2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Ansnorveldt DWS serves approximately 118 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Ansnorveldt DWS:
Ansnorveldt Distribution System (260034372)

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

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

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

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

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

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

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 York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
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 good 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
$19,507 for general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	104	0
Total Coliforms	104	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	52	0
Heterotrophic Plate Count	52	18
Total Coliforms	52	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.51	0.92	2.40
Turbidity (Treated)	NTU	8,760	0.18	0.12	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	4	0.255	0.25	0.26
Haloacetic Acids (Treated)	ug/L	4	9.625	<8	11
Nitrate (Treated)	mg/L	4	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	1	41.300	41.3	41.3
Trihalomethanes (Treated)	ug/L	4	45.225	38.80	49

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	1	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	1	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	1	0.1250	0.125	0.125	1
Boron	mg/L	1	0.1720	0.172	0.172	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	1	0.0500	<0.05	<0.05	1
Selenium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	1	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	1	0.300	<0.3	<0.3	20
Benzene	ug/L	1	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.4	<0.4	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	1	0.200	<0.2	<0.2	90
Diazinon	ug/L	1	0.200	<0.2	<0.2	20
Dicamba	ug/L	1	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.4	<0.4	9
Dimethoate	ug/L	1	0.300	<0.3	<0.3	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.2	<0.2	190
Metolachlor	ug/L	1	0.200	<0.2	<0.2	50
Metribuzin	ug/L	1	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	1	0.100	<0.1	<0.1	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.4	<0.4	60
Phorate	ug/L	1	0.200	<0.2	<0.2	2
Picloram	ug/L	1	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	1	0.190	<0.19	<0.19	1
Simazine	ug/L	1	0.200	<0.2	<0.2	10
Terbufos	ug/L	1	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.3	<0.3	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.1	<0.1	5
Trifluralin	ug/L	1	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	1	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Aurora DWS serves approximately 63,870 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Aurora DWS:
Town of Aurora Distribution System (260003227); Newmarket Distribution System (260003188)

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

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

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

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

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

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

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 York 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. Chlorine provides disinfection, and chloramine provides a secondary residual. Two facilities also re-chloraminate to boost the residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

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

Brief description and breakdown of monetary expenses incurred
$1,878,678 for standby power generator replacement, watermain replacement and rehabilitation, treatment improvements, valve chamber rehabilitation and upgrades, new well installation, facility upgrades, well rehabilitation, pump rehabilitation and replacement, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites)	Jul 19, 2022	5.00 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Jul 19, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	224	0
Total Coliforms	224	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	103	0
Heterotrophic Plate Count	103	38
Total Coliforms	103	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	2.53	0.00	5.00
Turbidity (Treated)	NTU	8,760	0.05	0.02	1.74

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	86	0.536	0.13	0.68
Haloacetic Acids (Distribution)	ug/L	24	8.000	<8	<8
Nitrate (Treated)	mg/L	8	0.405	0.12	<0.5
Nitrate (Distribution)	mg/L	78	0.501	<0.5	0.52
Nitrite (Treated)	mg/L	8	0.038	<0.003	<0.05
Nitrite (Distribution)	mg/L	78	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	2	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0009	<0.0009
Sodium	mg/L	8	18.800	12.9	22.8
Trihalomethanes (Treated)	ug/L	2	5.200	3.40	7
Trihalomethanes (Distribution)	ug/L	24	16.996	13.40	20.30

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	8	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	8	0.0007	<0.0005	0.0008	0.01
Barium	mg/L	8	0.0401	0.0182	0.0981	1
Boron	mg/L	8	0.0291	0.0242	0.0372	5
Cadmium	mg/L	8	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	8	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	8	0.0500	<0.05	<0.05	1
Selenium	mg/L	8	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	8	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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.100	<0.1	<0.1	3
Prometryne	ug/L	2	0.205	<0.2	<0.21	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Ballantrae/Musselman's Lake DWS serves approximately 5,220 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Ballantrae/Musselman's Lake DWS:
Ballantrae-Musselman's Lake Distribution System (260006737)

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

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

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

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

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

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

Description of the Ballantrae/Musselman's Lake DWS

Introduction
The communities of Ballantrae and Musselman's Lake are centered on Aurora Road and Highway 48 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 York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Ballantrae-Musselman's Lake system includes three wells and one storage facility. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and maintains pressure. Tests confirm good ground water quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When a significant process or water quality issue is detected, the system automatically pauses operation until an operator takes action.

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

Brief description and breakdown of monetary expenses incurred
$389,745 for facility upgrades, treatment improvements, valve chamber upgrades, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	150	0
Total Coliforms	150	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	104	0
Heterotrophic Plate Count	104	34
Total Coliforms	104	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.65	0.00	3.62
Turbidity (Treated)	NTU	8,760	0.05	0.01	10.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	12	0.083	<0.05	0.13
Haloacetic Acids (Distribution)	ug/L	4	18.000	17	20
Nitrate (Treated)	mg/L	8	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	4	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	8	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	3	11.507	9.82	13.4
Trihalomethanes (Treated)	ug/L	2	7.000	6.10	7.90
Trihalomethanes (Distribution)	ug/L	4	25.475	20.50	29.90

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0006	<0.0005	0.0008	0.01
Barium	mg/L	3	0.0853	0.0639	0.106	1
Boron	mg/L	3	0.0143	0.007	0.0215	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.055	<0.02	<0.09	3
Prometryne	ug/L	2	0.190	<0.19	<0.19	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.005	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System Quality Report for Georgina DWS

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

Drinking Water System Number: 260026156
Drinking Water System Name: Georgina DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Treatment III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Georgina DWS serves approximately 8,420 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

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

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

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

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

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

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

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

Description of the Georgina DWS

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

Raw water source
Lake Simcoe

Profile of water in distribution system
Lake Simcoe

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

List of water treatment chemicals used in this system
Chlorine gas (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
$2,846,904 for standby power generator upgrades, facility rehabilitation and upgrades, valve chamber upgrades, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Filter Performance	May 2, 2022	96.88%	Filter performance monitored continuously, alarms halted flow through affected equipment. Operator attended site, facility restored to normal operation.	Apr 25, 2022
Presence of Total coliform	Oct 7, 2022	Presence	Operator attended site. Resample taken. Resample result non-detectable for total coliform.	Oct 7, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	52	0
Total Coliforms	52	19

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	54	0
Heterotrophic Plate Count	52	15
Total Coliforms	54	1

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.71	0.20	1.40
Free Chlorine	mg/L	8,760	1.67	0.00	2.95
Turbidity (Raw)	NTU	8,760	0.45	0.00	10.00
Turbidity (Treated)	NTU	8,760	0.03	0.01	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine Backwash	mg/L	8,760	0.003	0	0.2
Haloacetic Acids (Distribution)	ug/L	4	30.500	26	37
Microcystin (Raw)	ug/L	29	0.150	<0.15	<0.15
Microcystin (Treated)	ug/L	29	0.150	<0.15	<0.15
Nitrate (Treated)	mg/L	4	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	4	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	4	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	2	33.000	32.9	33.1
Total Suspended Solids Backwash	mg/L	8,760	1.810	0	40
Trihalomethanes (Treated)	ug/L	13	29.204	20.40	39.40
Trihalomethanes (Distribution)	ug/L	13	46.727	33.80	58

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	2	0.0246	0.0218	0.0273	1
Boron	mg/L	2	0.0212	0.0192	0.0232	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	1	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	1	0.300	<0.3	<0.3	20
Benzene	ug/L	1	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.4	<0.4	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	1	0.200	<0.2	<0.2	90
Diazinon	ug/L	1	0.200	<0.2	<0.2	20
Dicamba	ug/L	1	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.4	<0.4	9
Dimethoate	ug/L	1	0.300	<0.3	<0.3	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.2	<0.2	190
Metolachlor	ug/L	1	0.200	<0.2	<0.2	50
Metribuzin	ug/L	1	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	1	0.100	<0.1	<0.1	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.4	<0.4	60
Phorate	ug/L	1	0.200	<0.2	<0.2	2
Picloram	ug/L	1	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	1	0.190	<0.19	<0.19	1
Simazine	ug/L	1	0.200	<0.2	<0.2	10
Terbufos	ug/L	1	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.3	<0.3	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.1	<0.1	5
Trifluralin	ug/L	1	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	1	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Holland Landing DWS serves approximately 11,210 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Holland Landing DWS:
Holland Landing/Queensville/Sharon Distribution System (260001747)

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

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

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

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

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

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

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 and connected groundwater systems 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 York 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
Holland Landing DWS includes two wells, two storage facilities (elevated tanks), and one booster pumping station. Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated 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 a significant process or water quality issue, the system automatically 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
$1,105,632 for new hydro installation, valve chamber rehabilitation and upgrades, well rehabilitation, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Combined Chlorine Residual <0.25 mg/L	Oct 4, 2022	0.22 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Oct 4, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	99	0
Total Coliforms	99	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	99	0
Heterotrophic Plate Count	99	27
Total Coliforms	99	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	2.59	0.00	3.57
Turbidity (Treated)	NTU	8,760	0.04	0.00	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	12	0.220	0.21	0.24
Haloacetic Acids (Distribution)	ug/L	4	8.300	<8	8.80
Nitrate (Treated)	mg/L	8	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	4	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	8	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	4	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	2	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0009	<0.0009
Sodium	mg/L	3	21.233	20.4	22.3
Trihalomethanes (Treated)	ug/L	2	11.250	8.40	14.10
Trihalomethanes (Distribution)	ug/L	4	18.125	15.60	20.40

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	3	0.1490	0.118	0.184	1
Boron	mg/L	3	0.0642	0.0565	0.0703	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.020	<0.02	<0.02	3
Prometryne	ug/L	2	0.185	<0.18	<0.19	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System Quality Report for Keswick DWS

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: Keswick DWS
Drinking Water System Owner: The Regional Municipality of York
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Treatment III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Keswick DWS serves approximately 34,130 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

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

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

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

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

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

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

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

Description of the Keswick DWS

Introduction
The community of Keswick is located on the east shore of Cook's Bay in the Town of Georgina. The Keswick sub-system is part of the larger Georgina DWS. Surface water from Lake Simcoe and Cook's Bay supplies this community. York Region operates the water supply, and the Town of Georgina maintains water quality and distributes it to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
Lake Simcoe

Profile of water in distribution system
Lake Simcoe

Water treatment description
The Keswick DWS includes one Water Treatment Plant and three storage/rechlorination facilities. Lake water is screened and chlorine prevents mussel growth on the intake pipe. 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
$637,372 for facility upgrades, valve chamber upgrades, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	43	3
Total Coliforms	43	26

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	27	0
Heterotrophic Plate Count	27	14
Total Coliforms	27	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	8,760	0.71	0.20	1.09
Free Chlorine	mg/L	8,760	1.48	0.00	5.00
Turbidity (Raw)	NTU	8,760	0.91	0.08	25.00
Turbidity (Treated)	NTU	8,760	0.09	0.02	3.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Haloacetic Acids (Distribution)	ug/L	8	36.000	25	51
Microcystin (Raw)	ug/L	29	0.150	<0.15	<0.15
Microcystin (Treated)	ug/L	22	0.150	<0.15	<0.15
Nitrate (Treated)	mg/L	2	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	8	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	2	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	8	0.050	<0.05	<0.05
Sodium	mg/L	3	33.733	33.2	34.5
Total Suspended Solids Backwash	mg/L	6	8.367	2.5	12.3
Trihalomethanes (Treated)	ug/L	7	11.938	1.80	20.10
Trihalomethanes (Distribution)	ug/L	28	47.264	24.20	72.10

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	3	0.0267	0.0247	0.028	1
Boron	mg/L	3	0.0159	0.0101	0.0189	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	1	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.4	<0.4	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	1	0.200	<0.2	<0.2	90
Diazinon	ug/L	1	0.200	<0.2	<0.2	20
Dicamba	ug/L	1	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.4	<0.4	9
Dimethoate	ug/L	1	0.300	<0.3	<0.3	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.2	<0.2	190
Metolachlor	ug/L	1	0.200	<0.2	<0.2	50
Metribuzin	ug/L	1	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.4	<0.4	60
Phorate	ug/L	1	0.200	<0.2	<0.2	2
Picloram	ug/L	1	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.100	<0.1	<0.1	3
Prometryne	ug/L	1	0.210	<0.21	<0.21	1
Simazine	ug/L	1	0.200	<0.2	<0.2	10
Terbufos	ug/L	1	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	1	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The King City DWS serves approximately 7,890 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the King City DWS:
King City Distribution System (260005138)

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

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

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

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

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

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

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 installed but are currently offline. York Region operates the water supply, and King Township maintains and distributes water to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit. 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, one pumping station, and two storage facilities. If the wells are used for supply, chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate can be added to sequester naturally occurring iron and manganese. Wells are currently offline. Storage facilities hold treated water and maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect a significant process or water quality issue, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Water in King City comes pre-treated from the York DWS. Well facilities were not run for supply, but can apply chlorine (gas) and ammonia solution for chloramination, and sodium silicate. Wells are currently offline.

Brief description and breakdown of monetary expenses incurred
$201,775 for treatment improvements, valve chamber upgrades, well rehabilitation, pump maintenance, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	35	0
Total Coliforms	35	0

Treated Samples

Note: no treated results are available for the reporting period as the wells were not operational.

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	1.76	0.00	2.59

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	8	0.568	0.5	0.63
Haloacetic Acids (Distribution)	ug/L	8	8.013	<8	8.10
Nitrate (Distribution)	mg/L	8	0.501	<0.5	0.51
Nitrite (Distribution)	mg/L	8	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0009	<0.0009
Sodium	mg/L	2	24.600	23.4	25.8
Trihalomethanes (Distribution)	ug/L	8	18.738	15.30	21.80

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0006	0.0006	0.0006	0.01
Barium	mg/L	2	0.0204	0.0186	0.0222	1
Boron	mg/L	2	0.0288	0.0269	0.0307	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Not Applicable

Schedule 24 sampling is not applicable to the King City DWS as the wells were offline.

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Kleinburg DWS serves approximately 9,060 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Kleinburg DWS:
Vaughan Distribution System (260003097)

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

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

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

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

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

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

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 York 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. Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and helps the booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect a significant process or water quality issue, the system automatically pauses operation until an operator takes action.

List of water treatment chemicals used in this system
Water in Kleinburg comes pre-treated from the York DWS. Well facilities were not run for supply, but can apply chlorine (gas) and ammonia solution for chloramination, and sodium silicate. Treatment systems and well performance are tested regularly in case they are ever needed for backup capacity.

Brief description and breakdown of monetary expenses incurred
$57,985 for well rehabilitation, pump maintenance, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Failure to meet monitoring requirement	May 20, 2022	N/A	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	May 24, 2022
Sodium > 20.0 mg/L	Apr 11, 2022	23.8 mg/L	Operator attended site. Resample taken.	Apr 11, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	99	0
Total Coliforms	99	0

Treated Samples

Note: no treated results are available for the reporting period as the wells were not operational.

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	1.74	0.16	2.81

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	4	0.585	0.54	0.63
Haloacetic Acids (Distribution)	ug/L	4	8.000	<8	<8
Nitrate (Distribution)	mg/L	4	0.508	<0.5	0.53
Nitrite (Distribution)	mg/L	4	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0009	<0.0009
Sodium	mg/L	2	24.050	23.8	24.3
Trihalomethanes (Distribution)	ug/L	4	19.525	16.30	21.10

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	1	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	1	0.0007	0.0007	0.0007	0.01
Barium	mg/L	1	0.0178	0.0178	0.0178	1
Boron	mg/L	1	0.0330	0.033	0.033	5
Cadmium	mg/L	1	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	1	0.0500	<0.05	<0.05	1
Selenium	mg/L	1	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Not Applicable

Schedule 24 sampling is not applicable to the Kleinburg DWS as the wells were available for backup capacity but were not used for supply.

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Mount Albert DWS serves approximately 5,780 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Mount Albert DWS:
Mount Albert Distribution System (260002265)

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

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

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

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

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

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

Description of the Mount Albert DWS

Introduction
The village 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 York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Mount Albert DWS includes three wells and two storage facilities. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and maintain pressure. Tests confirm good groundwater quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect a significant process or water quality issue, the system automatically 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
$117,970 for valve chamber upgrades, wells rehabilitation, pump maintenance, facility upgrades, standby power generator replacement, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	153	0
Total Coliforms	153	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	101	0
Heterotrophic Plate Count	101	28
Total Coliforms	101	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.57	0.00	3.16
Turbidity (Treated)	NTU	8,760	0.05	0.02	3.75

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	12	0.057	0.05	0.06
Haloacetic Acids (Distribution)	ug/L	4	8.000	<8	<8
Nitrate (Treated)	mg/L	8	2.009	<0.5	3.66
Nitrate (Distribution)	mg/L	4	2.075	1.97	2.2
Nitrite (Treated)	mg/L	8	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	4	0.050	<0.05	<0.05
Sodium	mg/L	3	13.133	10.9	15.6
Trihalomethanes (Treated)	ug/L	2	3.850	1.30	6.40
Trihalomethanes (Distribution)	ug/L	4	18.825	14.20	22

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	3	0.0671	0.0611	0.0791	1
Boron	mg/L	3	0.0088	0.0072	0.0097	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	3	0.0037	<0.0005	0.0069	0.02

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.100	<0.1	<0.1	3
Prometryne	ug/L	2	0.190	<0.19	<0.19	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Newmarket DWS serves approximately 100,290 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the 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)

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

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

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

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

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

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

Description of the Newmarket DWS

Introduction
The Town of Newmarket is located centrally in York Region. Groundwater from the Newmarket wells is blended with water from Lake Ontario and groundwater from Aurora from the York DWS. York Region operates the water supply, and the Town of Newmarket maintains and distributes water to users. The Province governs York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit. 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 five wells, six storage facilities, and two booster pumping stations. Chlorine provides disinfection, and chloramine provides a secondary residual. One of these facilities also re-chloraminates to boost the residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect a significant process or water quality issue, the system automatically 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
$919,023 for facility rehabilitation and upgrades, treatment improvements, valve chamber upgrades, facility upgrades, well rehabilitation, pump maintenance, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites)	Jul 17, 2022	4.67 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.	Jul 17, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	204	0
Total Coliforms	204	1

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	104	0
Heterotrophic Plate Count	104	32
Total Coliforms	104	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	2.65	0.00	4.68
Turbidity (Treated)	NTU	8,760	0.05	0.02	0.87

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	60	0.430	0.15	0.64
Haloacetic Acids (Distribution)	ug/L	16	8.000	<8	<8
Nitrate (Treated)	mg/L	8	0.401	0.1	<0.5
Nitrate (Distribution)	mg/L	52	0.506	<0.5	0.8
Nitrite (Treated)	mg/L	8	0.038	<0.003	<0.05
Nitrite (Distribution)	mg/L	52	0.050	<0.05	0.06
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	2	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	12	0.001	<0.0009	0.0016
Sodium	mg/L	6	19.850	14.3	22.8
Trihalomethanes (Treated)	ug/L	2	6.200	6	6.40
Trihalomethanes (Distribution)	ug/L	16	16.731	12.80	20.90

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	6	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	6	0.0006	<0.0005	0.0007	0.01
Barium	mg/L	6	0.0729	0.0201	0.156	1
Boron	mg/L	6	0.0357	0.0264	0.0486	5
Cadmium	mg/L	6	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	6	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	6	0.0500	<0.05	<0.05	1
Selenium	mg/L	6	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	6	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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.100	<0.1	<0.1	3
Prometryne	ug/L	2	0.210	<0.21	<0.21	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Nobleton DWS serves approximately 6,120 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Nobleton DWS:
Nobleton Distribution System-260002577

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

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

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

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

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

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

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 York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Nobleton DWS includes four wells, two storage facilities, and one booster pumping station. Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help the booster station maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect a significant process or water quality issue, the system automatically 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
$3,317,988 for new well installation, facility upgrades, treatment improvements, well rehabilitation, pump maintenance, general maintenance and repairs.

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

Incident Description	Incident Date	Adverse Test Result	Corrective Action	Corrective Action Date
Sodium > 20.0 mg/L	Apr 27, 2022	24.5 mg/L	Operator attended site. Resample taken.	May 3, 2022

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	147	0
Total Coliforms	147	1

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	143	0
Heterotrophic Plate Count	142	43
Total Coliforms	143	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.68	0.00	3.37
Turbidity (Treated)	NTU	8,760	0.08	0.02	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	19	0.122	0.11	0.14
Haloacetic Acids (Distribution)	ug/L	8	9.775	<8	16
Nitrate (Treated)	mg/L	11	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	8	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	11	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	8	0.050	<0.05	<0.05
Sodium	mg/L	6	18.733	14.5	24.5
Trihalomethanes (Treated)	ug/L	3	21.333	6.90	33
Trihalomethanes (Distribution)	ug/L	8	25.388	11	39.10

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	5	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	5	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	5	0.1828	0.142	0.234	1
Boron	mg/L	5	0.0402	0.0301	0.0468	5
Cadmium	mg/L	5	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	5	0.0500	<0.05	<0.05	1
Selenium	mg/L	5	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	3	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	3	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	3	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	3	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	3	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	3	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	3	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	3	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	3	5.000	<5	<5	100
Alachlor	ug/L	3	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	3	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	3	0.300	<0.3	<0.3	20
Benzene	ug/L	3	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	3	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	3	0.400	<0.4	<0.4	5
Carbaryl	ug/L	3	3.000	<3	<3	90
Carbofuran	ug/L	3	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	3	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	3	0.200	<0.2	<0.2	90
Diazinon	ug/L	3	0.200	<0.2	<0.2	20
Dicamba	ug/L	3	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	3	2.000	<2	<2	50
Diclofop-methyl	ug/L	3	0.400	<0.4	<0.4	9
Dimethoate	ug/L	3	0.300	<0.3	<0.3	20
Diquat	ug/L	3	1.000	<1	<1	70
Diuron	ug/L	3	3.000	<3	<3	150
Glyphosate	ug/L	3	25.000	<25	<25	280
Malathion	ug/L	3	0.200	<0.2	<0.2	190
Metolachlor	ug/L	3	0.200	<0.2	<0.2	50
Metribuzin	ug/L	3	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	3	0.100	<0.1	<0.1	80
Paraquat	ug/L	3	1.000	<1	<1	10
Pentachlorophenol	ug/L	3	0.400	<0.4	<0.4	60
Phorate	ug/L	3	0.200	<0.2	<0.2	2
Picloram	ug/L	3	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	3	0.047	<0.02	<0.1	3
Prometryne	ug/L	3	0.190	<0.19	<0.19	1
Simazine	ug/L	3	0.200	<0.2	<0.2	10
Terbufos	ug/L	3	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	3	0.300	<0.3	<0.3	10
Triallate	ug/L	3	4.000	<4	<4	230
Trichloroethylene	ug/L	3	0.100	<0.1	<0.1	5
Trifluralin	ug/L	3	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	3	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply II, Water Treatment II
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Schomberg DWS serves approximately 2,950 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Schomberg DWS:
Schomberg Distribution System (260005151)

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

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

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

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

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

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

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 York Region's operations with Acts and Regulations, a Permit to Take Water, a Municipal Drinking Water License and an operating Permit.

Raw water source
Groundwater

Profile of water in distribution system
Groundwater

Water treatment description
Schomberg DWS includes one Water treatment Plant, three wells and one storage/rechloramination facility. Naturally occurring methane is removed through pre-oxidation with chlorine followed by air stripping. Potassium permanganate is added for iron and manganese removal using media filtration. Water is disinfected with UV light, followed by chlorine which combines with naturally occurring ammonia to form chloramines to provide a secondary residual. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect a significant process or water quality issue, the system automatically 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
$78,478 for well rehabilitation, pump maintenance, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	144	0
Total Coliforms	144	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	52	0
Heterotrophic Plate Count	52	15
Total Coliforms	52	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	3.27	0.00	4.57
Turbidity (Treated)	NTU	8,760	0.23	0.09	0.65

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	8	0.161	0.16	0.17
Haloacetic Acids (Distribution)	ug/L	4	9.075	<8	12
Nitrate (Treated)	mg/L	4	0.500	<0.5	<0.5
Nitrate (Distribution)	mg/L	4	0.500	<0.5	<0.5
Nitrite (Treated)	mg/L	4	0.148	0.11	0.19
Nitrite (Distribution)	mg/L	4	0.365	0.3	0.44
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	1	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	4	0.001	<0.0009	0.0011
Sodium	mg/L	2	20.650	20.2	21.1
Trihalomethanes (Treated)	ug/L	1	6.300	6.30	6.30
Trihalomethanes (Distribution)	ug/L	4	5.000	4.80	5.20

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	2	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	2	0.0007	0.0007	0.0007	0.01
Barium	mg/L	2	0.1130	0.106	0.12	1
Boron	mg/L	2	0.0755	0.0656	0.0853	5
Cadmium	mg/L	2	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	2	0.0500	<0.05	<0.05	1
Selenium	mg/L	2	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	1	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	1	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	1	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	1	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	1	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	1	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	1	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	1	5.000	<5	<5	100
Alachlor	ug/L	1	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	1	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	1	0.300	<0.3	<0.3	20
Benzene	ug/L	1	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	1	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	1	0.400	<0.4	<0.4	5
Carbaryl	ug/L	1	3.000	<3	<3	90
Carbofuran	ug/L	1	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	1	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	1	0.200	<0.2	<0.2	90
Diazinon	ug/L	1	0.200	<0.2	<0.2	20
Dicamba	ug/L	1	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	1	2.000	<2	<2	50
Diclofop-methyl	ug/L	1	0.400	<0.4	<0.4	9
Dimethoate	ug/L	1	0.300	<0.3	<0.3	20
Diquat	ug/L	1	1.000	<1	<1	70
Diuron	ug/L	1	3.000	<3	<3	150
Glyphosate	ug/L	1	25.000	<25	<25	280
Malathion	ug/L	1	0.200	<0.2	<0.2	190
Metolachlor	ug/L	1	0.200	<0.2	<0.2	50
Metribuzin	ug/L	1	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	1	0.100	<0.1	<0.1	80
Paraquat	ug/L	1	1.000	<1	<1	10
Pentachlorophenol	ug/L	1	0.400	<0.4	<0.4	60
Phorate	ug/L	1	0.200	<0.2	<0.2	2
Picloram	ug/L	1	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	1	0.020	<0.02	<0.02	3
Prometryne	ug/L	1	0.180	<0.18	<0.18	1
Simazine	ug/L	1	0.200	<0.2	<0.2	10
Terbufos	ug/L	1	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	1	0.300	<0.3	<0.3	10
Triallate	ug/L	1	4.000	<4	<4	230
Trichloroethylene	ug/L	1	0.100	<0.1	<0.1	5
Trifluralin	ug/L	1	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	1	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Sharon/Queensville DWS serves approximately 4,890 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Sharon/Queensville DWS:
Holland Landing/Queensville/Sharon Distribution System (260001747); Newmarket Distribution System (260003188)

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

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

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

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

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

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

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 York 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). Chlorine provides disinfection, and chloramine provides a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. The storage facility holds treated water and helps to maintain pressure. Tests confirm good groundwater quality. Operators test the water and inspect the process. Online analyzers continuously monitor treatment and water flow. When analyzers detect a significant process or water quality issue, the system automatically 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
$205,580 for treatment improvements, valve chamber upgrades, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	202	0
Total Coliforms	202	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	104	0
Heterotrophic Plate Count	104	29
Total Coliforms	104	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	2.36	0.00	4.94
Turbidity (Treated)	NTU	8,760	0.05	0.02	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	12	0.219	0.2	0.26
Haloacetic Acids (Distribution)	ug/L	4	9.725	9.60	10
Nitrate (Treated)	mg/L	8	0.398	<0.08	<0.5
Nitrate (Distribution)	mg/L	4	0.400	0.1	<0.5
Nitrite (Treated)	mg/L	8	0.038	<0.003	<0.05
Nitrite (Distribution)	mg/L	4	0.039	0.005	<0.05
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	2	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0009	<0.0009
Sodium	mg/L	3	21.000	19.9	22.6
Trihalomethanes (Treated)	ug/L	2	14.350	12.60	16.10
Trihalomethanes (Distribution)	ug/L	4	18.100	17.50	18.80

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	3	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	3	0.0005	<0.0005	0.0006	0.01
Barium	mg/L	3	0.1453	0.128	0.159	1
Boron	mg/L	3	0.0510	0.0504	0.0519	5
Cadmium	mg/L	3	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	3	0.0500	<0.05	<0.05	1
Selenium	mg/L	3	0.0005	<0.0005	<0.0005	0.05
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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	2	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	2	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	2	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	2	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	2	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	2	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	2	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	2	5.000	<5	<5	100
Alachlor	ug/L	2	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	2	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	2	0.300	<0.3	<0.3	20
Benzene	ug/L	2	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	2	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	2	0.400	<0.4	<0.4	5
Carbaryl	ug/L	2	3.000	<3	<3	90
Carbofuran	ug/L	2	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	2	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	2	0.200	<0.2	<0.2	90
Diazinon	ug/L	2	0.200	<0.2	<0.2	20
Dicamba	ug/L	2	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	2	2.000	<2	<2	50
Diclofop-methyl	ug/L	2	0.400	<0.4	<0.4	9
Dimethoate	ug/L	2	0.300	<0.3	<0.3	20
Diquat	ug/L	2	1.000	<1	<1	70
Diuron	ug/L	2	3.000	<3	<3	150
Glyphosate	ug/L	2	25.000	<25	<25	280
Malathion	ug/L	2	0.200	<0.2	<0.2	190
Metolachlor	ug/L	2	0.200	<0.2	<0.2	50
Metribuzin	ug/L	2	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	2	0.100	<0.1	<0.1	80
Paraquat	ug/L	2	1.000	<1	<1	10
Pentachlorophenol	ug/L	2	0.400	<0.4	<0.4	60
Phorate	ug/L	2	0.200	<0.2	<0.2	2
Picloram	ug/L	2	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	2	0.100	<0.1	<0.1	3
Prometryne	ug/L	2	0.205	<0.2	<0.21	1
Simazine	ug/L	2	0.200	<0.2	<0.2	10
Terbufos	ug/L	2	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	2	0.300	<0.3	<0.3	10
Triallate	ug/L	2	4.000	<4	<4	230
Trichloroethylene	ug/L	2	0.100	<0.1	<0.1	5
Trifluralin	ug/L	2	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	2	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution and Supply III, Water Treatment I
Reporting period: Jan 1, 2022 - Dec 31, 2022

The Stouffville DWS serves approximately 31,650 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the Stouffville DWS:
Stouffville Distribution System (260003162)

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

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

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

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

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

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

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 York 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 of these booster stations is within York DWS and converts chloramines to free chlorine for the Stouffville DWS). Chlorine provides disinfection and maintains a secondary residual. Sodium silicate is added to sequester naturally occurring iron and manganese. Storage facilities hold treated water and help booster stations maintain pressure. Operators test the water and inspect the process. Online analyzers continuously monitor the facilities. When analyzers detect a significant process or water quality issue, the system automatically 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
$300,983 for treatment improvements, valve chamber upgrades, well rehabilitation, pump maintenance, facility upgrades, general maintenance and repairs.

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

Not Applicable

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

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

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

Raw Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	239	0
Total Coliforms	239	0

Treated Samples

Test Parameter	Count of Samples	Count of Presence
E. Coli	140	0
Heterotrophic Plate Count	140	39
Total Coliforms	140	0

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

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Free Chlorine	mg/L	8,760	1.56	0.00	3.65
Turbidity (Treated)	NTU	8,760	0.05	0.01	5.00

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	37	0.125	<0.05	0.2
Haloacetic Acids (Treated)	ug/L	4	8.000	<8	<8
Haloacetic Acids (Distribution)	ug/L	8	10.038	<8	14
Nitrate (Treated)	mg/L	12	1.030	<0.5	2.33
Nitrate (Distribution)	mg/L	25	0.591	<0.5	0.79
Nitrite (Treated)	mg/L	12	0.050	<0.05	<0.05
Nitrite (Distribution)	mg/L	25	0.050	<0.05	<0.05
N-Nitrosodimethylamine (NDMA) (Treated)	ug/L	3	0.001	<0.0009	<0.0009
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	1	0.001	<0.0008	<0.0008
Sodium	mg/L	6	54.183	25.3	130
Trihalomethanes (Treated)	ug/L	6	7.425	1.10	14.60
Trihalomethanes (Distribution)	ug/L	8	25.038	16.20	35.60

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	6	0.0005	<0.0005	<0.0005	0.0060
Arsenic	mg/L	6	0.0005	<0.0005	<0.0005	0.01
Barium	mg/L	6	0.1387	0.0982	0.198	1
Boron	mg/L	6	0.0314	0.0113	0.0656	5
Cadmium	mg/L	6	0.0005	<0.0005	<0.0005	0.0050
Chromium	mg/L	6	0.0005	<0.0005	<0.0005	0.05
Mercury	ug/L	6	0.0500	<0.05	<0.05	1
Selenium	mg/L	6	0.0005	<0.0005	<0.0005	0.05
Uranium	mg/L	6	0.0020	<0.0005	0.005	0.02

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
1,1-dichloroethylene (vinylidene chloride)	ug/L	3	0.300	<0.3	<0.3	14
1,2-(o-dcb) Dichlorobenzene	ug/L	3	0.100	<0.1	<0.1	200
1,2-Dichloroethane	ug/L	3	0.100	<0.1	<0.1	5
1,4-(p-dcb) Dichlorobenzene	ug/L	3	0.100	<0.1	<0.1	5
2,3,4,6-Tetrachlorophenol	ug/L	3	0.500	<0.5	<0.5	100
2,4,6-Trichlorophenol	ug/L	3	0.500	<0.5	<0.5	5
2,4-Dichlorophenol	ug/L	3	0.700	<0.7	<0.7	900
2,4-dichlorophenoxyacetic acid (2,4-D)	ug/L	3	0.800	<0.8	<0.8	100
2-methyl-4-chlorophenoxyacetic acid	ug/L	3	5.000	<5	<5	100
Alachlor	ug/L	3	0.400	<0.4	<0.4	5
Atrazine + N-dealkylated metabolites	ug/L	3	0.200	<0.2	<0.2	5
Azinphos-methyl	ug/L	3	0.300	<0.3	<0.3	20
Benzene	ug/L	3	0.100	<0.1	<0.1	1
Benzo(a)pyrene	ug/L	3	0.010	<0.01	<0.01	0.01
Bromoxynil	ug/L	3	0.400	<0.4	<0.4	5
Carbaryl	ug/L	3	3.000	<3	<3	90
Carbofuran	ug/L	3	3.000	<3	<3	90
Carbon Tetrachloride	ug/L	3	0.200	<0.2	<0.2	2
Chlorpyrifos	ug/L	3	0.200	<0.2	<0.2	90
Diazinon	ug/L	3	0.200	<0.2	<0.2	20
Dicamba	ug/L	3	0.400	<0.4	<0.4	120
Dichloromethane	ug/L	3	2.000	<2	<2	50
Diclofop-methyl	ug/L	3	0.400	<0.4	<0.4	9
Dimethoate	ug/L	3	0.300	<0.3	<0.3	20
Diquat	ug/L	3	1.000	<1	<1	70
Diuron	ug/L	3	3.000	<3	<3	150
Glyphosate	ug/L	3	25.000	<25	<25	280
Malathion	ug/L	3	0.200	<0.2	<0.2	190
Metolachlor	ug/L	3	0.200	<0.2	<0.2	50
Metribuzin	ug/L	3	0.300	<0.3	<0.3	80
Monochlorobenzene	ug/L	3	0.100	<0.1	<0.1	80
Paraquat	ug/L	3	1.000	<1	<1	10
Pentachlorophenol	ug/L	3	0.400	<0.4	<0.4	60
Phorate	ug/L	3	0.200	<0.2	<0.2	2
Picloram	ug/L	3	0.700	<0.7	<0.7	190
Polychlorinated Biphenyls (PCBs)	ug/L	3	0.073	<0.02	<0.1	3
Prometryne	ug/L	3	0.193	<0.19	<0.2	1
Simazine	ug/L	3	0.200	<0.2	<0.2	10
Terbufos	ug/L	3	0.200	<0.2	<0.2	1
Tetrachloroethylene (perchloroethylene)	ug/L	3	0.300	<0.3	<0.3	10
Triallate	ug/L	3	4.000	<4	<4	230
Trichloroethylene	ug/L	3	0.100	<0.1	<0.1	5
Trifluralin	ug/L	3	0.006	<0.006	<0.006	45
Vinyl Chloride	ug/L	3	0.200	<0.2	<0.2	1

2022 Annual Drinking Water System 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
Drinking Water System Category: Large Municipal Residential
Drinking Water System Classification: Water Distribution IV
Reporting period: Jan 1, 2022 - Dec 31, 2022

The York DWS serves approximately 932,590 people.
(Population is the most recent available estimate based on Statistics Canada census data and building permits)

List all Drinking Water Systems which receive their drinking water from the York DWS:
York DWS is the primary water source for: Markham Distribution System (220004162); Richmond Hill Distribution System (260001968); Vaughan Distribution System (260003097). The following systems are connected to or are sub-systems of the York DWS: York Drinking Water sub-system - Aurora (220002440); York Drinking Water sub-system - Holland Landing (220004046); King City Drinking Water System (220002299); Kleinburg Drinking Water System (220002360); York Drinking Water sub-system - Newmarket (220002413); York Drinking Water sub-system - Queensville (260001955); York Drinking Water sub-system - Stouffville (220002333); Town Of Aurora Distribution System (260003227); Town of Newmarket Distribution System (260003188)

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

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

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

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

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

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

Description of the York DWS

Introduction
The cities of Vaughan, Markham, and Richmond Hill 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 of the source water is done by Peel Region and the City of Toronto. Kleinburg, in Vaughan, is its own sub-system. Communities north of Vaughan, Richmond Hill, and Markham that receive water from the York DWS are supplemented with groundwater from wells.

Raw water source
Lake Ontario

Profile of water in distribution system
Lake Ontario (some sub-systems can be supplemented with local groundwater)

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 nine booster stations maintain pressure. One of these facilities also provides re-chloramination to boost the chloramine residual, and another converts it to free chlorine for the Stouffville DWS. Regional Operators test the water and inspect the process. Test results from certified labs and equipment confirm good water quality. Online analyzers continuously monitor the facilities. When analyzers detect a significant process or water quality issue, the system automatically 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. Re-chloramination chemicals: Chlorine Gas; Ammonia Solution (Ammonium Sulphate)

Brief description and breakdown of monetary expenses incurred
$26,902,045 for facility rehabilitation and upgrades, repairs, rehabilitation and upgrades on peel feedermain and other watermains, new standby power generator installation, valve chamber upgrades, well rehabilitation, pump maintenance, new watermain installation, watermain replacement, general maintenance and repairs.

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

Not Applicable

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

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

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

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 O. Reg. 170/03 during this reporting period

Test Parameter	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	1.67	0.00	3.67

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

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

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

Test Parameter [2] [3]	Test Unit	No. of Samples [1]	Average	Minimum	Maximum
Fluoride	mg/L	46	0.619	0.51	0.75
Haloacetic Acids (Distribution)	ug/L	46	8.000	<8	<8
Nitrate (Distribution)	mg/L	46	0.484	0.22	0.63
Nitrite (Distribution)	mg/L	46	0.045	<0.003	<0.05
N-Nitrosodimethylamine (NDMA) (Distribution)	ug/L	12	0.001	<0.0009	<0.0009
Sodium	mg/L	11	18.946	16.3	26
Trihalomethanes (Distribution)	ug/L	48	13.901	7.30	22.70

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

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

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

[3] Where sampling for 'N-Nitrosodimethylamine (NDMA)' is required, locations were selected to represent the farthest points in the distribution system. For York DWS and sub-systems, representative sample locations were selected from across the interconnected sub-systems, therefore not all sub-systems were chosen for NDMA sampling. Additional sample points were added in September 2022 to include at least one facility from every subsystem.

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

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

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

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

Test Parameter	Test Unit	No. of Samples	Average	Minimum	Maximum	ODWS Limit
Antimony	mg/L	12	0.0005	<0.0005	0.0008	0.0060
Arsenic	mg/L	12	0.0007	0.0006	<0.001	0.01
Barium	mg/L	12	0.0206	0.0161	0.026	1
Boron	mg/L	12	0.0274	0.023	0.0343	5
Cadmium	mg/L	12	0.0005	<0.00009	<0.0005	0.0050
Chromium	mg/L	12	0.0009	<0.0005	<0.005	0.05
Mercury	ug/L	12	0.0500	<0.05	<0.05	1
Selenium	mg/L	12	0.0006	<0.0005	<0.002	0.05
Uranium	mg/L	12	0.0005	0.0003	<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 three decimals. For a complete set of results, see the open dataset available at york.ca/drinkingwater.

Not Applicable

Schedule 24 sampling is not applicable to the York DWS as it has no active treatment facilities.

-
- -
-
- -