



2022
Annual Summary Report
for
Municipal Drinking Water Systems

Holland Landing/ Queensville/ Sharon
DRINKING WATER SYSTEM 260001747

And

Yonge/ Green Lane
DRINKING WATER SYSTEM 260087685

And

Mount Albert
DRINKING WATER SYSTEM 260002265

Reporting Period: January 1, 2022, to December 31, 2022
Schedule 22 of Ontario Regulation 170/03
(Safe Drinking Water Act 2002)

Contents

Executive Summary.....	3
Standard of Care	Error! Bookmark not defined.
Summary of Drinking Water Systems	3
Legislative Requirements.....	4
The Safe Drinking Water Act, 2002.....	5
Ontario Regulation 170/03 (Drinking Water Systems)	5
Schedule 7 - Operational Checks	6
Schedule 10 - Microbiological Sampling and Testing.....	6
Schedule 13 - Chemical Sampling and Testing.....	7
Schedule 15.1 - Lead	7
Schedule 16 - Reporting Adverse Test Results and Other Problems	7
Schedule 22 - Summary Reports for Municipalities, and Section 11 of O. Reg. 170/03.....	8
Small Drinking Water Systems, O. Reg. 319/08.....	9
2021 MECP Drinking Water Inspection.....	9
Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts).....	9
Ontario Regulation 169/03 - Ontario Drinking Water Quality Standards.....	11
Ontario Regulation 188/07 - Licensing of Municipal Drinking Water Systems.....	11
Drinking Water Quality Management Standard (DWQMS).....	12
New Legislative Requirements.....	12
Drinking Water Works Permits	12
Summary of Infrastructure Failures In 2021	13
Common Element Condominiums and Section 5(4) Agreements	13
Non-Revenue Water	13
References	15

Executive Summary

The Safe Drinking Water Act (SDWA) requires that it is the Town of East Gwillimbury's responsibility to:

- Recognize that the people of Ontario are entitled to expect their drinking water to be safe; and,
- Provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of Drinking Water Systems and drinking water testing.

The completion of this Summary Report is intended to provide the Mayor and Members of Council, as "Owners" of the Drinking Water Systems (DWS), a summary of the Town of East Gwillimbury's DWS for the reporting period of January 1, 2022 to December 31, 2022.

This report conforms to the requirements of Schedule 22 of the Ministry of the Environment, Conservation and Parks (MECP), Regulation 170/03 (Summary Reports for Municipalities).

Additionally, Annual Water Quality Reports were prepared for each DWS to fulfill Section 11 of Ontario Regulation 170/03. These reports summarize specific details regarding the overall quality of the Town's DWS and were posted on the Town of East Gwillimbury's website by February 28, 2023.

During the reporting period no provincial orders were issued to the Town by the MECP under the SDWA and The Town has maintained compliance with the acts and regulations including water quality monitoring and maintenance of the DWS. All infrastructure interruptions were quickly resolved while ensuring the safety of the DWS and its users.

Summary of Drinking Water Systems

CIES Water Operations Division is responsible for the distribution of potable (safe drinking) water to all industrial, commercial, and household municipal water users in the Town of East Gwillimbury.

The Town owns and operates three (3) large municipal DWS (DWS) which are distribution only and classified by the MECP as "Class I Drinking Water Systems":

1. Holland Landing/ Queensville/ Sharon (HQS) DWS
2. Yonge/ Green Lane (YGL) DWS
3. Mount Albert (MA) DWS

East Gwillimbury's treated drinking water is entirely supplied by York Region from both groundwater wells operated by York Region and surface water (Lake Ontario) sourced by York Region from the City of Toronto and the Region of Peel. These systems are disinfected with free chlorine (chlorinated) or a mixture of chlorine and aqueous ammonia (chloraminated).

For detailed information on the flow rates of the water supplied during the reporting period please see York Region's Annual Water Quality Reports at www.york.ca/environment/water-and-wastewater/drinking-water-quality-and-monitoring.

The **HQS** DWS is operated as a chloraminated DWS and receives groundwater from the two (2) York Region wells in Holland Landing and four (4) York Region wells in Queensville. Additionally, this system receives surface water from Lake Ontario, and is blended in the system with the groundwater sources.

The **YGL** DWS is operated as a chloraminated DWS and receives a blended source of surface water from Lake Ontario and groundwater.

The **MA** DWS is operated as a chlorinated system and receives groundwater from three (3) York Region wells located within the community of Mount Albert.

East Gwillimbury's DWS are identified by their own DWS numbers through the MECP.

A Municipal Drinking Water License and Drinking Water Works Permit have been assigned by MECP to all DWS and, along with the DWS numbers, are noted below.

DWS Name	Mount Albert	Yonge/ Green Lane	Holland Landing/ Queensville/
DWS Number	260002265	260087685	260001747
Municipal Drinking Water	117-101	117-102	117-103
Drinking Water Works	117-201	117-202	117-203

Legislative Requirements

The Safe Drinking Water Act, 2002 (SDWA) and the associated Regulations under which the Town of East Gwillimbury operates the Town's Drinking Water Systems are:

- Ontario Regulation 170/03 (Drinking Water Systems)
- Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts)

- Ontario Regulation 169/03 (Ontario Drinking Water Quality Standards)
- Ontario Regulation 188/07 (Licensing of Municipal Drinking Water Systems)

The Town's non-municipal DWS fall under the Health Protection and Promotion Act associated regulation O. Reg. 319/08 (Small Drinking Water Systems).

The Safe Drinking Water Act, 2002

Justice Dennis O'Connor, who led the Walkerton Commission of Inquiry, recommended that the Ontario government enact a Safe Drinking Water Act to deal with matters related to treatment and distribution of drinking water. As articulated by Mr. Justice Dennis O'Connor, the purpose of the Safe Drinking Water Act is to gather in one place, all legislation and regulations relating to the treatment and distribution of drinking water.

Further to Commissioner O'Connor's recommendations, the provincial government passed the Safe Drinking Water Act 2002, which expanded on the existing policies and practices and introduced new features to protect drinking water in Ontario. The Act's purpose is to protect human health through the control and regulation of DWS and drinking water testing. The Act also provides legislative authority to implement 50 of the 93 recommendations made in Commissioner O'Connor's Part Two Report.

Ontario Regulation 170/03 (Drinking Water Systems)

The Drinking Water Systems Regulation (O. Reg 170/03) establishes categories of DWS. East Gwillimbury's municipal water systems are Large Municipal Residential Systems which serve major residential developments with private residences.

The Regulation contains schedules that address several requirements for a DWS. The following schedules are applicable to Town's systems:

Schedule 7	Operational Checks
Schedule 10	Microbiological Sampling and Testing
Schedule 13	Chemical Sampling and Testing
Schedule 15.1	Lead Sampling
Schedule 16	Reporting Adverse Test Results and Other Problems
Schedule 22	Summary Reports for Municipalities

Schedule 7 - Operational Checks

Schedule 7, Operational Checks for Municipal - Large Residential Systems, identifies responsibility for chlorine, turbidity, and fluoride testing, as well as defines tests that can be done by a certified operator or a certified water quality analyst.

The Town ensures that regulated water samples from DWS are taken and tested for chlorine residual to ensure adequate secondary disinfection in the distribution systems. Primary disinfection and regulatory testing for inorganics, organics, nitrate and nitrites, sodium, and fluoride are completed by York Region during drinking water production.

The MA DWS is tested for free chlorine residual, as it is a chlorinated system, and HQS and YGL DWS are tested for combined chlorine residual, as they are chloraminated systems.

For the reporting period, **3,292** samples were taken from the **HQS** DWS and tested for combined chlorine. **DWS788** regulatory samples were taken from the **YGL** DWS and tested for combined chlorine. **648** regulatory samples were taken from the **MA** DWS and tested for free chlorine.

Schedule 10 - Microbiological Sampling and Testing

Microbiological sampling for Large Municipal Residential Systems are mandated under Schedule 10. The number of microbiological samples taken and tested is based on population. For the 3 municipal systems in East Gwillimbury, which serve a population less than 100,000, the operating authority must take 8 samples per month plus one for every thousand residents served with at least one sample taken each week and 25% tested in addition for Heterotrophic Plate Count (HPC).

Based on the population in the **HQS** DWS, there shall be a minimum of 31 samples collected per month, resulting in total of 372 microbiological samples for the reporting period. The Town exceeded the minimum requirement and collected a total of **423** microbiological samples for the reporting period with 212 analyzed for HPC.

Based on the population in the **MA** DWS, there shall be a minimum of 14 samples collected per month, resulting in a total of 168 microbiological samples for the reporting period. The Town exceeded the minimum requirement and collected **195** microbiological samples for the reporting period with 101 analyzed for HPC.

Based on the population in the **YGL** DWS, there shall be a minimum of 10 samples collected per month, resulting in total of 120 microbiological samples for the reporting period. The Town

exceeded the minimum requirement and collected **147** microbiological samples for the reporting period with 74 analyzed for HPC.

[Schedule 13 - Chemical Sampling and Testing](#)

Schedule 13, Chemical Sampling and Testing applies to the Town as all the Town's DWSWS are classified as Municipal Large Residential systems. Schedule 13 involves the sampling of inorganics, organics, trihalomethanes (THMs), haloacetic acids (HAAs), nitrate and nitrites, sodium, and fluoride.

As noted in Schedule 7, York Region tests for inorganics, nitrate and nitrites, sodium, and fluoride during drinking water production.

The Town tests for trihalomethanes (THMs) and haloacetic acids (HAAs) in all its distribution systems on a quarterly basis to satisfy its regulatory requirements.

There were no exceedances in any of the three (3) DWS for THM or HAA during the reporting period.

[Schedule 15.1 - Lead](#)

This Schedule applies to sampling for lead in Large Municipal Residential systems and incorporates several requirements. Under Section 15.1-5 of O.Reg 170/03, samples are required during the periods of December 15 to April 15 (Round 1 - winter), and June 15 to October 15 (Round 2 - summer).

The HQS, MA and YGL system DWS are all on a reduced sampling schedule and only require samples to be taken from the distribution system. This is the result of several successful rounds of sampling private plumbing to prove that there is not a concern with lead in the DWS or in private plumbing in East Gwillimbury.

Additionally, as part of the requirements of the lead testing exemption in the Municipal Drinking Water Licenses (MDWL) for HQS, YGL and the MA DWS, sampling for lead is required on a three-year cycle. Each of the two rounds within each cycle require a total of four (4) distribution samples from HQS, two (2) from YGL and three (3) from MA. In the reporting period two (2) rounds of distribution sampling were conducted in all three systems and there were no exceedances for lead resulting from any sample.

[Schedule 16 - Reporting Adverse Test Results and Other Problems](#)

Reporting adverse test results and other problems is required under Schedule 16.

This Schedule defines the Town's duty to report in the event that any drinking water tests do not meet the standards prescribed by Schedules 1, 2, or 3 of the Ontario Drinking Water Quality Standards (O.Reg 169/03), along with other specific parameters as identified within the Schedule.

The reporting requirement involves an immediate oral and, within 24 hours, written notification to the MECP Spills Action Center (SAC), and the Medical Officer of Health at the local York Region Health Unit. Action to resolve any adverse findings is undertaken in accordance with the Town's standard operating procedures and as directed by York Region Public Health. After corrective action has been completed, the area of the adverse is re-sampled to ensure water quality is no longer adverse and a notice of issue resolution is reported back to the MECP and York Region Public Health.

In the HQS system, 34 Adverse Water Quality Incidents (AWQI) were reported in 2022. All AWQIs were the result of low chloramine residual in the communities of Queensville and Sharon. All incidents were resolved the same day the adverse was observed through watermain flushing to increase chloramine residual.

In the MA system, one (1) AWQI was reported in the current reporting period. The adverse was for the presence of Total Coliform detected in routine sampling. The area of the adverse was flushed and resampled with resample results showing that the drinking water quality was no longer adverse.

No AWQI results were observed and reported in the YGL system for the reporting period.

[Schedule 22 - Summary Reports for Municipalities, and Section 11 of O. Reg. 170/03](#)

Summary Reports for Municipalities for Municipal Large Residential systems are identified within Schedule 22. The requirements of the report are listed within it, and annual submissions for the previous calendar year, must be submitted to Members of Council, as "Owners" of the system, by March 31st of the following year.

The Summary Report is also available on the Town's website and hard copies are available by request to members of the public at the Town's municipal offices located at 19000 Leslie Street, Sharon, or Operations Centre at 19850 Woodbine Ave, Queensville.

Similarly, Annual Water Quality Reports defined under Section 11 of the Regulation are prepared for submission no later than February 28th of the following year. The Annual Water Quality Reports are also made available on the Town of East Gwillimbury's website.

Small Drinking Water Systems, O. Reg. 319/08

The North Union Community Centre system, the Mount Albert Lions Club system, and the EG Operations Centre system fall under this regulation. York Region's Health Department has enforcement responsibility of these water supply systems.

The Town has ultra-violet (UV) disinfection systems at all three (3) of these locations. The Operations Centre also uses chlorine as a secondary disinfection for storage in the system.

The Town has received directives for all three (3) systems from the York Region's Public Health. As a result, the Town is required to conduct organic and inorganic sampling for Mount Albert Lions Club and North Union Community Centre, and EG Operations Centre.

No AWQI results were reported at the Town's three (3) Small Drinking Water Systems in the reporting period.

MECP Drinking Water Inspection

In November 2022, an unannounced, detailed inspection was conducted by the MECP on the Town's 3 large distribution systems. The MECP inspector reviewed the Town's records, plans and policies from August 2021 to November 2022 to ensure compliance and conformance with the Safe Drinking Water Act and its regulations. The following is a summary of non-conformities identified during the inspection with an overall compliance rating of 94.47% in all 3 systems. It is noted that the non-conformities were primarily administrative in nature and drinking water quality remained safe at all times for East Gwillimbury customers:

Holland Landing Queensville Sharon DWS – Compliance rating 88.76%

- pH testing was missed and not recorded during routine lead sampling:

When sampling for lead in drinking water, there is a requirement to immediately take a pH reading, however, this was overlooked on 12 samples taken in the DWS. Current results of the lead sampling did not have detectable levels of lead in East Gwillimbury's DWS and previous pH results have been stable. Therefore, there was no risk to water quality.

The Town's current procedure reflects the regulatory sampling requirements, and staff will be re-trained on the procedure to obtain a pH reading during sampling.

In addition, the 2023 sampling plan has been updated to include all lead sampling requirements. Staff will include a pH result for each sample on the Chain of Custody (COC) form which accompanies all samples taken in the DWS.

- Adverse chlorine residual not reported by Town's contractor:

One adverse chlorine residual recorded by the Town's contractor was not reported as per regulatory requirements, and as outlined in their contract with the Town. However, immediate corrective action was taken to resolve the low residual and water quality was restored above the regulatory requirement.

This contractor no longer works for the Town. All other adverse incidents recorded by the contractor were reported immediately to the Town and in conformity with the acts and regulations. This was determined to be an administrative error and drinking water quality remained safe at all times.

Mount Albert DWS – Compliance rating 97.57%

- pH testing was missed and not recorded during routine lead sampling:

Like HQS, an immediate pH reading was overlooked on 9 samples in the MA-DWS. Lead sampling results displayed that there were no detectable levels of lead during this time and previous pH results have been stable. The corrective action plan is outlined under HQS.

Yonge Green Lane DWS – Compliance rating 97.08%

- pH testing was missed and not recorded during routine lead sampling:

Like HQS and MA, an immediate pH reading was overlooked on 6 samples in the YGL-DWS. Lead sampling results displayed that there were no detectable levels of lead during this time and previous pH results have been stable. The corrective action plan is outlined under HQS.

[Ontario Regulation 128/04 \(Certification of Drinking Water System Operators and Water Quality Analysts\)](#)

This Regulation establishes the training and certification requirements that must be satisfied by certified operators and water quality analysts and came into effect in 2005. Requirements include taking mandatory training courses approved by the Director of the MECP. Operator certificates must be renewed every three years and requires completion of regulatory training.

The hours of training for operators are based on the class of the subsystem. The MECP has designated all Town DWS as Class 1 systems.

The Town of East Gwillimbury's water staff operate all DWS in accordance with the Safe Drinking Water Act and all Operators are required to complete a total of 90 training hours within the three-year Operator's certificate renewal period. Operator training consists of 21 hours of MECP "Director Approved" classroom training, plus 69 hours of On-the-Job practical training.

During the reporting period all the licensed Water Operators held a valid operator certificate in compliance with O. Reg 128/04.

Ontario Regulation 169/03 - Ontario Drinking Water Quality Standards

The Ontario Drinking Water Quality Standard identifies the minimum level of drinking water quality acceptable for human consumption.

The Town of East Gwillimbury assesses the acceptability of water through compliance with the following standards:

- Schedule 1. Microbiological Standard
- Schedule 2. Chemical Standards
- Schedule 3. Radiological Standards

Results outside of these regulatory standards are considered adverse and require reporting as well as corrective actions based on the type of adverse.

Ontario Regulation 188/07 - Licensing of Municipal Drinking Water Systems

The Safe Drinking Water Act requires Owners and Operating Authorities of municipal DWS to have an accredited Operating Authority. The Water Operations Division of CIES is the accredited Operating Authority for the Town.

To become accredited, an Operating Authority must establish and maintain a Quality Management System (QMS). Minimum requirements for the QMS are specified within the Drinking Water Quality Management Standard.

The Town's permits and licenses are valid until June 2026, with the application for renewal due in December 2025.

Drinking Water Quality Management Standard (DWQMS)

The DWQMS is a proactive and preventive approach to assuring drinking water quality, including consideration of elements that are fundamental to ensuring the long-term sustainability of a DWS including: Management processes employed within the system; the maintenance of infrastructure used to supply drinking water; and identification of potential risks and risk mitigation strategies for items such as system security, water treatment, and the impacts of climate change. Audits ensure compliance with DWQMS and continual improvement.

The Town remains fully accredited through the review period for the DWQMS. On March 22, 2022, the external auditor, SAI Global, conducted a surveillance system audit. There were zero (0) minor non-conformances and five (5) opportunities for improvement identified during the assessment.

An internal audit of the DWQMS was conducted by AET Consultants between October 12 and 17, 2022. There were zero (0) major non-conformances, two (2) minor non-conformances and four (4) opportunities for improvement identified during the assessment.

All non-conformities and opportunities for improvement were tracked in the Town's Corrective Action Review log and updated in the Town's DWQMS Operational Plan.

New Legislative Requirements

A new sampling parameter has been included by the MECP in the latest revision of the Town's Municipal Drinking Water license. Sampling for NDMA (N-Nitrosodimethylamine), a chloramine disinfection by-product, is required in East Gwillimbury's two (2) chloraminated systems; HQS and YGL systems. MA is a free chlorine system and is not required to sample for NDMA.

Staff completed sampling for NDMA in December 2022 and levels of NDMA were below the detectable limit.

Drinking Water Works Permits

The Municipal Drinking Water License and Drinking Water Works Permit (DWWP) authorizes the Water Operations Division of CIES to provide approval for alterations and additions to the Town's DWS.

All new developments are required to submit DWWP applications for review and approval before construction can proceed. There was one (1) Drinking Water Works Permit submission and approval within the review period: DWWP-2022-01 (Sharon Corners Phase 2).

Summary of Infrastructure Failures

There were no significant infrastructure failures in the MA, HQS and/ or YGL systems during the review period.

The Town quickly responded to all minor incidents and followed the Town's procedures to repair failures and minimize any impact to the residents safely and efficiently.

Common Element Condominiums and Section 5(4) Agreements

There were two (2) Small Non-municipal Year-round DWS registered in East Gwillimbury with one connected to the Holland Landing /Queensville /Sharon DWS and one in Mount Albert DWS during the review period.

These two private DWS maintained agreements, under a pilot program with the Town, to treat it as a part of the larger Municipal DWS and complete regulatory sampling and flushing required to maintain water quality. Regular maintenance, or infrastructure repairs remain the responsibility of the condominium board.

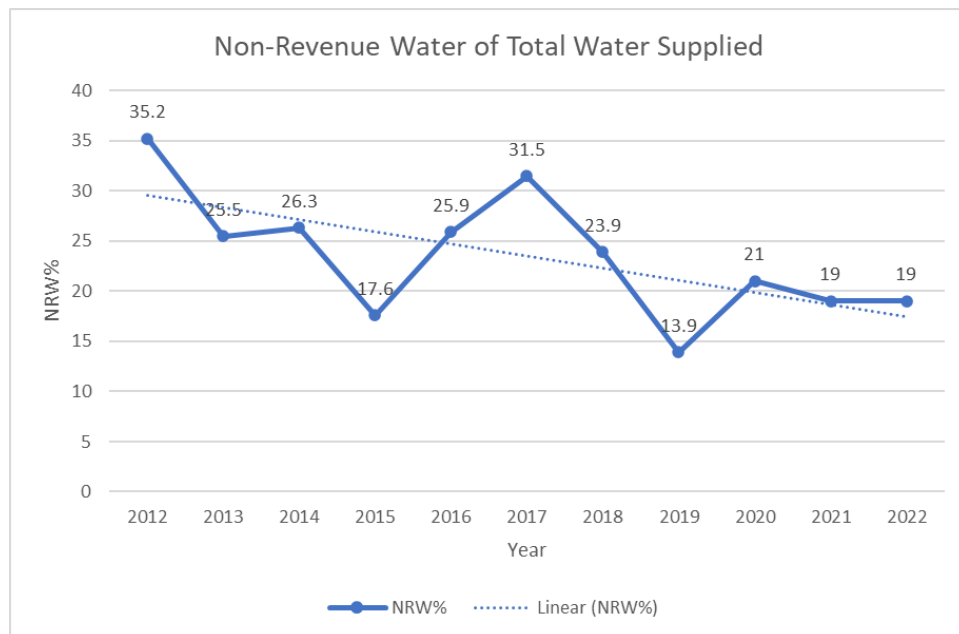
On August 25, 2022, one of the private DWS received fragmentation from the MECP and is no longer considered a DWS. The Town and Condominium terminated the sampling agreement at the end of August 2022. Therefore, at the end of this review period only one (1) Small Non-municipal DWS has an agreement in place.

Non-Revenue Water

At the end of 2019, the American Water Works Association (AWWA) recommended that water loss focus on a suite of eight indicators focusing on Volume of losses, Value of losses, and Data Validity.

With these updates, AWWA recommended that utilities discontinue percentage performance indicators, including percentage of non-revenue water (NRW) which has been the standard metric used historically. Council was provided an education session May 20, 2020, outlining the AWWA changes. Staff continue to track NRW along with the new KPI's while transitioning to the new metrics.

The chart below is a summary of the historical NRW for East Gwillimbury. NRW is inclusive of flushing for both water quality and maintenance, system leaks as well as operational water use by ECSS, CIES and CPRC.



NRW has trended downwards since 2012, with the majority of non-revenue water historically associated with watermain flushing in the Bales Drive industrial area. In 2021 and more so in 2022, Queensville/Sharon required large flushing volumes to maintain chlorine residuals. Even with the increased flushing required in Sharon /Queensville there is still a net downward trend in NRW which has been realized by reduced flushing in Bales, installation of new and more accurate water meters town wide over the last 5 years, and improving our data collection and management to quantify NRW.

The two new AWWA metrics include:

- “Loss cost rate” metric which is a financial indicator on the financial impact of respective

losses per service connection. This combines volume and value of loss. This metric was first calculated for 2021. In 2022, it was calculated at \$30.09/connection. The Town will continue to refine the data to support this metric to enable trending, this year the Town is in the 50th percentile, meaning average in comparison to other municipalities across North America.

- “Normalized water losses” metric represents losses per connection. It is noted by AWWA that this is not a stand-alone KPI; nor can it be used as a target. In 2021, the Town had a total loss of 60 litres/connection per day, and in 2022 this was calculated to be 24.5 litres/connection per day. To also put this into context, it is below the 25th percentile and comparatively favourable.

The new AWWA suite of KPI’s will take time to refine through improved data collection, evaluation and fully adoption. Staff will continue to utilize the AWWA software, continuously improve data and utilize the new KPIs to more fully understand and compare water loss performance.

References

- Safe Drinking Water Act 2002 (SDWA)
- Ontario Regulation 170/03 of the SDWA (Drinking Water Systems)
- Ontario Regulation 128/04 of the SDWA (Certification of Drinking Water System Operators and Water Quality Analysts)
- Ontario Regulation 169/03 of the SDWA (Ontario Drinking Water Quality Standards)
- Ontario Regulation 188/07 of the SDWA (Licensing of Municipal Drinking Water Systems)
- Ontario Regulation 319/08 of Health Protection and Promotion Act (Small Drinking Water Systems)
- Drinking Water Quality Management Standard (February 2017) [ontario.ca/environment](https://www.ontario.ca/environment)