



Newmarket

Drinking Water System

Annual Water Quality & Performance Report

2024

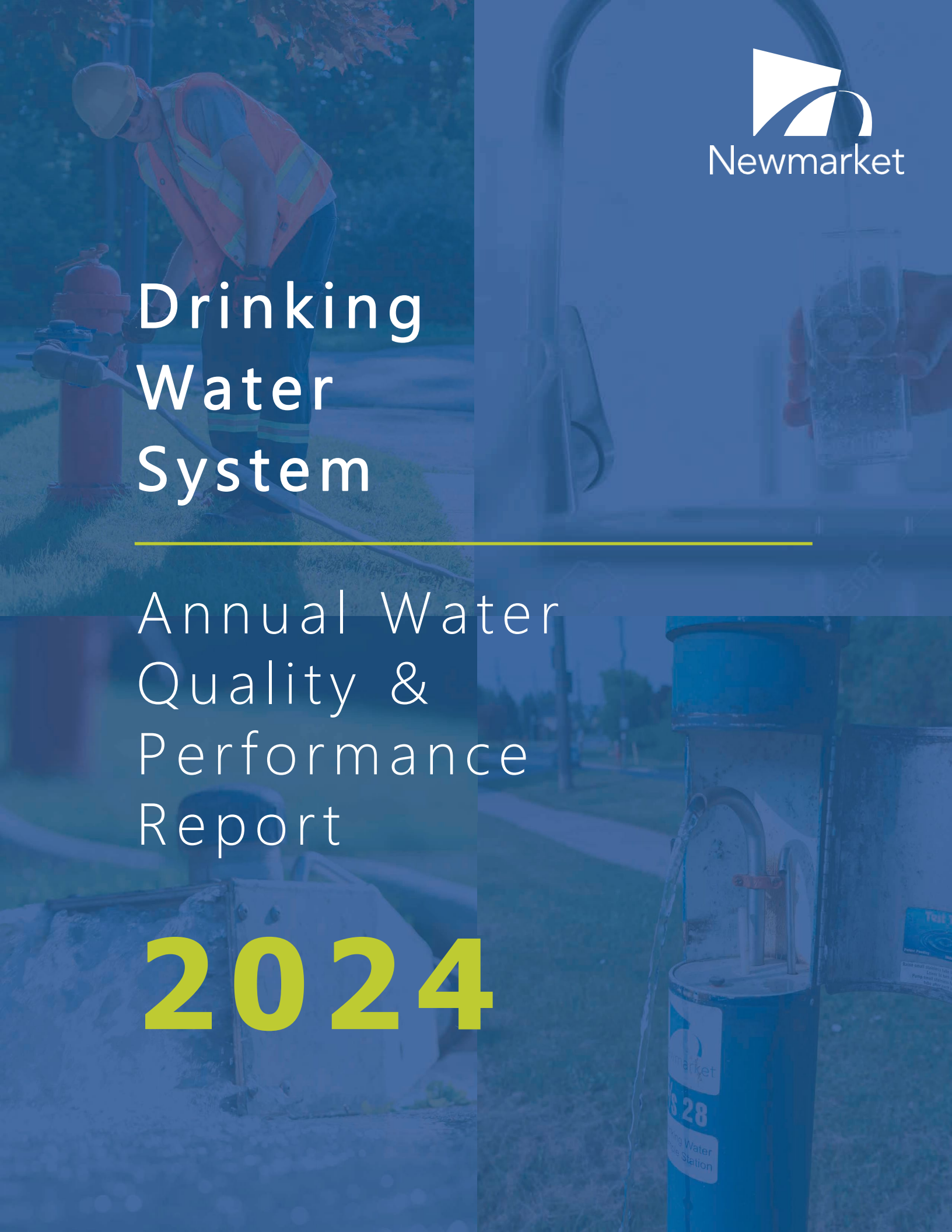


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Abstract

This report contains information necessary to satisfy the annual reporting requirements within the Ontario Safe Drinking Water Act, 2002, and associated regulations.

Prepared by the Town of Newmarket pursuant to Section 11 of O.Reg. 170/03.

Drinking Water System Number: 260003188

DWS Name: Newmarket Drinking Water Distribution System

DWS Owner: The Town of Newmarket

DWS Category: Large Municipal Residential

Reporting Period: 01-Jan-2024 to 31-Dec-2024

Purpose

This report's intended purpose is to inform council that Public Works Services has prepared an annual summary report pertinent to its subsequent drinking water system as legislatively required under *Schedule 22 of O. Reg 170/03* under the *Safe Drinking Water Act (SDWA, 2002)*. Additionally, the annual summary report has been prepared in accordance with *Schedule 22 of O. Reg 170/03*. Annual summary reports for the Town's drinking water system are posted on the municipal website annually and allow information sharing to be utilized by the general public. Users of the system were notified of the annual report and its availability, which can be accessed through online media sources and general inquiries.

Moreover, the issuance of this report allows the legal Owners (Mayor & Council) of the water system to remain well informed of the Operating Authority's (Town of Newmarket) regulatory requirements and compliance, as well as its conformance with industry *Best Management Practices (BMP's)*. Ultimately, this report fulfills the requirements to provide members of council with an annual system report as outlined in *Section 11 of O. Reg 170/03 (SDWA, 2002)*.

Background

The annual system report sets out to enable the water systems Owners with an assessment in the determination of both planned and existing uses of the system. The required information of the annual system report and its contents for council are outlined within *Section 11 of O. Reg 170/03*. This report describes the preceding calendar year's drinking water system performance, with details up to and including:

- Reported adverse water quality events (AWQI's) & corrective actions (*Table 2*)
- Ministry inspection findings (*Figure 1*)
- Inspection performance data for the drinking water system (*Annual Summary Report; Figure 1*)
- Monetary expenses for the drinking water system (*Table 1*)
- Water quality data (*Tables 3-9*)
- Drinking Water Quality Summary Analysis (*Appendix A*)
- Water and Flow Consumption Data (*Appendix B*)

A copy of this annual report (Section 11) was provided to all drinking water system owners that are connected to the Town of Newmarket.

O. Reg. 170/03 – Section 11

Annual Reports for Municipalities/Owners
under O. Reg. 170/03 must provide the following:

1. A brief description of the Drinking Water System, including a list of water treatment chemicals used by the system.
2. A summary of adverse test results and other observations that were reported to the MECP during the reporting period.
3. A description of any corrective actions that were taken in response to any adverse test results and other observations that were encountered during the reporting period.
4. A summary of the most recent water testing results, required under O. Reg. 170/03 and our respective Municipal Drinking Water Licence (MDWL), that occurred during the reporting period.
5. A description of the major expenses incurred during the reporting period to install, repair, or replace required equipment/infrastructure.
6. A statement identifying the locations where the annual report will be made available for the public; and
7. The specific number of points sampled during the lead sampling periods identified within O. Reg. 170/03 as well as the total number of samples taken, and the number of points where a sample exceeded the prescribed standard for lead.

Under the *Safe Drinking Water Act*, O. Reg. 170/03 the prescribed requirement is that a copy of annual report outlined in *Section 11* is to be provided without charge, to every person who requests a copy. The annual report is readily available to the general public at no charge on the Town's website.

It is a requirement that the Owner of the subsequent drinking water system(s) take the necessary steps to advise users of the annual reports availability, at no cost, and the means to which it can be obtained. Furthermore, the annual report under *Section 11* is to be made available no later than February 28th of each year, while the summary report contained in *Schedule 22* is to be provided to the "Owners" of the drinking water system no later than March. 31st each year for the preceding calendar year.

The annual report for the Town's municipal water system is posted at www.newmarket.ca. Copies of each annual report and summary report prepared in accordance with *Section 11* and *Schedule 22* of O. Reg. 170/03 are available to the public and for inspection at:

- Robert N. Shelton Operations Centre (1275 Maple Hill Court)
- Newmarket Municipal Offices, Customer Service Counter (395 Mulock Drive)

Online at www.newmarket.ca/waterqualityreports

O. Reg. 170/03 – Schedule 22

Summary Reports for Municipalities/Owners
under O. Reg. 170/03 must provide the following:

1. A list of the requirements of the Safe Drinking Water Act (SDWA, 2002), its regulations, the system's approval, Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), and any order applicable for the system that were not met at any time during the period covered by the report.
2. For each requirement that was not met, specify the duration of the failure and the measures that were taken to correct the failure.
3. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
4. A comparison of the summary in point (3) to the rated capacity and flow rates approved in the system's approval, Drinking Water Works Permit (DWWP) or Municipal Drinking Water Licence (MDWL), or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4) of O. Reg 170/03, to the flow rates specified in the written agreement.

***** The Town of Newmarket does not have any identified rated capacities contained within the respective Drinking Water Works Permit (DWWP) or Municipal Drinking Water Licence (MDWL) approvals, as the system is that of a distribution nature. Additionally, no agreements under Section 5 (4) of O. Reg 170/03 – Drinking Water Systems are in place between the Regional Municipality of York and the Town of Newmarket. Therefore, the stipulations mentioned above are not applicable for the intended purposes of this report. *****

Legislative Requirements

The primary regulatory requirements that are directly applicable to the Town of Newmarket's water distribution system are identified in this section. Moreover, while the list of all applicable legislative acts and regulations is lengthy and extensive, for the intended purposes of this report the legislative requirements of importance have been condensed and outlined below.

Safe Drinking Water Act (SDWA, 2002)

The Ontario *Safe Drinking Water Act* (SDWA, 2002) protects human health and the surrounding environment through the control and regulation of our drinking water systems, as well as the associated laboratory testing that is required. *The Act* also contains regulatory requirements pertaining to the treatment and distribution of drinking water. Key aspects of *the Act* include:

- Accreditation
- Municipal drinking water systems
- Drinking water testing and sampling
- Inspections, compliance and enforcement
- Standard of Care

The legislative requirements for the Town's drinking water are set in place to essentially maintain compliance with all applicable *SDWA, 2002* regulations and to adequately address any identified incidents of non-compliance.

O. Reg. 128/04: Certification of Drinking Water System Operators & WQA

O. Reg. 128/04 establishes the training and certification requirements for all operators working in regulated drinking water systems in Ontario. Operators are required to achieve and maintain compliance with these training and certification requirements to legally operate drinking water systems under the *Safe Drinking Water Act* (SDWA, 2002).

Additionally, *O. Reg. 128/04* establishes legal designations and duties for the *Overall Responsible Operator* (ORO), *Operator in Charge* (OIC) responsibilities, record keeping requirements, as well as the requirements for operations maintenance manuals and other key components pertinent from a compliance standpoint

O. Reg. 170/03: Drinking Water Systems

Drinking Water Systems (O. Reg. 170/03) is a legislative tool used to regulate municipal drinking water systems that vary in population, size, and type, and acts as the primary framework to ensure regulatory adherence to:

- Operational checks and sampling
- Chemical and microbiological testing
- Reporting adverse test results
- Corrective actions; and
- Annual reporting

O. Reg. 242/05: Compliance & Enforcement

O. Reg. 242/05 under the *Safe Drinking Water Act* requires the MECP (*Ministry of the Environment, Conservation and Parks*) to carry out specific activities relating to annual mandatory inspections of municipal drinking water systems.

O. Reg. 453/07: Financial Plan Requirement

O. Reg. 453/07 dictates that all owners of a municipal residential drinking water system prepare a financial plan that details and projects a long-range outlook for a minimum of 6 years of financial information. Additionally, *O. Reg. 453/07* specifies what must be contained within a financial plan. These plans must be formally approved and acknowledged by the Owner(s) of a drinking water system through a municipal council resolution. These requirements are associated with provincial drinking water system approvals and are required to obtain and renew a *Municipal Drinking Water Licence* (MDWL).

Standard of Care Provision Safe Drinking Water Act (SDWA, 2002)

Found within *Section 19* of the *Safe Drinking Water Act* is the statutory *Standard of Care* provision that states every owner of a municipal drinking water system or any person who oversees the operating authority or exercises decision making authority, shall:

- Exercise the level of care, diligence and skill in respect to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and
- Act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking water system.

Failure to comply with *Section 19* of the *Safe Drinking Water Act* is deemed an offence under *the Act* and could result in the prosecution of an individual, the corporation, or both. The *Standard of Care* legislation applies directly to municipal councils, management, and those with decision-making authority over the system.

Section 14 (3) of the *Safe Drinking Water Act* (SDWA, 2002) specifically notes that an owner is not relieved of their duty to comply with *Section 19*, even if there is an agreement to delegate the operations of the drinking water system to someone else. The owner is obligated to ensure the operating authority is carrying out its responsibilities according to the Act and in cases where it is not, to take reasonable steps to ensure it does.

Drinking Water Quality Management Standard v.2.0

The Drinking Water Quality Management Standard (DWQMS) sets out the framework for Operating Authorities and Owners of drinking water systems to develop and maintain a Quality Management System (QMS) that is relevant and appropriate for their respective drinking water system(s). The DWQMS is the approved QMS under the SDWA, 2002.

The purpose of a Quality Management System is to establish policies and objectives, achieve those objectives, as well as direct and control organizational quality. To adhere to the DWQMS requirements the Town of Newmarket has developed an Operational Plan that is appropriate and relevant to the Town's water distribution system. The Quality Management System is subject to annual internal and external audits as part of the ongoing accreditation process. The DWQMS and QMS requirements are additional components that are required for provincial drinking water system approvals including issuance and renewal of the MDWL.

Accreditation

A full scope re-accreditation audit is required every 3 years, and after obtaining re-accreditation a surveillance audit is conducted in the 2 subsequent years between the re-accreditation period. The Town of Newmarket received re-accreditation by SAI Global in January 2025, the audit was conducted from May 7th to May 8th. The Town of Newmarket was not found to have any major or minor non-conformities in the assessment of its Quality Management System and the auditor identified 9 *Opportunities for Improvement* (OFI's) that are being reviewed and responded to accordingly. Additionally, the Town of Newmarket received a perfect score for conformance (100%) for the Quality Management System and through a committed approach to continuous improvement, strives to find new and innovative ways to refine the current success of the established systems, processes, and procedures.

Municipal Drinking Water Licence (MDWL) and Drinking Water Works Permit (DWWP)

The Town's MDWL and DWWP describe system specific requirements in addition to those included in provincial regulations. These Ministry issued approval documents outline detailed conditions and the regulatory requirements pertaining to the operation, maintenance, and monitoring of the drinking water system. The MDWL and DWWP are both to be complied with at all times and are key components associated with drinking water system approvals. Furthermore, the MDWL in conjunction with the DWWP must be renewed every five (5) years in accordance with MECP requirements.

- *Municipal Drinking Water Licence* (MDWL) number: 124-101 (Issue 9)
- *Drinking Water Works Permit* (DWWP) number: 124-201 (Issue 3)

Drinking Water System Analysis

Detailed information on the Town of Newmarket's drinking water system is outlined in the following section and aims to inform Council as well as the public in regard to the Operating Authority's approach in providing safe, high-quality water.

System Description

The Town of Newmarket is comprised of approximately 87,942 residents centrally located within the Regional Municipality of York. The *Newmarket Drinking Water System (DWS)* is a Large Municipal Residential Class 1 subsystem which purchases water from York Region. The Region operates and maintains groundwater wells sourced in the Yonge Street aquifer which service the Town of Newmarket. Groundwater from the Newmarket well sites blend together with surface water from Lake Ontario and groundwater from Aurora. Because of these features, York Region operates the water supply to the system, while Newmarket maintains and distributes the water to the user. The integrated system includes Newmarket's localized distribution watermains and service connections, in partnership with, the Regional Municipality of York's transmission mains, pumping stations, storage facilities and groundwater treatment facilities. Additionally, the Town of East Gwillimbury receives some or all of their drinking water from the Newmarket Drinking Water System. Receiving systems are outlined below:

- DWS # (260001747) – *Holland Landing/Queensville/Sharon Distribution Systems*
- DWS # (260087685) – *Yonge/Green Lane Distribution System*

Water from the Region's supply network is continuously monitored by staff at their centralized control panel hub through the SCADA (*Supervisory Control and Data Acquisition*) system. The Town and the Region work closely with one another to deliver safe and clean water to the customer from source to tap. Additionally, the Region produces and provides their own independent *Annual Drinking Water Quality Report* as well as a *Drinking Water System Report* which provide further information to the applicable drinking water system for the preceding year. These reports are also made publicly available and can be found on their website at:

www.york.ca/environment/water-and-wastewater/drinking-water-quality-and-monitoring

*****The Town of Newmarket does not produce or provide any water treatment chemicals as the drinking water system is that of a distribution designation. Water treatment & chemical addition is the responsibility of The Regional Municipality of York. Chlorine (Cl₂) is added to achieve primary disinfection, and chloramines (NH₂Cl) are added to provide secondary disinfection. Sodium silicate (Na₂SiO₃) is added to sequester naturally occurring iron and manganese in the groundwater supplies*****

System Specifics & Linear Asset Overview

- 27,095 water services (metered)
- 2,761 mainline valves with approximately 318 km of municipally owned watermains
- 2,370 municipally owned fire hydrants and leads.
- 30 sample stations
- 9 permanent auto-flushers (2 of which are of intelligent design and capability)
- 6 anti-stagnation valves
- 6 combination valves (air relief/vacuum relief)
- 5 air release valves
- 4 pressure zones (West, Central West, Central East, and East)

Monetary Expenses (Installations, Repairs, Replacements, Upgrades & Maintenance)

Information regarding major expenses incurred by the Town of Newmarket during the time period associated with this report can be found below in *Table 1*.

Project Type	Associated Costs
Capital Improvements	\$1,206,684
Emergency Repairs	\$786,203
Preventative Maintenance Activities	\$163,247
Hydrant Inspections	\$84,591

Table 1: Annual Expenditures for Drinking Water System (2024)

Regulatory Compliance Overview

2024, the MECP conducted an inspection beginning on November 20th, 2024, with a primary focus on verifying the adherence and compliance to all legislative and regulatory requirements set out under the jurisdiction of the MECP. The MECP performed an offsite desktop audit, as well as an onsite inspection of system processes, operations manuals and all records and documentation required to fulfill all the audit criteria.

Compliance with *O. Reg. 170/03* is determined through these system inspections conducted annually by the *Ministry of the Environment, Conservation and Parks* (MECP). The annual reporting requirements for drinking water systems are contained within *Section 11* (Annual Reports) and *Schedule 22* (Summary Reports for Municipalities). The Town of Newmarket is required to maintain compliance with all applicable requirements and adequately address any identified incidents of non-compliance.

For the fourth year in a row the drinking water system received a perfect score of 100% after the completion of the 2024 inspection period. There were no notices or incidents associated with non-compliance issued to the Town of Newmarket after the MECP conducted a thorough assessment of the drinking water system. A perfect score is the highest inspection rating issued by the province and inversely indicates a low-risk rating threshold from the MECP. Each local municipality is independently rated by the Ministry for inspection on its local distribution system and drinking water quality test results.

Full inspection report details and grading criteria for 2024 can be found on Page 14

Figure 1: 2024 MECP Newmarket Distribution System Inspection Report

Ministry of the Environment, Conservation and Parks - Inspection Summary Rating Record (Reporting Year - 2024-25)

DWS Name: NEWMARKET DISTRIBUTION SYSTEM
DWS Number: 260003188
DWS Owner: CORPORATION OF THE TOWN OF NEWMARKET
Municipal Location: NEWMARKET

Regulation: O.REG. 170/03
DWS Category: DW Municipal Residential
Type of Inspection: Focused
Compliance Assessment Start Date: Nov-20-2024
Ministry Office: York Durham District Office

Maximum Risk Rating: 206

Inspection Module	Non Compliance Risk (X out of Y)
Certification and Training	0/28
Distribution System	0/4
Operations Manuals	0/14
Reporting & Corrective Actions	0/49
Treatment Processes	0/60
Water Quality Monitoring	0/51
Overall - Calculated	0/206

Inspection Risk Rating: 0.00%

Final Inspection Rating: 100.00%

Figure 1: 2024 MECP Newmarket Distribution System Inspection Report

Adverse Water Quality Incidents (AWQI)

All applicable AWQI's must be reported to the MECP as well as the local *Ministry of Health* (York Region Public Health Unit) in accordance with *SDWA, 2002* and *O. Reg. 170/03*. In addition, any corrective actions taken to resolve an AWQI must be completed in accordance with *O. Reg. 170/03*, the provisions contained within the *Municipal Drinking Water Licence*, as well as any additional instructions provided by the MOH. As reflected in the *2024 MECP Inspection Report*, all reportable AWQI's and corrective actions were done so in accordance with these requirements.

During the 2024 reporting period there were 15 adverse or potentially adverse water quality incidents. This was a vast improvement from the 68 adverse water quality incidents reported from the previous year in 2023. The Town of Newmarket has seen a reduction in adverse water quality events by approximately 78% to the previous year and a 90% reduction comparatively over the past 6 years. These improvements can be attributed to operations staff commitments to reporting adaptations, training, technological utilization, and an emphasis on optimizing operational strategies and working closely with neighbouring municipalities, Public Health, and the Ministry.

Notices submitted in accordance with subsection 18(1) of the Safe Drinking Water Act or section 16-4 of Schedule 16 of O. Reg 170/03 & reported to Spills Action Centre (SAC) can be found in Table 2.

Note: "Incident date" is the date adverse result was reported to MECP-SAC. "Corrective action date" is the date the location was resampled.

The remedial actions conducted by the water operations staff for the 15 AWQI's included flushing and resampling the affected sample points in the system as required under Schedules 17-4, and 17-6 for the parameters indicated during this reporting period. All resamples collected for the 1 AWQI for TC returned negative results for the presence of total coliforms by the *York-Durham Regional Environmental Laboratory*, indicating the initial sampling results were created by secondary contamination of unknown origin. All adverse water quality incidents are contained within *Table 2: AWQI Data for 2024 Reporting Period* found on Page 16. Further breakdown and representative data analysis for all AWQI's that occurred in the last 6-years can be observed in *Figure 2* of the *Annual Summary Report* for 2024 (Schedule 22).

Incident Date	Parameter	Result (mg/L or Presence)	AWQI #	Corrective Action (Schedules 17-4 & 17-6)	Corrective Action Date
1) April-08-2024	Chlorine	0.21 mg/L	164758	Flushed, resampled, results acceptable	April-18-2024
2) May-07-2024	Chlorine	0.16 mg/L	164924	Flushed, resampled, results acceptable	May-07-2024
3) May-28-2024	Chlorine	0.23 mg/L	165044	Flushed, resampled, results acceptable	May-28-2024
4) June-10-2024	Chlorine	0.15 mg/L	154167	Flushed, resampled. results acceptable	June-10-2024
5) July-02-2024	Chlorine	0.24 mg/L	165405	Flushed, resampled, results acceptable	July-02-2024
6) July-15-2024	Chlorine	0.17 mg/L	165583	Flushed, resampled, results acceptable	July 15-2024
7) Aug-12-2024	Chlorine	0.21 mg/L	165957	Flushed, resampled, results acceptable	Aug-12-2024
8) Aug-12-2024	Chlorine	0.18 mg/L	165958	Flushed, resampled, results acceptable	Aug-12-2024
9) Aug-17-2024	Chlorine	0.10 mg/L	166020	Flushed, resampled, results acceptable	Aug-17-2024
10) Aug-26-2024	Total Coliforms	Presence	166106	Flushed, resampled, results acceptable	Aug-30-2024
11) Oct-21-2024	Chlorine	0.20 mg/L	166702	Flushed, resampled, results acceptable	Oct-21-2024
12) Oct-23-2024	Chlorine	0.04 mg/L	166723	Flushed, resampled, results acceptable	Oct-23-2024
13) Nov-22-2024	Chlorine	0.11 mg/L	166922	Flushed, resampled, results acceptable	Nov-22-2024
14) Dec-05-2024	Chlorine	0.23 mg/L	167012	Flushed, resampled, results acceptable	Dec-05-2024
15) Dec-23-2024	Chlorine	0.24 mg/L	167099	Flushed, resampled, results acceptable	Dec-23-2024

Table 2: AWQI Data for 2024 Reporting Period

Water Quality Data

The Town of Newmarket’s sampling program consists of regulatory sampling and testing, in house sampling, and the results produced from the enhanced monitoring initiative. Members of staff complete these programs based on operational necessity, as well as regulatory requirements and amended updates.

In total, three thousand nine hundred and ten (3910) grab samples (*Table 4*) were collected and tested within the water distribution system. These tests include weekly scheduled tests, tests completed during flushing activities, chlorine tests taken during microbiological sampling, chlorine results observed during chemical sampling or organic and inorganic compounds, as well as chlorine testing results from all corrective action response. The allowable range for combined chlorine in the system is 0.25 to 4.00 mg/L. For the Town’s drinking water system, the high and low ranges for the reporting period were 3.26 and 0.04 mg/L.

Microbiological Sampling & Testing Schedule 10, 11, 12 (O. Reg. 170/03) During Reporting Period

System Type	Number of Samples	Range of E. Coli or Fecal Results (min.) – (max.)	Range of Total Coliform Results (min.) – (max.)	Number of HPC Samples	Range of HPC Results (min.) – (max.)
Raw	N/A	N/A	N/A	N/A	N/A
Treated	N/A	N/A	N/A	N/A	N/A
Distribution	1392	1392 (100% A)	1391 (99.9% A) 1 “Presence” Sample	338	0-200 CFU’s/mL

Table 3: Microbiological sampling and testing - Schedule 10

Operational Testing Completed Under Schedule 7, 8, 9 (O. Reg. 170/03) During Period Covered in Annual Report

Parameter	Number of Grab Samples	Range of Results (min.) – (max.)	Unit of Measure
Chlorine (Cl₂)	3910	0.04 – 3.26	mg/L or ppm

Table 4: Cumulative daily grab samples for 2024

Sodium (Na) and Fluoride (F) Schedules (13-8) & (13-9)

Regulated sampling schedule: *Once every 60 months.*

Sodium is a naturally occurring element found in the environment that may be present in both groundwater and surface water sources. Sodium levels in groundwater and surface water sources may also be influenced by road salt application practices. Sodium levels within municipal drinking water may also be affected by chemical addition for water conditioning and treatment, such as sodium silicate and sodium hypochlorite. Moreover, both these chemical constituents are added to the drinking water supplied by The Regional Municipality of York and any additional information regarding their water quality and monitoring can be found at:

<https://www.york.ca/environment/water-and-wastewater/drinking-water-quality-and-monitoring>

The Town of Newmarket samples for sodium and fluoride annually, in part, to maintain and ensure excellent water quality for the Town and its users. The *Maximum Allowable Concentration* (MAC) for sodium is 20 mg/L, and 1.5 mg/L for fluoride. Canada's guideline for sodium in drinking water is an aesthetic taste objective of 200 mg/L. Any exceedances of these prescribed standards are considered adverse results of a drinking water test for the purposes of *Section 18* of the SDWA, 2002 and must be reported accordingly unless an exceedance report has been completed within the prior 57 months. The last report that was created with respect to a sodium exceedance was January 11th, 2021, therefore, the next reporting date for an adverse result of this nature is October 11th, 2026. All sodium exceedances that are observed by the Town's operations staff are reported and responded to in accordance with all applicable legislative and regulatory requirements.

Nitrates & Nitrites Schedule (13-7)

These naturally occurring chemical compounds are created when ammonia is oxidized by aerobic bacteria and converted into the unstable nitrite compound and further reacts to form the more stable compound nitrate. Oxidation of ammonia is common and expected. The MECP has placed limits on the *Maximum Allowable Concentrations* (MAC) of both nitrites and nitrates in drinking water. Potential health risks associated with these compounds impact small children and infants under 6 months of age with a disorder known as "*Methemoglobinemia*", otherwise known as "*blue baby syndrome*".

O. Reg. 170/03 requires these parameters to be tested at the point where water enters the distribution system. The Town of Newmarket relies heavily on the Regional Municipality of York's

involvement in this type of sampling and testing within their supply and treatment networks. As part of the of the Town’s due diligence, these parameters are sampled and tested by operations staff on a weekly basis. Furthermore, samples conducted for nitrites and nitrates are completed over and above the regulatory requirements prescribed under *O. Reg. 170/03*.

Lead Testing in Drinking Water System

Province wide there is considerable interest to the public concerning the presence of lead (Pb) in water samples, particularly when it comes to educational institutions and day-care centres. Currently, the Town of Newmarket is regulated to test for the presence of lead within the municipal distribution system, and not within the adjoining private plumbing networks. In Ontario, the drinking water quality standard for lead is 10 micrograms per litre (10 µg/L) or 0.010 milligrams per litre (0.010 mg/L). This standard is based on the national guideline set out by *Health Canada*. Additionally, the Ministry has amended regulations under the *SDWA* to introduce lead testing exemptions within plumbing systems for municipal drinking water systems.

Regulatory relief for lead under *Schedule D* of the Town of Newmarket’s *Municipal Drinking Water Licence* (124-101) requires eight (8) sample points to be completed during each of the two sampling periods found within *O. Reg. 170/03*. Any additional lead sampling that is to be completed is done so above the Ministry’s requirements and is done so at the sole discretion of the Town. Furthermore, all tests for lead in the drinking water system are performed by licenced water operations staff employed by the Town of Newmarket and are significantly below the threshold limit of 0.01 mg/L which is detailed below in *Table 5: Summary of lead testing under Schedule 15*.

****Under *O. Reg. 243/07 – Schools, Private Schools, and Childcare Centres*; school boards are required to perform mandatory testing for lead (Pb), as well as perform regular preventative maintenance activities to prevent any potential contaminants from entering their systems****

Location Type	Number of Samples	Range of Lead Results (min.) – (max.)	Unit of Measure	Number of Exceedances
Plumbing Network	N/A	N/A	N/A	N/A
Distribution System	16	<0.0005 – 0.0011	mg/L	0

Table 5: Summary of lead (Pb) testing under Schedule 15.1 during reporting period

Organic Parameters that Exceed ½ the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards

Parameter	Result Value	Unit of Measure	Date of Sample
N/A	N/A	N/A	N/A

Table 6: Summary of Organic Parameters that Exceed 1/2 of ODWS Schedule 2

Summary of Additional Testing Carried Out Pursuant to Schedule 13 – Chemical Sampling and Testing

O. Reg. 170/03 requires these parameters to be tested at the point where water enters the distribution system. As a lower tier municipality in a two-tier system The Town of Newmarket relies on the Regional Municipality of York (upper tier) to collect and sample most of these constituents as water leaves York Region’s treatment plants and facilities. Regulatory sampling data for organics and inorganics sampled by the Town of Newmarket can be found on Page 21 in *Table 7: Summary of testing pursuant to Schedule 13 during reporting period*. Additional parameters for Schedule 13 not listed are completed by the Regional Municipality of York and can be found in their annual report.

Organic/Inorganic Parameter	Sample Dates	Results Value (min.) – (max.)	Unit of Measure	Running Annual Average	Regulatory Limit (ODWS)	Exceedance
Organics						
Trihalomethanes (THMs)	16-Jan-24 15-Apr-24 15-July-24 15-Oct-24	Min = 10.1 Max = 31.1	µg/L	11.6	100 µg/L	No
Haloacetic Acids (HAAs)	16-Jan-24 15-Apr-24 15-July-24 15-Oct-24	Min = <8.0 Max = 11.0	µg/L	8.3	80 µg/L	No
Nitrosodimethylamine (NDMA)	11-March-24 17-June-24 30-Sept-24 9-Dec-24	Min = <0.0009 Max = <0.0009	µg/L	<0.0009	0.09 µg/L	No
Inorganics						
Nitrate (NO₃) as N	N/A	N/A	mg/L	N/A	10 mg/L	No
Nitrite (NO₂) as N	414 samples taken	Min = 0.00 Max = 0.45	mg/L	0.02	1 mg/L	No
Sodium (Na)	No samples taken	N/A	mg/L	N/A	20 mg/L	No
Fluoride (F)	274 samples taken	Min = 0.18 Max = 1.00	mg/L	0.44	1.5 mg/L	No

Table 7: Summary of testing pursuant to Schedule 13 during reporting period

Summary of Parameters Tested Under Schedule 23 – Inorganics – O. Reg. 170/03

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony Arsenic Barium Boron Cadmium Chromium Mercury Selenium Uranium	**REFER TO REGIONAL MUNICIPALITY OF YORK ANNUAL REPORT FOR ADDITIONAL DATA**			
<p>Under O. Reg. 170/03 these parameters are required to be tested at the point in which water is supplied to the distribution system. As the lower tier municipality in a two-tier municipal structure, The Town of Newmarket relies on York Region to complete the sampling schedule for these inorganic parameters as water leaves the supply system(s) and treatment facilities</p>				

Table 8: Summary of inorganic parameters tested during reporting period

Summary of Parameters Tested Under Schedule 24 – Organics – O. Reg. 170/03

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor				
Aldicarb				
Aldrin + Dieldrin				
Atrazine + N-dealkylated metabolites				
Azinphos-methyl				
Benzene				
Benzo(a)pyrene				
Bromoxynil				
Carbaryl				
Carbofuran				
Carbon Tetrachloride				
Chlorpyrifos				
Diazinon				
Dicamba				
1,2 – Dichlorobenzene				
1,4 – Dichlorobenzene				
1,2 – Dichloroethane				
1,1 – Dichloroethylene				
Dichloromethane				
2,4 – Dichlorophenol				
2,4 – Dichlorophenoxy acetic acid				
Diclofop-methyl				
Dimethoate				
Diquat				
Diuron				
Glyphosate				
Malathion				
2-Methyl-4-chlorophenoxyacetic acid				
Metolachlor				
Metribuzin				
Monochlorobenzene				
Paraquat				
Pentachlorophenol				
Phorate				
Picloram				
Polychlorinated Biphenyls (PCB)				
Prometryne				
Simazine				
Terbufos				
Tetrachloroethylene				
2,3,4,6 – Tetrachlorophenol				
Triallate				
Trichloroethylene				
2,4,6 – Trichlorophenol				
Trifluralin				
Vinyl Chloride				

**** REFER TO
REGIONAL MUNICIPALITY OF YORK
ANNUAL REPORT FOR ADDITIONAL
DATA ****

Under O. Reg. 170/03 these parameters are required to be tested at the point in which water is supplied to the distribution system. As the lower tier municipality in a two-tier municipal structure, The Town of Newmarket relies on York Region to complete the sampling schedule for these inorganic parameters as water leaves the supply system(s) and treatment facilities

Table 9: Summary of organic parameters tested during reporting period

Drinking Water Quality Summary Analysis

2024



	Unit	Sampling Period	Number of Samples	Reporting Limit	Maximum	Minimum	Average	Aesthetic Objective	AWQI	Exceedance(s)
Microbiological Sampling (O. Reg. 170/03 Schedule 10)										
E. Coli (Presence/Absence)	CFU/mL	Jan. 1 st to Dec. 31 st	1392	0 to > 80	Absent	Absent	100 %	N/A	0	N
Total Coliforms (Presence/Absence)	CFU/mL	Jan. 1 st to Dec. 31 st	1392	0 to > 80	Present	Absent	99.9 %	N/A	1	Y
Heterotrophic Plate Count	CFU/mL	Jan. 1 st to Dec. 31 st	338	>3.0 x 10 ³	N/A	N/A	N/A	N/A	0	N
Operational Checks (O. Reg. 170/03 Schedule 7)										
Combined Chlorine (Chloramines)	mg/L	Jan. 1 st to Dec. 31 st	3910	0.25	3.26	0.04	1.60	N/A	14	Y
Turbidity	NTU	Jan. 1 st to Dec. 31 st	365	N/A	1.98	0.32	0.62	5.0	0	N
Organic Parameters (O. Reg. 170/03 Schedule 13)										
Trihalomethanes (THM)	µg/L	Jan. 16 th to Oct. 15 th	48	100	31.1	10.1	11.6	N/A	0	N
Haloacetic Acids (HAA)	µg/L	Jan. 16 th to Oct. 15 th	32	80	11.0	<8.0	8.3	N/A	0	N
Nitrosodimethylamine (NDMA)	µg/L	Mar. 11 th to Dec. 9 th	4	0.09	<0.001	<0.001	<0.001	N/A	0	N

	Unit	Sampling Period	Number of Samples	Reporting Limit	Maximum	Minimum	Average	Aesthetic Objective	MAC	Exceedance(s)
Inorganic Parameters (O. Reg. 170/03 Schedule 13)										
Nitrate (NO₂ as N)	mg/L	Not Required	0	0.01	0	0	0	N/A	10	N/A
Nitrite (NO₃ as N)	mg/L	Jan. 1 st to Dec. 31st	414	0.002	0.45	0.00	0.02	N/A	1	N
Sodium (Na)	mg/L	Not Required	0	0.4	0	0	0	200	20	N/A
Fluoride (F)	mg/L	Jan. 1 st to Dec. 31st	274	0.10	1.0	0.18	0.44	N/A	1.5	N
Lead (Pb) Testing (O. Reg. 170/03 Schedule 15.1)										
Plumbing Network	mg/L	Not required	0	0.00005	N/A	N/A	N/A	N/A	0.010	N/A
Distribution System	mg/L	Jan. 1 st to Dec. 31st	16	0.00005	0.001	<0.001	<0.001	N/A	0.010	N
Inorganic Parameters (O. Reg. 170/03 Schedule 23)										
Antimony	mg/L	Not Required	0	0.0005	-	-	-	-	0.006	N/A
Arsenic	mg/L	Not Required	0	0.00005	-	-	-	-	0.01	N/A
Barium	mg/L	Not Required	0	0.0005	-	-	-	-	1.00	N/A
Cadmium	mg/L	Not Required	0	0.00001	-	-	-	-	0.005	N/A
Chromium	mg/L	Not Required	0	0.0002	-	-	-	-	0.05	N/A
Mercury	mg/L	Not Required	0	0.00005	-	-	-	-	0.001	N/A
Selenium	mg/L	Not Required	0	0.0005	-	-	-	-	0.05	N/A
Uranium	mg/L	Not Required	0	0.00005	-	-	-	-	0.02	N/A
Organic Parameters (O. Reg. 170/03 Schedule 24)										
Alachlor	µg/L	Not Required	0	0.0005	-	-	-	-	5	N/A
Aldicarb	µg/L	Not Required	0	-	-	-	-	-	-	N/A
Aldrin + Dieldrin	µg/L	Not Required	0	-	-	-	-	-	-	N/A
Atrazine + N-dealkylated metabolites	µg/L	Not Required	0	0.0025	-	-	-	-	5	N/A

Organic Parameters (Continued)	Unit	Sampling Period	Number of Samples	Reporting Limit	Maximum	Minimum	Average	Aesthetic Objective	MAC	Exceedance(s)
	Azinphos-methyl	µg/L	Not Required	0	0.001	-	-	-	-	20
Benzene	µg/L	Not Required	0	0.1	-	-	-	-	1	N/A
Benzo(a)pyrene	µg/L	Not Required	0	0.01	-	-	-	-	0.01	N/A
Bromoxynil	µg/L	Not Required	0	0.075	-	-	-	-	5	N/A
Carbaryl	µg/L	Not Required	0	0.0015	-	-	-	-	90	N/A
Carbofuran	µg/L	Not Required	0	0.0025	-	-	-	-	90	N/A
Carbon Tetrachloride	µg/L	Not Required	0	0.2	-	-	-	-	2	N/A
Chlorpyrifos	µg/L	Not Required	0	0.01	-	-	-	-	90	N/A
Diazinon	µg/L	Not Required	0	0.0005	-	-	-	-	20	N/A
Dicamba	µg/L	Not Required	0	0.2	-	-	-	-	120	N/A
1,2 - Dichlorobenzene	µg/L	Not Required	0	0.2	-	-	-	3	200	N/A
1,4 - Dichlorobenzene	µg/L	Not Required	0	0.2	-	-	-	-	5	N/A
1,2 - Dichloroethane	µg/L	Not Required	0	0.2	-	-	-	-	5	N/A
1,1 - Dichloroethylene	µg/L	Not Required	0	0.2	-	-	-	-	14	N/A
2,3,4,6 - Tetrachlorophenol	µg/L	Not Required	0	1.0	-	-	-	1	100	N/A
1,4 - Dichlorobenzene	µg/L	Not Required	0	0.2	-	-	-	1	5	N/A
1,2 - Dichloroethane	µg/L	Not Required	0	0.2	-	-	-	-	5	N/A
2,4,6 - Trichlorophenol	µg/L	Not Required	0	0.5	-	-	-	-	5	N/A
Dichloromethane	µg/L	Not Required	0	0.3	-	-	-	-	50	N/A
2,4 - Dichlorophenol	µg/L	Not Required	0	0.5	-	-	-	-	900	N/A
2,4 - Dichlorophenoxy acetic acid	µg/L	Not Required	0	-	-	-	-	-	100	N/A
Diclofop-methyl	µg/L	Not Required	0	0.5	-	-	-	-	9	N/A
Dimethoate	µg/L	Not Required	0	0.001	-	-	-	-	20	N/A
Diquat	µg/L	Not Required	0	1.0	-	-	-	-	70	N/A
Diuron	µg/L	Not Required	0	0.001	-	-	-	-	150	N/A
Glyphosate	µg/L	Not Required	0	25	-	-	-	-	280	N/A
Malathion	µg/L	Not Required	0	0.001	-	-	-	-	190	N/A
2-Methyl-4-chlorophenoxyacetic acid	µg/L	Not Required	0	0.2	-	-	-	-	100	N/A
Metolachlor	µg/L	Not Required	0	0.001	-	-	-	-	50	N/A
Metribuzin	µg/L	Not Required	0	0.001	-	-	-	-	80	N/A

Organic Parameters (Continued)	Unit	Sampling Period	Number of Samples	Reporting Limit	Maximum	Minimum	Average	Aesthetic Objective	MAC	Exceedance(s)
Monochlorobenzene	µg/L	Not Required	0	0.2	-	-	-	-	80	N/A
Paraquat	µg/L	Not Required	0	1.0	-	-	-	-	10	N/A
Pentachlorophenol	µg/L	Not Required	0	0.5	-	-	-	30	60	N/A
Phorate	µg/L	Not Required	0	0.01	-	-	-	-	2	N/A
Picloram	µg/L	Not Required	0	0.3	-	-	-	-	190	N/A
Polychlorinated Biphenyls (PCB)	µg/L	Not Required	0	0.3	-	-	-	-	3	N/A
Prometryne	µg/L	Not Required	0	0.0005	-	-	-	-	1	N/A
Simazine	µg/L	Not Required	0	0.001	-	-	-	-	10	N/A
Terbufos	µg/L	Not Required	0	0.006	-	-	-	-	1	N/A
Tetrachloroethylene	µg/L	Not Required	0	0.2	-	-	-	-	10	N/A
Trifluralin	µg/L	Not Required	0	0.265	-	-	-	-	45	N/A
Triallate	µg/L	Not Required	0	0.01	-	-	-	-	230	N/A
Trichloroethylene	µg/L	Not Required	0	0.2	-	-	-	-	5	N/A
Vinyl Chloride	µg/L	Not Required	0	0.1	-	-	-	-	1	N/A

****Town of Newmarket relies on York Region to complete a portion of required sampling for listed parameters set out under O. Reg. 170/03****

York Region (Newmarket) *Drinking Water Report* <https://www.york.ca/media/118211/download?attachment>



Notes:

AWQI: Adverse Water Quality Incident

CFU: Colony Forming Unit

MAC: Maximum Acceptable Concentration

mg/L: milligrams per litre

ND: Not detectable

NTU: Nephelometric Turbidity Unit

P/A: Presence / Absence

µg/L: micrograms per litre

All inorganic (**Schedule 23 & 13**) and organic (**Schedule 24**) parameters listed as **"not required"** are completed by The Regional Municipality of York as per O. Reg. 170/03 and can be found in York Region's *Drinking Water Report*.

Newmarket	January	February	March	April	May	June	July	August	September	October	November	December	Year to Date Total	
Aurora Ballymore (Aurora) m3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aurora Ballymore (Newmarket) m3	46,092	45,538	46,011	45,718	55,339	57,814	61,316	54,412	55,990	49,327	43,587	45,575	606,719	
Aurora West 12" (Aurora) m3	-3	-3	-4	-4	-4	-4	-4	-6	-5	-5	-7	-8	-7	-60
Aurora West 12" (Newmarket) m3	197,343	186,700	200,652	194,530	210,667	218,213	226,066	217,362	207,532	204,308	196,595	210,048	2,470,016	
Aurora West 8" (Aurora) m3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aurora West 8" (Newmarket) m3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Davis Drive/Hwy. 404 m3	-4,729	-4,366	-3,832	-4,624	-8,401	-7,619	-13,704	-10,258	-8,693	-8,240	-5,549	-3,554	-83,569	
EG Leslie Street MC 12" Fwd to NW m3	35,877	34,542	21,143	30,410	30,921	30,500	34,841	31,882	32,236	31,445	25,292	22,796	361,883	
EG Leslie Street MC 12" Rev to EG m3	-26,033	-23,124	-28,681	-23,196	-16,594	-17,234	-17,613	-18,652	-22,820	-19,587	-20,239	-25,032	-258,803	
EG Leslie Street MC 22" Fwd to NW m3	0	0	0	0	0	0	0	17	0	0	0	0	17	
EG Leslie Street MC 22" Rev to EG m3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Harry Walker Pkwy MC 10" Fwd to NM m3	0	0	0	0	1	0	31	2	8	25	1	0	68	
Harry Walker Pkwy MC 10" Rev to EG m3	0	0	0	0	0	0	-2	0	0	-3	-4	-3	-12	
Harry Walker Pkwy MC 3" Fwd to NM m3	0	0	0	0	2,327	2,620	3,016	2,785	2,796	2,674	2,113	1,938	20,269	
Harry Walker Pkwy MC 3" Rev to EG m3	0	0	0	0	-1,575	-1,850	-1,931	-2,047	-2,431	-2,154	-2,217	-2,596	-16,799	
Leslie/Broughton (Aurora) m3	-6	-8	-5	-11	-6	-4	-6	-4	-14	-9	-8	-7	-88	
Leslie/Broughton (Newmarket) m3	244,292	228,206	254,733	242,715	269,785	272,843	290,050	289,478	289,144	281,624	251,201	256,805	3,170,874	
Newmarket Well No. 1 (Forward) m3	27,773	25,241	25,151	23,262	22,199	23,016	24,022	23,806	21,224	21,047	20,139	20,973	277,853	
Newmarket Well No. 1 (Reverse) m3	-6	0	0	0	0	0	0	0	0	0	0	0	-6	
Newmarket Well No. 13 (Forward) m3	35,255	33,353	39,662	35,003	34,882	37,058	17,039	390	624	14,542	56,258	62,201	366,267	
Newmarket Well No. 13 (Reverse) m3	0	0	0	0	-1	0	0	0	0	0	-1	0	-2	
Newmarket Well No. 15 (Forward) m3	1,243	0	103	20,400	39,158	40,813	42,145	39,186	37,910	35,242	31,498	33,182	320,880	
Newmarket Well No. 15 (Reverse) m3	-1	0	0	0	0	0	0	-1	0	0	0	0	-3	
Newmarket Well No. 16 (Forward) m3	35,737	31,448	31,828	30,289	34,108	33,633	53,916	64,355	57,233	41,142	1,004	626	415,319	
Newmarket Well No. 16 (Reverse) m3	0	0	0	0	0	0	0	0	0	0	0	0	-1	
Newmarket Well No. 2 (Forward) m3	56,709	51,785	56,914	52,210	51,759	54,307	59,905	53,379	49,711	48,257	43,561	46,742	625,239	
Newmarket Well No. 2 (Reverse) m3	-6	0	-8	-28	-35	0	-26	0	-9	-5	-1	0	-119	
Newmarket/Aurora (Aurora) m3	0	0	0	0	0	0	0	0	0	0	0	0	0	
Newmarket/Aurora (Newmarket) m3	61,492	55,287	58,416	38,739	33,073	27,926	23,243	23,362	26,185	16,004	12,458	9,075	385,260	
Woodspring Avenue (East Gwillimbury) m3	-11,027	-10,772	-11,707	-11,306	-12,104	-13,000	-14,317	-12,814	-12,403	-12,098	-10,906	-12,046	-144,501	
Woodspring Avenue (Newmarket) m3	0	0	0	0	0	3	1	0	1	0	0	1	6	
Yonge/Aspenwood (East Gwillimbury) m3	-1,727	-1,319	-1,340	-1,227	-1,514	-3,850	-4,458	-4,287	-3,716	-2,622	-2,751	-2,346	-31,155	

	January	February	March	April	May	June	July	August	September	October	November	December	Year to Date Total
Yonge/Aspenwood (Newmarket) m3	0	0	0	2	0	1	1	4	0	16	2	2	28
Yonge/Bristol (East Gwillimbury) m3	-6,192	-5,323	-6,305	-4,305	-5,200	-8,632	-7,622	-7,728	-5,926	-6,376	-4,728	-7,840	-76,177
Yonge/Bristol (Newmarket) m3	10	8	9	11	12	10	11	9	9	13	11	10	121
Total Water Consumption m3	692,093	647,193	682,740	668,587	738,797	746,562	775,919	744,635	724,585	694,567	637,307	656,541	8,409,525

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Maximum Daily Flow m3	23,749	26,283	24,009	25,944	27,577	29,229	29,102	26,910	28,938	25,572	24,544	23,336	29,229
Maximum Date	17-Jan-2024	12-Feb-2024	25-Mar-2024	22-Apr-2024	14-May-2024	19-Jun-2024	08-Jul-2024	27-Aug-2024	19-Sep-2024	01-Oct-2024	06-Nov-2024	17-Dec-2024	
Minimum Daily Flow m3	19,694	19,444	19,847	19,554	20,036	21,015	21,901	20,144	20,957	20,957	19,999	18,982	18,982
Minimum Date	01-Jan-2024	23-Feb-2024	10-Mar-2024	03-Apr-2024	16-May-2024	30-Jun-2024	15-Jul-2024	05-Aug-2024	01-Sep-2024	09-Oct-2024	12-Nov-2024	27-Dec-2024	
Average Daily Flow m3	22,326	22,317	22,024	22,286	23,832	24,885	25,030	24,020	24,153	22,405	21,244	21,179	22,975

** Chart Provided by The Regional Municipality of York (Annual Flow Data for Town of Newmarket) **