0.020	<0.02	<0.02
Nitrate	mg/L	22	0.616	<0.5	<1.25
Nitrate + Nitrite	mg/L	10	0.784	<1	<1.25
Nitrite	mg/L	22	0.063	<0.05	<0.125
Sodium	mg/L	7	18.500	14.4	24
Trihalomethanes	mg/L	24	0.014	0.0086	0.0256

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Aurora DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	7	0.0008	0.0006	0.0008	0.006
Arsenic	mg/L	7	0.0007	<0.0005	0.0008	0.025
Barium	mg/L	7	0.0339	0.0243	0.0824	1
Boron	mg/L	7	0.0028	<0.0025	0.0036	5
Cadmium	mg/L	7	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	7	0.0005	<0.0005	<0.0005	0.05
Mercury	mg/L	7	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	7	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	7	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	1	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	1	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	1	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	1	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	1	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	1	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	1	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	1	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	1	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	1	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	1	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	1	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	1	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	1	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	1	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	1	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	1	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	1	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	1	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	1	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	1	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	1	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	1	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Ballantrae/Musselman's Lake DWS

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

Drinking Water System Number: 220008658
Drinking Water System Name: Ballantrae/Musselman's Lake DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Ballantrae/Musselman's Lake DWS serves approximately 5056 people

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 Ballantrae/Musselman's Lake DWS:

Ballantrae-Musselman's Lake Distribution System (260006737)

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 Ballantrae/Musselman's Lake DWS

Introduction
The communities of Ballantrae and Musselman's Lake are centered on Aurora Road between Highway 48 and Ninth Line in Whitchurch-Stouffville. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of Whitchurch-Stouffville 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
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Ballantrae-Musselman's Lake system includes three wells and one storage facility. Water is disinfected with chlorine. Sodium silicate is used to manage iron and manganese. The storage facility holds water and maintains pressure. Tests confirm ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (Gas, Sodium Hypochlorite); Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$35,438 for general maintenance and repair.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	18-Mar-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Mar-17
	04-Jul-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	04-Jul-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	152	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	6
Total Coliforms	Raw	152	1
	Treated	104	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.34	0.00	2.84
Turbidity (Treated)	NTU	8,760	0.07	0.02	6.65

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	11	0.085	0.03	<0.125
Haloacetic Acids	mg/L	4	0.021	<0.02	0.024
Nitrate	mg/L	9	0.766	<1	<1.25
Nitrate + Nitrite	mg/L	9	0.767	<0.006	<1.25
Nitrite	mg/L	9	0.078	<0.006	<0.125
Sodium	mg/L	3	11.675	11.3	12.4
Trihalomethanes	mg/L	6	0.017	0.009	0.0276

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Ballantrae/Musselman's Lake DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0006	0.0006	0.0007	0.006
Arsenic	mg/L	3	0.0006	<0.0005	0.0008	0.025
Barium	mg/L	3	0.0773	0.0596	0.1	1
Boron	mg/L	3	0.0291	0.0238	0.0347	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0006	0.0005	0.0008	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	2	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	2	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	2	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	2	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	2	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	2	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	2	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	2	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	2	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	2	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	2	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	2	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	2	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	2	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	2	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	2	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	2	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	2	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	2	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	2	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	2	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	2	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	2	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	2	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	2	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	2	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	2	0.0002	<0.0002	<0.0002	0.002

2017 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, 2017 - Dec 31, 2017

The Georgina DWS serves approximately 8140 people

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. 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 prevents mussel growth. Filtration removes particles. Granular activated carbon improves taste. UV light and chlorine disinfect the water. 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 the facilities and automatically pause operation if an issue is detected.

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
$656,210 for general maintenance and repair, and SCADA upgrades to one elevated tank.

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

Not Applicable

There were no reported adverse water quality incidents or observations of improper disinfection that occured in the Georgina DWS during 2017

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	52	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	7
Total Coliforms	Raw	52	19
	Treated	52	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.32	0.20	1.12
Free Chlorine	mg/L	8,760	1.61	0.00	3.30
Turbidity (Raw)	NTU	8,760	0.54	0.01	10.00
Turbidity (Treated)	NTU	8,760	0.06	0.01	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine Backwash	mg/L	8,760	0.002	0	5
Haloacetic Acids	mg/L	4	0.033	0.027	0.037
Nitrate	mg/L	5	0.912	<1.25	<1.25
Nitrate + Nitrite	mg/L	5	0.912	<1.25	<1.25
Nitrite	mg/L	5	0.092	<0.008	<0.125
Sodium	mg/L	2	28.350	28.1	28.6
Total Suspend Solids Backwash	NTU	8,760	0.847	0	200
Trihalomethanes	mg/L	25	0.033	0.0183	0.0515

*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

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	Units	Test Result	ODWS Limit
Trihalomethanes	Sutton ET	05-Jun-17	mg/L	0.0515	0.1

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0007	0.0007	0.0007	0.006
Arsenic	mg/L	2	0.0005	0.0005	0.0005	0.025
Barium	mg/L	2	0.0242	0.024	0.0244	1
Boron	mg/L	2	0.0255	0.0252	0.0258	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	mg/L	2	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	2	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	1	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	1	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	1	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	1	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	1	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	1	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	1	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	1	0.0178	0.0178	0.0178	0.05
Diclofop-methyl	mg/L	1	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	1	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	1	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	1	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	1	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	1	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	1	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	1	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	1	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	1	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	1	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	1	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	1	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	1	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	1	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Holland Landing DWS

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

Drinking Water System Number: 220004046
Drinking Water System Name: Holland Landing DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Holland Landing DWS serves approximately 7570 people

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 Holland Landing DWS:
Holland Landing/Queensville/Sharon Distribution System (260001747)

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 Holland Landing DWS

Introduction
Holland Landing is located in western East Gwillimbury. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water from the York DWS. York Region operates the water supply, and the Town of East Gwillimbury 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Holland Landing DWS includes two wells, two storage facilities (elevated tanks), and one booster pumping station. Water is disinfected with chloramine. Sodium silicate is used to manage iron and manganese. Storage facilities hold water and maintain pressure. The booster stations also maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine gas; Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$458,364 for general maintenance and repair, and Sherwood Forest Pumping Station electrical upgrades.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	19-Apr-17	mg/L	0.00	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	19-Apr-17
	25-Aug-17	mg/L	0.15	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	25-Aug-17
	29-Aug-17	mg/L	0.15	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-Aug-17
	02-Oct-17	mg/L	0.00	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	02-Oct-17
	23-Nov-17	mg/L	0.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	23-Nov-17
	17-Dec-17	mg/L	0.22	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	17-Dec-17
Dichlorometh..	12-Apr-17	ug/L	50.7	Operator attended site. Resample taken.	02-May-17
System Pressure	07-Mar-17	PSI	0	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	07-Mar-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	104	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	14
Total Coliforms	Raw	104	0
	Treated	104	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	2.15	0.00	3.29
Turbidity (Treated)	NTU	8,760	0.10	0.03	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	11	0.212	0.2	0.23
Haloacetic Acids	mg/L	4	0.020	<0.02	<0.02
Nitrate	mg/L	9	0.752	<1	<1
Nitrate + Nitrite	mg/L	7	0.754	<1	<1
Nitrite	mg/L	9	0.076	<0.1	<0.1
Sodium	mg/L	3	21.275	19.7	22.4
Trihalomethanes	mg/L	7	0.013	0.0067	0.0188

*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

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	Units	Test Result	ODWS Limit
Dichloromethane	Holland Landing Well 1 Treated	12-Apr-17	mg/L	0.0507	0.05

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0007	0.0007	0.0007	0.006
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.025
Barium	mg/L	3	0.1657	0.146	0.193	1
Boron	mg/L	3	0.0723	0.0674	0.0776	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0005	<0.0005	0.0006	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	3	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	3	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	2	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	2	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	2	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	2	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	2	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	2	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	2	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	3	0.0183	<0.001	0.0507	0.05
Diclofop-methyl	mg/L	2	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	2	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	2	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	2	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	2	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	2	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	2	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	2	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	2	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	2	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	2	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	2	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	2	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	3	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	2	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	2	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	3	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Georgina DWS (Keswick DW Sub-System)

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

Drinking Water System Number: 210003280
Drinking Water System Name: Georgina DWS (Keswick DW Sub-System)
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, 2017 - Dec 31, 2017

The Georgina DWS (Keswick DW Sub-System) serves approximately 32340 people

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 DW Sub-System):

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 (Keswick DW Sub-System)

Introduction
The community of Keswick is located on the east shore of Cook's Bay in the Town of Georgina. Surface water from Lake Simcoe and Cook's Bay supplies this community. Algae in the lake can add a harmless but musty taste. York Region operates the water supply, and 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 Keswick DWS includes one Water Treatment Plant and three storage/rechlorination facilities. Lake water is screened and chlorine prevents mussel growth. Filtration removes particles. Granular activated carbon improves water taste, and chlorine disinfects it. 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 the facilities and automatically pause operation if an issue is detected.

List of water treatment chemicals used in this system
Chlorine gas; Carbon Dioxide (pH control); Polyaluminum Chloride (coagulation); Granular activated carbon (filtration); Non water treatment chemical: Hydrofluosilicic Acid applied

Brief description and breakdown of monetary expenses incurred
$314,973 for general maintenance and repair, SCADA upgrades to one elevated tank and one reservoir.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	18-Mar-17	mg/L	5.00	Reported as BMP. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	18-Mar-17
Fluoride as F	29-Jun-17	mg/L	1.75	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-Jun-17
	28-Aug-17	mg/L	1.51	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	28-Aug-17
Primary Disinfection	15-Feb-17	Unitless	NA	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	16-Feb-17
Turbidity	04-Mar-17	NTU	2100	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	05-Mar-17
	12-Oct-17	NTU	N/A	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	14-Dec-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	58	7
	Treated	55	0
Heterotrophic Plate Count	Treated	55	7
Total Coliforms	Raw	58	45
	Treated	55	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.64	0.20	1.41
Free Chlorine	mg/L	8,760	1.17	0.00	2.93
Turbidity (Raw)	NTU	8,760	0.80	0.14	24.99
Turbidity (Treated)	NTU	8,760	0.09	0.03	3.00

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Haloacetic Acids	mg/L	8	0.044	0.033	0.06
Nitrate	mg/L	6	1.072	<1.25	<2.5
Nitrate + Nitrite	mg/L	6	1.072	<1.25	<2.5
Nitrite	mg/L	6	0.107	<0.008	<0.25
Sodium	mg/L	3	33.475	28.9	37.8
Total Suspended Solids Backwash	mg/L	12	7.867	1.3	20.1
Trihalomethanes	mg/L	35	0.039	0.0092	0.0704

*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

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	Units	Test Result	ODWS Limit
Trihalomethanes	Keswick West Park Heights Reservoir	06-Feb-17	mg/L	0.0525	0.1
		03-Apr-17	mg/L	0.0601	0.1
		01-May-17	mg/L	0.0616	0.1
		10-Jul-17	mg/L	0.0605	0.1
		07-Aug-17	mg/L	0.0692	0.1
		04-Sep-17	mg/L	0.0659	0.1
		09-Oct-17	mg/L	0.0704	0.1
		06-Nov-17	mg/L	0.0621	0.1
		04-Dec-17	mg/L	0.0525	0.1
	Keswick Woodbine Elevated Tank	01-May-17	mg/L	0.0512	0.1
		07-Aug-17	mg/L	0.0507	0.1
		04-Sep-17	mg/L	0.0527	0.1
		09-Oct-17	mg/L	0.0564	0.1
	Keswick WTP Clearwell	10-Jul-17	mg/L	0.0526	0.1

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0007	0.0007	0.0008	0.006
Arsenic	mg/L	3	0.0005	0.0005	0.0006	0.025
Barium	mg/L	3	0.0265	0.0243	0.0304	1
Boron	mg/L	3	0.0297	0.0279	0.0308	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0016	<0.0005	0.0037	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	3	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	3	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	1	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	1	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	1	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	1	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	1	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	1	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	1	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	3	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	1	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	1	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	1	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	1	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	1	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	1	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	1	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	1	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	1	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	1	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	1	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	1	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	1	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	3	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	1	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	1	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	3	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for King City DWS

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

Drinking Water System Number: 220002299
Drinking Water System Name: King City DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The King City DWS serves approximately 7690 people

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 King City DWS:
King City Distribution System (260005138)

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 King City DWS

Introduction
King City is a community in south-eastern King Township. King City DWS provides water from Lake Ontario through the York DWS. Two wells are maintained as an emergency backup water source. York Region operates the water supply, and King Township maintains and distributes water 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
King City DWS includes two wells and two storage facilities. If the wells are used for supply, water is disinfected with chloramine. Sodium silicate manages iron and manganese. Storage facilities hold water and maintain pressure. The backup wells and treatment are tested often to ensure safety and performance. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
In 2017, water in King City was 100% pre-treated and York Region did not apply any treatment chemicals to the King City DWS. Well facilities were not run for supply, but have capability to apply chlorine (gas), ammonia solution for chloramination, and sodium silicate if ever needed for backup capacity.

Brief description and breakdown of monetary expenses incurred
$20,668 for general maintenance and repair.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
E. coli + Total Coliform	17-Apr-17	Unitless	presence	Operator attended site. Resample taken. Resample result non-detectable for total coliform and E. coli	21-Apr-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	104	0
Total Coliforms	Raw	104	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	1.76	0.00	2.56
Turbidity (Raw)	NTU	8,760	1.19	0.00	5.00
Turbidity (Treated)	NTU	8,760	0.05	0.02	0.13

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	6	0.596	0.496	0.67
Haloacetic Acids	mg/L	8	0.020	<0.02	<0.02
Nitrate	mg/L	2	1.000	<1	<1
Nitrate + Nitrite	mg/L	2	1.000	<1	<1
Nitrite	mg/L	2	0.100	<0.1	<0.1
Sodium	mg/L	2	23.700	23.5	23.9
Trihalomethanes	mg/L	9	0.023	0.0162	0.0404

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the King City DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0009	0.0008	0.0009	0.006
Arsenic	mg/L	2	0.0008	0.0008	0.0008	0.025
Barium	mg/L	2	0.0243	0.0238	0.0247	1
Boron	mg/L	2	0.0061	0.0058	0.0064	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	mg/L	2	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	2	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Dichloromethane	mg/L	1	0.0010	<0.001	<0.001	0.05
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Kleinburg DWS

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

Drinking Water System Number: 220002360
Drinking Water System Name: Kleinburg DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Kleinburg DWS serves approximately 6500 people

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 Kleinburg DWS:
Vaughan Distribution System (260003097)

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 Kleinburg DWS

Introduction
Kleinburg is a village in the City of Vaughan. Kleinburg DWS provides water from Lake Ontario through the York DWS. Two wells are maintained as an emergency backup water source. York Region operates the water supply, and the City of Vaughan maintains and distributes water 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
Kleinburg DWS includes two wells, one storage facility and two booster pumping stations. Water is disinfected with chloramine. Sodium silicate is used to manage iron and manganese. The storage facility holds water. Pressure is maintained by the storage facility and the pumping stations. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
In 2017, water in Kleinburg was 100% pre-treated and York Region did not apply any treatment chemicals to the Kleinburg DWS. Well facilities have capability to apply chlorine (gas), ammonia solution for chloramination, and sodium silicate.

Brief description and breakdown of monetary expenses incurred
$1,891,170 for general maintenance and repair, one elevated tank re-coating, and well upgrades.

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

Not Applicable

There were no reported adverse water quality incidents or observations of improper disinfection that occured in the Kleinburg DWS during 2017

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	98	0
	Treated	4	0
Heterotrophic Plate Count	Treated	4	0
Total Coliforms	Raw	98	0
	Treated	4	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	1.68	0.49	2.61
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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	1	0.610	0.61	0.61
Haloacetic Acids	mg/L	2	0.020	<0.02	<0.02
Trihalomethanes	mg/L	3	0.030	0.0187	0.0432

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Kleinburg DWS during 2017

Summary of inorganic parameters teste 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

Not Applicable

Refer to previous reports for the most recent results

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	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Dichloromethane	mg/L	1	0.0010	<0.001	<0.001	0.05
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Mount Albert DWS

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

Drinking Water System Number: 220006543
Drinking Water System Name: Mount Albert DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Mount Albert DWS serves approximately 5280 people

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 Mount Albert DWS:
Mount Albert Distribution System (260002265)

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 Mount Albert DWS

Introduction
The town of Mount Albert is located in the east side of Town of East Gwillimbury around Mount Albert Road, between Highway 48 and York Durham Line. Local groundwater is naturally high in minerals. York Region operates the water supply, while the Town of East Gwillimbury 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
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Mount Albert DWS includes three wells and two storage facilities. Water is disinfected with chlorine. Sodium silicate is used to manage iron and manganese. The storage facilities hold water and maintain pressure. Tests confirm ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (Sodium Hypochlorite and Chlorine Gas); Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$23,161 for general maintenance and repair.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	28-Feb-17	mg/L	4.24	Reported as BMP. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	28-Feb-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	156	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	19
Total Coliforms	Raw	156	0
	Treated	104	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.49	0.00	4.89
Turbidity (Treated)	NTU	8,760	0.09	0.03	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	11	0.111	0.05	<0.25
Haloacetic Acids	mg/L	4	0.020	<0.02	<0.02
Nitrate	mg/L	9	2.727	<0.005	5.14
Nitrate + Nitrite	mg/L	9	2.728	<0.02	5.14
Nitrite	mg/L	9	0.171	<0.02	<0.25
Sodium	mg/L	3	11.310	12.7	12.7
Trihalomethanes	mg/L	6	0.014	0.0013	0.0264

*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

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	Units	Test Result	ODWS Limit
Nitrate	Mount Albert Well 3 Treated	04-Jan-17	mg/L	5.09	10
		12-Jul-17	mg/L	5.03	10
		10-Oct-17	mg/L	5.14	10
Nitrate + Nitrite	Mount Albert Well 3 Treated	04-Jan-17	mg/L	5.09	10
		12-Jul-17	mg/L	5.03	10
		10-Oct-17	mg/L	5.14	10

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0006	0.0006	0.0007	0.006
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.025
Barium	mg/L	3	0.0657	0.0567	0.0741	1
Boron	mg/L	3	0.0268	0.0242	0.0282	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0006	0.0006	0.0007	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0036	<0.0005	0.0073	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	2	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	2	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	2	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	2	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	2	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	2	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	2	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	2	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	2	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	2	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	2	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	2	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	2	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	2	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	2	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	2	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	2	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	2	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	2	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	2	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	2	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	2	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	2	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	2	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	2	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	2	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	2	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Newmarket DWS

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

Drinking Water System Number: 220002413
Drinking Water System Name: Newmarket DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Newmarket DWS serves approximately 90030 people

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 Newmarket DWS:
Holland Landing/Queensville/Sharon Distribution System (260001747); Newmarket Distribution System (260003188); Town Of Aurora Distribution System (260003227); Yonge-Green Lane Distribution System (260087685)

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 Newmarket DWS

Introduction
The Town of Newmarket is located centrally in York Region. Newmarket wells are offline for maintenance. Water from Lake Ontario and groundwater from Aurora are provided through the York DWS. York Region operates the water supply, and the Town of Newmarket maintains and distributes water 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
Newmarket DWS includes six wells, six storage facilities (two are also rechloramination stations), and two booster pumping stations. Water is disinfected with chloramine. Sodium silicate is used to manage iron and manganese. Storage facilities hold water, and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (gas, sodium hypochlorite); Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$2,258,879 for general maintenance and repair, and SCADA upgrades to four elevated tanks, five wells, and five meter chambers, Davis Drive meter chamber upgrades, and Yonge Street Aquifer rehabilitation.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	08-Mar-17	mg/L	4.09	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	08-Mar-17
	14-Mar-17	mg/L	4.93	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	14-Mar-17
	19-Jun-17	mg/L	4.23	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Jun-17
	11-Jul-17	mg/L	4.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	11-Jul-17
	20-Jul-17	mg/L	0.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	20-Jul-17
	26-Jul-17	mg/L	4.22	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	26-Jul-17
	26-Jul-17	mg/L	4.12	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	27-Jul-17
	28-Jul-17	mg/L	4.31	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	28-Jul-17
	03-Aug-17	mg/L	4.26	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	03-Aug-17
	03-Aug-17	mg/L	4.25	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	03-Aug-17
	06-Aug-17	mg/L	4.19	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	06-Aug-17
	07-Aug-17	mg/L	4.64	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	07-Aug-17
	07-Aug-17	mg/L	4.41	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	07-Aug-17
	13-Aug-17	mg/L	4.02	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	13-Aug-17
	19-Aug-17	mg/L	4.24	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Aug-17
	30-Aug-17	mg/L	4.32	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	30-Aug-17
	12-Oct-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	12-Oct-17
	16-Oct-17	mg/L	4.45	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	16-Oct-17
	14-Nov-17	mg/L	4.26	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	14-Nov-17
	15-Nov-17	mg/L	4.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	15-Nov-17
	15-Nov-17	mg/L	4.01	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	15-Nov-17
Primary Disinfection	13-Jun-17	mg/L	0.06	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	13-Jun-17
	14-Jun-17	mg/L	0.05	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	14-Jun-17
Total coliform	18-Jun-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	29-Jun-17
	03-Jul-17	Unitless	presence	Operator attended site. Resample taken. Resample result non-detectable for total coliform and E. coli	05-Jul-17
	07-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	09-Aug-17
	09-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	11-Aug-17
	11-Aug-17	Unitless	presence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.	13-Aug-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	248	0
	Treated	6	0
Heterotrophic Plate Count	Treated	6	1
Total Coliforms	Raw	248	12
	Treated	6	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	1.82	0.00	4.99
Turbidity (Treated)	NTU	8,760	0.14	0.06	2.44

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	23	0.459	0.263	0.64
Haloacetic Acids	mg/L	16	0.021	<0.02	0.042
Nitrate	mg/L	12	0.708	<0.5	<1
Nitrate + Nitrite	mg/L	4	1.000	<1	<1
Nitrite	mg/L	12	0.071	<0.05	<0.1
Sodium	mg/L	4	20.525	18.3	21.7
Trihalomethanes	mg/L	16	0.019	0.0133	0.0288

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Newmarket DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	4	0.0008	0.0008	0.0008	0.006
Arsenic	mg/L	4	0.0006	<0.0005	0.0008	0.025
Barium	mg/L	4	0.0644	0.0243	0.128	1
Boron	mg/L	4	0.0853	0.0212	0.113	5
Cadmium	mg/L	4	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	4	0.0019	0.001	0.0024	0.05
Mercury	mg/L	4	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	4	0.0007	<0.0005	0.0011	0.01
Uranium	mg/L	4	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Not Applicable

Refer to previous reports for the most recent results

2017 Annual Drinking Water System (DWS) Quality Report for Nobleton DWS

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

Drinking Water System Number: 220002306
Drinking Water System Name: Nobleton DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Nobleton DWS serves approximately 5815 people

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 Nobleton DWS:
Nobleton Distribution System-260002577

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 Nobleton DWS

Introduction
Nobleton is located in King Township, and the municipal drinking water system is centered on King Road and Highway 27. Local groundwater is naturally high in minerals. Tests confirm ground water quality. York Region operates the water supply, while King Township 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
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Nobleton system includes three wells, two storage facilities, and one booster pumping station. Water is disinfected with chlorine. Sodium silicate is used to manage iron and manganese. The booster station and storage facilities maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (sodium hypochlorite and chlorine gas); Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$247,623 for general maintenance and repair, and elevated tank recoating.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	23-Apr-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	23-Apr-17
	29-May-17	mg/L	0.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-May-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	156	0
	Treated	156	0
Heterotrophic Plate Count	Treated	156	36
Total Coliforms	Raw	156	2
	Treated	156	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.53	0.00	4.99
Turbidity (Treated)	NTU	8,760	0.12	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	18	0.155	0.1	<0.25
Haloacetic Acids	mg/L	8	0.020	<0.02	<0.02
Nitrate	mg/L	14	1.626	<2.5	<2.5
Nitrate + Nitrite	mg/L	14	1.627	<0.008	<2.5
Nitrite	mg/L	14	0.165	<0.008	<0.25
Sodium	mg/L	5	18.983	17.3	20.8
Trihalomethanes	mg/L	11	0.023	0.0055	0.0411

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Nobleton DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	5	0.0005	0.0005	0.0006	0.006
Arsenic	mg/L	5	0.0005	<0.0005	<0.0005	0.025
Barium	mg/L	5	0.2550	0.236	0.272	1
Boron	mg/L	5	0.0763	0.0707	0.0818	5
Cadmium	mg/L	5	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	5	0.0011	0.001	0.0011	0.05
Mercury	mg/L	5	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	5	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	5	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	3	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	3	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	3	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	3	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	3	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	3	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	3	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	3	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	3	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	3	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	3	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	3	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	3	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	3	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	3	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	3	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	3	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	3	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	3	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	3	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	3	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	3	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	3	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	3	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	3	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	3	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	3	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	3	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	3	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	3	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	3	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	3	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	3	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	3	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	3	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	3	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Schomberg DWS

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

Drinking Water System Number: 220004901
Drinking Water System Name: Schomberg DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II, Water Treatment II
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Schomberg DWS serves approximately 2935 people

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 Schomberg DWS:
Schomberg Distribution System (260005151)

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 Schomberg DWS

Introduction
Schomberg is located within the Township of King around the intersections of Highway 27 and Highway 9, just south of the border with Simcoe County. Local groundwater is naturally high in minerals. Tests confirm ground water quality. York Region operates the water supply, while King Township 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
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Schomberg DWS includes one Water Treatment Plant, three wells and one storage facility. Naturally occurring methane is removed. Potassium permanganate removes iron and manganese before filtration. Water is disinfected with UV light and chlorine, which combines with naturally occurring ammonia to form chloramine. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Potassium Permanganate; Chlorine gas (forms chloramine when it combines with naturally occurring ammonia)

Brief description and breakdown of monetary expenses incurred
$134,836 for general maintenance and repair.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	18-Oct-17	mg/L	0.24	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	18-Oct-17
UV Dosage	03-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	03-Aug-17
	10-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	11-Aug-17
	10-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	10-Aug-17
					11-Aug-17
	11-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	11-Aug-17
	12-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	12-Aug-17
	24-Aug-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	24-Aug-17
	01-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	01-Sep-17
	01-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	01-Sep-17
	12-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	12-Sep-17
	13-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	13-Sep-17
	21-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	21-Sep-17
	27-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	27-Sep-17
	29-Sep-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	29-Sep-17
	01-Oct-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	01-Oct-17
	07-Oct-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	07-Oct-17
	20-Oct-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	20-Oct-17
	30-Oct-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	30-Oct-17
	02-Nov-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	02-Nov-17
	29-Nov-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	29-Nov-17
	07-Dec-17	mJ/cm2	<40	Operator attended site, restored facility to normal operation	07-Dec-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	150	0
	Treated	52	0
Heterotrophic Plate Count	Treated	52	4
Total Coliforms	Raw	150	0
	Treated	52	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	2.20	0.00	4.20
Turbidity (Treated)	NTU	8,760	0.19	0.05	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	6	0.176	0.12	<0.25
Haloacetic Acids	mg/L	3	0.020	<0.02	<0.02
Nitrate	mg/L	6	1.656	<2.5	<2.5
Nitrate + Nitrite	mg/L	6	1.675	<2.5	<2.5
Nitrite	mg/L	6	0.229	0.05	0.33
Sodium	mg/L	2	19.350	19.3	19.4
Trihalomethanes	mg/L	4	0.005	0.0038	0.0054

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Schomberg DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0006	0.0005	0.0006	0.006
Arsenic	mg/L	2	0.0008	0.0008	0.0008	0.025
Barium	mg/L	2	0.1135	0.111	0.116	1
Boron	mg/L	2	0.0919	0.0906	0.0932	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	2	0.0019	0.0019	0.0019	0.05
Mercury	mg/L	2	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	2	0.0010	0.0009	0.0011	0.01
Uranium	mg/L	2	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	1	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	1	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	1	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	1	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	1	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	1	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	1	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	1	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	1	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	1	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	1	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	1	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	1	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	1	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	1	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	1	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	1	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	1	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	1	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	1	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	1	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	1	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	1	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	1	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	1	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	1	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	1	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	1	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	1	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	1	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	1	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	1	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	1	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	1	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	1	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Sharon/Queensville DWS

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

Drinking Water System Number: 260001955
Drinking Water System Name: Sharon/Queensville DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Sharon/Queensville DWS serves approximately 3510 people

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 Sharon/Queensville DWS:
Holland Landing/Queensville/Sharon Distribution System (260001747); Newmarket Distribution System (260003188)

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 Sharon/Queensville DWS

Introduction
Queensville and Sharon are in the Town of East Gwillimbury. Local groundwater is naturally high in minerals, and is blended with Lake Ontario water from the York DWS. York Region operates the water supply, and the Town of East Gwillimbury 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
Sharon-Queensville DWS includes four wells and one storage facility (elevated tank). Water is disinfected with chloramine. Sodium silicate is used to manage iron and manganese. Storage facilities hold water and help to maintain pressure. Tests confirm good ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment levels and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine gas; Ammonia solution; Sodium Silicate

Brief description and breakdown of monetary expenses incurred
$38,170 for general maintenance and repair.

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

Not Applicable

There were no reported adverse water quality incidents or observations of improper disinfection that occured in the Sharon/Queensville DWS during 2017

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	197	0
	Treated	104	0
Heterotrophic Plate Count	Treated	104	14
Total Coliforms	Raw	197	4
	Treated	104	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	2.33	0.25	3.81
Turbidity (Treated)	NTU	8,760	0.10	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	11	0.211	0.2	0.221
Haloacetic Acids	mg/L	4	0.020	<0.02	<0.02
Nitrate	mg/L	9	0.751	<1	<1
Nitrate + Nitrite	mg/L	7	0.753	<1	<1
Nitrite	mg/L	9	0.076	<0.1	<0.1
Sodium	mg/L	3	20.925	20.1	23
Trihalomethanes	mg/L	6	0.017	0.0131	0.0197

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Sharon/Queensville DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0007	0.0007	0.0007	0.006
Arsenic	mg/L	3	0.0006	<0.0005	0.0009	0.025
Barium	mg/L	3	0.1527	0.151	0.156	1
Boron	mg/L	3	0.0742	0.0701	0.0767	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	3	0.0007	0.0006	0.0008	0.05
Mercury	mg/L	3	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Uranium	mg/L	3	0.0005	<0.0005	<0.0005	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	2	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	2	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	2	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	2	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	2	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	2	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	2	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	2	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	2	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	2	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	2	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	2	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	2	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	2	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	2	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	2	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	2	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	2	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	2	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	2	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	2	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	2	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	2	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	2	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	2	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	2	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	2	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	2	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	2	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	2	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	2	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	2	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	2	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	2	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	2	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for Stouffville DWS

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

Drinking Water System Number: 220002333
Drinking Water System Name: Stouffville DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III, Water Treatment I
Reporting period: Jan 1, 2017 - Dec 31, 2017

The Stouffville DWS serves approximately 29970 people

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 Stouffville DWS:
Stouffville Distribution System (260003162)

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 Stouffville DWS

Introduction
Stouffville is a community in the Town of Whitchurch-Stouffville. Local groundwater is naturally high in minerals, and blends with Lake Ontario water from the York DWS. York Region operates the water supply, while the Town 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. Lake Ontario water is purchased with supply agreements.

Raw water source
Groundwater

Profile of water in distribution system
Blended - Lake and Groundwater

Water treatment description
Stouffville DWS includes five wells, three storage facilities, and four booster pumping stations. One facility also rechlorinates. Chlorine disinfects the water. UV light also disinfects Wells 5 and 6. Chloramine in York DWS water is converted to chlorine. Sodium silicate manages iron and manganese. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Chlorine (gas and sodium hypochlorite); Sodium silicate

Brief description and breakdown of monetary expenses incurred
$148,677 for general maintenance and repair.

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

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	11-Mar-17	mg/L	5.00	Reported as BMP. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	11-Mar-17
	26-Oct-17	mg/L	0.02	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	26-Oct-17
	12-Dec-17	mg/L	0.02	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	12-Dec-17

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

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

Parameter	Sample Source	No. of Samples	No. of Detections
E. coli	Raw	253	0
	Treated	156	0
Heterotrophic Plate Count	Treated	156	28
Total Coliforms	Raw	253	1
	Treated	156	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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.46	0.00	5.00
Turbidity (Treated)	NTU	8,760	0.06	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	24	0.133	0.04	<0.5
Haloacetic Acids	mg/L	10	0.020	<0.02	<0.02
Nitrate	mg/L	18	1.318	<0.5	<5
Nitrate + Nitrite	mg/L	14	1.985	<2.5	<5
Nitrite	mg/L	18	0.109	<0.006	<0.5
Sodium	mg/L	5	37.892	23	57
Trihalomethanes	mg/L	13	0.015	0.0013	0.0297

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the Stouffville DWS during 2017

Summary of inorganic parameters teste 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

				Minimum	Maximum	ODWS Limit
Antimony	mg/L	5	0.0007	0.0007	0.0007	0.006
Arsenic	mg/L	5	0.0005	<0.0005	0.0005	0.025
Barium	mg/L	5	0.1279	0.0964	0.146	1
Boron	mg/L	5	0.0433	0.0278	0.0676	5
Cadmium	mg/L	5	0.0005	<0.0005	<0.0005	0.005
Chromium	mg/L	5	0.0006	<0.0005	0.0008	0.05
Mercury	mg/L	5	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	5	0.0006	<0.0005	0.0008	0.01
Uranium	mg/L	5	0.0018	<0.0005	0.0029	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Test Parameter	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	mg/L	3	0.0003	<0.0003	<0.0003	0.014
1,2-(o-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.2
1,2-Dichloroethane	mg/L	3	0.0001	<0.0001	<0.0001	0.005
1,4-(p-dcb) Dichlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
2-methyl-4-chlorophenoxyacetic acid	mg/L	3	0.0050	<0.005	<0.005	0.1
2,3,4,6-Tetrachlorophenol	mg/L	3	0.0005	<0.0005	<0.0005	0.1
2,4-Dichlorophenol	mg/L	3	0.0007	<0.0007	<0.0007	0.9
2,4-dichlorophenoxyacetic acid (2,4-D)	mg/L	3	0.0008	<0.0008	<0.0008	0.1
2,4,6-Trichlorophenol	mg/L	3	0.0005	<0.0005	<0.0005	0.005
Alachlor	mg/L	3	0.0004	<0.0004	<0.0004	0.005
Atrazine + N-dealkylated metabolites	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Azinphos-methyl	mg/L	3	0.0003	<0.0003	<0.0003	0.02
Benzene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Benzo(a)pyrene	mg/L	3	0.0000	<0.00001	<0.00001	0.00001
Bromoxynil	mg/L	3	0.0004	<0.0004	<0.0004	0.005
Carbaryl	mg/L	3	0.0030	<0.003	<0.003	0.09
Carbofuran	mg/L	3	0.0030	<0.003	<0.003	0.09
Carbon Tetrachloride	mg/L	3	0.0002	<0.0002	<0.0002	0.005
Chlorpyrifos	mg/L	3	0.0002	<0.0002	<0.0002	0.09
Diazinon	mg/L	3	0.0002	<0.0002	<0.0002	0.02
Dicamba	mg/L	3	0.0004	<0.0004	<0.0004	0.12
Dichloromethane	mg/L	3	0.0010	<0.001	<0.001	0.05
Diclofop-methyl	mg/L	3	0.0004	<0.0004	<0.0004	0.009
Dimethoate	mg/L	3	0.0003	<0.0003	<0.0003	0.02
Diquat	mg/L	3	0.0010	<0.001	<0.001	0.07
Diuron	mg/L	3	0.0030	<0.003	<0.003	0.15
Glyphosate	mg/L	3	0.0250	<0.025	<0.025	0.28
Malathion	mg/L	3	0.0002	<0.0002	<0.0002	0.19
Metolachlor	mg/L	3	0.0002	<0.0002	<0.0002	0.05
Metribuzin	mg/L	3	0.0003	<0.0003	<0.0003	0.08
Monochlorobenzene	mg/L	3	0.0001	<0.0001	<0.0001	0.08
Paraquat	mg/L	3	0.0010	<0.001	<0.001	0.01
Pentachlorophenol	mg/L	3	0.0004	<0.0004	<0.0004	0.06
Phorate	mg/L	3	0.0002	<0.0002	<0.0002	0.002
Picloram	mg/L	3	0.0007	<0.0007	<0.0007	0.19
Polychlorinated Biphenyls (PCBs)	mg/L	3	0.0000	<0.00002	<0.00002	0.003
Prometryne	mg/L	3	0.0002	<0.0002	<0.0002	0.001
Simazine	mg/L	3	0.0002	<0.0002	<0.0002	0.01
Terbufos	mg/L	3	0.0002	<0.0002	<0.0002	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	3	0.0003	<0.0003	<0.0003	0.03
Triallate	mg/L	3	0.0040	<0.004	<0.004	0.23
Trichloroethylene	mg/L	3	0.0001	<0.0001	<0.0001	0.005
Trifluralin	mg/L	3	0.0000	<0.000006	<0.000006	0.045
Vinyl Chloride	mg/L	3	0.0002	<0.0002	<0.0002	0.002

2017 Annual Drinking Water System (DWS) Quality Report for York DWS

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

Drinking Water System Number: 260001929
Drinking Water System Name: York DWS
Drinking Water System Owner: The Regional Municipality of York
DWS Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution IV
Reporting period: Jan 1, 2017 - Dec 31, 2017

The York DWS serves approximately 1078660 people

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 York DWS:

King City Drinking Water System (220002299); York Drinking Water System - Stouffville (220002333); Kleinburg Drinking Water System (220002360); York Drinking Water System - Newmarket (220002413); York Drinking Water System - Aurora (220002440); York Drinking Water System - Holland Landing (220004046); Markham Distribution System (220004162); York Drinking Water System - Queensville (260001955); Richmond Hill Distribution System (260001968); Vaughan Distribution System (260003097); Town Of Aurora Distribution System (260003227)

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 York DWS

Introduction
The Town of Richmond Hill and the Cities of Vaughan and Markham form the southern border of York Region. These three municipalities receive all their water from Lake Ontario through the York Drinking Water System (York DWS). In these areas, initial treatment on the source water is done by Peel Region and the City of Toronto. In the communities north of Vaughan, Richmond Hill and Markham that receive water from the York DWS, the supply is supplemented with groundwater from wells.

Raw water source
Lake Ontario

Profile of water in distribution system
Lake Ontario

Water treatment description
In Vaughan, Richmond Hill, and Markham, purchased water is pre-treated and disinfected by the City of Toronto and Peel Region. Twelve storage facilities hold water and help the seven booster stations maintain pressure. Test results from certified labs and equipment confirm good water quality. Regional Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect an issue, the system pauses operation until an operator takes action.

List of water treatment chemicals used in this system
York DWS water is purchased pre-treated from the City of Toronto and Peel Region. York Region does not add any more treatment in this system.

Brief description and breakdown of monetary expenses incurred
$12,540,586 for general maintenance and repair, Islington watermain rehabilitation, and Bathurst watermain emergency 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 MOECC Spills Action Centre

Test Parameter	Incident Date	Units	Result	Corrective Action	Corrective Action Date
Chlorine Residual	22-Feb-17	mg/L	5.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	22-Feb-17
	24-Feb-17	mg/L	3.48	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	24-Feb-17
	01-Mar-17	mg/L	4.54	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	01-Mar-17
	06-Jul-17	mg/L	7.14	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	06-Jul-17
	01-Sep-17	mg/L	>3.0	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	01-Sep-17
	19-Sep-17	mg/L	3.08	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	19-Sep-17
	08-Oct-17	mg/L	6.96	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	08-Oct-17
	18-Nov-17	mg/L	4.87	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	18-Nov-17
	04-Dec-17	mg/L	>3.00	Operator attended site, restored facility to normal operation	05-Dec-17
	13-Dec-17	mg/L	>3.00	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	13-Dec-17
	18-Dec-17	mg/L	9.94	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	18-Dec-17
	28-Dec-17	mg/L	>3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	28-Dec-17

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

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

Not Applicable

York DWS does not have any raw water or treatment facilities, so there are no microbiological tests to report here. For more data, view the Open Dataset or refer to the local municipality

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

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Chlorine	mg/L	8,760	1.45	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Parameter	Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	36	0.560	0.45	0.66
Haloacetic Acids	mg/L	48	0.020	<0.02	<0.02
Nitrate	mg/L	12	1.000	<1	<1
Nitrate + Nitrite	mg/L	12	1.000	<1	<1
Nitrite	mg/L	12	0.100	<0.1	<0.1
Sodium	mg/L	12	17.075	15.3	19.3
Trihalomethanes	mg/L	48	0.016	0.0055	0.0275

*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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the York DWS during 2017

Summary of inorganic parameters teste 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	Units	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	18	0.0014	<0.0025	0.0009	0.006
Arsenic	mg/L	18	0.0014	<0.0025	0.001	0.025
Barium	mg/L	18	0.0217	0.0211	0.0235	1
Boron	mg/L	18	0.1999	<0.0025	0.448	5
Cadmium	mg/L	18	0.0012	<0.0005	<0.0025	0.005
Chromium	mg/L	18	0.0012	<0.0005	<0.0025	0.05
Mercury	mg/L	12	0.0001	<0.00005	<0.00005	0.001
Selenium	mg/L	18	0.0012	<0.0005	<0.0025	0.01
Uranium	mg/L	18	0.0015	<0.0005	0.003	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 four decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater

Not Applicable

No organic parameters were tested for the York DWS as it does not have any wells