Clause 9 in Report No. 4 of Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on March 29, 2018.

9

2017 Drinking Water Systems Report

Committee of the Whole recommends adoption of the following recommendation contained in the report dated February 16, 2018 from the Commissioner of Environmental Services:

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

Report dated February 16, 2018 from the Commissioner of Environmental Services now follows:

1. Recommendation

It is recommended that:

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

2. Purpose

This report and included attachments, along with the information released online, satisfies reporting requirements in Ontario Regulation 170/03 – Drinking Water Systems, and helps Council to meet its Standard of Care requirements in the *Safe Drinking Water Act, 2002*.

3. Background

Drinking water system owners report annually to Council and the public to comply with the *Safe Drinking Water Act, 2002*

The Ministry of the Environment and Climate Change (the Ministry) regulates drinking water systems in Ontario. The *Safe Drinking Water Act, 2002,* (the Act) requires municipal drinking water system owners to report annually on the quality and quantity of drinking water produced.

This year, the regulatory requirement is satisfied through:

- This report, presentation and attachments to Council and Committee
- Water quality Section 11 reports available at york.ca/drinkingwater

In addition, the newly developed online reporting tool provides enhanced customer accessibility to the information, available through York Region's Drinking Water webpage at york.ca/drinkingwater

Report helps Council exercise due diligence and meet its Standard of Care under the Act

In 2000, seven people died and thousands became ill from municipal drinking water severely contaminated with E. coli bacteria in Walkerton, Ontario. A range of contributing factors was identified. As a result of this tragedy, the Province developed the *Safe Drinking Water Act, 2002* to address some of these factors and reduce the risk of drinking water related illness.

The Act imposes a Standard of Care upon individuals with decision making authority over municipal drinking water systems. Consequently, Council is in a unique position to protect the people in their community by demonstrating a level of diligence over the delivery of water services. Council's due diligence ensures York Region's drinking water systems continue to provide safe, high quality drinking water.

Council members fulfil this duty through their ongoing commitment and efforts on Regional Council. Council direction ensures financial sustainability of its water systems, asset management strategy implementation and continuous improvement actions to proactively manage risks. This report summarizes 2017 information that supports Council in their Standard of Care including:

- Process improvements to enhance operational diligence and collaboration to continually improve drinking water operations
- Water quality and water quantity performance

- Major drinking water system expenses incurred
- Reported adverse water quality events and associated corrective actions, and a summary of Ministry inspection findings and associated corrective actions (Attachments 1 and 2)
- Summary of the new online reporting tool for each Drinking Water system (Attachment 3)

York Region's Medical Officer of Health is a key partner in mitigating and monitoring potential public health risks related to drinking water

The Region's Medical Officer of Health plays a key role in protecting public health through safe drinking water by assessing any potential health impact from an adverse water quality test result, and may direct the owner of a drinking water system to take corrective actions beyond what is prescribed by regulations.

In the event of a water emergency, procedures are in place to ensure close cooperation between the Medical Officer of Health, the Region, the local municipalities and the Ministry to ensure effective communication with the public to protect public health. Environmental Services and Public Health maintain a 24/7 response process to address potential water quality issues.

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

A key recommendation resulting from the Walkerton tragedy is a multi-barrier approach to drinking water quality and safety. Elements of this approach include source water protection, training of operators, a drinking water quality management standard (DWQMS), and a strict Provincial inspection and enforcement program. The multi-barrier approach ensures both preventive and corrective actions are taken to protect drinking water quality.

Environmental Services staff continue to identify and mitigate current and future threats to drinking water sources. The 2017 Report on Source Water Protection Implementation was presented to Committee of the Whole on January 18, 2018. York Region continues to develop and participate in top quality Operator training. The management standard protects public health by mandating consistent practices for managing and operating water systems and by identifying and mitigating risks. York Region facilities are regularly inspected by the Ministry, and staff maintain a positive working relationship with regulators to identify and mitigate risks identified in our watersheds.

The 2017 Integrated Management System Update Report, (also on today's agenda) provides more information on the Region's continual improvement efforts to proactively manage risks to drinking water systems.

York Region's drinking water sampling program and monitoring tools protect public health and safety

York Region uses a variety of monitoring methods to address the unique needs of each water system. Online analyzers and a comprehensive sampling program allow staff oversight of individual facilities. Enhanced monitoring above minimum regulatory requirements provides valuable information that is used to support our industry leading drinking water operations. Some examples include:

- Online analyzers continuously monitor many regulated parameters, and automatic shut offs stop the flow of drinking water when these parameters approach regulatory limits

- A comprehensive sampling program includes both regulatory and research samples and is frequently updated in response to operational needs and regulation changes

- Analyzers and dosing equipment are calibrated during regularly scheduled preventive maintenance and are recalibrated as needed by trained operators and technologists to ensure accurate readings

4. Analysis and Implications

RESEARCH AND INNOVATION

Environmental Services collaborates to drive improvement and is recognized as one of the Leading Utilities of the World

2017 saw many Council-approved and staff-driven process improvements across the Region's drinking water systems. Innovation drives performance and efficiency across all systems. By supporting Environmental Services' efforts in research and innovation, Council demonstrates due diligence and commitment to their Standard of Care for continually improving drinking water performance and mitigating future risks. The Update on Water and Wastewater Research and Innovation Memo on today's agenda provides more details on this innovative and challenging work. Remote monitoring and data communication systems were enhanced for performance and security, and infrastructure received carefully selected upgrades. New in-house and Ministry approved training was developed to support Operators and informed by research and regulatory updates. These

successful improvements are the result of collaboration across all branches within Environmental Services.

Research and innovative thinking guide the automation and technology that support York Region's reputation as a leading utility provider. Often, public utilities are locally focused and disconnected from global neighbours. In 2017, York Region was inducted into the Leading Utilities of the World network. Membership indicates a gold standard of utility innovation and performance, and provides access to industry experts and offers the opportunity to share best practices with other leading utilities around the world.

Open Data and online reporting tool support Vision 2051 and the 2015-2019 Strategic Plan

Open data is the release of easy to access government data for public use. The Federal and Provincial governments, and most major municipalities in Canada participate in Open Data. Open Data increases transparency, promotes understanding of government, and fosters trust among customers by proactively making data publicly available. Environmental Services is committed to contribute to the Region's growing Open Data program.

Publishing the annual drinking water report data through Open Data:

- Meets the 2015-2019 Strategic Plan objective to provide greater access to Regional information, increase the number of datasets online and increase visits to Regional websites

- Supports the Vision 2051 goal area of Open and Responsive Governance

Access to the drinking water Open Datasets is available at york.ca/opendata

The new online reporting tool hosted on York Region's Drinking Water Quality webpage, york.ca/drinkingwater, replaces the previous printed Summary Report, and showcases essential reporting details from the Open Dataset in a user-friendly, self-serve interface. This initiative supports the Region's commitment to accessibility, customer service, and to be a leader in public services.

WATER QUALITY PERFORMANCE

Public health and safety has been maintained at all times, including during adverse water quality events

York Region reports all adverse water quality parameters and observations to the Ministry and the Region's Medical Officer of Health, and in some instances, over and above what is required by regulation as a due diligence measure. York Region follows a conservative approach by consistently reporting analyzer

readings that appear to represent performance outside the regulated requirements. Adverse water quality incidents must be reported immediately with a written follow-up report provided within twenty-four hours, therefore reporting these types of incidents as due diligence ensures compliance. Determining the cause of the readings can take several days. The strict documentation process identifies the contributing factors to systematically analyze the causes of the events and develop case-specific action plans to drive continual improvement. An example of this includes continuous analyzer readings for parameters related to disinfection:

- Optimization projects recently completed on new equipment at facilities in Aurora, Newmarket and Schomberg have proven effective in preventing most of the triggers for adverse readings and has decreased adverse events reported as due diligence from these facilities

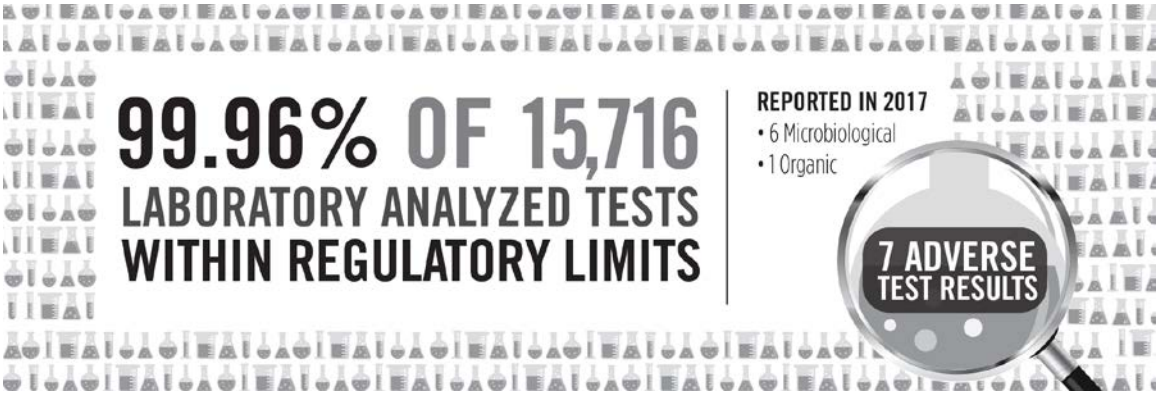
The strong working relationship between Public Health, the Ministry and the operations' teams is demonstrated with:

- Quick operator response and transparent communication for all events
- No additional corrective actions directed for any reported event by the Ministry or by the Medical Officer of Health
- Regular collaboration between Environmental Services, the Ministry, and Public Health for action plans and process improvements
- No water use restriction advisories due to water quality concerns have been issued by the Medical Officer of Health in more than a decade

99.96 per cent of laboratory analyzed samples in 2017 within regulated standards and confirm York Region's high quality drinking water continues to be safe

In 2017, York-Durham Laboratory performed 15,716 water quality tests for York Region's drinking water systems, resulting in only seven reported adverse test results. This means 99.96 per cent of all samples collected and analyzed by the laboratory in 2017 were within regulated standards (see Figure 1). The laboratory initiates the reporting process when analysis indicates a parameter is outside regulatory limits. Staff responded to each adverse test result and performed corrective actions accordingly.

Figure 1
Adverse Water Quality Events Reported from Laboratory Analyzed Test Results in 2017



Attachment 1 includes a list of all adverse laboratory samples and the corrective actions taken by staff. Figure 1 and Table 1 summarize the laboratory analyzed water quality test results reported as adverse water quality events in 2017.

Table 1
Adverse Water Quality Events Reported from Laboratory Analyzed Test Results in 2017

Parameter	Discussion
Microbiological (6 of 7)	• Total Coliform bacteria detected in Newmarket and in King City. - In King City, Total Coliform including E. coli were detected in one sample following construction activities. The storage facility was offline and no water was sent to users. The facility was thoroughly flushed and re-disinfected. Resample results and ongoing weekly sampling results confirm these tests were an anomaly. - In Newmarket, Total Coliform was detected at two storage facilities. One facility was offline for maintenance and was thoroughly flushed and re-disinfected. The second facility did not require draining. Resample results and ongoing weekly sampling results confirm these tests were an anomaly. • As a precaution, staff also reviewed sample collection and handling procedures
Organic Compound (1 of 7)	• Dichloromethane is an organic solvent and was detected at trace amounts at Holland Landing Well 1, with a concentration of 0.057 mg/L against the regulated limit of 0.05 mg/L. Resample results were non-detectable for Dichloromethane

System performance is monitored continuously and automatic safeguards stop water flow when approaching regulatory limits

In addition to sampling by operators, 340 online analyzers continuously monitor system performance. Analyzers monitor several parameters, including chlorine residual which is also known as the “disinfection level”, creating approximately 36 million records in 2017. When analyzers detect an issue, the system shuts down facility operation until an operator takes action.

Given the robust nature of the system, water can be drawn from different parts of the system while staff correct the conditions that resulted in the alarm. A team of control panel operators monitor the system and dispatch operators to respond to alarms or unusual trends. Facilities can only return to operation after an operator attends the site to inspect the equipment, manually test the water, and complete any other required corrective actions including confirming the water quality is acceptable.

Analyzers remotely monitor system performance, 99.99 per cent of analyzer readings complied with regulated standards

Staff reported 96 adverse system performance events in 2017. In every occurrence, the flow of water was stopped by automatic safeguards. Analyzers record point-in-time measurements. Occasional high or low readings on an analyzer are not representative of overall disinfection level in the distribution system.

- 59 of these events occurred at storage and re-treatment facilities. Several of these facilities are new or have been recently upgraded, therefore equipment optimization is ongoing to fine tune performance
- More than half of the events self-corrected or required minor adjustment, and required no operator intervention aside from confirming compliant readings and restarting the facility
- 23 events were reported as due diligence or best management practice

Attachment 2 includes the reported system performance events detected with continuous monitoring and the actions taken to correct them. Figure 2 and Table 2, below, summarize the continuously monitored analyzer readings reported as adverse water quality events.

Figure 2
Adverse Water Quality Events Reported from Continuous Monitoring Analyzer Readings in 2017

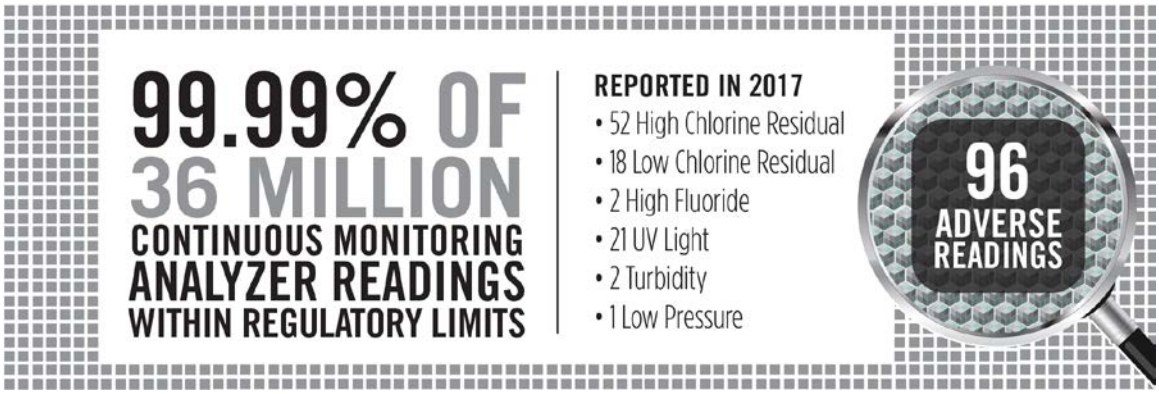


Table 2

Adverse Water Quality Events Reported from Continuous Monitoring Analyzer Readings in 2017

Parameter	Discussion
High Chlorine Residual (high disinfection) (52 of 96)	• Many high residual events occurred at facilities operating near the upper regulatory limit. This practice helps to optimize water quality in areas of the distribution system that are furthest from the treatment source. The local Medical Officer of Health, the Ministry, and local municipalities were consulted when planning this action.
Low Chlorine Residual (low disinfection) (18 of 96)	• Most low disinfection events involve equipment error or maintenance at the time of the alarm. • Corrective actions for low disinfection include collecting grab samples and standardizing analyzers against hand-held equipment. If analyzers are found to be reading low disinfection level correctly, staff backflush the water in cooperation with the local municipality and monitor the chlorine residual until it is compliant.
High Fluoride (2 of 96)	• Fluoride is continuously monitored at the Georgina and Keswick Water Treatment Plants, where it is applied at the optimal level recommended by the Ministry and the Medical Officer of Health. • Fluoride readings approaching the maximum standard trigger immediate facility shut down. In these two events, there was no flow at the time of the alarm and staff recalibrated the equipment to ensure accurate readings. • For each event, an operator backflushed the system to prevent water from leaving the facility and restored the correct dose.
UV (ultraviolet) Light Disinfection Level (21 of 96)	• UV light is used for primary disinfection at some facilities as an alternative to chlorine for primary disinfection. York Region monitors UV continuously at facilities where it is used. • All UV incidents occurred at the Schomberg Water Treatment Plant during equipment upgrades. Staff identified programming enhancements to optimize flow rates and UV disinfection level. • Most 2017 adverse UV dose readings were reported during these enhancements as due diligence since the alarm duration was less than the time defined as reportable by the Ministry. • The local Medical Officer of Health was consulted and had no further direction for these events. The Ministry provided additional direction on what threshold to report UV dose readings.

Parameter	Discussion
Turbidity (2 of 96)	• Turbidity was reported as due diligence at the Keswick Water Treatment Plant. Readings were related to maintenance activities and did not require additional corrective actions.
Low System Pressure (1 of 96)	• Low pressure was reported as a best management practice due to a brief change in flow direction. In 2016, the Region received permission from the Ministry to no longer report low pressure. • The Region continues to investigate and respond to low pressure events, and will report adverse system conditions if there are actual or potential negative impacts to the system.

INSPECTIONS BY THE MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE

York Region top scoring municipality in the Greater Toronto Area and top ranking in Ontario for the Ontario Chief Water Inspector's 2016-2017 Annual Report

Ontario's Chief Drinking Water Inspector releases an annual report rating for drinking water systems. Reporting timelines are based on the Ministry's previous fiscal year from April 1, 2016 to March 31, 2017. York Region achieved top compliance scores for Ministry inspections and for samples meeting provincial water quality standards. Attachment 2 explains the findings and any corrective actions for Ministry inspections conducted in the 2017 calendar year.

- **Inspections:** York Region achieved an overall rating of 99.60 per cent for all systems combined
    - 13 of 15 systems scored 100 per cent
    - Georgina and York Drinking Water Systems received a score of 95.54 and 98.44 per cent, respectively, resulting from noncompliance inspection findings relating to administrative issues in 2015 and 2016 for quality of logbook entries, timing of documentation, and license administration. These issues did not impact water quality or system performance
- **Samples meeting provincial water quality standards:** York Region achieved an overall rating of 99.93 per cent for all systems combined
    - 13 of 15 systems scored 100 per cent
    - Newmarket and Kleinburg Drinking Water Systems received a score of 99.62 and 99.26 per cent, respectively, for samples

meeting provincial water quality standards relating to infrequent presence of total coliform bacteria

The City of Toronto and Peel Region, who supply the majority of York Region's drinking water, also received high scores.

Inspectors evaluate facilities against regulations, licenses, permits and Ministry procedures. There were no risks to public health relating to the deficiencies identified by the Ministry. As demonstrated in Table 3, below, York Region continues to receive top marks on Ministry inspections and sampling results, consistently leading the Province along with our Greater Toronto Area municipal partners and neighbours.

Table 3

Ministry of the Environment and Climate Change
2015-2017 Chief Drinking Water Inspector's Annual Report

Municipality	Inspection Rating (%)		Water Quality Tests Meeting Standards (%)		Overall Score	
	2015-2016	2016-2017	2015-2016	2016-2017	2015-2016	2016-2017
York Region*	**99.73**	**99.60**	**99.96**	**99.93**	**99.85**	**99.77**
Durham Region*	99.72	99.36	99.94	99.95	99.83	99.67
Peel Region*	96.26	97.76	99.95	99.92	98.11	98.84
City of Toronto*	97.46	95.57	99.65	99.72	98.56	97.65
Provincial Average	98.49	98.47	99.89	99.89	99.19	98.18

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

WATER VOLUME AND CAPACITY

All drinking water systems operated within all permitted water volume and capacity limits in 2017

In 2017, all of York Region's drinking water systems operated within the monthly average flow, maximum daily withdrawal and allowable daily withdrawal limits. York 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 the City of Toronto and Peel Region
- The permitted Intra-Basin Transfer volumes for water taken from (and returned to Lake Ontario) for communities in the Lake Huron watershed

York Region continues to ensure sufficient drinking water capacity for the Region's growing population. Maximum permitted volumes in current servicing agreements align with forecasted population growth to 2031 and long term needs will be refined in the upcoming Water and Wastewater Master Plan Update, currently planned for 2021.

5. Financial Considerations

Effective asset management is critical to delivering reliable and sustainable water services

York Region delivers high quality drinking water in a safe and efficient manner. The estimated replacement cost for York Region's water facilities and underground infrastructure is approximately $2.0 billion, accounting for approximately 16 per cent of all the Region's assets. These assets are wholly owned by the Region and do not include shared assets with the City of Toronto and with Peel Region. Effective asset management, including infrastructure maintenance, is critical to the Region's ability to deliver services that are safe, reliable and efficient while sustaining our growing communities. Environmental Services ensures operational excellence by collaboratively planning and prioritizing upgrades, repairs and expansions.

In October 2015, Council approved new 2016 – 2021 water and wastewater rates supported by a detailed analysis described in the Financial Sustainability Plan. The plan was implemented commencing in April 2016, and focuses on achieving full cost recovery pricing in 2021 and eliminating shortfalls in asset management funding.

York Region spent approximately $20.9 million in 2017 to maintain and improve drinking water systems

Section 11 of the Drinking Water Systems regulation requires water utility owners to "describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment."

In 2017, York Region spent approximately $20.9 million installing, repairing or replacing equipment used to treat, store and deliver safe drinking water. Costs are funded through the rate-supported Environmental Services water budget, as approved annually by Council. These expenses are summarized below in Table 4.

Table 4
Summary of Major Expenditures for the Drinking Water Systems in 2017

Drinking Water System (DWS)	Installation, Repair or Replacement Activity	Expenses ($)
Ansnorveldt DWS	General maintenance and repair	$60,556
Ballantrae/Musselman's Lake DWS	General maintenance and repair	$35,438
Mount Albert DWS	General maintenance and repair	$23,161
Nobleton DWS	General maintenance and repair, and elevated tank recoating	$247,623
Schomberg DWS	General maintenance and repair	$134,836
York DWS		
Vaughan, Richmond Hill, Markham communities	General maintenance and repair, Islington watermain rehabilitation, Bathurst watermain emergency replacement	$12,540,586
Aurora sub-system	General maintenance and repair, Ridge Road Pumping Station upgrades	$2,032,794
Holland Landing sub-system	General maintenance and repair, Sherwood Forest Pumping Station electrical upgrades	$458,364
King City sub-system	General maintenance and repair	$20,668
Kleinburg sub-system	General maintenance and repair, one elevated tank recoating, well upgrades	$1,891,170
Newmarket sub-system	General maintenance and repair, Davis Drive meter chamber upgrades, Yonge Street Aquifer rehabilitation, and SCADA upgrades to four elevated tanks, five wells, and five meter chambers	$2,258,879
Queensville sub-system	General maintenance and repair	$38,170
Stouffville sub-system	General maintenance and repair	$148,677

Georgina DWS		
Lakeshore, Sutton Communities	General maintenance and repair, SCADA upgrades to one elevated tank	$656,210
Keswick sub-system	General maintenance and repair, SCADA upgrades to one elevated tank and one reservoir	$314,973
Total		$20,862,105

6. Local Municipal Impact

York Region and the nine local municipalities work together to distribute high quality drinking water

Water quality standards are maintained by collaboration between York Region and the nine local municipalities. Although ownership and operation of the systems is two-tiered, the Region and the local municipalities coordinate operation of the systems to provide safe and uninterrupted water supply to their customers.

York Region collaborates with the nine local municipalities on data transparency and customer service

York Region recognizes the importance of engaging customers online. Transparency of data is an important part of customer service. The Open Dataset and online reporting tool allow anyone to analyze the performance of water systems in a readily accessible and easy to understand format. To support this goal of transparent customer service, the reporting tools were shared for feedback with local municipality water quality groups, data teams, and some Regional Council members.

7. Conclusion

This report and all attachments, along with the drinking water Open Dataset posted on york.ca/opendata and the content on york.ca/drinkingwater, satisfies reporting requirements under the Act. Council is able to demonstrate due diligence required for decision making under the Statutory Standard of Care by reviewing and considering the information on the Region's drinking water systems contained in this report when exercising decision making authority.

York Region's drinking water systems are subject to strict regulations implemented by the Province of Ontario to keep drinking water safe. Results from the 2017 reporting year continue to prove the excellent performance of York Region's drinking water systems. This report demonstrates the Region's commitment to operational excellence through continuous improvement, while also fulfilling our obligation to communicate performance to Council, stakeholders and the public.

For more information on this report, please contact Wendy Kemp, Director, Strategy and Innovation at 1-877-464-9675 extension 75141 or Roy Huetl, Director, Operations, Maintenance and Monitoring at extension 75323.

The Senior Management Group has reviewed this report.

February 16, 2018

Attachments (3)

8207143

Accessible formats or communication supports are available upon request

Attachment 1

Summary of Reported Adverse Water Quality Incidents in 2017

The Ministry of the Environment and Climate Change (MOECC) and the Medical Officer of Health were satisfied with the corrective actions taken for all reported events in the summary below and had no further direction.

Location	Parameter	Event Date(s) (2017)	Result (mg/L unless noted)	Limit (mg/L unless noted)	Corrective Action
Ballantrae-Musselman's Lake Drinking Water System					
Musselman's Lake Elevated Tank	Free Chlorine Residual	March 18 July 4	0.00 0.00	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Georgina Drinking Water System, Keswick Sub-System					
Keswick Water Treatment Plant	Turbidity	March 4* October 12*	2100 NTU Unmeasured reading due to equipment error	1.0 NTU (N/A)	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
	Fluoride as F	June 29 August 28*	1.75 1.51	1.50 maximum	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
	Primary Disinfection	February 15	Pre-treatment chemical ran out, which could have resulted in decreased disinfection performance	N/A	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Keswick West Park Heights Reservoir	Free Chlorine Residual	March 18*	5.00	0.05 to 4.00	Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
Mount Albert Drinking Water System					
Mount Albert Well 3	Free Chlorine Residual	February 28*	4.24	0.05 to 4.00	Operator attended site. Facility returned to normal operation. Compliant grab sample taken.
Nobleton Drinking Water System					
Nobleton North Elevated Tank	Free Chlorine Residual	April 23	0.00	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Nobleton Well 3	Free Chlorine Residual	May 29	0.00	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.

*reported as Best Management Practice or as due diligence measure

Location	Parameter	Event Date(s) (2017)	Result (mg/L unless noted)	Limit (mg/L unless noted)	Corrective Action
Schomberg Drinking Water System					
Schomberg WTP	UV Dose (Primary Disinfection)	August 3 August 10 August 10* August 10* August 11 August 12 August 24 September 1 September 1* September 12 September 13 September 21 September 27 September 29 October 1 October 7* October 20 October 30 November 2 November 29 December 7*	Less than 40 mJ/cm^2 during startup or shutdown	Greater than 40 mJ/cm^2 at peak flow rate	Operator attended site, restored facility to normal operation. All UV incidents occurred during equipment upgrades, and staff identified programming enhancements to optimize flow rates and UV dose. The local Medical Officer of Health was consulted and had no further direction for these events. MOECC clarified UV dose readings do not need to be reported for startup or shutdown low UV dose events lasting less than 10 minutes.
	Combined Chlorine Residual	October 18*	0.24	0.25 to 3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
York Drinking Water System, Aurora Sub-System					
Aurora Ridge Road Reservoir	Combined Chlorine Residual	February 22* August 1* August 1 August 9 September 12 November 22	5.00 4.21 4.91 4.11 4.03 4.58	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Aurora South Reservoir	Combined Chlorine Residual	April 30 May 13 August 9 August 29 August 31 October 4 December 4 December 6 December 21* December 26*	5.00 5.00 4.72 4.99 4.10 4.17 4.76 4.20 4.15 4.06	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.

*reported as Best Management Practice or as due diligence measure

Location	Parameter	Event Date(s) (2017)	Result (mg/L unless noted)	Limit (mg/L unless noted)	Corrective Action
Ridge Road Booster Pumping Station	Combined Chlorine Residual	September 10 October 19	4.14 4.42	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
York Drinking Water System, Holland Landing Sub-System					
Holland Landing Well 1	Dichloromethane	April 12	0.057	0.05	Operator attended site. Resample taken. Resample result non-detectable for dichloromethane.
	Combined Chlorine Residual	April 19 December 17*	0.00 0.22	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Holland Landing Well 2	Combined Chlorine Residual	August 25 August 29 October 2	0.15 0.15 0.00	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Holland Landing West Elevated Tank	System Pressure	March 7*	0 psi	20 psi minimum	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Sherwood Forest Pumping Station	Combined Chlorine Residual	November 23	0.08	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
York Drinking Water System, King City Sub-System					
King City Dufferin Elevated Tank	E. coli & Total coliform (bacteria)	April 17	Presence	Absence	Operator attended site. Resample taken. Resample result non-detectable for e.coli and total coliform.
York Drinking Water System, Newmarket Sub-System					
Glenway Reservoir	Combined Chlorine Residual	March 8 June 19 July 11 August 3 August 6 August 7 August 7* August 13 August 19 August 30 October 12 November 14 November 15 November 15	4.09 4.23 4.08 4.25 4.19 4.41 4.64 4.02 4.24 4.32 0.0 4.26 4.01 4.08	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.

*reported as Best Management Practice or as due diligence measure

Location	Parameter	Event Date(s) (2017)	Result (mg/L unless noted)	Limit (mg/L unless noted)	Corrective Action
Kirby Cres Booster Pumping Station	Total Chlorine Residual	July 20 July 26 July 26* July 28 August 3 October 16	0.00 4.22 4.12 4.31 4.26 4.45	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Newmarket Magna Tank	Combined Chlorine Residual	March 14	4.93	0.25 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Newmarket Southeast Elevated Tank	Total coliform (bacteria)	June 18 August 7 August 9 August 11	Presence Presence Presence Presence	Absence	Operator attended site. Resample taken. Tank isolated until resample result non-detectable for total coliform.
Newmarket Well 1 and 2	Primary Disinfection Contact Time	June 13*	Online trend showed insufficient time	N/A	Operator on-site for equipment upgrade, restored facility to normal operation. Compliant grab sample taken.
Newmarket Well 15	Primary Disinfection Contact Time	June 14*	Online trend showed insufficient time	N/A	Operator on-site for equipment upgrade, restored facility to normal operation. Compliant grab sample taken.
Newmarket West Reservoir	Total coliform (bacteria)	July 3	Presence	Absence	Operator attended site. Resample taken. Resample result non-detectable for total coliform.
York Drinking Water System, Stouffville Sub-System					
Stouffville Booster Station (High Lift)	Free Chlorine Residual	December 12	0.02	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Stouffville Reservoir	Free Chlorine Residual	October 26	0.02	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
Stouffville Wells 1 and 2	Free Chlorine Residual	March 11*	5.00	0.05 to 4.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.

*reported as Best Management Practice or as due diligence measure

Location	Parameter	Event Date(s) (2017)	Result (mg/L unless noted)	Limit (mg/L unless noted)	Corrective Action
York Drinking Water System, Vaughan Community					
East Vaughan Pumping Station	Combined Chlorine Residual	October 8 November 18 December 4 December 13 December 18 December 28	6.96 4.87 >3.00 >3.00 9.94 >3.00	0.25 to 3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
East Woodbridge Pumping Station	Combined Chlorine Residual	July 5	7.14	0.25 to 3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
South Maple Pumping Station	Combined Chlorine Residual	February 24 March 1 September 19	3.48 4.54 3.08	0.25 to 3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.
South Maple Reservoir	Combined Chlorine Residual	February 22 September 1	5.0 >3.0	0.25 to 3.00	Operator attended site, restored facility to normal operation. Compliant grab sample taken.

*reported as Best Management Practice or as due diligence measure

Attachment 2

Ministry of Environment and Climate Change Inspection Results Summary from January 1 to December 31, 2017

For all findings in the summary below, the Ministry of the Environmental and Climate Change acknowledged that corrective actions the Region implemented were sufficient.

Drinking Water System (DWS)	Rating (per cent)	Findings	Corrective Action
Ansnorveldt DWS *November 17, 2016*	100	This inspection started in 2016 and was completed in February 2017. There were no findings.	Not Applicable
Ansnorveldt DWS *February 14, 2017*	100	None	Not Applicable
Ansnorveldt DWS *September 12, 2017*	100	None	Not Applicable
Ballantrae-Musselman's Lake DWS *May 2, 2017*	100	None	Not Applicable
Mount Albert DWS *June 29, 2017*	95.85	*Two (2) Non Compliances:* 1. Well casing required repair. York Region to repair the well casing and strengthen the well inspection process. 2. One set of quarterly nitrate/nitrite samples was completed four days too early. York Region to plan how to prevent recurrence and review this plan with Operators.	1. Well inspection and repair procedure and work plans reviewed and updated, and the well casing was repaired. 2. Sampling scheduling software and procedure have been reviewed and revised, and sampling timeframes were reinforced with staff.
Nobleton DWS *April 18, 2017*	100	*One (1) Best Management Practice:* Logbook entries appeared to meet Regulatory requirements, however York Region Logbook Protocol was not followed on four occasions. York Region to review internal record keeping practices with Operators.	Logbook Protocol updated. Requirements were reinforced at operational team meetings by management team. Operators received in-house practical training. Digital Logbook pilot underway.
Schomberg DWS *January 18, 2017*	100	None	Not Applicable
Schomberg DWS *August 15, 2017*	100	None	Not Applicable

Drinking Water System (DWS)	Rating (per cent)	Findings	Corrective Action
York Drinking Water System			
Vaughan, Richmond Hill, Markham communities *March 13, 2017*	98.44	*One (1) Non Compliance:* Overall Responsible Operator's license was expired. The Region noted this deficiency during review and reported it to Ministry prior to the inspection. No further action required. Note: this issue was already reported to Council in early 2017. *One (1) Best Management Practice:* On several occasions, Logbook Protocol was observed to not be followed. York Region to review logbook practices and determine the feasibility of an electronic logbook.	Non Compliance: Operational management is notified when license expiration is approaching BMP: Logbook Protocol being updated requirements were reinforced at operational team meetings by management team. Operators received Ministry approved and in-house practical training. Digital Logbook pilot analysis underway.
Aurora sub-system *June 15, 2017*	100	*One (1) Best Management Practice:* One reservoir facility was deemed to require strengthened security. Several satisfactory actions were taken immediately. York Region directed to install new vent screen.	York Region immediately implemented corrective actions, increased deterrence measures and is investigating additional security measures for Regional facilities, where needed.
Holland Landing sub-system *February 7, 2017*	100	*One (1) Best Management Practice:* One due-diligence Adverse Water Quality Incident was reported under the York Drinking Water System instead of the Holland Landing subsystem. York Region is reminded to report using the correct system.	York Region reminded staff to verify the correct system/subsystem name when reporting Adverse Water Quality Incidents.
Holland Landing sub-system *October 10, 2017*	100	*One (1) Best Management Practice:* Well Inspection process and paperwork to better align with projected schedule. The Region to strengthen the well inspection process and documentation.	York Region revised the well inspection Work Order process by creating a checklist report, and streamlined documents for well inspections.
King City sub-system *January 10, 2017*	100	None	Not Applicable
King City sub-system *July 18, 2017*	100	None	Not Applicable
Kleinburg sub-system *April 18, 2018*	100	None	Not Applicable
Newmarket sub-system *January 25, 2017*	100	None	Not Applicable

Drinking Water System (DWS)	Rating (per cent)	Findings	Corrective Action
Newmarket sub-system *August 31, 2017*	94.92	*One (1) Non Compliance:* Operator response to a self-correcting high disinfection level adverse water quality incident was deemed insufficient. York Region to ensure an operator attends the facility for all analyzer readings outside regulated levels or when equipment loses power. *One (1) Best Management Practice:* Inspector noted several due diligence reports for spikes of high disinfection level when flow was reversing, and sometimes when flow was forward. York Region recommended to be consistent when reporting due diligence spikes of high disinfection level.	Non Compliance: York Region reviewed adverse response and documentation requirements with staff and re-reviewed facility logbooks. In-house adverse training for Adverse reporting developed with more modules pending. BMP: York Region management meeting to discuss approach to due diligence reports.
Sharon/Queensville sub-system *February 10, 2017*	100	*Two (2) Best Management Practices:* 1. A piece of well monitoring equipment was passed through an open conduit. York Region is recommended to ensure all open conduits going into a well are temporarily sealed until a permanent seal is made. 2. Comparison of results on handheld equipment against online equipment should be consistent. York Region is recommended to choose a consistent practice for comparing handheld and online analyzer readings.	BMP 1: York Region confirmed the conduits were temporarily sealed until the equipment was removed, at which point it was permanently sealed. BMP 2: York Region reviewed legal requirements, procedures, and job plans and concluded no updates to procedures are currently required.
Stouffville sub-system *December 12, 2016*	100	This inspection started in 2016 and was completed in January 2017. There were no findings.	Not Applicable
Stouffville sub-system *July 31, 2017*	100	*One (1) Best Management Practice:* It was noted that documentation for Operator response to one high residual alarm was minimal. York Region is reminded to add more detail about factors contributing to abnormal operating events.	BMP: Logbook Protocol being updated requirements were reinforced at operational team meetings by management team. Operators received Ministry approved and in-house practical training. Digital Logbook pilot analysis underway.

Drinking Water System (DWS)	Rating (per cent)	Findings	Corrective Action
Georgina Drinking Water System			
Keswick, Lakeshore, Sutton communities (Georgina Water Treatment Plant) *February 21, 2017*	95.54	*Two (2) Non Compliances:* 1. In 2016, two reports of high fluoride spikes were correctly reported verbally, but written notice was not provided in a timely manner. York Region to ensure documentation is submitted within the regulated timeframe for adverse water quality incidents. 2. A review of 2015 logbooks revealed a high fluoride adverse water quality incident was deemed to be a false analyzer reading without sufficient documentation to support this conclusion. York Region to review practices and procedures to ensure proper documentation and reporting of water quality parameters outside regulatory limits. *Three (3) Best Management Practices:* 1. Some logbook entries were unclear and quality of details was inconsistent. York Region recommended to provide additional training on logbook entries and record keeping. 2. The Drinking Water Works Permit was being updated at the time of the inspection, and the inspector noted equipment that should be added during the revision. 3. For one observed logbook entry from 2015, an Operator conducting routine sampling did not properly document chlorine residual. York Region to review record keeping practices with staff.	Non Compliances and BMP #1 & #3: In-house adverse training for Adverse reporting developed with more modules pending. Staff also attended Director approved training on regulatory reporting requirements and reviewed relevant procedures. BMP #2: York Region added the recommended equipment to the revised Drinking Water Works Permit
Keswick sub-system (Keswick Water Treatment Plant) *February 21, 2017*	100	*Two (2) Best Management Practices:* 1. Language in the Drinking Water Works Permit should be updated to clarify operation of some equipment. 2. Reporting of one Sodium result over 20 mg/L was determined to be reported verbally but not in writing within 24 hours as would have been required if the result needed to be reported. Further review demonstrated this test result did not need to be reported since Sodium is reported 57 months after the previous reported result. York Region to ensure written notices are given within 24 hours of the verbal report for adverse test results.	BMP 1: The DWWP was amended to reflect equipment operation. BMP 2: Sodium reporting requirements updated with the laboratory and staff reminded of reporting time windows for adverse test results.

2017 Water Quality & Capacity Summary | Ansnorveldt DWS

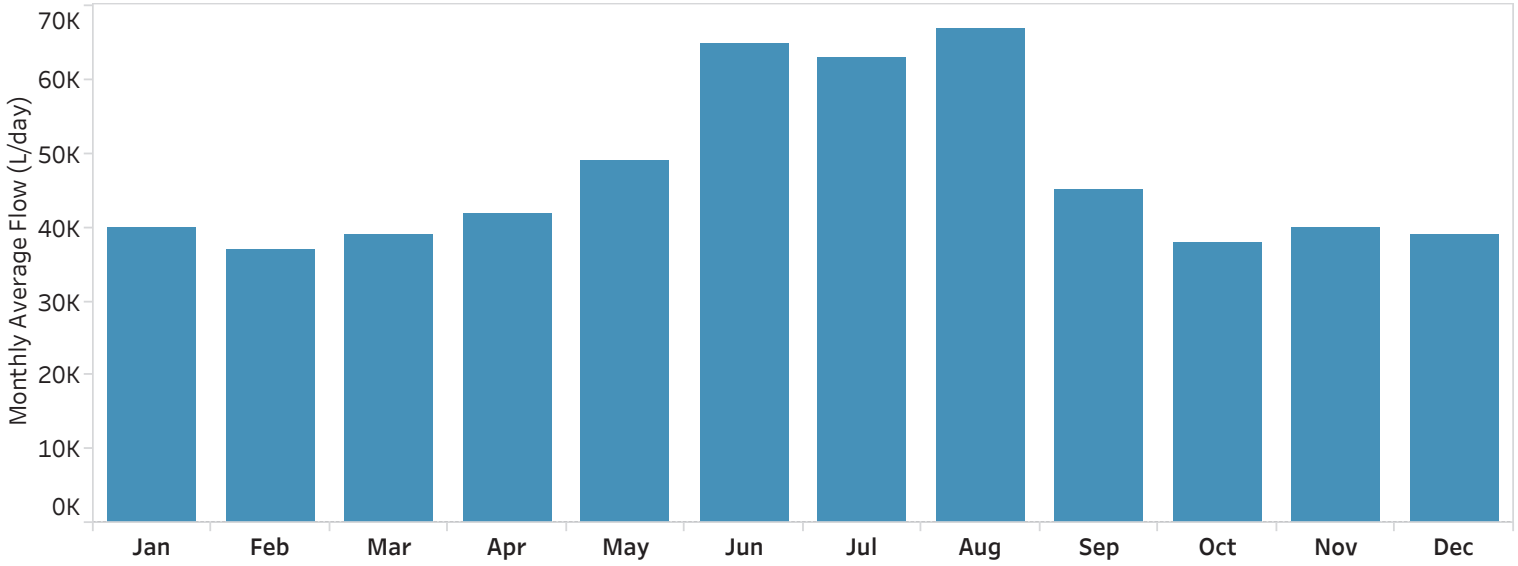
Top Requested Water Quality Parameters

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
1.68 mg/L	0.23 mg/L	40 mg/L	Not Detected (<0.0005 mg/L)

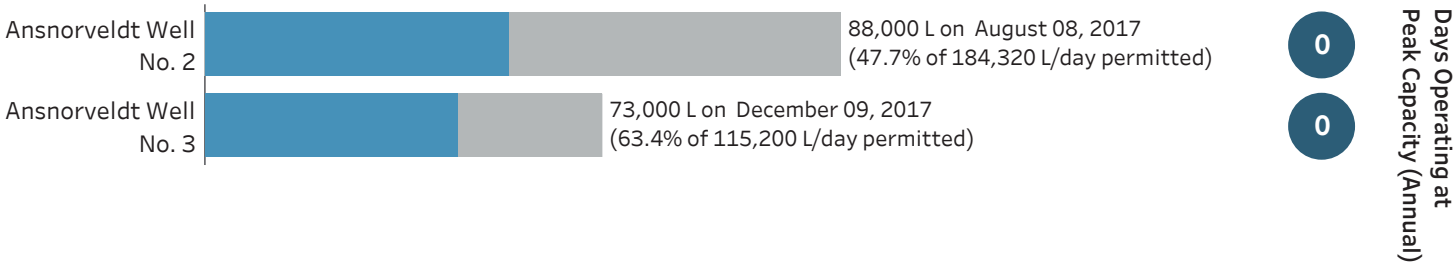
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Ansnorveldt DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | **Aurora DWS**

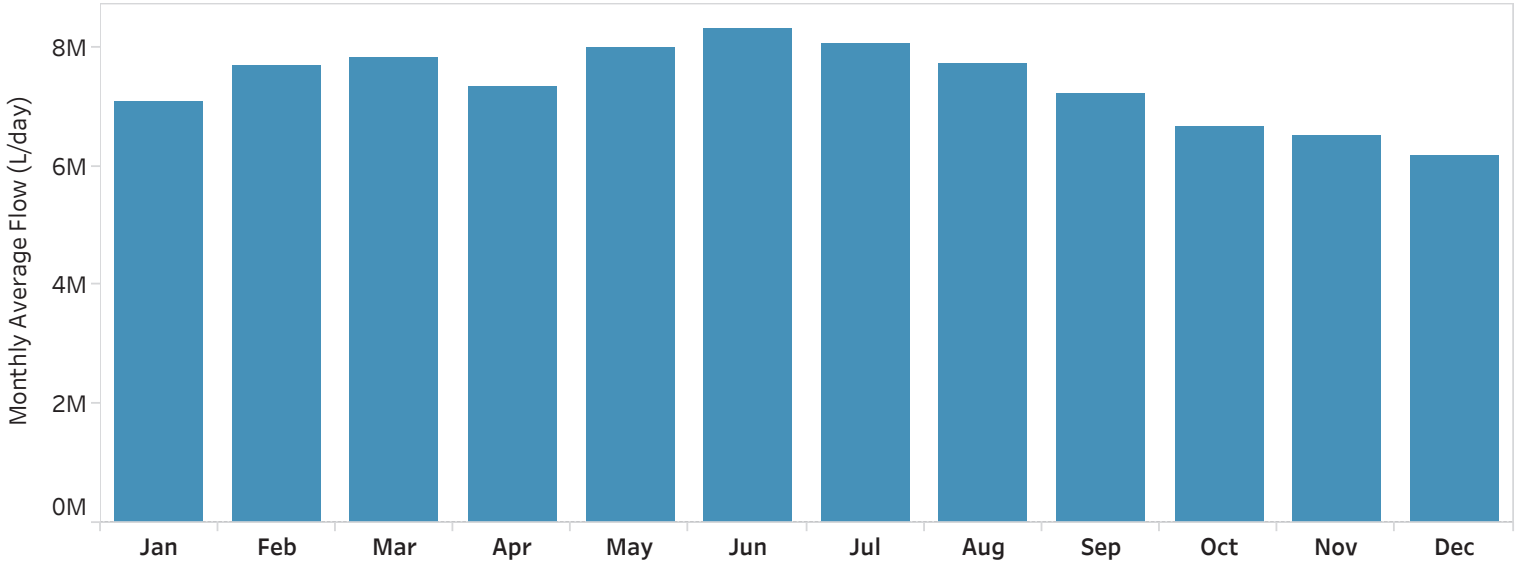
Top Requested Water Quality Parameters

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
2.43 mg/L	0.34 mg/L	19 mg/L	Not Detected (<0.0005 mg/L)

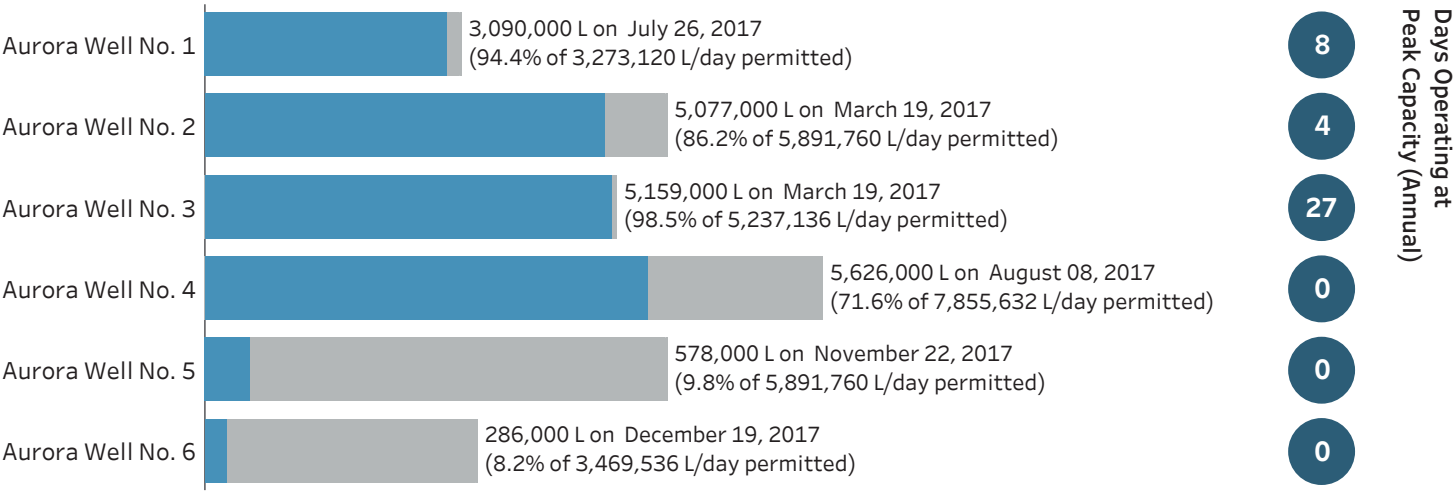
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Aurora DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | Ballantrae/Musselman's Lake DWS

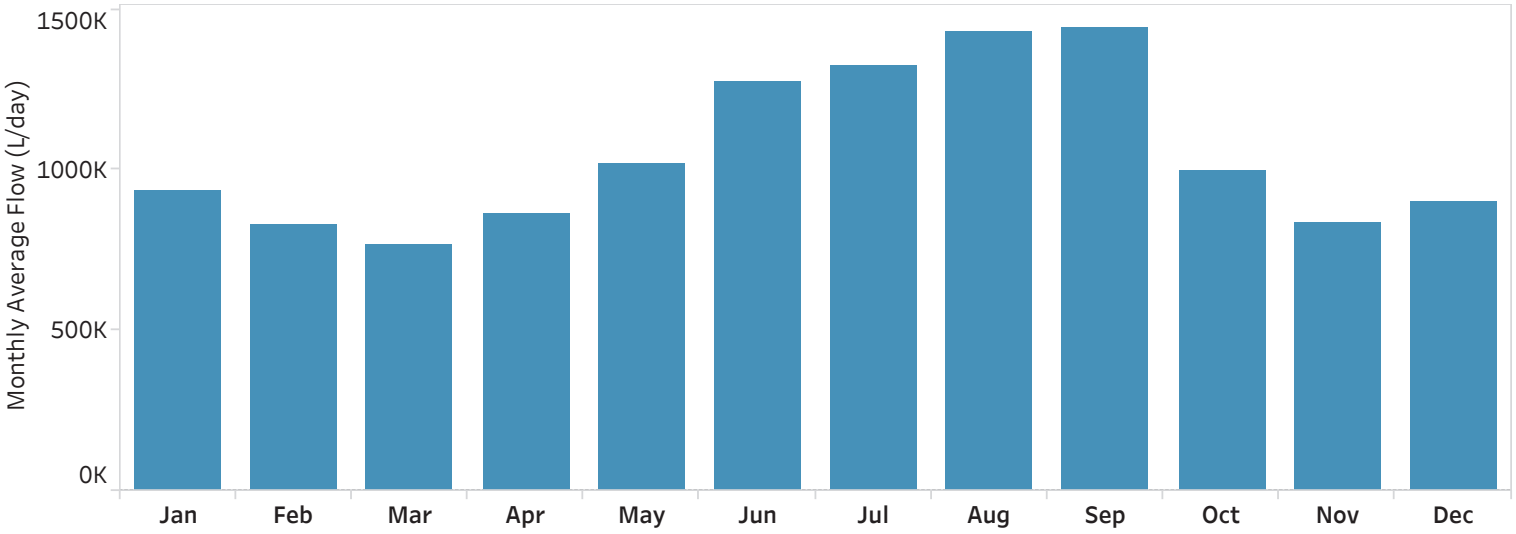
Top Requested Water Quality Parameters

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
1.34 mg/L	0.09 mg/L	12 mg/L	Not Detected (<0.0005 mg/L)

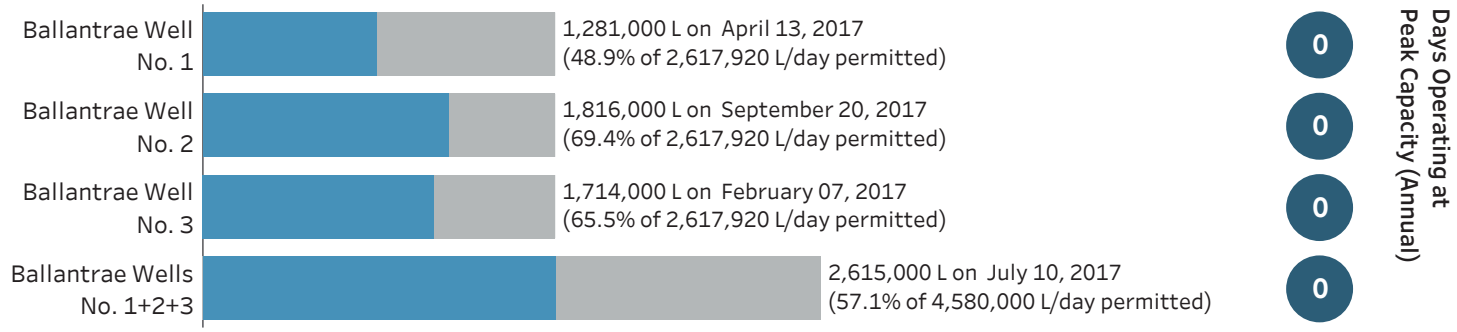
System Monthly Average Flow

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.



Permitted and Actual Maximum Daily Withdrawal

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



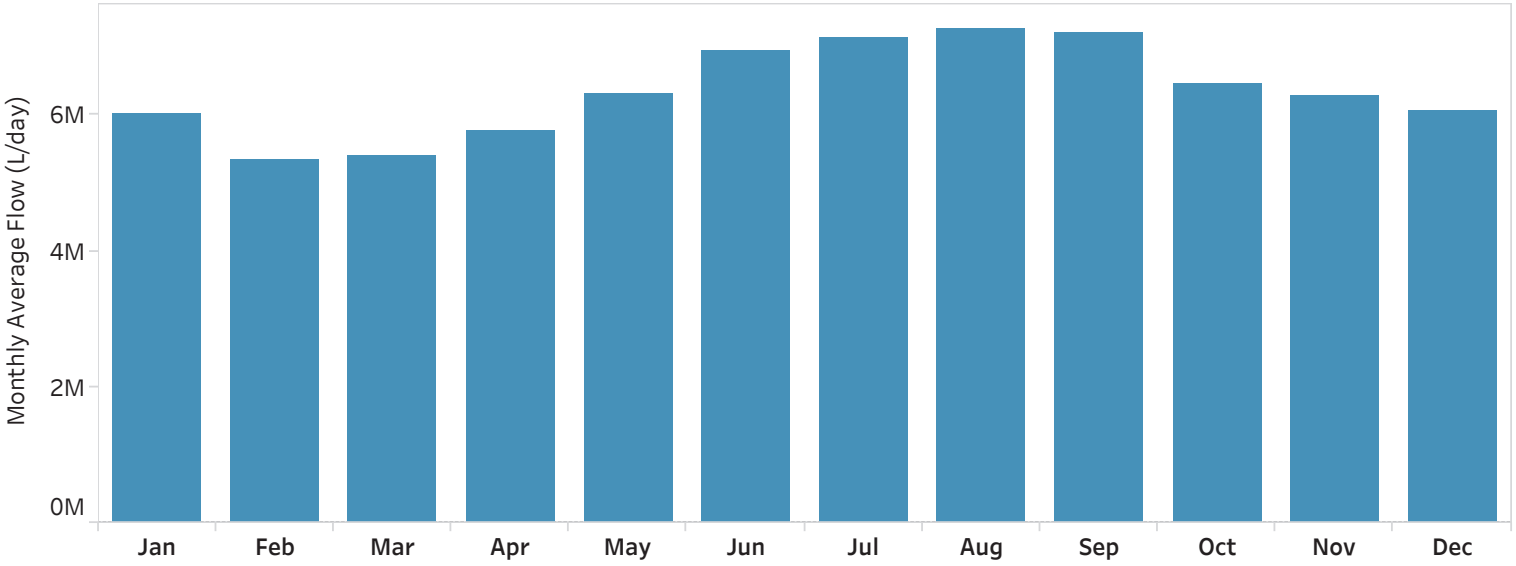
Top Requested Water Quality Parameters

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
1.61 mg/L	0.32 mg/L	28 mg/L	Not Detected (<0.0005 mg/L)

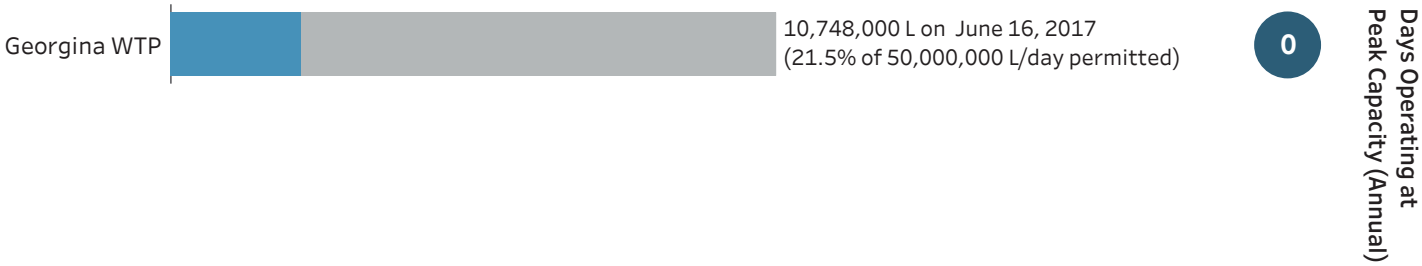
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Georgina DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | Holland Landing DWS

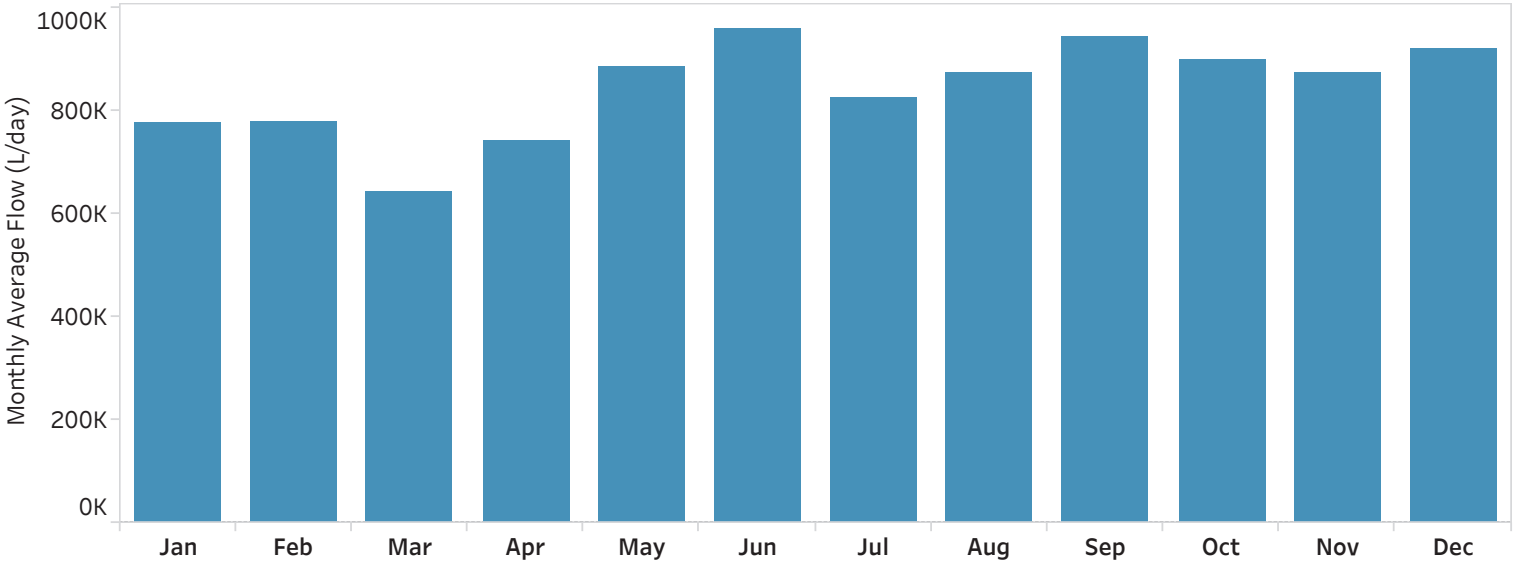
Top Requested Water Quality Parameters

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
2.15 mg/L	0.21 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

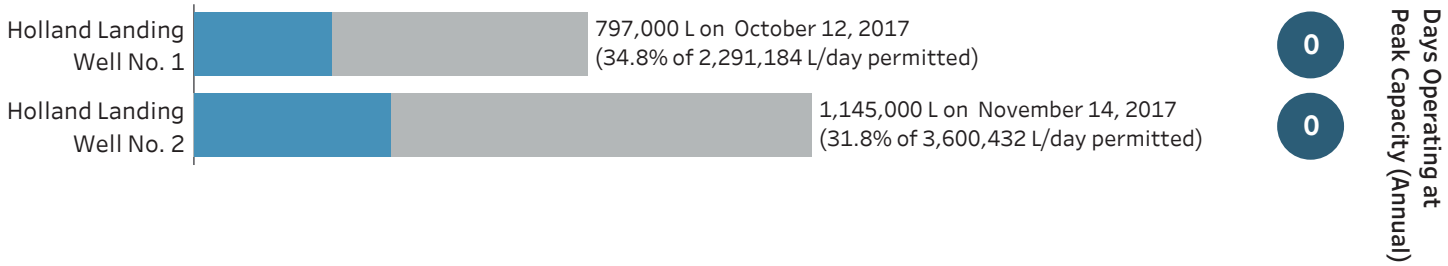
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Holland Landing DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | **Keswick DWS**

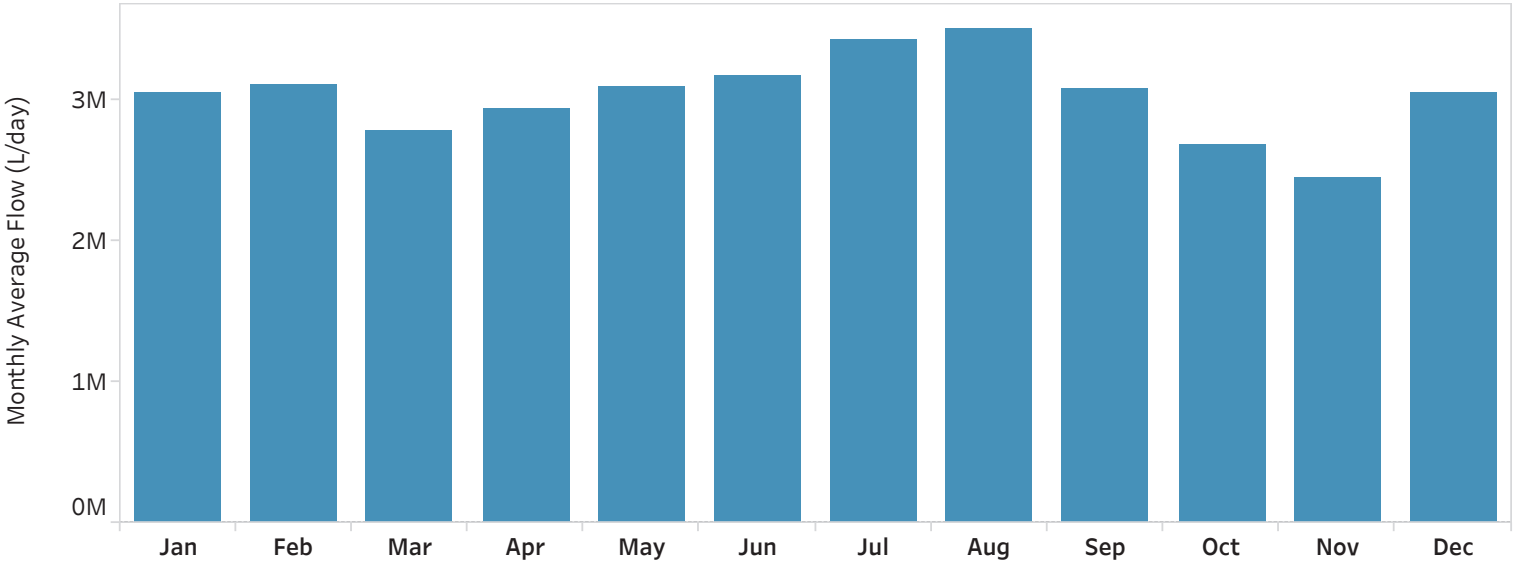
Top Requested Water Quality Parameters

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
1.17 mg/L	0.64 mg/L	33 mg/L	Not Detected (<0.0005 mg/L)

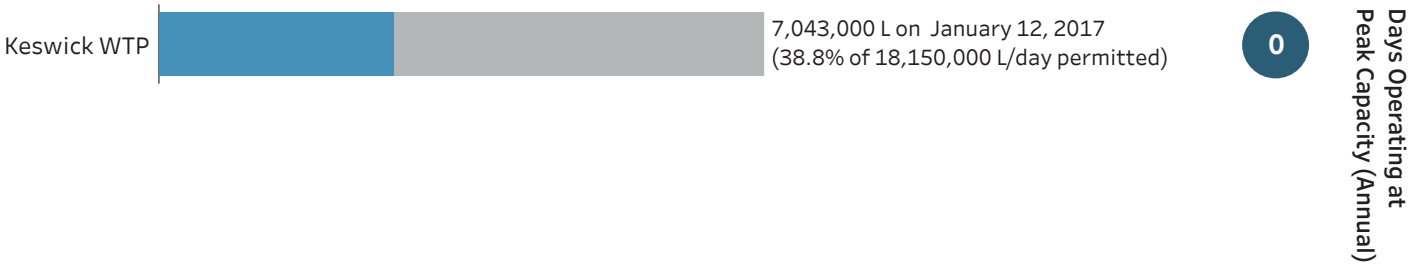
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Keswick DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | King City DWS

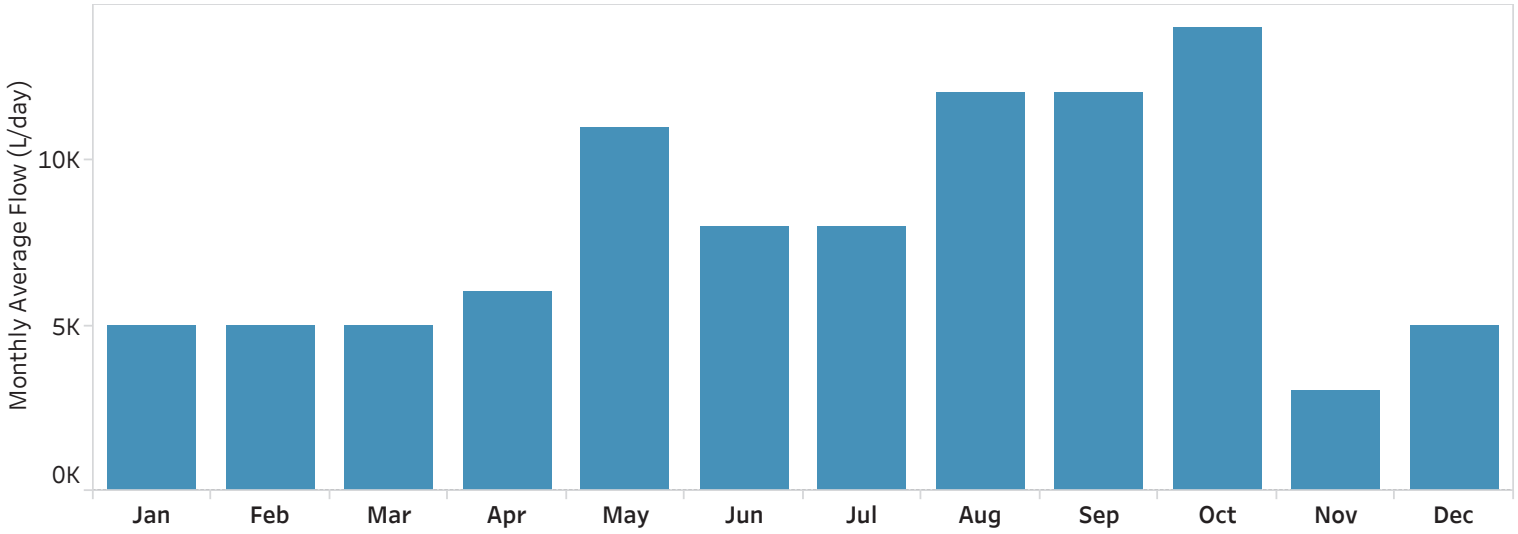
Top Requested Water Quality Parameters

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 treatment and distribution facilities in the King City DWS.

Chlorine	Fluoride	Sodium	Lead
1.76 mg/L	0.60 mg/L	24 mg/L	Not Detected (<0.0005 mg/L)

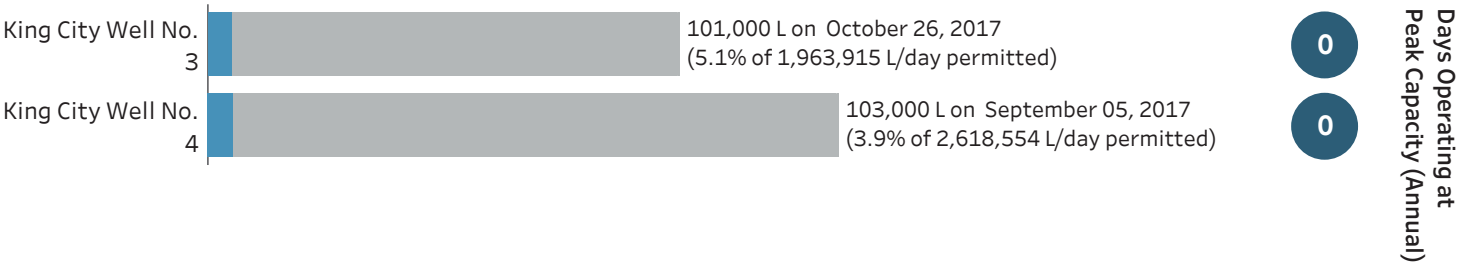
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the King City DWS. In 2017, water from wells was used for testing and maintenance, not for supply.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | **Kleinburg DWS**

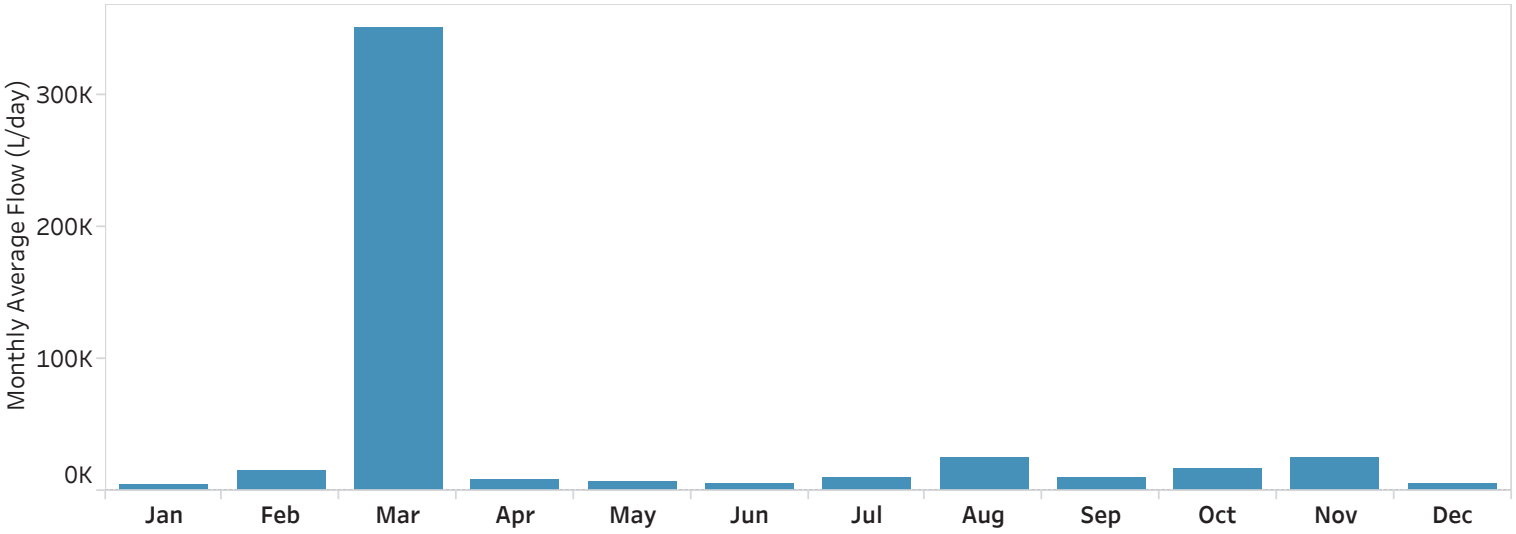
Top Requested Water Quality Parameters

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 treatment and distribution facilities in the Kleinburg DWS.

Chlorine	Fluoride	Sodium	Lead
1.68 mg/L	0.61 mg/L	**N/A** *See York DWS for approximate results	

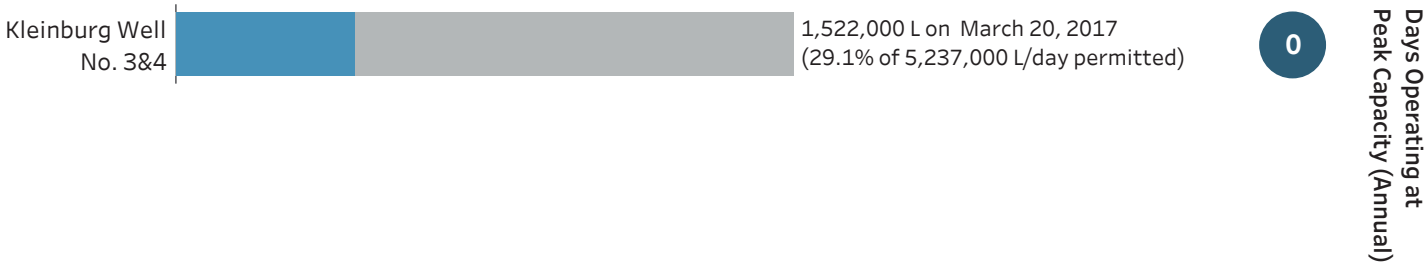
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Kleinburg DWS. In 2017, water from wells was used for testing and maintenance, not for supply.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | **Mount Albert DWS**

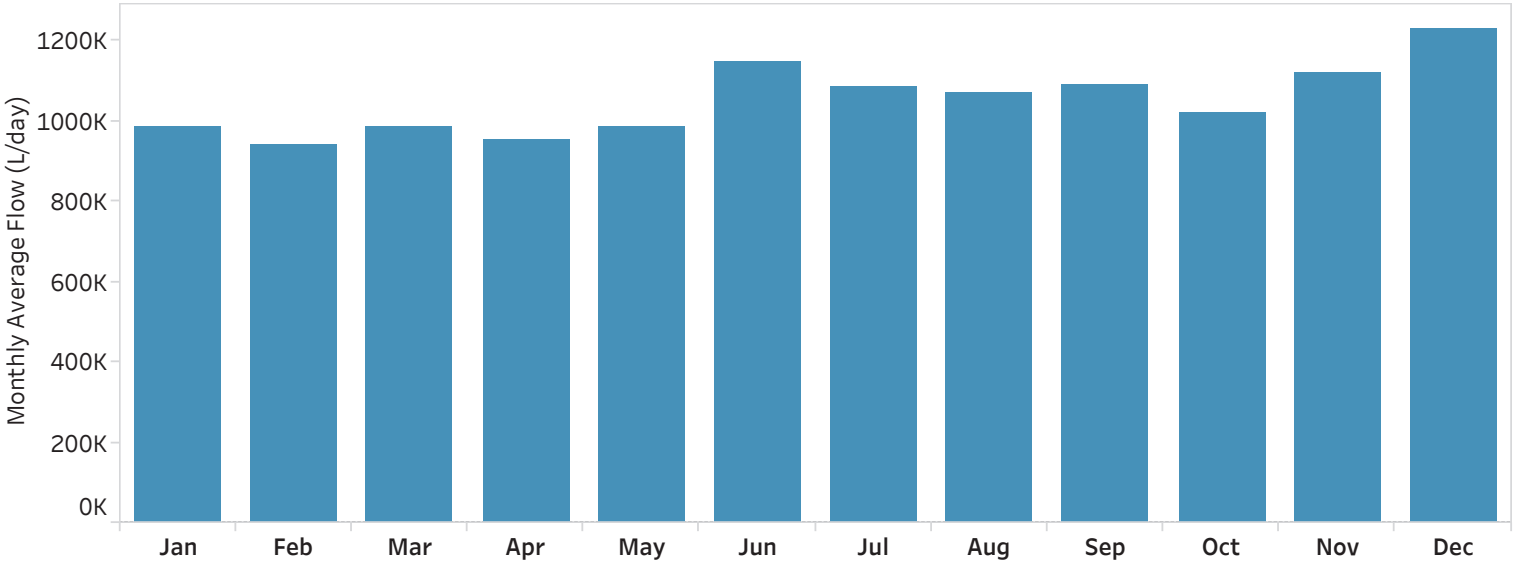
Top Requested Water Quality Parameters

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
1.49 mg/L	0.11 mg/L	11 mg/L	Not Detected (<0.0005 mg/L)

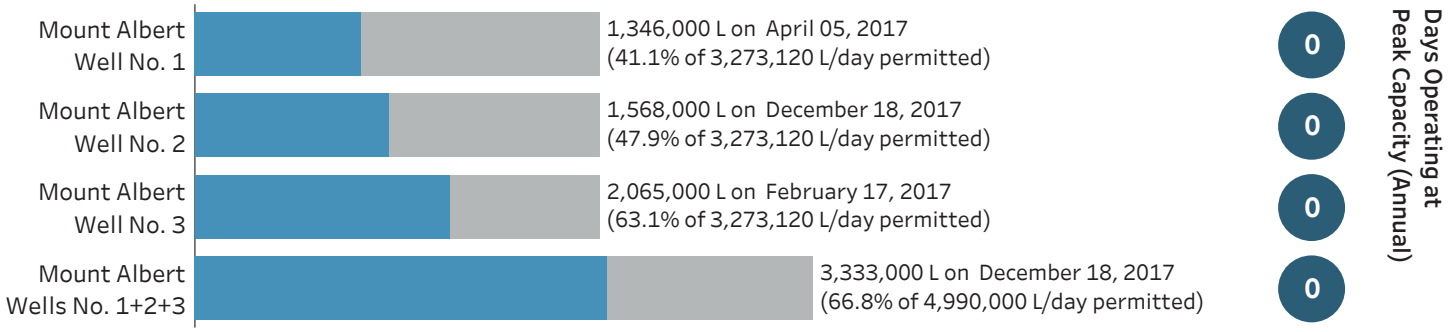
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Mount Albert DWS.



Permitted and Actual Maximum Daily Withdrawal

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



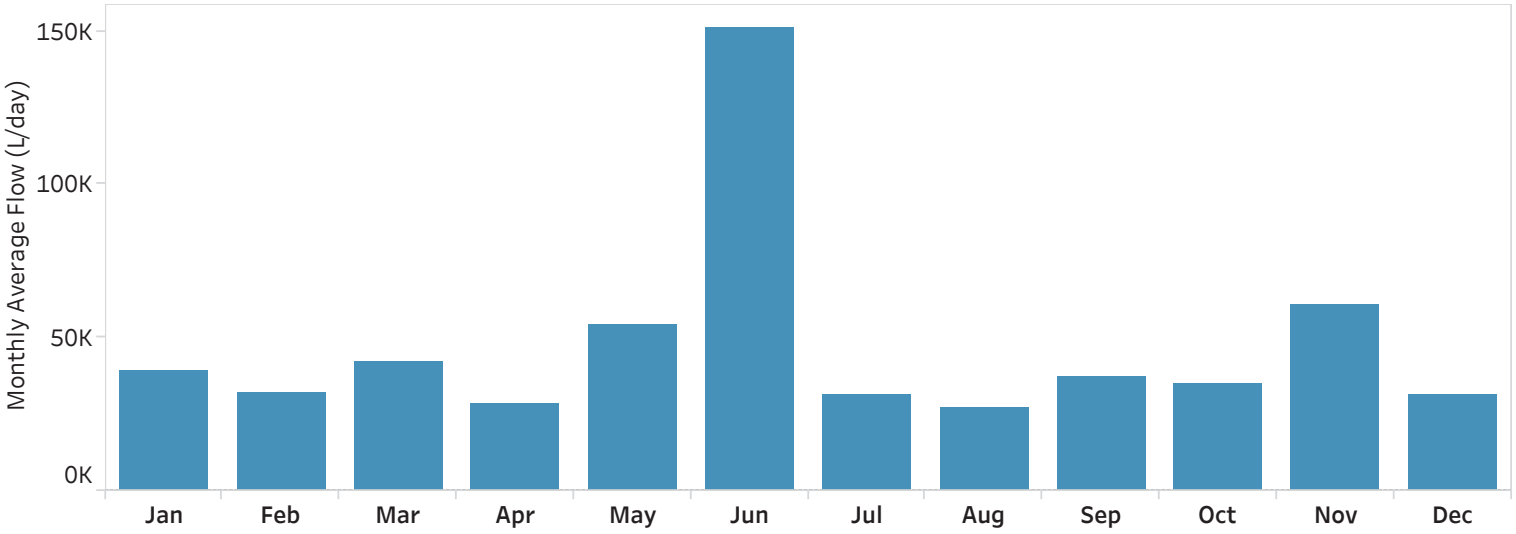
Top Requested Water Quality Parameters

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
1.82 mg/L	0.46 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

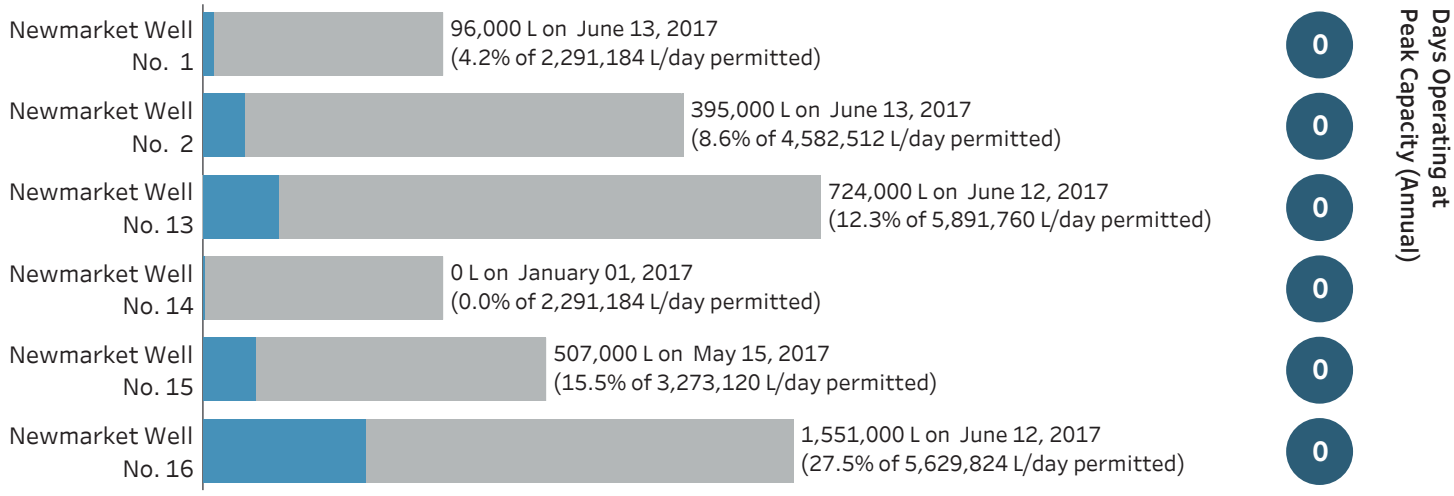
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Newmarket DWS. In 2017, water from wells was used for testing and maintenance, not for supply.



Permitted and Actual Maximum Daily Withdrawal

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



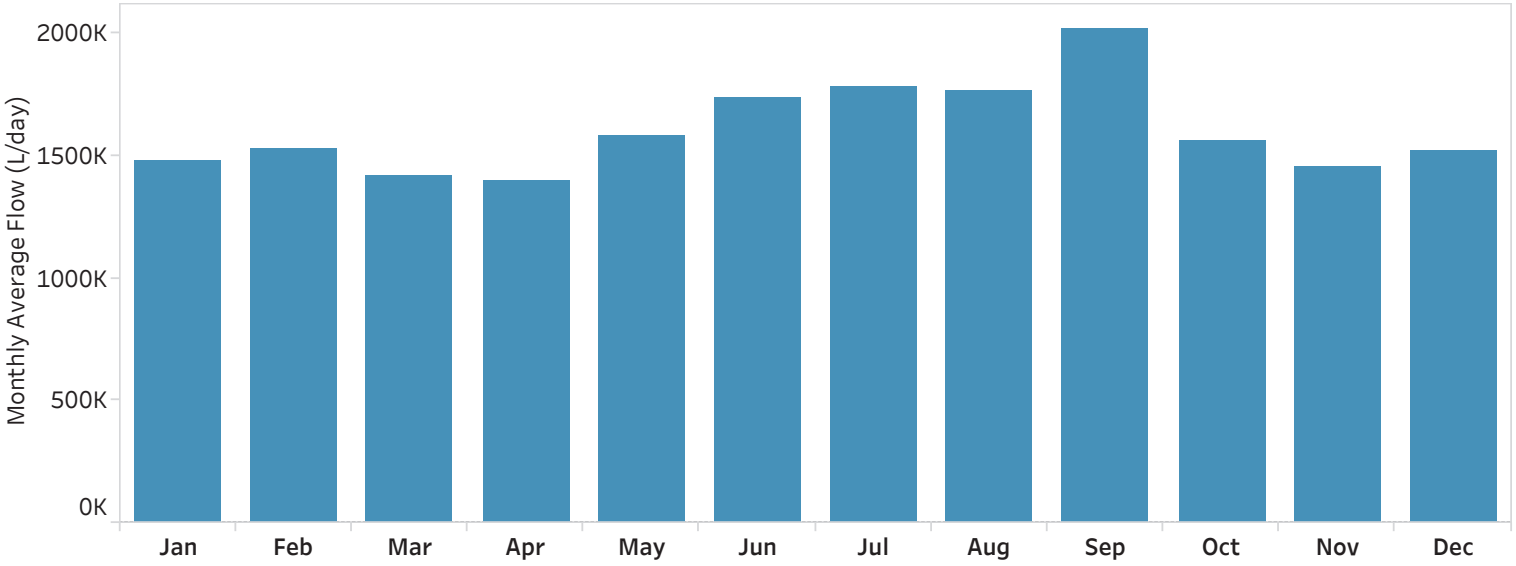
Top Requested Water Quality Parameters

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
1.53 mg/L	0.15 mg/L	19 mg/L	Not Detected (<0.0005 mg/L)

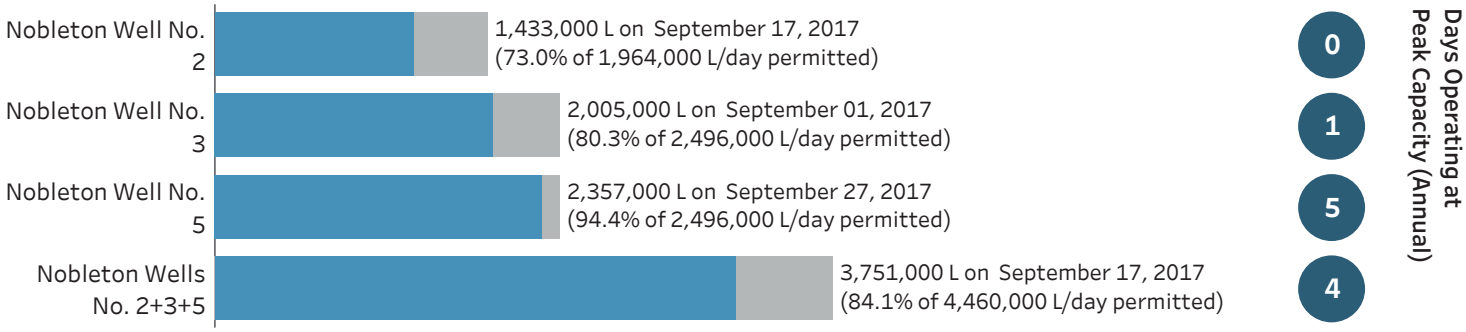
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Nobleton DWS.



Permitted and Actual Maximum Daily Withdrawal

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



2017 Water Quality & Capacity Summary | Schomberg DWS

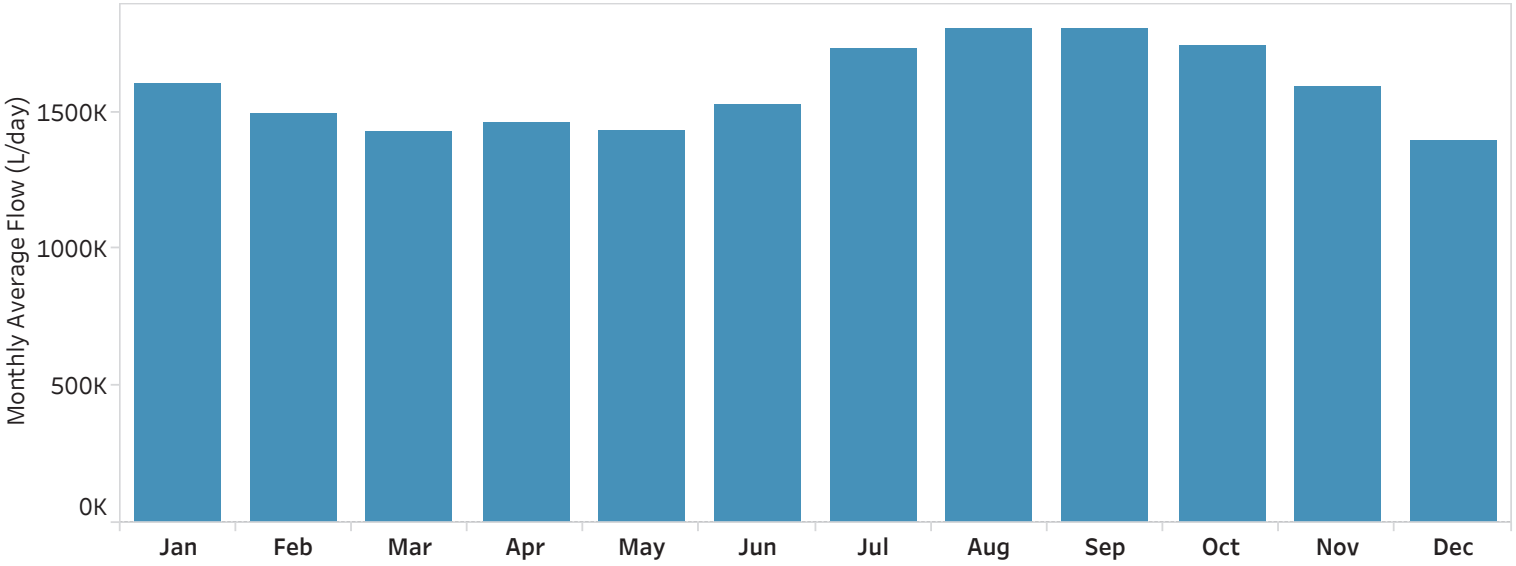
Top Requested Water Quality Parameters

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
2.20 mg/L	0.18 mg/L	19 mg/L	Not Detected (<0.0005 mg/L)

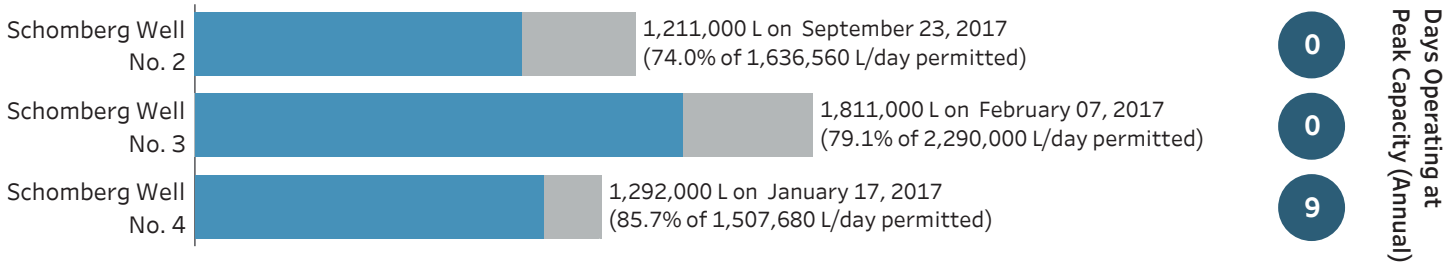
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Schomberg DWS.



Permitted and Actual Maximum Daily Withdrawal

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



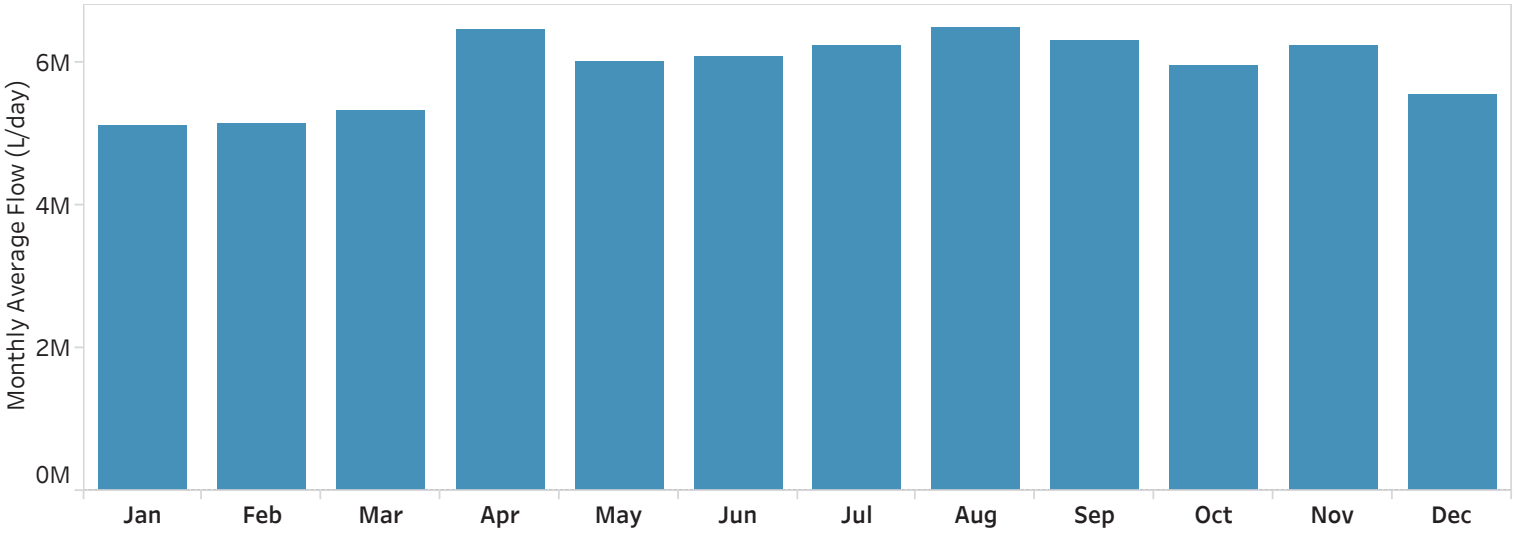
Top Requested Water Quality Parameters

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
2.33 mg/L	0.21 mg/L	21 mg/L	Not Detected (<0.0005 mg/L)

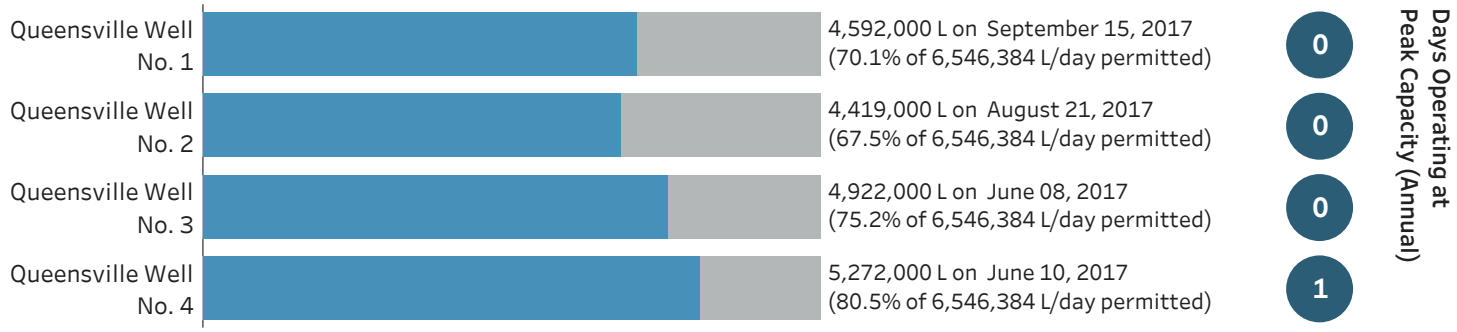
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Sharon/Queensville DWS.



Permitted and Actual Maximum Daily Withdrawal

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



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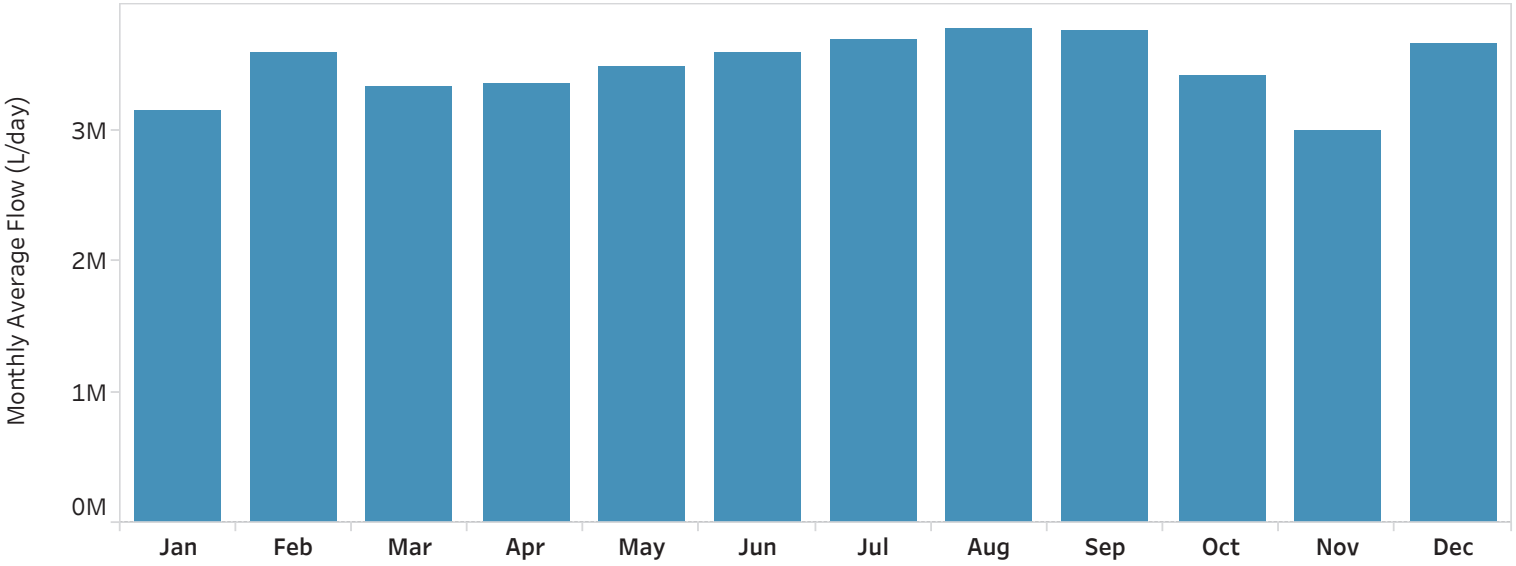
Top Requested Water Quality Parameters

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
1.46 mg/L	0.13 mg/L	38 mg/L	Not Detected (<0.0005 mg/L)

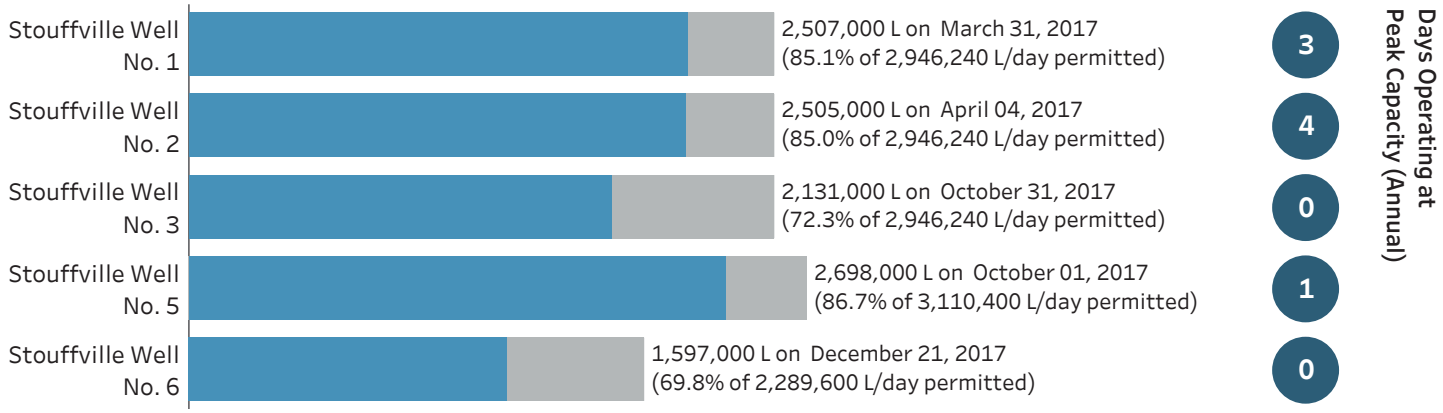
System Monthly Average Flow

The following chart shows the average flow of water produced (treated) in litres per day (L/day) each month in the Stouffville DWS.



Permitted and Actual Maximum Daily Withdrawal

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



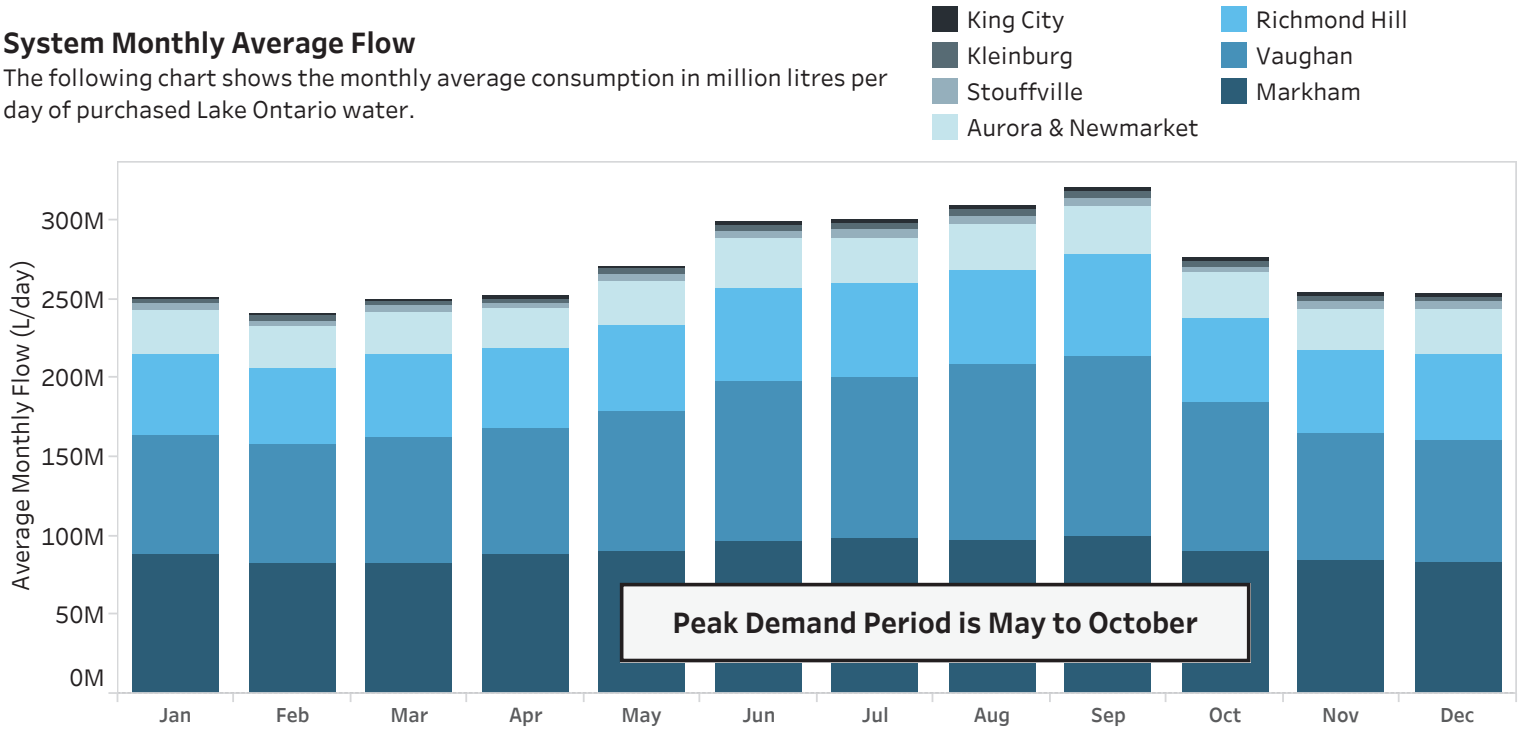
Top Requested Water Quality Parameters

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
1.45 mg/L	0.56 mg/L	17 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.



Permitted and Actual Maximum Daily Flow

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).