

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

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

Drinking Water System Number: 260001929

Drinking Water System Name: York DWS

Drinking Water System Owner: The Regional Municipality of York

DWS Category: Large Municipal Residential

Drinking Water System Classification: Water Distribution IV

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

The York DWS serves approximately 894230 people

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

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

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

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

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

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

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

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

Description of the York DWS

Introduction

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

Raw water source

Lake Ontario

Profile of water in distribution system

Lake Ontario (some sub-systems 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 provide 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, and 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

\$17,645,771 for general maintenance and repair, watermain replacement, pumping station upgrades, distribution system maintenance and emergency maintenance.

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

Adverse Parameter	Incident Date	Adverse Test Result Units	Adverse Test Results	Corrective Action	Corrective Action Date
Chlorine Residual	01-Jan-18	mg/L	9.94	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	01-Jan-18
	14-Jan-18	mg/L	3.07	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	14-Jan-18
	18-Jan-18	mg/L	5.82	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	18-Jan-18
	29-Jan-18	mg/L	5.44	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-Jan-18
	05-May-18	mg/L	3.43	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	05-May-18
	23-Jun-18	mg/L	4.92	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	24-Jun-18
	29-Jul-18	mg/L	0.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	29-Jul-18
	26-Oct-18	mg/L	3.40	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	26-Oct-18
	11-Dec-18	mg/L	3.03	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.	11-Dec-18
	21-Dec-18	mg/L	3.06	Operator attended site, restored facility to normal operation. Compliant grab sample taken.	22-Dec-18

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 Regulation 170/03 during this reporting period

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

Test Parameter	Test Units	Continuous Sample Count	Average	Minimum	Maximum
Combined Chlorine	mg/L	8,760	1.71	0.00	9.94

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

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

Test Parameter	Test Units	No. of Samples	Average	Minimum	Maximum
Fluoride	mg/L	48	0.607	0.1	0.69
Haloacetic Acids	mg/L	48	0.012	<0.008	<0.02
Nitrate	mg/L	48	0.500	<0.5	<0.5
Nitrite	mg/L	48	0.050	<0.05	<0.05
Sodium	mg/L	12	17.725	15.5	20.4
Trihalomethanes	mg/L	48	0.018	0.007	0.0352

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

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

Not Applicable

There were no parameters that exceeded half the standard indicated above for the York DWS during 2018

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

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

Test Parameter	No. of Samples	Test Units	Average	Minimum	Maximum	ODWS Limit
Antimony	12	mg/L	0.00050	<0.0005	0.0005	0.006
Arsenic	12	mg/L	0.00075	0.0007	0.0008	0.01
Barium	12	mg/L	0.02157	0.0204	0.022	1
Boron	12	mg/L	0.02692	0.0261	0.0288	5
Cadmium	12	mg/L	0.00050	<0.0005	<0.0005	0.005
Chromium	12	mg/L	0.00050	<0.0005	<0.0005	0.05
Mercury	12	mg/L	0.00005	<0.00005	<0.00005	0.001
Selenium	12	mg/L	0.00050	<0.0005	<0.0005	0.05
Uranium	12	mg/L	0.00050	<0.0005	<0.0005	0.02

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

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

Not Applicable

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