The Regional Municipality of York

Committee of the Whole
Environmental Services
April 11, 2024
FOR DECISION

Report of the Commissioner of Public Works

2023 Drinking Water Systems Report

1. Recommendation

The Regional Clerk circulate this report to the Clerks of the local municipalities, City of Toronto, Region of Peel and the Ontario Chief Drinking Water Inspector (Ministry of the Environment, Conservation and Parks).

2. Purpose

This annual regulatory report informs Council of York Region's performance requirements for water quantity, quality and compliance with Ontario Regulation 170/03: Drinking Water Systems and supports Council in meeting its standard of care requirements under the *Safe Drinking Water Act, 2002* (the Act).

Key Points:

- York Region received an excellent overall average score of 99.87% in the Chief Drinking Water Inspector's Annual Report for the Province's 2022-2023 fiscal year
- Public Works uses advanced systems monitoring, controls, and a multi-barrier approach to protect drinking water and public health
- In 2023, the Region continued to provide high quality drinking water with 100% of 17,309 laboratory analyzed samples and over 99.99% of 40.2 million continuous monitoring analyzer readings within regulated standards
- In 2023, Ministry of the Environment, Conservation and Parks inspections confirmed York Region's adherence to regulatory requirements with an inspection score of 100%
- Drinking water systems operated within permitted volume and capacity limits although operational requirements resulted in instantaneous peak flow exceedances for short durations

3. Background

The Region complies with the *Safe Drinking Water Act, 2002* to protect public health by providing high quality drinking water

The Ministry of the Environment, Conservation and Parks (the Ministry) regulates municipal drinking water systems in Ontario. The Act was developed to address factors that led to the Walkerton tragedy in 2000. As a result, Ontario now has some of the safest drinking water in the world.

The Act requires municipalities to report annually on drinking water and imposes a standard of care upon Municipal Council members. Members are required to oversee municipal drinking water systems with the level of care and diligence that a reasonably prudent person would be expected to exercise. Council protects people in their communities by ensuring financial sustainability, asset management, risk mitigation and continual improvement of the Region's drinking water systems.

This report summarizes 2023 calendar year drinking water systems performance, with further details as follows:

- Reported adverse water quality events and corrective actions (Appendix A)
- Ministry inspection findings and corrective actions (Appendix B)
- Performance data for each drinking water system (Appendix C)
- Monetary expenses for each drinking water system (Appendix D)

Public Works partners with Public Health, local municipalities, and neighbouring municipalities to provide safe drinking water

Within the Region, water is delivered through a two-tiered water system. To ensure safe drinking water, the Region designs, constructs, operates and maintains 15 drinking water supply systems, including advanced treatment facilities, which provide water to all nine local municipalities. Local municipal partners are responsible for similar functions at a local level, to maintain their distribution systems to deliver high-quality water to residents and businesses.

Public Works and Public Health maintain a 24/7 response system to address potential water quality issues. Public Health assesses each reported adverse water quality test result for potential health impacts. Procedures are in place to ensure close alignment with Public Health, local municipalities and the Ministry for effective communication while protecting public health related water quality concerns.

Multi-barrier approach to risk management protects drinking water systems and public health

A multi-barrier approach protects drinking water and promotes quality and safety, while informing preventive and corrective actions. Elements of this approach include source water protection, asset management, training and licensing of operators, operational strategies, Drinking Water Quality Management Standard, system audits, a strict Provincial Inspection and Enforcement Program, and research that anticipates and prepares the Region for future water quality and operational requirements.

4. Analysis

Information on the Region's drinking water system performance helps inform Council and the public about the Region's approach to providing safe, high-quality drinking water and are summarized in the following sections:

- **2023 Water Quality** outlines water quality laboratory and continuous monitoring results that confirmed the high-quality of the Region's drinking water
- **Compliance Outcomes from Ministry Inspections** recounts inspection results for 2023 and summarizes results published in the Chief Drinking Water Inspector's 2022-2023 annual report
- **2023 Water Volume and Capacity** outlines the quantity of water that was needed to supply residents and businesses with high quality water

2023 WATER QUALITY

100% of 2023 laboratory samples met regulatory limits

The Region's sampling program includes regulatory, in-house and research samples. Staff update the program based on operational needs and regulatory changes. In 2023, the York-Durham Environmental Laboratory performed 17,309 water quality tests for the Region's drinking water systems. 100% of samples collected and analyzed by the laboratory were within regulated limits and standards.

In 2023, there was one sodium result from the Newmarket Drinking Water System (DWS) slightly above 20 mg/L that prompted reporting to the Region's Medical Officer of Health and the Ministry. Sodium is found naturally in surface and groundwater, as it is present in most rocks and soils across Southern Ontario.

Table 1 summarizes the one laboratory analyzed sample reported as an adverse water quality event in 2023. A notification process is initiated when sample analysis indicates a parameter requires reporting. The threshold for sodium is not a compliance limit or regulated standard; it ensures residents on sodium restricted diets have information about sodium levels in their

drinking water. Staff responded to the adverse test result and resampled to confirm sodium levels. No other corrective actions were required. Adverse events are internally reviewed to develop and apply lessons learned to mitigate future events. There was no risk to public health related to this adverse event. Appendix A summarizes laboratory analyzed samples reported as adverse water quality events in 2023 including the sodium sample noted above.

Table 1

Adverse Water Quality Events
Reported from Laboratory Analyzed Samples in 2023

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Sample Results and Corrective Actions Taken
Sodium Newmarket DWS (1)	Sodium level of 24.7 mg/L was reported at the Newmarket Northeast (Davis Drive) Elevated Tank. The reporting requirement for sodium is once every 57 months for results exceeding 20 mg/L. Health Canada's guideline for sodium in drinking water is an aesthetic taste objective of 200 mg/L. Operators resampled at the facility to confirm sodium levels and notified the Region's Medical Officer of Health and the Ministry.

Sampling scheduling error provided opportunity for continual improvement of sampling program

One Haloacetic Acid (HAA) sample must be collected every three months from several water storage facilities across the Region to inform monitoring trend analysis. HAA sampling is completed to confirm levels of potential disinfection byproducts in the water are within regulated limits. During routine data review, staff determined, due to a sampling scheduling error, the October 2023 HAA sample at Sutton Elevated Tank was not collected. Staff confirmed there were no other missed regulatory samples in any systems and the January 2024 HAA sample at the facility was collected on schedule. Staff confirmed the water was safe for consumption, based on more than five years of historical data at this site, showing HAA levels well below the regulatory limit. This was corroborated by the sample collected in January 2024. Corrective actions were taken, including implementing improvements to the process for sampling and monitoring results to prevent reoccurrence.

Continuous monitoring analyzers and online equipment support 24/7 water quality surveillance and control by the Region's Remote Operations Centre

In addition to sampling conducted by staff, 382 online analyzers continuously monitor several water quality parameters including chlorine disinfection. Analyzers and other online equipment are calibrated regularly by trained staff. The Region's Remote Operations Centre monitors the system 24/7. If necessary, they dispatch field operators to respond to alarms or unusual trends and perform corrective actions. Remote operators can also make real-time operational and process adjustments. These systems and processes greatly reduce the risk of non-potable water entering the drinking water system.

Real-time monitoring systems and analyzer readings demonstrate compliance with regulatory limits for water safety parameters

The real-time monitoring system recorded 40.2 million analyzer readings in 2023. From these readings, staff reported eight adverse water quality events. Most events self-corrected or required only minor equipment or process adjustments. Staff confirmed drinking water safety through on-site tests and facility operation. There was no risk to public health related to these adverse events.

Table 2 summarizes continuously monitored analyzer readings reported as adverse water quality events in 2023. Appendix A contains details of all reported adverse water quality events in 2023.

Table 2
Adverse Water Quality Events
Reported from Continuous Monitoring Analyzer Readings in 2023

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Monitoring Results and Corrective Actions Taken
Other – System Performance Monitoring (Failure to meet monitoring requirement) • York DWS (1)	An operational event at the West Woodbridge Elevated Tank was reported as an adverse water quality event as due diligence. A brief equipment malfunction caused water to flow out of the tower when it was supposed to be filling after maintenance. Chlorine analyzers and grab samples confirmed safe disinfection levels during the event. Calculations showed the water never reached the nearest service connection. Corrective actions included returning the facility to filling status and flushing the nearby distribution system as a precaution.

Parameter, Drinking Water System (DWS) and Number of Occurrences	Summary of Reported Monitoring Results and Corrective Actions Taken
High Chlorine Level • Schomberg DWS (4)	Four minor high chlorine level events resulted from brief fluctuations in the chlorine dosing and monitoring system. The system can occasionally record brief high chlorine levels while the facility automatically shuts down for an operator to investigate. Corrective actions for high chlorine levels include collecting grab samples to confirm actual chlorine levels and verifying analyzers.
Filtration Performance • Keswick DWS (1)	A brief interruption in coagulant dosing occurred from an error following equipment maintenance. The affected part of the facility shut down automatically due to rising turbidity online analyzer readings. Corrective actions included isolating the entire facility from the system and backflushing. Treated water without coagulant did not enter the distribution system. Operational records and laboratory results show equipment provided effective disinfection. Flow monitoring for the coagulant system was installed to automatically shut down the plant upon detection of low or no coagulant flow. Operators received additional training on how these coagulant system upgrades integrate with the existing systems.
High Fluoride Level • Keswick DWS (1) • Georgina DWS (1)	Fluoride is continuously monitored at Georgina and Keswick Water Treatment Plants, where it is applied within the optimal range recommended by the Medical Officer of Health. Online analyzers detected two instances of fluoride above the operational limit. When this occurred, the facilities automatically shut down and stopped sending water to the distribution system. Corrective actions included backflushing the system to prevent the impacted water from leaving the facility and ensuring the correct fluoride dose range was restored. Compliant grab samples were collected.

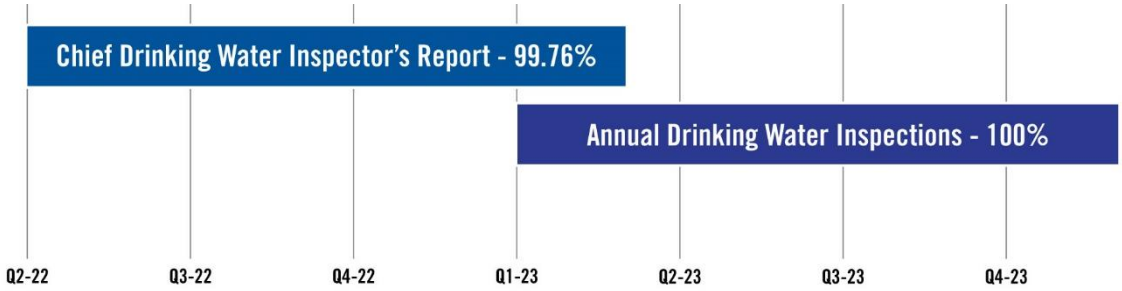
The Region has reduced adverse water quality events from continuous monitoring analyzers by over 90% since 2016. This improved trend results from updated training, optimizing operational strategies and close collaboration with Public Health, the Ministry and local municipalities to adapt reporting thresholds to the design of Regional systems.

COMPLIANCE OUTCOMES FROM MINISTRY INSPECTIONS

This annual report includes Ministry Inspection results from both the 2023 calendar year and the 2022-2023 fiscal year for the Ontario Chief Drinking Water Inspector's Report, as depicted in Figure 1.

Figure 1

Reporting Period Timeline



All annual drinking water inspections completed in 2023 received a perfect score with one non-compliance which did not impact the compliance score

In the 2023 calendar year, 16 inspections were completed for the Region's 15 drinking water systems. All inspections completed in 2023 received a score of 100%. Although there was one non-compliance finding, a brief interruption in coagulant dosing at the Keswick Water Treatment Plant as detailed in Table 2, it did not impact the Region's compliance score.

Ministry staff identified eight best management practice recommendations related to record keeping, provision of detailed disinfection calculations for Ministry reference, and alarm management, all of which, staff have implemented. Appendix B outlines 2023 Annual Drinking Water Inspection Results.

York Region received excellent scores in the 2022-2023 Provincial Report

At the end of each calendar year, Ontario's Chief Drinking Water Inspector releases an annual report, rating all regulated drinking water systems in Ontario. Reporting timelines are based on the Ministry's previous fiscal year from April 1, 2022, to March 31, 2023. The Region, along with the City of Toronto and Peel Region, which supply the majority of York Region's drinking water, received high scores. Table 3 outlines the scores for Greater Toronto and Hamilton Area municipalities.

Table 3

GTHA 2022-2023 Chief Drinking Water Inspector's Report Scores

Municipality	Inspection Rating (%)*	Water Quality Tests Meeting Standards (%)*
York Region	99.76	99.98
Peel Region	100.00	99.98
City of Toronto	100.00	99.93
Halton Region	100.00	99.99
Durham Region	99.94	99.84
Provincial Average	98.63	99.76

*Average of scores for all drinking water systems within the municipality

In the fiscal period covered by the Chief Drinking Water Inspector's Report, the Region received a combined inspection and test result average of 99.87%.

The Region received an inspection rating of 99.76% in the 2022-2023 Provincial Report. A single non-compliance occurred from an inspection completed in 2022 related to UV sensor calibration practices; the 14 other inspections achieved a score of 100%. Details of the non-compliance were shared in March 2023 with Council. Corrective actions were identified and implemented to ensure full compliance, including improvements to the sensor verification process, documentation, and training. Operational records and laboratory results demonstrate equipment provided effective disinfection and there was no risk to public health.

The Region received an overall water quality test compliance rating of 99.98% for laboratory analyzed samples, meeting requirements of the Ontario Drinking Water Quality Standards. Water quality test scores do not include water quality parameters outside Ontario Regulation 169/03, system performance monitoring events, or online analyzer readings.

One water quality test result from samples analyzed by the laboratory in 2022 was reported as adverse for detection of total coliform bacteria. This slightly lowered the overall average. Resample results and ongoing weekly sampling tests confirmed effective disinfection and no coliform bacteria present. There was no risk to public health because of this adverse test result. Details are found in the 2022 Drinking Water Systems report received by Council March 24, 2023.

Historically, the Region has scored high in the Chief Drinking Water Inspector's Report, with combined inspection and test result averages ranging between 99.54% and 100% over the previous five years.

2023 WATER VOLUME AND CAPACITY

All drinking water systems operated within daily permitted water volume and capacity limits

In 2023, the Region's drinking water systems operated within their maximum daily withdrawal limits. Thirteen of 43 production wells experienced temporary periods of flow rates that exceeded the maximum per minute pumping rates outlined in their Permits to Take Water. Flow exceedances are generally due to operational requirements or equipment fluctuations. These exceedances were small in total volume and ranged from one to 73 minutes in duration. No negative impacts or complaints from other water users from these minor exceedances were observed. All drinking water systems continue to meet water quality and quantity needs of the community and operate within their daily permitted water volume and capacity limits.

The Region continues to maintain compliance with:

- The *Safe Drinking Water Act, 2002* and its regulations
- Terms and conditions of the Region's Permits to Take Water and supply agreements with Toronto and Peel
- Permitted Intra-Basin Transfer volumes for water taken from (and returned to) Lake Ontario for communities in the Lake Huron watershed

Appendix C illustrates important data about the quality and quantity of drinking water in each drinking water system. This data supports decision making regarding long-term, reliable water sourcing and servicing. Public Works continues to assess impacts of the *More Homes Built Faster Act, 2022* on overall system operation and capacity allocation. Maximum permitted volumes for the Region's drinking water systems are anticipated to support forecasted population growth to 2051 as analyzed through the 2022 Water and Wastewater Master Plan.

5. Financial Considerations

In 2023, the Region invested $65 million to maintain and improve drinking water systems

Ontario Regulation 170/03: Drinking Water Systems requires water utility owners to "describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment". Managing growth in a drinking water system, while optimizing the existing system and meeting regulatory requirements, is achieved through extensive collaboration between skilled staff, local municipal partners, the Province, and other partners including the development community and academia.

The Region operates and maintains $2.7 billion in water assets. In 2023, the Region invested $65 million installing, repairing or replacing equipment used to treat, store and deliver safe drinking water. These expenses are summarized in Appendix D and do not include day-to-day operational costs. These investments in maintaining drinking water equipment are 2.4% of the total replacement cost for the Regional treatment and distribution system and demonstrate the importance of routine maintenance to maximize asset performance and minimize cost. The Region has budgeted $563 million for water system rehabilitation and replacement over the next 10 years, including groundwater treatment upgrades supporting the continued delivery of high-quality drinking water. These rate-supported costs are funded through the Public Works water budget, as approved annually by Council.

6. Local Impact

The Region and its nine local municipalities distribute high quality drinking water collaboratively

Water quality standards are maintained through collaboration between the Region and the nine local municipalities. Although ownership and operation of the water systems is two-tiered, the Region and the local municipalities coordinate construction and operation of highly efficient and integrated systems to provide safe and uninterrupted water supply to our shared customers.

The Region and the local municipalities continue to work closely to ensure capacity allocation and infrastructure constructed throughout the system is appropriately sized and timed to support water quality targets with consideration given to water conservation and distribution system best management practices.

Staff meet quarterly, at minimum, with each local municipality to discuss, coordinate and resolve operational issues. The ongoing partnership has resulted in numerous operational strategies to deliver high quality water to York Region residents.

Each local municipality is independently rated by the Ministry on its local distribution system inspections and drinking water quality test results.

7. Conclusion

The Region’s drinking water systems comply with strict provincial regulations to keep drinking water safe, achieving an overall average score of 99.87% in the 2022-2023 Chief Drinking Water Inspector’s Report. In 2023, 100% of laboratory samples met compliance limits and a single non-compliance was identified through Ministry inspections, while still achieving 100% inspection results, confirming the excellent performance of the Region’s drinking water systems. Ongoing excellence of the Region’s drinking water systems is supported through continual improvement initiatives including data and process management work.

This report satisfies Council reporting requirements in Ontario Regulation 170/03: Drinking Water Systems and supports Council with meeting statutory standard of care requirements under the *Safe Drinking Water Act, 2002*. The drinking water quality and systems data, posted on york.ca/opendata and on york.ca/drinkingwater, satisfy public-facing water quality and systems information reporting requirements under the Act.

For more information on this report, please contact David Szeptycki, Director of Sustainability, Communication and Innovation at 1-877-464-9675 ext. 75723, or Richard Walker, Director of Water and Wastewater (A) at 1-877-464-9675 ext. 75311. Accessible formats or communication supports are available upon request.

Recommended by: **Laura McDowell, P.Eng.**
Commissioner of Public Works

Approved for Submission: **Erin Mahoney**
Chief Administrative Officer

March 26, 2024
#16012119

Appendix A – 2023 Summary of Adverse Water Quality Events
Appendix B – 2023 Summary of Inspection Findings
Appendix C – 2023 Performance Data Summaries
Appendix D – 2023 Summary of Expenses

2023 SUMMARY OF ADVERSE WATER QUALITY EVENTS AND CORRECTIVE ACTIONS

The Ministry of Environment, Conservation and Parks and the Region's Medical Officer of Health was satisfied with corrective actions taken for all events in the summary below and had no further direction. For more information on the Adverse Water Quality Events in this Appendix, refer to the "Analysis" section of the report.

Ansnorveldt DWS

There were no adverse water quality events for this drinking water system.

Aurora Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

Ballantrae-Musselman's Lake Drinking Water System

There were no adverse water quality events for this drinking water system.

Georgina Drinking Water System

Description	Date	Test Result	Corrective Action
Fluoride > 1.5 mg/L	May 15	1.58 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.

Holland Landing Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

Keswick Sub-System (York Drinking Water System)

Description	Date	Test Result	Corrective Action
Filter Performance	Apr 17	No Coagulant	Operator attended site, restored facility to normal operation.
Fluoride > 1.5 mg/L	May 15	1.63 mg/L	Flow halted upon alarm and prevented water from entering the distribution system. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.

King City Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

Kleinburg Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

Mount Albert Drinking Water System

There were no adverse water quality events for this drinking water system.

Newmarket Sub-System (York Drinking Water System)

Description	Date	Test Result	Corrective Action
Sodium > 20.0 mg/L	Apr 19	24.7 mg/L	Operator attended site. Resample taken.

Nobleton Drinking Water System

There were no adverse water quality events for this drinking water system.

Schomberg Drinking Water System

Description	Date	Test Result	Corrective Action
Combined Chlorine Residual > 4.0 mg/L (Regulatory Relief Sites)	Jan 12	4.06 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Feb 1	4.03 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Mar 31	4.17 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.
	Apr 20	4.01 mg/L	Operator attended site, facility restored to normal operation. Compliant grab sample taken.

Sharon/Queensville Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

Stouffville Sub-System (York Drinking Water System)

There were no adverse water quality events for this drinking water system.

York Drinking Water System: Markham, Richmond Hill, Vaughan

Description	Date	Test Result	Corrective Action
Failure to meet monitoring requirement	Mar 29	N/A	Reported as due diligence. Operator attended site. Facility returned to normal operation. Compliant grab sample taken.

2023 SUMMARY OF INSPECTION FINDINGS AND CORRECTIVE ACTIONS

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Municipality: **Aurora**		
Aurora DWS November 10, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **East Gwillimbury**		
Holland Landing DWS November 30, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Mount Albert DWS June 26, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Queensville DWS November 17, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Municipality: **Georgina**		
Georgina DWS Oct 12, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Keswick DWS November 2, 2023	100	One non-compliance finding and no best management practice recommendations from this inspection: • The filtration process must always use a chemical coagulant when the treatment plant is in operation. Flow monitoring for the coagulant system was installed to automatically shut down the plant when low or no coagulant flow is detected. Staff received training on the upgrades.
Municipality: **King**		
Ansnorveldt DWS June 27, 2023	100	No non-compliance findings and two best management practice recommendations from this inspection: • Ensure every alarm triggered during maintenance, all adjustments to equipment, and every response to an alarm is recorded in the facility logbook by the person performing the work and not only in the remote operations center's logbook. Record-keeping training will highlight this best practice. • Initiate a logbook dedicated to changes to alarm set points. Record keeping procedure updated to include documentation of alarm set point response; record-keeping training will highlight the importance of documenting changes to alarm set points.
King City DWS June 30, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
Nobleton DWS October 12, 2023	100	No non-compliance findings and two best management practice recommendations from this inspection: • Submit detailed Contact Time (disinfection) calculations for reference purposes to the Ministry's Water Permissions team. Calculations were submitted as recommended. • In addition to formal record keeping protocols for instructions from field operators to remote operators, document instructions about when to disregard alarms in the facility logbook. Record keeping protocols are being reviewed. Alarm instructions related to reportable adverse water quality events will be documented in the logbook.
Schomberg DWS August 14, 2023	100	No non-compliance findings and two best management practice recommendations from this inspection: • Ensure every onsite alarm response is documented in the facility logbook by the responding operator and not only in the remote operations center's logbook. Updated record-keeping training will highlight this best practice. • UV alarm summary reports contained limited details for each alarm. Recommendation to add more detail in the UV alarm reports or formally document data evaluated during review of these reports to support potential process optimization. Staff are evaluating possible improvements to UV alarm reports management.
Municipality: **Markham, Richmond Hill, Vaughan**		
York DWS November 8, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **Newmarket**		
Newmarket DWS November 14, 2023	100	No non-compliance findings and one best management practice recommendation from this inspection: • Review the alarm management process to reduce the chance of an alarm accidentally remaining in a disabled state after maintenance. Staff reviewed the existing Alarm Management

System Name and Inspection Date	Inspection Score (%)	Summary of Findings and Corrective Actions
		Program at the inspected facilities and continue to monitor across all Regionally operated facilities.
Municipality: **Vaughan**		
Kleinburg DWS February 8, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Kleinburg DWS June 13, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Municipality: **Whitchurch-Stouffville**		
Ballantrae DWS June 26, 2023	100	No non-compliance findings or best management practice recommendations from this inspection.
Stouffville DWS August 16, 2023	100	No non-compliance findings and one best management practice recommendation from this inspection: • Update administrative details in the Drinking Water Works Permit when it is renewed. Staff updated the details related to pump type during the Permit renewal process.

2023 PERFORMANCE DATA SUMMARIES FOR YORK REGION'S DRINKING WATER SYSTEMS (DWS)

2023 Water Quality & Capacity Summary
Ansnorveldt DWS

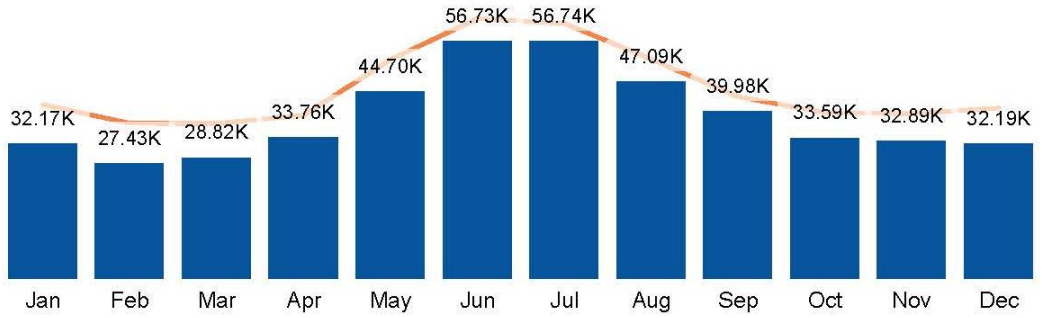
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Ansnorveldt DWS.

Chlorine	Fluoride	Sodium	Lead
1.56 mg/L	0.26 mg/L	42 mg/L	Not Detected (<0.0005 mg/L)

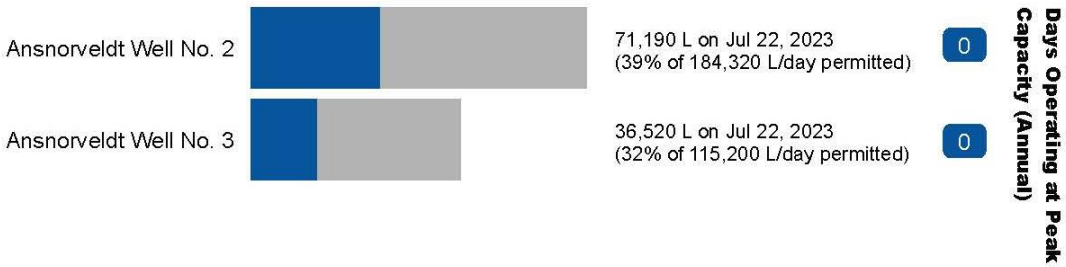
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Ansnorveldt DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Aurora DWS

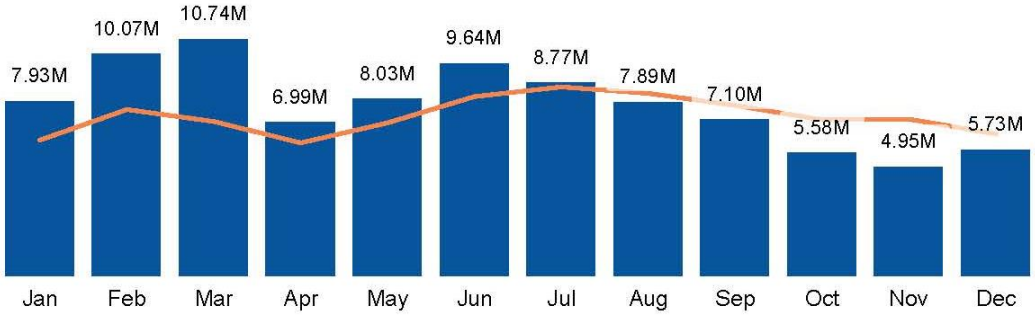
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Aurora DWS.

Chlorine	Fluoride	Sodium	Lead
2.49 mg/L	0.56 mg/L	19 mg/L	Not Detected (<0.0005 mg/L)

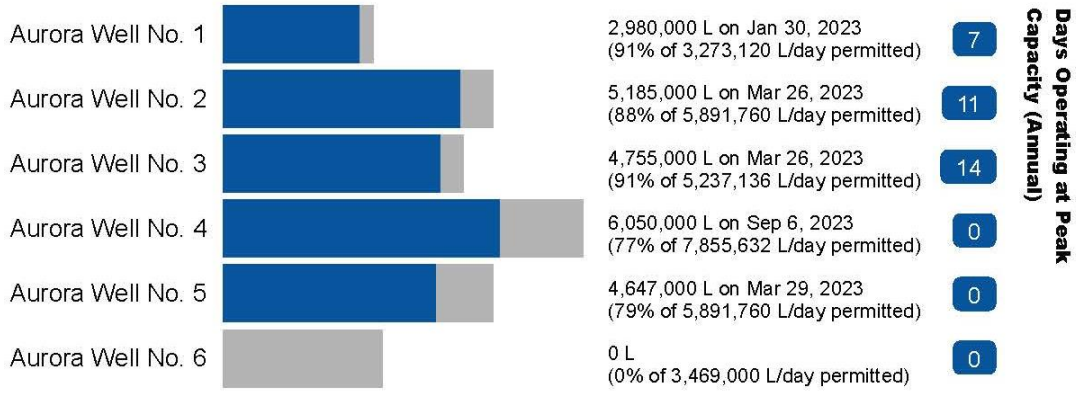
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Aurora DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Ballantrae/Musselman's Lake DWS

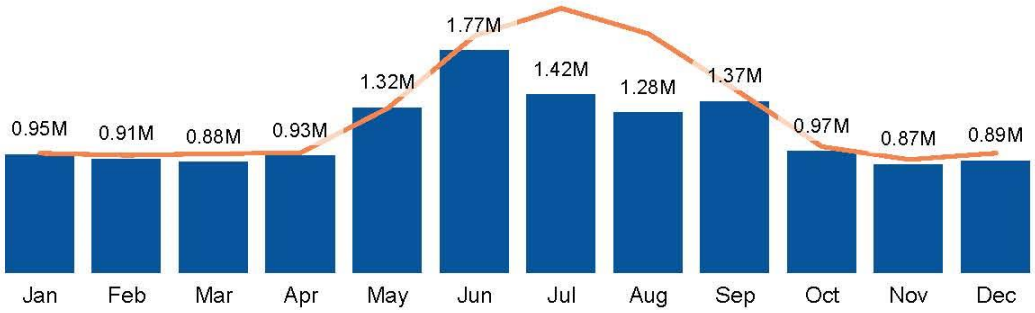
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Ballantrae/Musselman's Lake DWS.

Chlorine	Fluoride	Sodium	Lead
1.57 mg/L	0.08 mg/L	12 mg/L	Not Detected (<0.0005 mg/L)

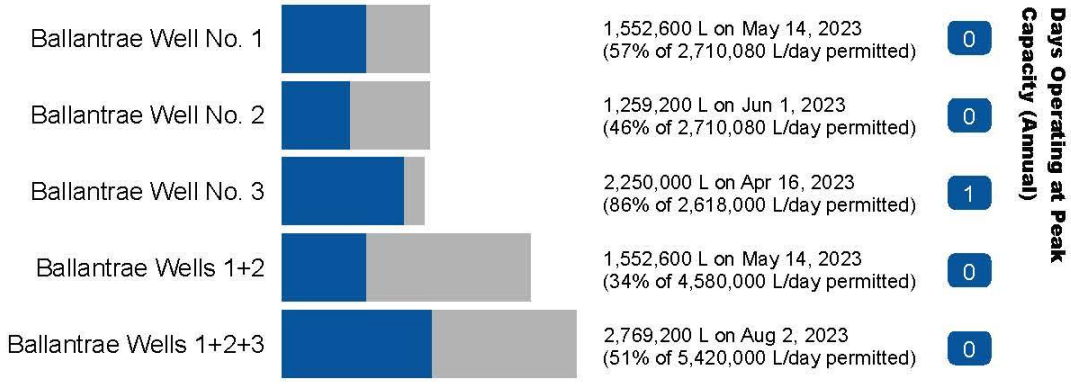
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Ballantrae/Musselman's Lake DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Georgina DWS

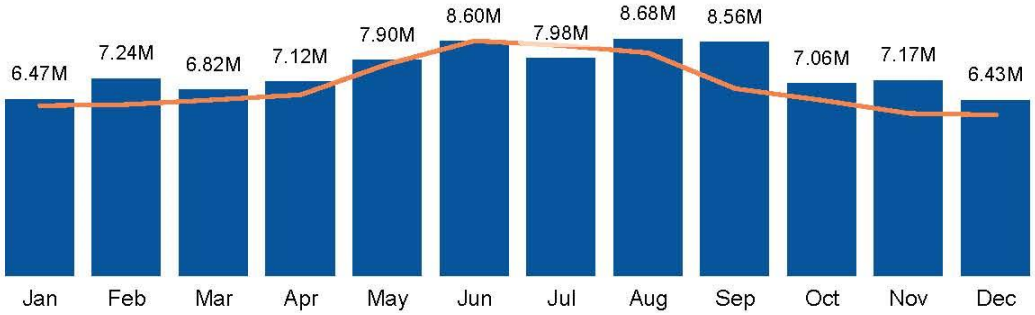
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Georgina DWS.

Chlorine	Fluoride	Sodium	Lead
1.67 mg/L	0.69 mg/L	35 mg/L	Not Detected (<0.0005 mg/L)

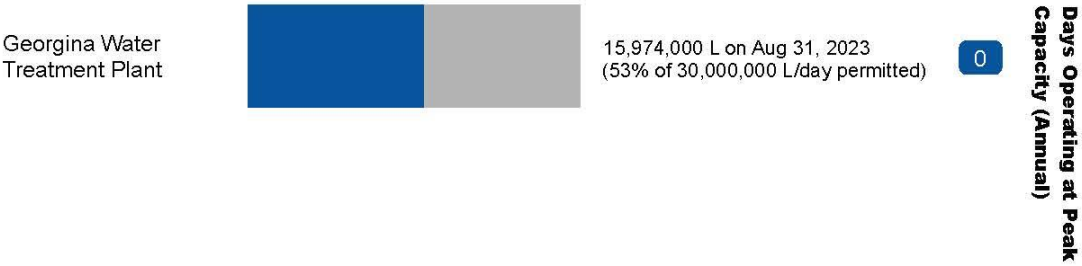
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Georgina DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Holland Landing DWS

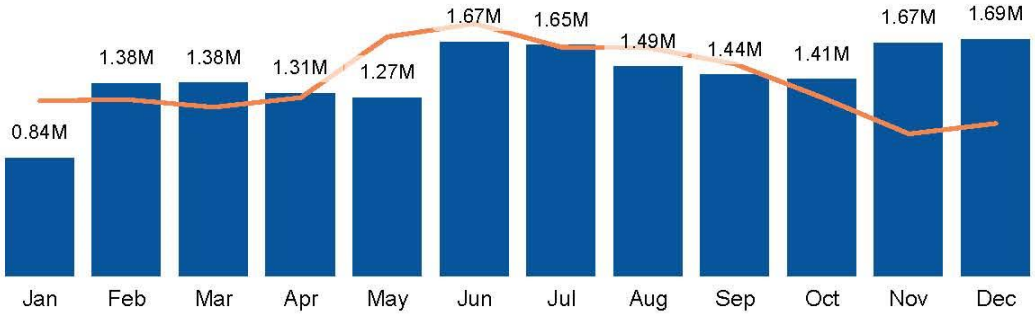
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Holland Landing DWS.

Chlorine	Fluoride	Sodium	Lead
2.52 mg/L	0.22 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

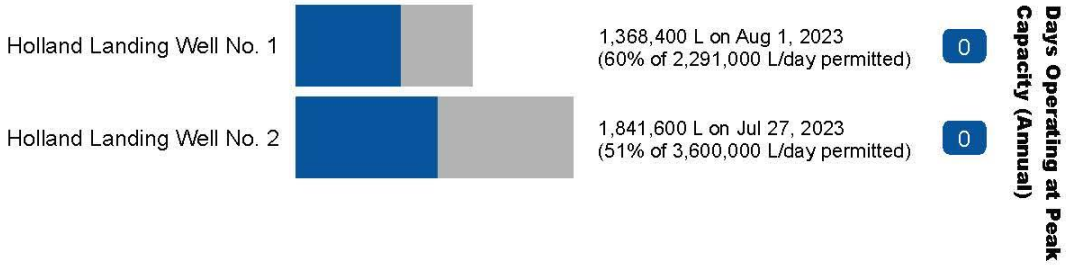
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Holland Landing DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Keswick DWS

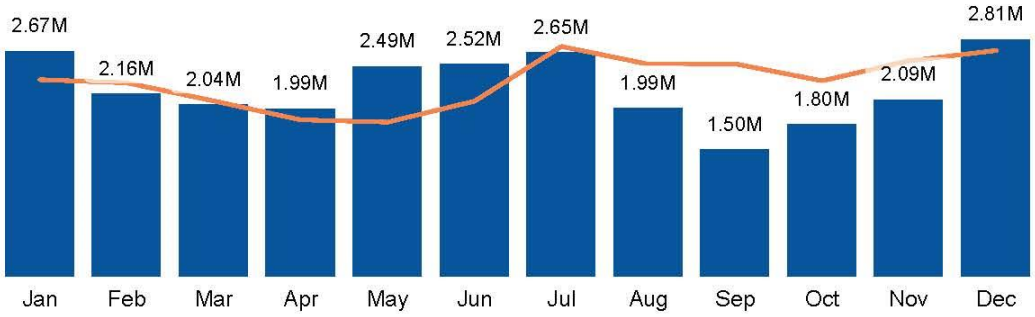
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Keswick DWS.

Chlorine	Fluoride	Sodium	Lead
1.42 mg/L	0.69 mg/L	36 mg/L	Not Detected (<0.0005 mg/L)

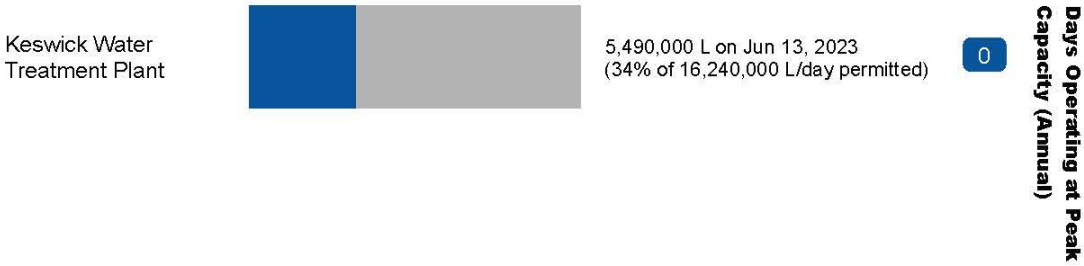
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Keswick DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
King City DWS

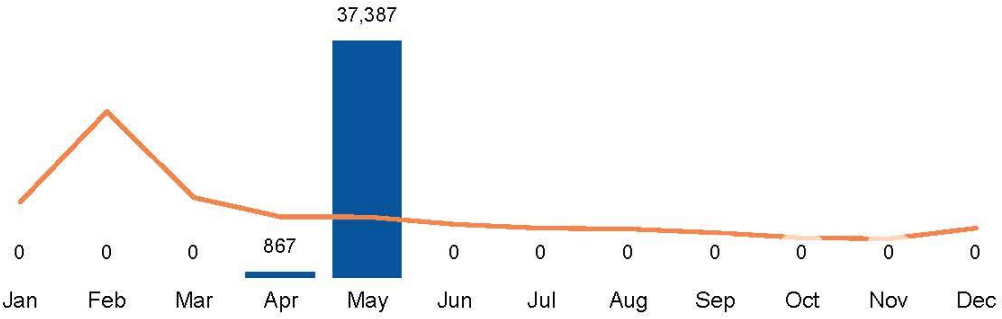
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the King City DWS.

Chlorine	Fluoride	Sodium	Lead
1.77 mg/L	0.63 mg/L	28 mg/L	Not Detected (<0.0005 mg/L)

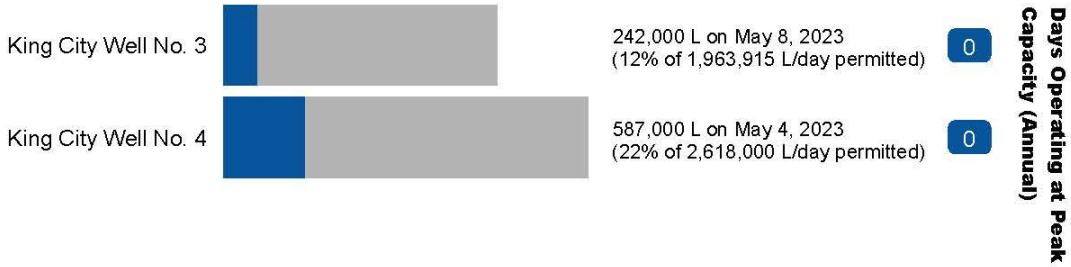
System Monthly Average Flow

The following chart shows the average flow of water withdrawn from wells to maintain standby availability in litres per day (L/day) each month in the King City DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Kleinburg DWS

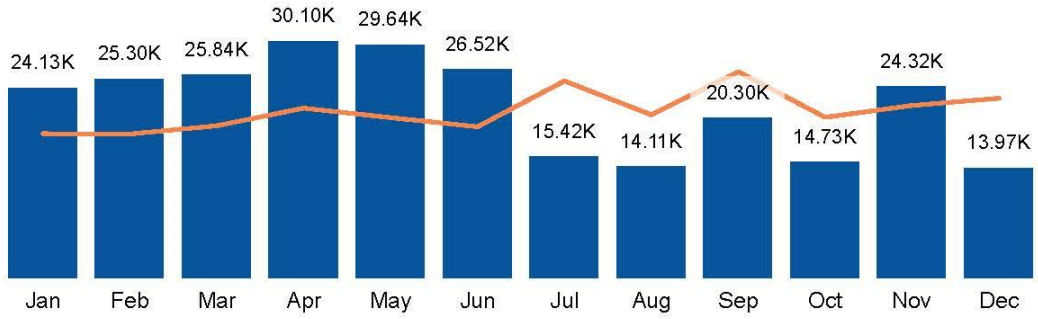
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the Kleinburg DWS.

Chlorine	Fluoride	Sodium	Lead
1.83 mg/L	0.62 mg/L	18 mg/L	Not Detected (<0.0005 mg/L)

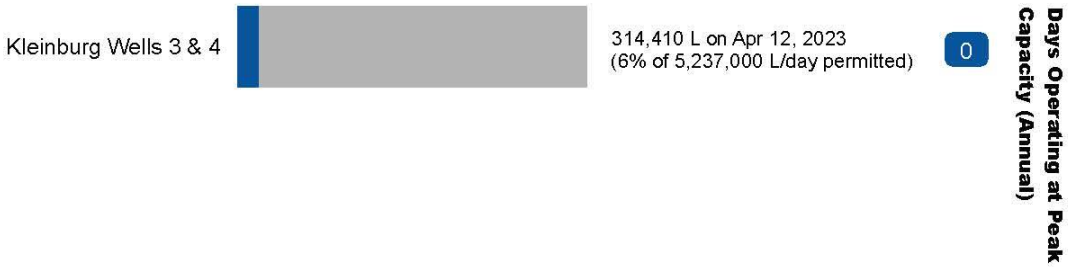
System Monthly Average Flow

The following chart shows the average flow of water withdrawn from wells to maintain standby availability in litres per day (L/day) each month in the Kleinburg DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Mount Albert DWS

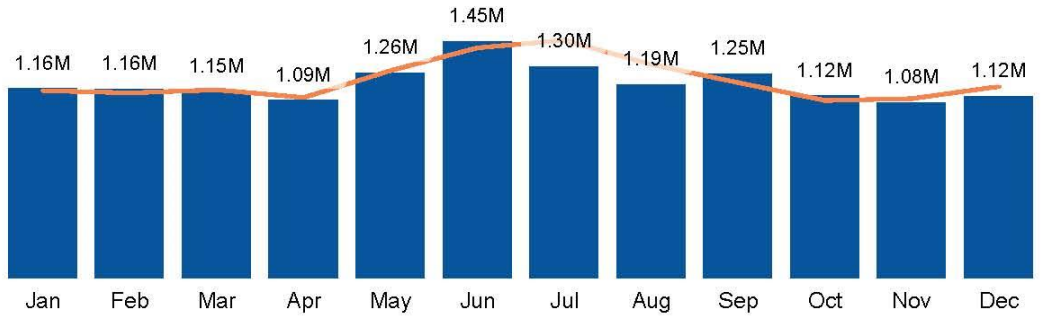
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Mount Albert DWS.

Chlorine	Fluoride	Sodium	Lead
1.50 mg/L	0.06 mg/L	14 mg/L	Not Detected (<0.0005 mg/L)

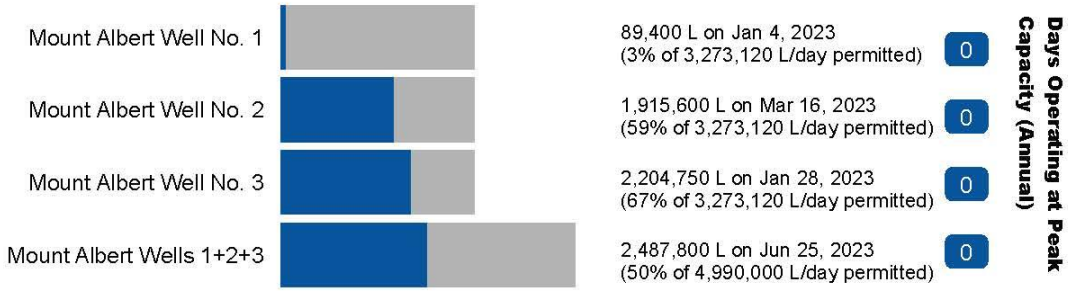
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Mount Albert DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Newmarket DWS

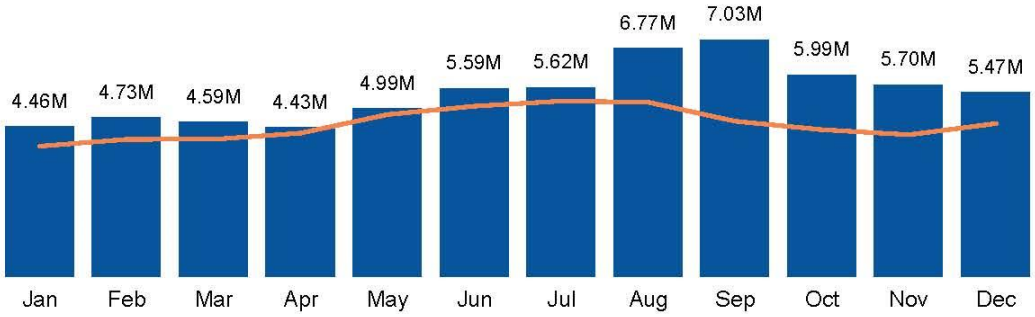
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Newmarket DWS.

Chlorine	Fluoride	Sodium	Lead
2.53 mg/L	0.46 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

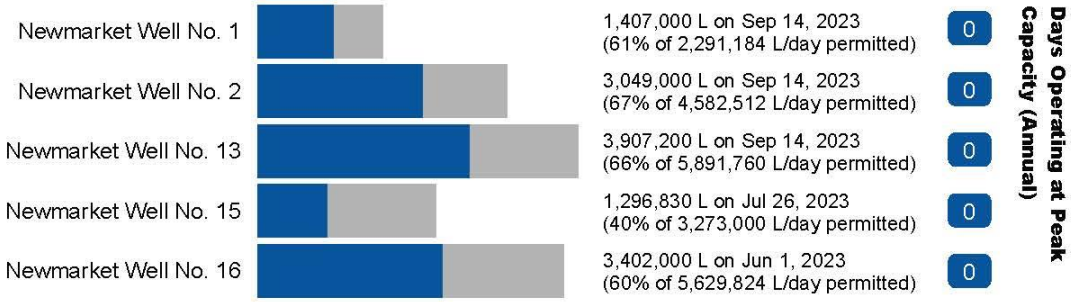
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Newmarket DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Nobleton DWS

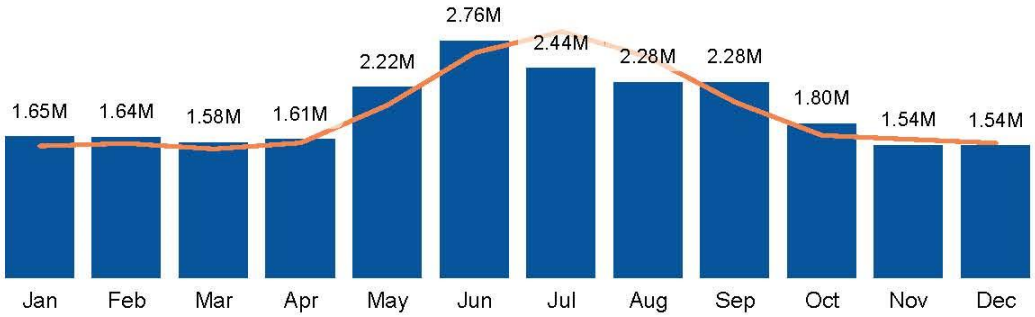
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Nobleton DWS.

Chlorine	Fluoride	Sodium	Lead
1.84 mg/L	0.12 mg/L	15 mg/L	Not Detected (<0.0005 mg/L)

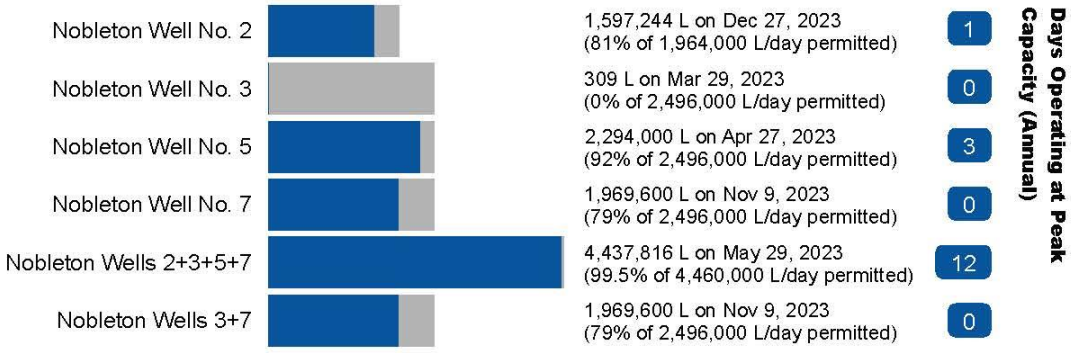
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Nobleton DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Schomberg DWS

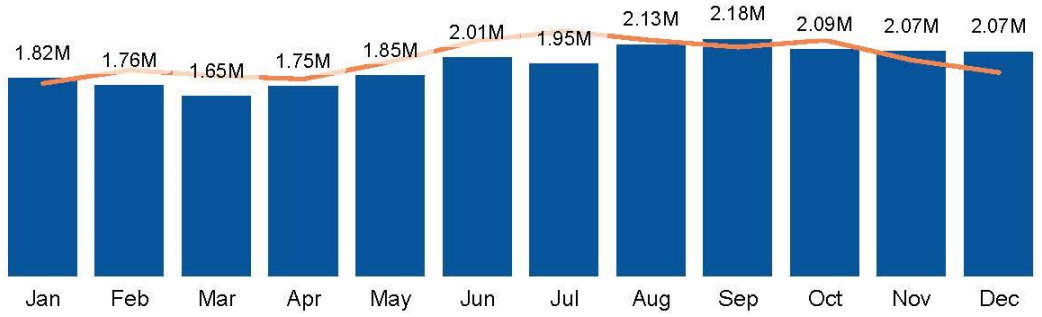
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Schomberg DWS.

Chlorine	Fluoride	Sodium	Lead
3.27 mg/L	0.17 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

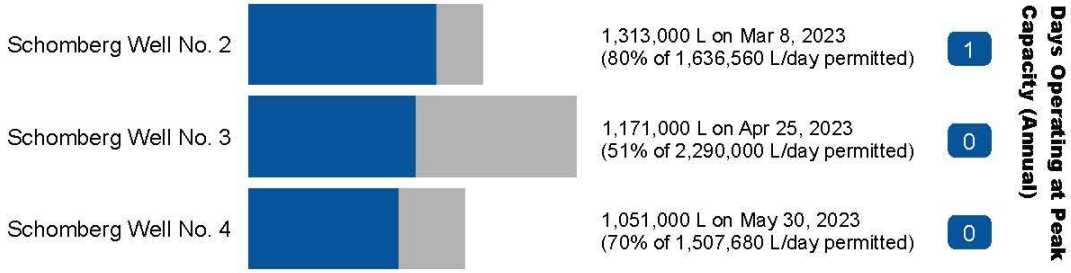
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Schomberg DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Sharon/Queensville DWS

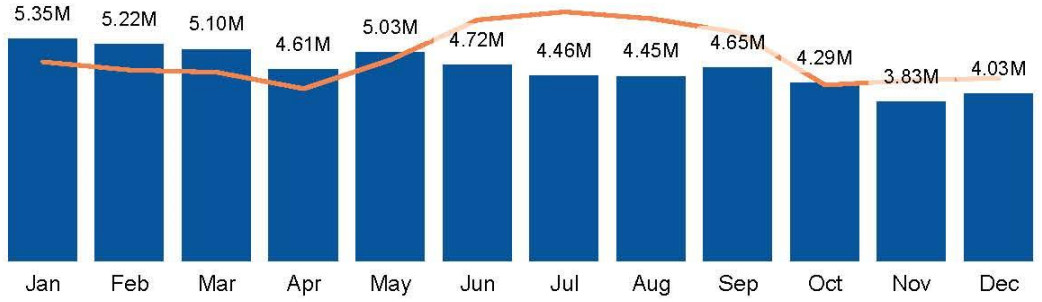
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Sharon/Queensville DWS.

Chlorine	Fluoride	Sodium	Lead
2.54 mg/L	0.21 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

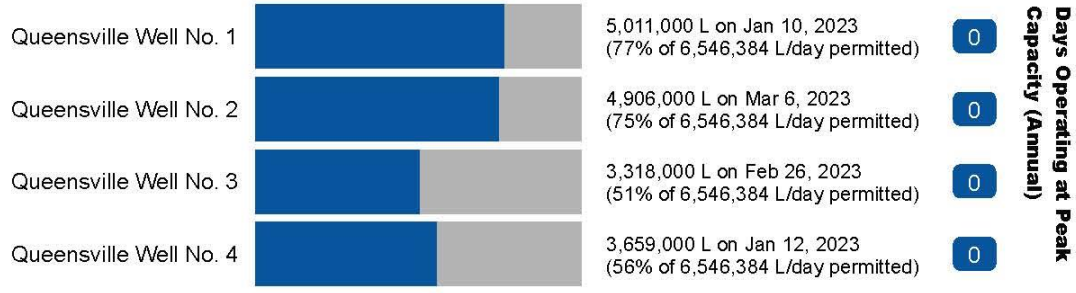
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Sharon/Queensville DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary
Stouffville DWS

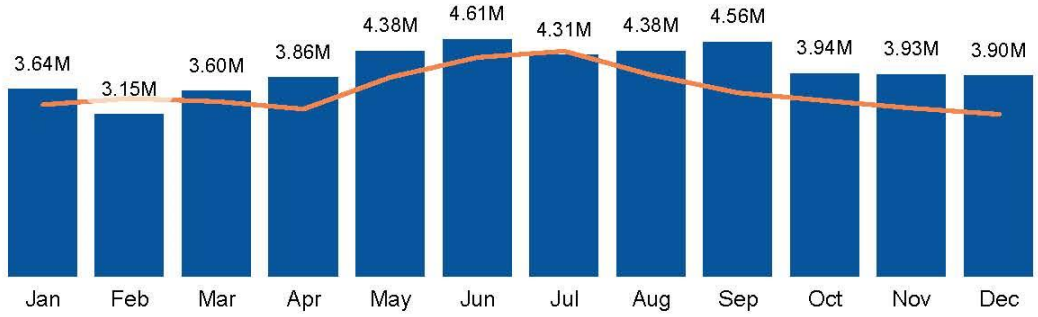
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from treatment and distribution facilities in the Stouffville DWS.

Chlorine	Fluoride	Sodium	Lead
1.60 mg/L	0.11 mg/L	56 mg/L	Not Detected (<0.0005 mg/L)

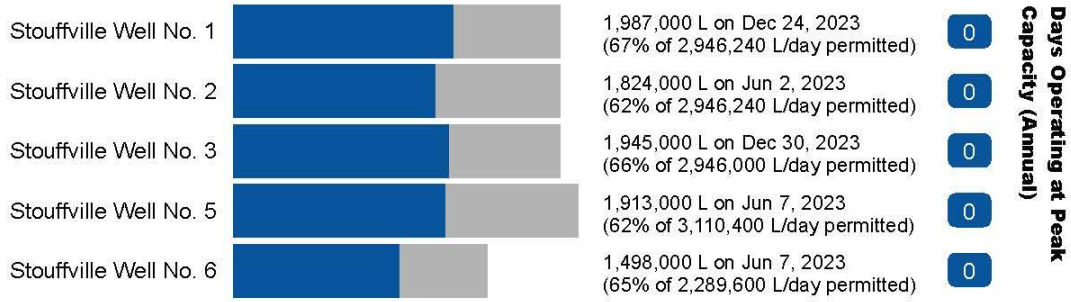
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Stouffville DWS compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Volumes

The following chart shows the maximum volume of water in a single day from each water supply facility (blue bar) compared to the maximum permitted by the Ministry of the Environment, Conservation and Parks (grey bar). Also shown to the right is the number of days where the water supply facilities were operating at peak capacity (greater than 80% of the permitted volume).



2023 Water Quality & Capacity Summary

York DWS Vaughan | Richmond Hill | Markham

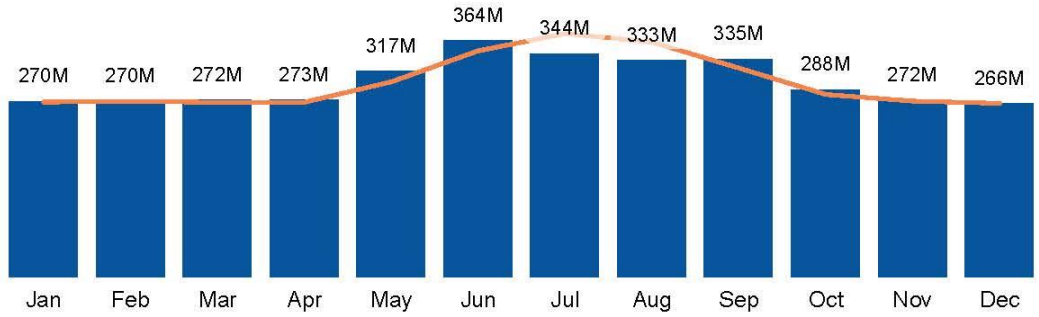
Top Requested Water Quality Parameters

Drinking water is monitored for a wide range of chemical parameters through a combination of continuous monitoring by online analyzers and routine grab samples by operators. The following annual average concentrations in milligrams per litre (mg/L) were reported from distribution facilities in the York DWS.

Chlorine	Fluoride	Sodium	Lead
1.68 mg/L	0.62 mg/L	19 mg/L	Not Detected (<0.0005 mg/L)

System Monthly Average Flow

The following chart shows the monthly average consumption in million litres per day of purchased Lake Ontario water compared to the 5 year historical average (orange line).



Permitted and Actual Maximum Daily Withdrawal

The City of Toronto and Peel Region supply water to York Region under water supply agreements. The following chart shows the maximum volume of water purchased from each municipality in a single day (blue bar) compared to the maximum flow permitted under the applicable water supply agreement (grey bar).

2023 SUMMARY OF EXPENSES TO INSTALL, REPAIR OR REPLACE REQUIRED EQUIPMENT

This summary fulfills reporting requirement under *Ontario Regulation 170/03 – Drinking Water Systems* to summarize any major expenses incurred to install, repair or replace required equipment. Operating costs are not reflected in these totals.

Drinking Water System	Description of Monetary Expenses	Total
Municipality: **Aurora**		
Aurora Drinking Water Sub-System	Standby power generator replacement, watermain replacement, treatment facility and pumping stations upgrades, valve chamber rehabilitation, well rehabilitation, pump rehabilitation, general maintenance and repairs	$ 14,178,940
Municipality: **East Gwillimbury**		
Holland Landing Drinking Water Sub-System	New facility design, hydro installation, valve chamber rehabilitation and upgrades, new watermain design, general maintenance and repairs	$ 1,448,170
Mount Albert Drinking Water System	Valve chamber rehabilitation, wells rehabilitation, pump maintenance, wells upgrades design, general maintenance and repairs	$ 258,258
Sharon-Queensville Drinking Water Sub- System	Treatment facility upgrades design, valve chamber rehabilitation, general maintenance and repairs	$ 408,733
Municipality: **King**		
Ansnorveldt Drinking Water System	General maintenance and repairs	$ 128,500

Drinking Water System	Description of Monetary Expenses	Total
King City Drinking Water Sub-System	Valve chamber rehabilitation, well rehabilitation, pump maintenance, general maintenance and repairs	$ 283,224
Nobleton Drinking Water System	New well installation, facility upgrades, well rehabilitation, well replacement, pump maintenance, general maintenance and repairs	$ 3,574,655
Schomberg Drinking Water System	Well rehabilitation, pump maintenance, general maintenance and repairs	$ 778,197
Municipality: **Newmarket**		
Newmarket Drinking Water Sub-System	Storage facility rehabilitation and upgrades, treatment facility upgrades, valve chamber rehabilitation and upgrades, well rehabilitation, pump maintenance, general maintenance and repairs	$ 6,211,477
Municipality: **Georgina**		
Georgina Drinking Water System	Treatment facility rehabilitation and upgrades, standby power generator upgrades, valve chamber rehabilitation, general maintenance and repairs	$ 4,042,103
Keswick Drinking Water Sub-System	Facility upgrades design, valve chamber rehabilitation, general maintenance and repairs	$ 296,792
Municipality: **Whitchurch-Stouffville**		
Ballantrae-Musselman's Lake Drinking Water System	Storage facility rehabilitation and upgrades, valve chamber rehabilitation, general maintenance and repairs	$ 270,819

Drinking Water System	Description of Monetary Expenses	Total
Stouffville Drinking Water Sub-System	Storage facility upgrades, valve chamber rehabilitation, well rehabilitation, pump maintenance, general maintenance and repairs	$ 378,864
Municipality: **Markham, Richmond Hill, Vaughan**		
Kleinburg Drinking Water Sub-System	Well rehabilitation, pump maintenance, general maintenance and repairs	$ 131,550
York Drinking Water System	Storage facility rehabilitation and upgrades, repairs and upgrades on Peel feedermain, standby power and fuel storage generator upgrades, valve chamber upgrades and rehabilitation, pump maintenance, watermains installation, replacement and rehabilitation, general maintenance and repairs	$ 32,943,095
Total:		$ 65,333,377

Accessible formats or communication supports are available upon request.
Contact Corporate Communications at 1-877-464-9675 ext. 71234 or
yrcorporatecommunications@york.ca