

2024 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, 2024 - Dec 31, 2024

The Newmarket DWS serves approximately 93,690 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
Public Works 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. Two of these facilities can re-chloramine to boost the residual but only one is currently in use. 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 (Sodium Hypochlorite and Chlorine gas); Ammonia solution (Ammonium Sulphate); Sodium Silicate

Brief description and breakdown of monetary expenses incurred:

\$4,474,341 for for pump maintenance, valve chamber upgrades design and new meter chamber construction, treatment facility upgrades design, storage facility upgrades and rehabilitation construction, new treatment facility design, new regional remote operations center construction, general maintenance and repairs.

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

| Incident Description | Incident Date | Adverse Test Result | Corrective Action | Corrective Action Date |
|---|----------------------|----------------------------|---|-------------------------------|
| Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites) | Jan 8, 2024 | 4.03 mg/L | Operator attended site, facility restored to normal operation. Compliant grab sample taken. | Jan 8, 2024 |

**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 | 248 | 0 |
| Total Coliforms | 248 | 2 |

Treated Samples

| Test Parameter | Count of Samples | Count of Presence |
|---------------------------|-------------------------|--------------------------|
| E. Coli | 147 | 0 |
| Heterotrophic Plate Count | 146 | 20 |
| Total Coliforms | 147 | 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 | 2.64 | 0.00 | 4.04 |
| 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 | 63 | 0.430 | 0.140 | 0.610 |
| Haloacetic Acids (Distribution) | ug/L | 17 | 8.169 | <8.000 | 9.100 |
| Nitrate (Treated) | mg/L | 11 | 0.500 | <0.500 | <0.500 |
| Nitrate (Distribution) | mg/L | 52 | 0.522 | <0.500 | 0.710 |
| Nitrite (Treated) | mg/L | 11 | 0.050 | <0.050 | <0.050 |
| Nitrite (Distribution) | mg/L | 52 | 0.050 | <0.050 | <0.050 |
| N-Nitrosodimethylamine (NDMA) (Treated) | ug/L | 3 | 0.0009 | <0.0009 | <0.0009 |
| N-Nitrosodimethylamine (NDMA) (Distribution) | ug/L | 7 | 0.0009 | <0.0009 | 0.0012 |
| Sodium | mg/L | 7 | 18.400 | 15.200 | 20.200 |
| Trihalomethanes (Treated) | ug/L | 3 | 6.833 | 6.800 | 6.900 |
| Trihalomethanes (Distribution) | ug/L | 18 | 19.263 | 10.900 | 23.800 |

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

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

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

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

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

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

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

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

| Test Parameter | Test Unit | No. of Samples | Average | Minimum | Maximum | ODWS Limit |
|-----------------------|------------------|-----------------------|----------------|----------------|----------------|-------------------|
| Antimony | mg/L | 7 | 0.0005 | <0.0005 | <0.0005 | 0.006 |
| Arsenic | mg/L | 7 | 0.0010 | <0.0010 | <0.0010 | 0.01 |
| Barium | mg/L | 7 | 0.0949 | 0.0230 | 0.1900 | 1 |
| Boron | mg/L | 7 | 0.0299 | 0.0230 | 0.0390 | 5 |
| Cadmium | mg/L | 7 | 0.0001 | <0.0001 | <0.0001 | 0.005 |
| Chromium | mg/L | 7 | 0.0050 | <0.0050 | <0.0050 | 0.05 |
| Mercury | ug/L | 7 | 0.0500 | <0.0500 | <0.0500 | 1 |
| Selenium | mg/L | 7 | 0.0020 | <0.0020 | <0.0020 | 0.05 |
| Uranium | mg/L | 7 | 0.0002 | <0.0001 | 0.0004 | 0.02 |

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

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

| Test Parameter | Test Unit | No. of Samples | Average | Minimum | Maximum | ODWS Limit |
|--|-----------|----------------|---------|---------|---------|------------|
| 1,1-dichloroethylene (vinylidene chloride) | ug/L | 12 | 0.300 | <0.300 | <0.300 | 14 |
| 1,2-(o-dcb) Dichlorobenzene | ug/L | 12 | 0.100 | <0.100 | <0.100 | 200 |
| 1,2-Dichloroethane | ug/L | 12 | 0.100 | <0.100 | <0.100 | 5 |
| 1,4-(p-dcb) Dichlorobenzene | ug/L | 12 | 0.100 | <0.100 | <0.100 | 5 |
| 2,3,4,6-Tetrachlorophenol | ug/L | 3 | 0.500 | <0.500 | <0.500 | 100 |
| 2,4,6-Trichlorophenol | ug/L | 3 | 0.500 | <0.500 | <0.500 | 5 |
| 2,4-Dichlorophenol | ug/L | 3 | 0.700 | <0.700 | <0.700 | 900 |
| 2,4-dichlorophenoxyacetic acid (2,4-D) | ug/L | 3 | 0.800 | <0.800 | <0.800 | 100 |
| 2-methyl-4-chlorophenoxyacetic acid | ug/L | 3 | 5.000 | <5.000 | <5.000 | 100 |
| Alachlor | ug/L | 3 | 0.400 | <0.400 | <0.400 | 5 |
| Atrazine + N-dealkylated metabolites | ug/L | 3 | 0.200 | <0.200 | <0.200 | 5 |
| Azinphos-methyl | ug/L | 3 | 0.300 | <0.300 | <0.300 | 20 |
| Benzene | ug/L | 12 | 0.100 | <0.100 | <0.100 | 1 |
| Benzo(a)pyrene | ug/L | 3 | 0.010 | <0.010 | <0.010 | 0.01 |
| Bromoxynil | ug/L | 3 | 0.400 | <0.400 | <0.400 | 5 |
| Carbaryl | ug/L | 3 | 3.000 | <3.000 | <3.000 | 90 |
| Carbofuran | ug/L | 3 | 3.000 | <3.000 | <3.000 | 90 |
| Carbon Tetrachloride | ug/L | 12 | 0.200 | <0.200 | <0.200 | 2 |
| Chlorpyrifos | ug/L | 3 | 0.200 | <0.200 | <0.200 | 90 |
| Diazinon | ug/L | 3 | 0.200 | <0.200 | <0.200 | 20 |
| Dicamba | ug/L | 3 | 0.400 | <0.400 | <0.400 | 120 |
| Dichloromethane | ug/L | 12 | 4.000 | <4.000 | <4.000 | 50 |
| Diclofop-methyl | ug/L | 3 | 0.400 | <0.400 | <0.400 | 9 |
| Dimethoate | ug/L | 3 | 0.300 | <0.300 | <0.300 | 20 |
| Diquat | ug/L | 3 | 1.000 | <1.000 | <1.000 | 70 |
| Diuron | ug/L | 3 | 3.000 | <3.000 | <3.000 | 150 |
| Glyphosate | ug/L | 3 | 25.000 | <25.000 | <25.000 | 280 |
| Malathion | ug/L | 3 | 0.200 | <0.200 | <0.200 | 190 |
| Metolachlor | ug/L | 3 | 0.200 | <0.200 | <0.200 | 50 |
| Metribuzin | ug/L | 3 | 0.300 | <0.300 | <0.300 | 80 |
| Monochlorobenzene | ug/L | 12 | 0.100 | <0.100 | <0.100 | 80 |
| Paraquat | ug/L | 3 | 1.000 | <1.000 | <1.000 | 10 |
| Pentachlorophenol | ug/L | 3 | 0.400 | <0.400 | <0.400 | 60 |
| Phorate | ug/L | 3 | 0.200 | <0.200 | <0.200 | 2 |
| Picloram | ug/L | 3 | 0.700 | <0.700 | <0.700 | 190 |
| Polychlorinated Biphenyls (PCBs) | ug/L | 3 | 0.100 | <0.100 | <0.100 | 3 |
| Prometryne | ug/L | 3 | 0.200 | <0.200 | <0.200 | 1 |
| Simazine | ug/L | 3 | 0.200 | <0.200 | <0.200 | 10 |
| Terbufos | ug/L | 3 | 0.200 | <0.200 | <0.200 | 1 |
| Tetrachloroethylene (perchloroethylene) | ug/L | 12 | 0.300 | <0.300 | <0.300 | 10 |
| Triallate | ug/L | 3 | 4.000 | <4.000 | <4.000 | 230 |
| Trichloroethylene | ug/L | 12 | 0.100 | <0.100 | <0.100 | 5 |
| Trifluralin | ug/L | 3 | 0.006 | <0.006 | <0.006 | 45 |
| Vinyl Chloride | ug/L | 12 | 0.200 | <0.200 | <0.200 | 1 |