

2023-2024 Chief Drinking Water Inspector annual report

Learn about the performance of our regulated drinking water systems and laboratories, drinking water test results, and enforcement activities and programs.

Message from the Chief Drinking Water Inspector

In Ontario, we are fortunate to have highly protected drinking water. Clean drinking water is essential for the health and well-being of all individuals. It plays a critical role in preventing waterborne diseases and maintaining overall public health. It is not only a matter of public health but also a public responsibility that requires robust frameworks and regulations. Ontario has one of the most comprehensive drinking water protection frameworks in the world.

This framework is a testament to our commitment to preserving this precious resource.

This responsibility, however, does not lie solely with the provincial government.

Safeguarding drinking water involves many individuals and organizations, such as the Chief Medical Officer of Health and public health units, municipalities, conservation authorities, water associations, the Walkerton Clean Water Centre, and the Ontario Clean Water Agency. This report highlights their important work and shows that the performance of our drinking water systems continues to effectively protect public health.

We remain committed to transparency and accountability and recognize the ongoing need for vigilance and continuous improvement in water quality management. The importance of keeping our drinking water clean cannot be overstated. It is essential for our health, our environment, and our economy. Each of us has a role to play in protecting our water sources and ensuring that future generations have access to clean, safe drinking water.

Steven Carrasco

Message from the Chief Medical Officer of Health

In a world where water scarcity is becoming an increasingly pressing issue, Ontario's position of abundance is both a rare blessing and a profound responsibility. To honour this gift is to recognize its value and to manage it sustainably, ensuring generations to come can enjoy clean, safe drinking water.

The Small Drinking Water Systems Program plays an important role in delivering clean, healthy drinking water every day, ensuring that 10,000 businesses and communities across the province have access to the healthy drinking water they need.

This program, overseen by the Ministry of Health and administered by local boards of health, ensures that each system is inspected and assessed to create a tailored, site-specific plan for maintaining water quality. These efforts not only protect public health but also reduce the administrative burden on system operators, allowing them to focus on providing safe water for all.

As we release the 2023-2024 program results, I am pleased to share that 97.81% of test results have met Ontario's high standards for drinking water quality. The program continues to demonstrate its value in reducing adverse water quality incidents and safeguarding public health.

The enduring success of the Small Drinking Water Systems Program is a testament to the dedication of local boards of health, drinking water partners, and everyone involved in ensuring safe drinking water across the province. Thank you for your tireless work and commitment to the health and well-being of Ontarians.

Kieran Moore

Chief Medical Officer of Health
Ministry of Health

2023-2024 at-a-glance

Statistics

In 2023-2024:

- 99.9% of the more than 500,000 drinking water test results from municipal residential drinking water systems met Ontario's Drinking Water Quality Standards.
- 99.6% of more than 40,000 results from non-municipal year-round residential systems met the standards.
- 99.7% of almost 60,000 results from systems serving designated facilities (such as child care centres and long-term care homes) met the standards.
- 97.3% of more than 21,000 test results met Ontario's standard for lead in drinking water at schools and child care centres. When looking at flushed samples only, this number increases to 98.6%.
- Staff at licensed laboratories analyzed and reported over 1,000,000 drinking water test results.
- All licensed laboratories and 99.8% of municipal residential drinking water systems received a compliance rating above 80%.
- 7,653 operators were certified to run drinking water systems and 1,581 operator certificates were renewed.
- Over \$20 million in funding has been committed for source water protection over the next three years.

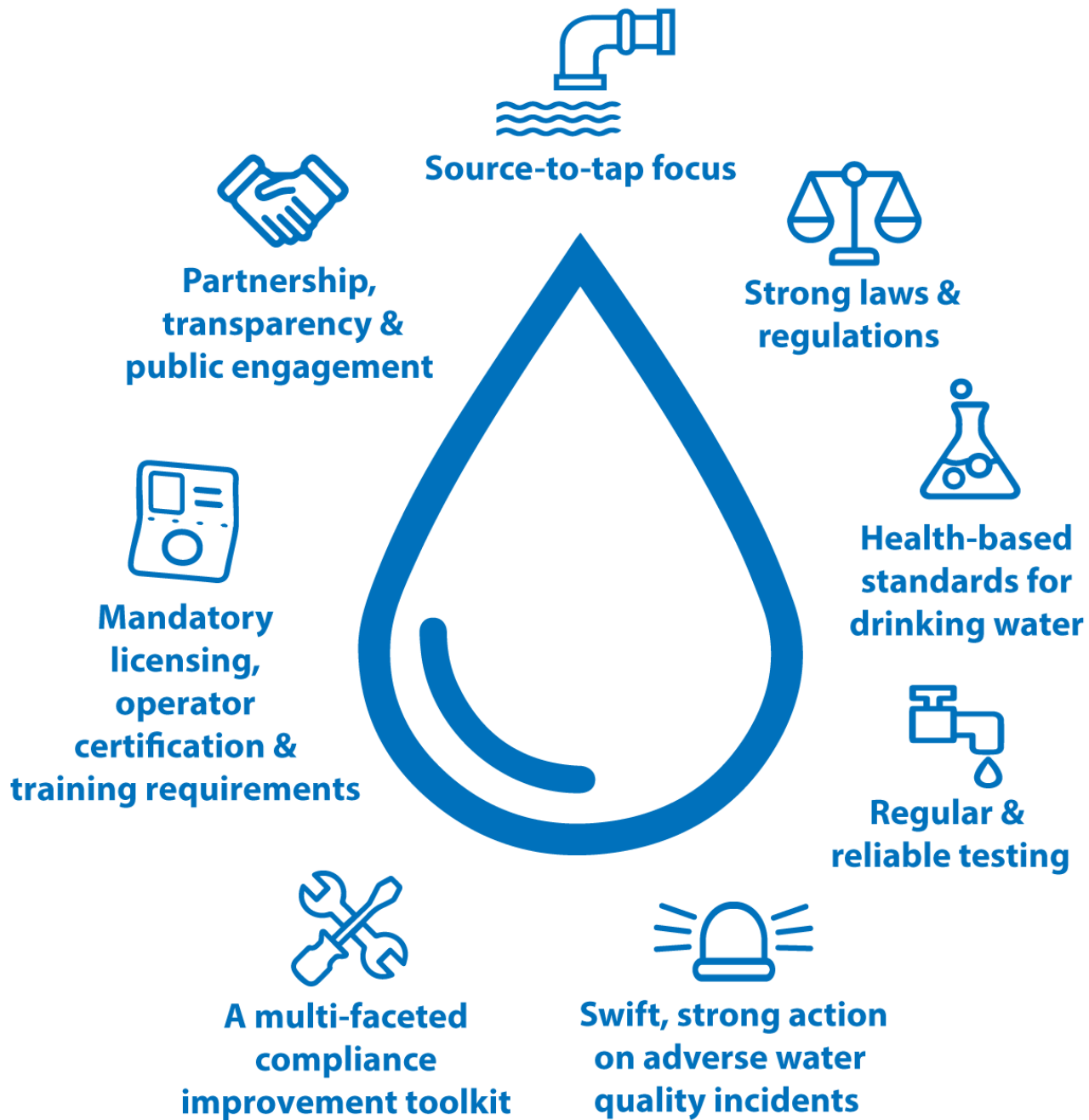


Figure 1: Drinking water protection framework

The 8 components of the framework are:

- source-to-tap focus
- strong laws and regulations
- health-based standards for drinking water
- regular and reliable testing
- swift, strong action on adverse water quality incidents

Drinking water protection framework

Ontario's drinking water protection framework aims to keep drinking water safe through multiple protective barriers and checks and balances. These include:

- strong legislation
- source protection plans
- stringent health-based drinking water quality standards
- highly trained and licensed operators with continuing education requirements
- frequent operational checks and water monitoring
- duplicative reporting
- regular inspections of drinking water systems and licensed laboratories
- partnership, transparency and public engagement

Ontario continues to work with our partners through this comprehensive, multi-barrier framework to protect Ontario's drinking water from source to tap.

Update on ministry actions to protect drinking water

Source water protection

In 2024, the ministry made a historic investment by signing transfer payment agreements with source protection authorities across the province totaling more than \$20 million over three fiscal years to support meeting requirements under the *Clean Water Act* (<https://www.ontario.ca/laws/statute/06c22>) .

Municipal drinking water systems are expanding or changing in response to population growth, and this often changes the drinking water protection zones surrounding them. As well, several source protection plans needed to be updated to address the ministry's updated Technical Rules released in 2021 and, for example re-evaluate the risks from road

salt and update policies to address the risk. In the 2023-2024 fiscal year, six source protection plans were amended or updated to incorporate changes to drinking water systems, update science and/or address implementation challenges.

The ministry also supports municipalities by providing the mandatory training for risk management officials and inspectors to manage drinking water threats in their local region. 29 participants received their training in 2023-2024.

Ministry's Protocol of Accepted Methods and Sampling Document

The ministry is in the process of updating 2 key drinking water documents: the Protocol of Accepted Drinking Water Testing Methods (<https://www.ontario.ca/page/accepted-drinking-water-testing-methods>), and the Practices for the Collection and Handling of Drinking Water Samples (<https://www.ontario.ca/page/practices-collection-and-handling-drinking-water-samples>). These documents are used by the regulated community and ministry staff in the collection and analysis of drinking water samples in Ontario. The Protocol of Accepted Drinking Water Testing Methods lists analytical methods that are suitable for use by a licensed laboratory to test for all the regulated parameters in Ontario Regulation 169/03. Ministry staff also use this document to approve drinking water testing licence applications and verify compliance with testing methods during inspections. The Collection and Handling of Drinking Water Samples promotes proper sampling techniques to ensure results reflect the actual conditions of the drinking water being tested. The proposed updates to the procedure were posted for public comment on the Environmental Registry of Ontario. The ministry received many comments and is in the process of reviewing the comments and adjusting the procedures based on feedback provided.

Operator project

The Ministry of the Environment, Conservation and Parks led a multi-stakeholder project to assess challenges and identify measures needed to help ensure that every Ontario region has a sufficient and qualified workforce for the water and wastewater sector. The long-term sustainability of the water operator workforce is crucial to drinking water protection as operators monitor, sample and operate drinking water systems to safeguard Ontario's drinking water.

The ministry collected and is using the feedback received from stakeholders and partners, including industry associations, employers, Indigenous industry representatives and post-secondary education institutions to develop a comprehensive strategy to support water operator recruitment and retention in Ontario.

Moving forward

Updating Ontario's drinking water benchmarks

The ministry is planning to replace the Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines with a new Drinking Water Benchmarks Table. The Drinking Water Benchmarks Table will include:

- Ontario Drinking Water Quality Standards - regulatory benchmarks within Ontario Regulation 169/03 made under the *Safe Drinking Water Act, 2002*
- Aesthetic Objectives - non-regulatory benchmarks for parameters that may impair the taste, odour, or colour of water
- Operational Guidelines - non-regulatory benchmarks for parameters that, if not properly controlled, may negatively affect the efficient and effective treatment, disinfection, and water distribution to the consumer

Ministry staff, drinking water system owners/operators, design engineers, and other professionals such as hydrogeologists would use this document as a reference in the design and operation of water treatment plants to produce water that continuously satisfies the standards, objectives and guidelines of drinking water quality.

The ministry expects to consult on the Drinking Water Benchmarks Table and how it gets updated through a posting for public comment on the Environmental Registry of Ontario in the near future.

Drinking water performance

The Ministry of the Environment, Conservation and Parks regulates the various kinds of drinking water systems and related activities set out in the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) , including:

- Municipal residential drinking water systems that are owned by municipalities and supply drinking water to homes and businesses.
- Non-municipal year-round residential drinking water systems that are privately owned

and supply drinking water all year to people's homes in places such as trailer parks, apartments, and condominium and townhouse developments where there are six or more private residences. This also includes drinking water systems owned by local services boards, which are volunteer organizations that are set up in rural areas where there is no municipal structure.

- Public and privately owned systems serving designated facilities that have their own source of water and provide drinking water to facilities such as children's camps, schools, health care centres and senior care homes.
- Licensed laboratories that perform testing of drinking water.
- Certification and training for water operators and water quality analysts in Ontario.

The ministry has a comprehensive compliance program, which includes inspecting drinking water systems and laboratories, managing drinking water related incidents such as adverse water quality incidents, and outreach and education measures.

Inspections are a key tool in the multi-faceted compliance tool kit component of the drinking water protection framework. During an inspection of a drinking water system, the water compliance officer will collect information to evaluate compliance and make notes to record details of the inspection. The officer will inspect the drinking water treatment equipment, interview personnel, review records and data and take photographs. During an inspection of a laboratory, the laboratory inspector will tour the facility, interview personnel, review records, trace drinking water samples from receipt to reporting test results, among other things. All drinking water systems and laboratory owners are issued a report with the inspector's findings including any instances of non-compliance.

When non-compliance is identified, the inspector works with system or laboratory owners to bring them into compliance. For more serious instances of non-compliance, the inspector may issue an order or refer the matter to the ministry's Environmental Investigations and Enforcement Branch for potential investigation.

The decision to refer non-compliant behaviour for investigation depends on several criteria, including:

- the potential impact of the non-compliance to the health of the users of the system
- the compliance history of the inspected system owner and/or operator
- the level of the owner's cooperation

- what steps the owner and/or operator has taken or is taking to resolve the issue

The *Compliance and Enforcement Regulation (Ontario Regulation 242/05)* (<https://www.ontario.ca/laws/regulation/050242>) made under the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) also requires that the ministry take mandatory action (for example, issue an order or refer the matter for potential investigation) when a violation may compromise the safety of the drinking water. This is further detailed in the Compliance and Enforcement section below.

Regular monitoring and sampling at drinking water systems is required so that water quality issues are quickly identified and addressed. When a sample exceeds an Ontario Drinking Water Quality Standard or there is an observation of improperly treated drinking water, the laboratory and/or system owner must report the issue to the ministry and the local medical officer of health. Figure 2 outlines the process that must be followed when an adverse test result or observation occurs.

General Notification Process for Adverse Water Quality Incidents

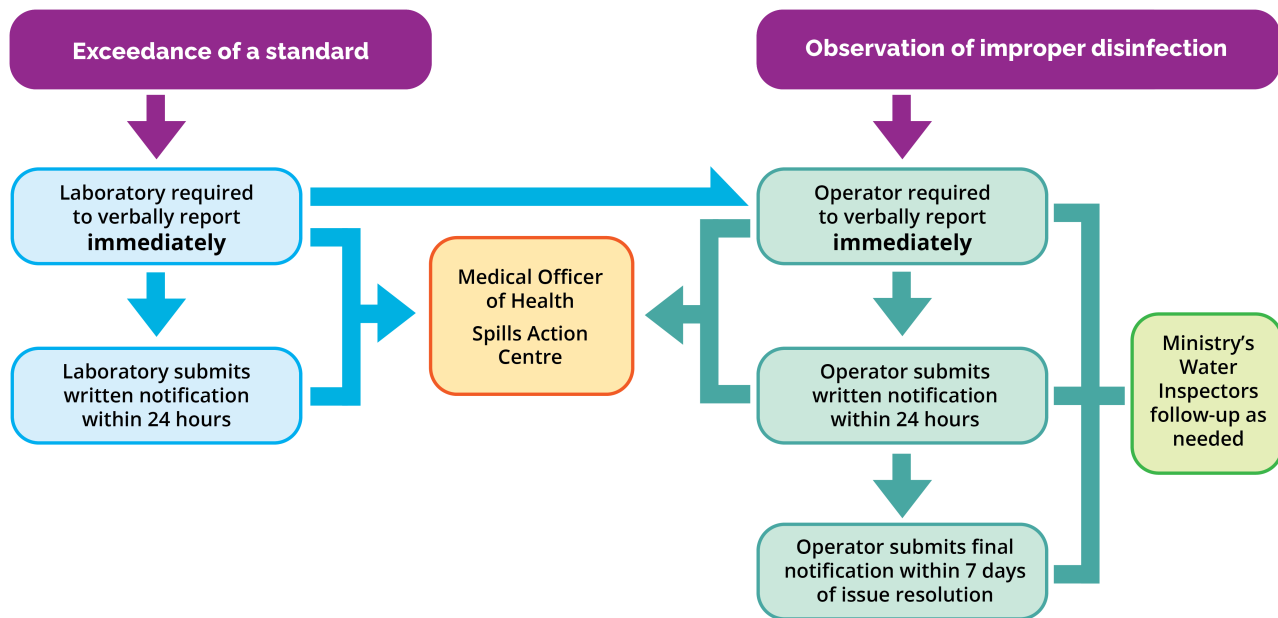


Figure 2 outlines the process that must be followed when an adverse test result or observation occurs

General notification process for adverse water quality incidents

Exceedance of a standard

The following reports are submitted to Spills Action Centre and local medical officer of health:

- laboratory verbally reports immediately
- operator verbally reports immediately
- laboratory submits written notification within 24 hours to the Spills Action Centre and local medical officer of health
- operator written notification within 24 hours to the Spills Action Centre and local medical officer of health

Observation of improper disinfection:

- operator required to verbally report immediately to the Spills Action Centre and local medical officer of health

It is important to note that the report of an adverse test or operational issue (for example, low chlorine or improper disinfection) does not necessarily mean that the drinking water is unsafe, but it does mean that the owner and operator need to investigate what may have caused the adverse result or operational issue and take all steps necessary to resolve it.

The ministry also follows up on lead exceedances and works with operators of schools and child care centres, as well as the local medical officer of health, to resolve issues. When a test result exceeds the standard for lead, facility operators must report the exceedance to the ministry, the local medical officer of health and the Ministry of Education. If a result from a flushed sample fails to meet the standard, owners and operators must take immediate action to make the tap or fountain inaccessible to children by disconnecting or bagging it until the problem is fixed. Other corrective actions can include increased flushing, replacing the fixture, or installing a filter or other device that is certified for lead reduction. Operators must also follow any other directions issued by their local medical officer of health.

The following section outlines the performance of our regulated drinking water systems and laboratories, drinking water test results, and enforcement activities and programs. The performance results show that Ontario’s drinking water systems continue to be well-operated, and our water is still among the best protected in the world. More detailed information on the following data is available on the Ontario Data Catalogue (<https://data.ontario.ca/dataset/drinking-water-quality-and-enforcement>) .

Table 1: Number of drinking water systems and laboratories regulated by the Ministry of the Environment, Conservation and Parks in 2023-2024

Category	Number of drinking water systems and laboratories
Municipal residential drinking water systems	653

Category	Number of drinking water systems and laboratories
Non-municipal year-round residential drinking water systems (for example, year-round trailer parks)	465
Systems serving designated facilities (for example, a school on its own well supply)	1,370
Licensed laboratories	50

Table 2: Summary of drinking water test results for system types in 2023-2024

Category	Number of tests results	Microbiological adverse test results	Chemical and radiological adverse test results	Percentage of test results meeting standards
Municipal residential systems	524,036	495	175	99.87%
Non-municipal year-round residential	43,100	101	84	99.57%

Category	Numb er of tests results	Microbiol ogical adverse test results	Chemical and radiological adverse test results	Percentage of test results meeting standards
systems				
Systems serving designated facilities	57,949	149	38	99.68%

The consistent result of over 99% for all three system categories demonstrates that the stringent regulations and requirements in place help to ensure that regulated drinking water continues to remain very safe in Ontario. The year-over-year^[1] variation in the number of test results that met the standard is very minor, for all drinking water system categories. (Figure 3).

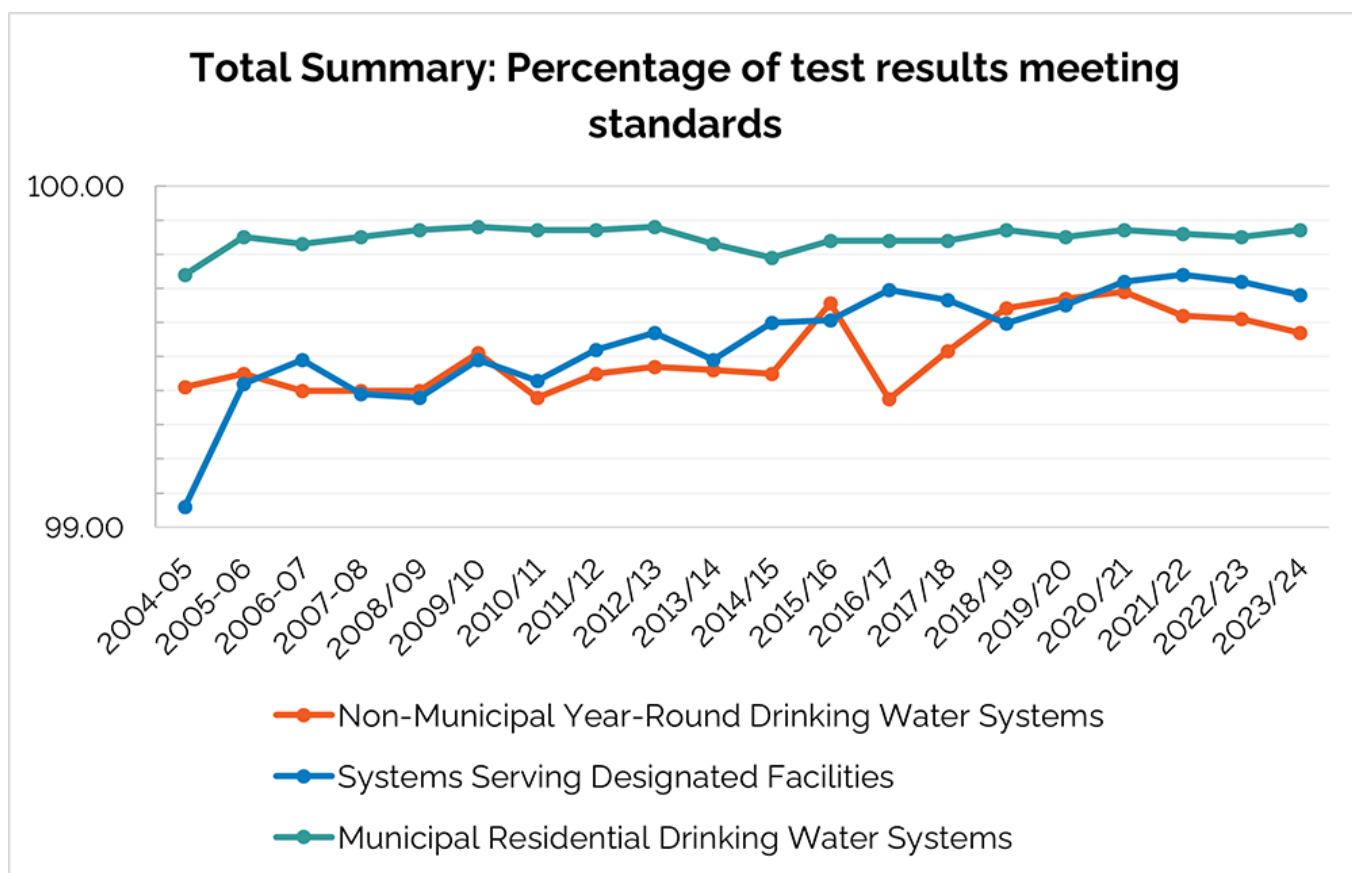


Figure 3: Trends in percentage of drinking water tests meeting Ontario Drinking Water Quality Standards, by system type

A chart showing trends in the percentage of drinking water tests that met standards for municipal residential drinking water systems, non-municipal year-round residential drinking water systems and systems serving designated facilities over 16 years. The trend is consistent for all three system categories, showing that over 99% of drinking water test results since 2004-2005 have met standards.

For municipal residential drinking water systems, the percentage of drinking water test results that met the standards ranged from 99.74% in 2004-2005 to 99.87% in 2023-2024.

For non-municipal year-round drinking water systems, the percentage of drinking water test results that met the standards ranged from 99.41% in 2004-2005 to 99.57% in 2023-2024.

For systems serving designated facilities, the percentage of drinking water test results that met the standards ranged from 99.06% in 2004-2005 to 99.68% in 2023-2024.

Table 3: Summary of adverse water quality incidents for system types in 2023-2024

Category	Number of adverse water quality incidents	Number of systems reportings
Municipal residential systems	1,180	361
Non-municipal year-round residential systems	448	186
Systems serving designated facilities	372	251

Table 4: Lead test results for schools, private schools, and child care centres in 2023-2024

Sample type	Total number of results	Number of test results meeting Ontario's Drinking Water Quality Standard	Number of lead exceedances (of total number of results)	Percentage of test results meeting Ontario's Drinking Water Quality Standard

Sample type	Total number of results	Number of test results meeting Ontario's Drinking Water Quality Standard	Number of lead exceedances (of total number of results)	Percentage of test results meeting Ontario's Drinking Water Quality Standard
Lead - Flushed	10,666	10,517	149	98.6%
Lead - Standing	10,923	10,491	432	96.05%
Lead - Total for standing and flushed samples	21,589	21,008	581	97.31%

Table 5: Community lead testing - lead plumbing tests results 2023-2024		
Category	Number of test results	Percentage meeting the drinking water standard for lead

Category	Number of test results	Percentage meeting the drinking water standard for lead
Municipal residential drinking water systems	4,628	95.83%
Non-municipal year-round residential drinking water systems	720	99.17%

Table 6: Number of inspections conducted in 2023-2024

Category	Number of inspections
Municipal residential drinking water systems	653
Non-municipal year-round residential drinking water systems	113

Category	Number of sent year-at-a-glance reports ^[2]
Non-municipal year-round residential drinking water systems	449
Systems serving designated facilities	1,313

Table 8: Drinking water fixture inventories as of September 30, 2024			
Category	Number of facilities	Percentage of drinking water fixture inventories submitted	Percentage declaring sampling is completed ^[3]
Schools and child care centres	11,131	93%	82%

Inspection ratings

The ministry assigns a rating to each inspection conducted at a municipal residential drinking water system or licensed laboratory. A risk-based inspection rating is calculated based on the number of non-compliance items identified during an inspection of a system or laboratory, and the significance of those administrative, environmental and/or health consequences.

In 2023-2024:

- 74% of municipal residential drinking water systems received a 100% rating
- 99.8% of municipal residential drinking water systems received an inspection rating above 80%
- 62% of laboratories received a 100% rating in at least 1 of their inspections
- 32% of laboratories received a 100% in both inspections
- 100% of laboratory inspections received ratings above 80%

An inspection rating of less than 100% does not indicate that drinking water is unsafe. It identifies areas where changes may need to be made to improve the operation of a drinking water system or laboratory. In these situations, the ministry uses a range of compliance tools to help ensure that the owners address specific areas requiring attention.

Common instances of non-compliance for drinking water systems included failing to ensure:

- that continuous monitoring equipment is performing and recording tests correctly
- treatment equipment is properly operated (for example, using the correct dosage of chlorine, confirming that filters are performing properly)
- logbooks are properly maintained and contain the required information
- persons operating the drinking water system possess the proper designation and training
- reporting requirements for adverse water quality incidents are met
- microbiological samples are collected at the proper frequency and correct location

Common instances of non-compliance for licensed laboratories included failing to ensure:

- documentation and record-keeping contain sufficient detail

- policies and procedures are up to date
- that laboratory personnel are conducting drinking water testing according to the licensed test method
- that adverse results are reported, and that the reports include all the required information

Compliance and Enforcement Regulation

The *Compliance and Enforcement Regulation (Ontario Regulation 242/05)* (<https://www.ontario.ca/laws/regulation/050242>) made under the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) outlines the requirements the ministry's compliance program must meet. Requirements met this year included:

- completing an inspection at all 653 municipal residential drinking water systems in the province
- completing two inspections at each of the 50 licensed laboratories in the province
 - one laboratory left the program mid-year and so did not require a second inspection
- conducting at least one of the two inspections at each licensed laboratory unannounced
- issuing all inspection reports for licensed laboratories within 45 days of the completion of the inspection
- taking mandatory action within 14 days of finding a deficiency at a municipal residential drinking water system or an infraction at a licensed laboratory

The ministry did not meet the requirement to issue all inspection reports for municipal residential drinking water systems within 45 days of the completion of the inspection as one inspection report was issued after the 45-day requirement. The ministry is taking corrective action to ensure all requirements under the Compliance and Enforcement Regulation are met, including stricter adherence to standard operating procedures concerning these requirements. Training was provided to staff on the importance of the Compliance and Enforcement Regulation and its requirements.

In addition to setting requirements for inspection and compliance activities, the Compliance and Enforcement regulation also provides the public with the right to request an investigation of an alleged contravention of the *Safe Drinking Water Act, 2002* or any of

its regulations. In 2023-2024, there were no public requests for investigations.

Deficiencies, infractions and orders

Deficiencies and infractions

The Compliance and Enforcement regulation made under the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) (Ontario Regulation 242/05 (<https://www.ontario.ca/laws/regulation/050242>)) requires that the ministry undertake mandatory action for deficiencies identified at municipal residential drinking water systems and infractions at laboratories. Mandatory action may consist of various measures, such as issuing an order or referring non-compliant behaviour for investigation.

A 'deficiency' in this context means a violation of prescribed provisions of the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) and its regulations that poses a drinking water health hazard. For example, water treatment equipment that is not operated according to provincial requirements may impact the quality of drinking water and adversely affect the health of those using the system. In the context of the Compliance and Enforcement regulation, an 'infraction' means a violation of prescribed provisions of the *Safe Drinking Water Act, 2002* and its regulations in respect of a licensed laboratory. For example, a laboratory's failure to report an adverse test result to the owner of a drinking water system could result in the system owner not taking corrective action.

In 2023-2024, the ministry did not identify any deficiencies during inspections of municipal residential drinking water systems.

There were six infractions identified at six licensed laboratories tied to late adverse reporting. The owners of five laboratories were issued orders requiring them to take corrective action. The sixth infraction was also tied to a late adverse report, but this instance was referred for investigation.

The following orders were issued in 2023-2024 (including those issued as a result of an infraction):

Licensed laboratories

Three orders were issued by the Ministry of the Environment, Conservation and Parks pertaining to five separate licensed laboratories. Two individual laboratories were ordered and one order was issued to the owner of four laboratories due to the same infraction occurring at each site.

- In the case of a laboratory that failed to immediately report an adverse water quality test result to the drinking water system owner, the local medical officer of health and local health unit, and the Spills Action Centre, as required by law, the order required the laboratory to:
 - conduct a root cause analysis to identify deficiencies in the laboratory system for flagging adverse drinking water test results that included a review of the laboratory's current quality management system and standard operating procedures regarding the identification, processing, and immediate reporting of the prescribed adverse water test results
 - implement corrective action to address deficiencies and retrain staff on processing and immediate reporting of adverse drinking water test results
 - submit a compliance report to the ministry outlining how the laboratory has complied with these requirements
- In the case of a laboratory that failed to immediately report an adverse water quality test result to the Ministry of Health, as required by law, the order required the laboratory to:
 - review their quality management system at the Laboratory regarding the identification, processing, and immediate reporting of adverse results from small drinking water systems
 - implement corrective action to address deficiencies and retrain staff on processing and immediate reporting of adverse drinking water test results
 - submit a compliance report to the ministry outlining how the laboratory has complied with these requirements
- In the case of an agency that operates four laboratories that failed to immediately report adverse water quality test results to the Ministry of Health, as required by law, the order required the agency to:

- review all written notifications of adverse drinking water test results pertaining to small drinking water systems between August 2023 and November 2023 to verify if the immediate adverse written notifications were sent as required
- review the agency's quality management system regarding the identification, processing, and immediate reporting of adverse water test results, including a review of the verification procedures for ensuring that written notification of adverse test results are sent in the required timeframes
- implement corrective action to address deficiencies and retrain staff on processing, immediate reporting of adverse test results and alternative procedures for immediate written notification
- submit a compliance report to the ministry outlining how the agency has complied with these requirements

The laboratories complied with the orders

Non-municipal year-round residential drinking water systems

Eight orders were issued to owners of non-municipal year-round residential drinking water systems.

- For a system that did not have a certified operator as required by law, a provincial officer's order was issued requiring the owner to:
 - submit written confirmation to the ministry that the owner has hired a certified operator
- For a system that did not have a certified operator, as required by law, and had therefore been made the subject of a boil water advisory, a provincial officer's order was issued requiring the owner to:
 - retain a certified operator and provide proof of a written contract between the owner and the certified operator
 - develop a contingency plan that includes procedures for preventing and managing any future situations that result in a failure to secure a certified operator and identify the potential causes and describe how the duration of such situations would be minimized
 - provide a weekly summary report of system operations that includes sampling results, logbook copies, operation and maintenance records, and information

pertaining to alarms and/or abnormal conditions and any corrective actions that were implemented

- A provincial officer's order was issued to the owners and property manager of a system that did not have a certified operator, as required by law, and whose system needed repairs, was not operational, and was not in compliance with sampling and operational requirements. The orderes requested that the Director review the order. The Director issued a director's order which largely upheld the provincial officer's order with some modifications, and which required the owner to:
 - submit a report to the ministry that includes a description and photographs of the current system components, maintenance records indicating equipment maintenance and modifications from the Engineering Evaluation Report, and photographs that show the Boil Water Advisory Notices and provincial officer's report posted in a public place in the apartment unit as well as the posting of the corresponding inspection report
 - submit maintenance records quarterly to the ministry including monthly UV maintenance, auto shut-off solenoid valve checks and filter maintenance
 - ensure that required sampling is conducted and submit to the ministry copies of the certificate of analysis and chain of custody forms for all samples taken in the drinking water system on a quarterly basis
 - retain a certified operator and provide the ministry with a copy of the certified operator's certificate and contract for services
 - submit to the ministry a Drinking Water System Profile Information Form
- A provincial officer's order was issued to the corporate owner and directors of a system that did not have a certified operator, as required by law, and was not in compliance with water testing requirements. The orderes requested the Director review the order. The Director issued a director's order which upheld the provincial officer's order and required the owner to:
 - retain a certified operator and provide proof to the ministry of a written contract between the owner and the certified operator
 - provide users of the drinking water system with monthly door-to-door notices of the boil water advisory in effect until the advisory was rescinded and notify the ministry that the notices were delivered
 - supply users of the drinking water system with four litres of potable bottled water

per person per day until such time that the provincial officer notifies the owner otherwise

- A provincial officer's order was issued to the owner of the system, the owner of the land that part of the system is located on, and a condominium corporation due to concerns with maintenance of the system and the failure to retain a certified operator. The orderes requested that the Director review the order. The Director issued a director's order which largely upheld the provincial officer's order with some modifications, and which required the orderes to:
 - submit to the ministry an action plan outlining steps to restore primary disinfection to the drinking water system or, alternatively, how the orderes will provide an alternate source of potable drinking water to the users of the drinking water system
 - Submit to the ministry an action plan that describes how the orderes will ensure that a qualified person will operate and maintain the drinking water system
- A provincial officer's order was issued to the corporate owner and director of a system with a well cover that was not preventing the entry of surface water and other foreign materials and which did not have an up-to-date engineering report, requiring the owner and director to:
 - retain the services of a licensed well technician and submit written confirmation to the ministry that they were retained
 - have the technician prepare and submit a well technician report to the ministry
 - submit to the ministry a proposed action plan, including a schedule for implementing the recommendations from the well assessment report
 - retain a qualified licensed engineering practitioner and submit to the ministry written confirmation that they were retained
 - have the engineer prepare an engineering evaluation report of the system and arrange for them to submit the report and a Declaration of Licensed Engineering Practitioner and Notice of Completion to the ministry
- A provincial officer's order was issued to the owner of a system that did not have a certified operator, as required by law, and did not have a current engineering evaluation report, requiring the owner to:
 - retain the services of a certified operator and provide proof to the ministry of the

contract between the owner and the operator:

- provide the ministry with the date the certified operator would assume the operational duties of the drinking water system
- create and submit to the ministry a sampling plan and schedule to cover the period between the operator assuming operational duties and July 2024 which details the microbiological, organic and inorganic sampling along with all chlorine residual and turbidity testing to be conducted
- retain the services of a qualified licensed engineering practitioner and submit to the ministry written confirmation that they were retained
- instruct the engineer to complete an assessment of the drinking water system to determine that all equipment required to meet Schedules 2, 6, 8 and 9 of Ontario Regulation 170/03 was provided
- have the practitioner complete and submit a report detailing the findings of the engineering assessment containing, at a minimum, the reasons, technical information relied upon, and conclusions of the assessment

- A provincial officer's order was issued to the corporate owner and director of a system that did not register with the ministry, have a certified operator nor have an engineering assessment prepared as required by law, and was not complying with drinking water monitoring requirements, requiring the owner to:
 - retain the services of a licensed engineering practitioner and have the engineer submit to the ministry written confirmation that they were retained
 - arrange for the engineer to complete an assessment of the drinking water system to determine that the water treatment equipment complies with schedules 2, 6, and 8 of Ontario Regulations 170/03 and provide the ministry with an engineering evaluation report of the assessment
 - retain a certified operator and submit the name and contact information of the operator to the ministry
 - submit a laboratory services notification form to the ministry
 - provide written confirmation to the ministry that microbiological and chemical sampling and testing is being conducted at the drinking water system
 - leave the Schedule 19 Drinking Water Warning Notice signs posted on all private residential units, until a certified operator is retained, and sampling is conducted
- Four owners complied with the orders within the timeframe outlined in the orders. Four ordererees failed comply with the orders and were referred for investigation.

Systems serving designated facilities

Three orders were issued to owners of systems serving designated facilities.

- A provincial officer's order was issued to the owners of a system servicing a long-term care facility which did not have a qualified person operating the system, as required by law, and was not complying with its recording/reporting requirements and was not adequately sampling and testing the water, requiring the owners to:
 - ensure their system operator completed the required training and possesses the required designation/certification and submit a report confirming the completion of this action to the ministry
 - identify the correct legal entity that owns and operates the drinking water equipment and submit a profile update form to the ministry
 - implement a procedure so that required information is available for review by any

member of the public during normal business hours without charge at the office of the owner or at a location that is reasonably convenient to the public

- implement a procedure to prepare an annual report by the required deadline each year
 - have the engineering evaluation report updated by a licensed engineering practitioner to reflect the recently installed drinking water system equipment and submit the report, a Declaration of Licensed Engineering Practitioner, and a Notice of Completion to the ministry
 - implement procedures so that the treatment equipment is operated in a manner that achieves the design capabilities required under Ontario Regulation 170/03 at all times that water is being supplied to consumers and provide proof that the procedure was implemented
 - implement a procedure to ensure that a record is made for every required operational test and every required sample
 - implement a procedure/schedule to ensure that microbiological, inorganic, organic, nitrate, nitrite, fluoride, sodium sampling is conducted
 - either implement a procedure to ensure lead sampling is conducted or submit an application to sample for lead every 36 months
- A provincial officer's order was issued to the owner of a system servicing a child care centre due to a number of non-compliances, including failing to retain a certified operator, and not complying with sampling, reporting, and maintenance obligations, which required the owner to:
 - submit to the ministry monthly checks and maintenance record sheets, including UV maintenance and cartridge filter record sheets
 - submit to the ministry a plan that outlines a schedule for maintenance and checks identifies the person that will perform the checks and maintenance explaining how the checks and maintenance will be documented and outline what procedure will be implemented to ensure maintenance issues will be addressed promptly
 - submit to the ministry all chain of custody forms and laboratory test reports for all drinking water testing within two days from when they were received from the laboratory
 - For a system servicing a long-term care facility which did not have a certified operator

or trained person to operate the system, an order was issued requiring the orderes to:

- retain a certified operator and provide proof to the ministry of a contract between the operator and orderes
 - create and submit to the ministry a sampling schedule identifying the frequency, location and parameter being sampled to ensure sampling requirements are met for raw and distribution microbiological, treated nitrate and nitride and daily treated chlorine residuals
 - submit to the ministry all water test results for raw and distribution microbiological, treated nitrate and nitride and monthly log sheets for treated chlorine residuals
 - post copies of the provincial officer's order in prominent locations where they are likely to come to the attention of users of the water system
- Two of these owners complied with the orders within the specified timeframe, while one orderes originally complied with the order but failed to maintain compliance, which led to a referral for investigation.
-

Convictions

In 2023-2024, owners and/or operators of four systems that supplied drinking water to municipal and non-municipal residential systems were charged with offences under the *Safe Drinking Water Act, 2002* (<https://www.ontario.ca/laws/statute/02s32>) and convicted and fined for a combined total of \$55,800.

These convictions were as follows.

Municipal residential drinking water systems

- The operator of a municipal drinking water system was convicted of recording misleading information in a document required to be created under the *Safe Drinking Water Act, 2002*. The operator failed to ensure that accurate chlorine readings were taken by the chlorine analyzer and reported to the Supervisory Control and Data Acquisition (SCADA) system and did not record the fact that the free chlorine analyzer

was in calibration mode in the logbook. The operator was fined \$5,000, plus Victim Fine Surcharge.

- The owner and two certified operators of a municipal drinking water system were each convicted of one count of failing to immediately report an observation that a drinking water system's water had not been disinfected in accordance with the ministry procedure, and each were also convicted of one count of failing to take immediate corrective action in response to that observation, as required by law. The owner and operators failed to report a low combined chlorine residual level and did not take corrective action. One of the certified operators was also convicted of one count of failing to ensure that the processes within his responsibility were measured, monitored, sampled and tested in a manner that permitted them to be adjusted when necessary. The owner was fined \$10,000, plus Victim Fine Surcharge, and the two certified operators were fined \$1,600 and \$1,200, plus Victim Fine Surcharge.
- The operator of a municipal drinking water system was convicted of failing to take all steps reasonably necessary to operate the processes within his responsibility in a safe and efficient manner in accordance with the relevant operations manuals. The operator failed to respond to a low chlorine alarm causing the system to shut down, lose pressure in the water lines, and the township to issue a boil water advisory. The operator was fined \$5,000, plus Victim Fine Surcharge.

Non-municipal year-round residential systems

- The operating authority and certified operator of a drinking water system serving a mobile home park were charged with failing to take weekly water samples and sample and test for trihalomethanes under the *Safe Drinking Water Act, 2002*. The operating authority pled guilty and was fined \$15,000, plus Victim Fine Surcharge. The certified operator pled guilty but was not fined.
- In a separate case, the same operating authority and certified operator were convicted of failing to comply with a provincial officer's order and failing to furnish a provincial officer with records as required under the *Safe Drinking Water Act, 2002*, respectively. The operating authority pled guilty and was fined \$5,000, plus Victim Fine Surcharge. The certified operator also pled guilty as was fined \$1,000, plus Victim Fine Surcharge.
- The owner of the above-mentioned mobile home park and drinking water system was convicted of failing to ensure a report was prepared by a licensed engineering practitioner within 30 days of completing alterations to the system, failing to provide the required water treatment equipment, and failing to comply with a permit to take

water by not maintaining and submitting water-taking records as required. The owner pled guilty and was fined a total of \$12,000, plus Victim Fine Surcharge.

Information on drinking water quality, inspections, orders and convictions data is available on the Ontario Data Catalogue (<https://data.ontario.ca/en/dataset/drinking-water-quality-and-enforcement>) .

2023-2024 highlights of Ontario's small drinking water system results

Across Ontario, thousands of businesses and other community sites use a small drinking water system to supply drinking water to the public. These places may not have access to a municipal drinking water supply and are most often located in semi-rural and remote communities.

These small drinking water systems, which are regulated under the *Health Protection and Promotion Act* (<https://www.ontario.ca/laws/statute/90h07>) and one of its regulations, *Ontario Regulation 319/08 (Small Drinking Water Systems)* (<https://www.ontario.ca/laws/regulation/080319>) , provide drinking water in restaurants, medical offices, places of worship and community centres, resorts, rental cabins, motels, lodges, bed and breakfasts, campgrounds, and other public settings.

The Small Drinking Water Systems Program is a unique and innovative program overseen by the Ministry of Health and administered by local boards of health. Public health inspectors conduct inspections and risk assessments of all small drinking water systems in Ontario, and provide owner/operators with a tailored, site-specific plan (i.e., a Directive) to help keep drinking water safe. This customized approach has reduced unnecessary burden on small drinking water system owner/operators without compromising provincial drinking water standards.

Owners and operators of small drinking water systems are responsible for protecting the drinking water that they provide to the public. They are also responsible for meeting Ontario's regulatory requirements, including regular drinking water sampling and testing, and maintaining up-to-date records.

2023-2024 at a glance

- Over the past decade, we have seen increasingly positive results including a steady decline in the proportion of high-risk systems (8.09% in 2023—24 down from 16.65% in 2012-2013). The total number of systems is relatively stable from year to year.
- Risk category is determined based on water source, treatment, and distribution criteria. High-risk small drinking water systems may have a significant level of risk and are routinely inspected every two years. Low and moderate risk small drinking water systems may have negligible to moderate risk levels and are routinely inspected every four years.
- Public health inspectors often work with the operator to address potential risks, which, when corrected, may result in a lower assigned category of risk.
 - As of March 31, 2024, over three quarters (80.13%) of small drinking water systems are categorized as low risk and a total of 91.91% of systems are categorized as low and moderate risk, and subject to regular re-assessment every four years.
 - The remaining systems, categorized as high risk, are re-assessed every two years.
- Sampling appears to be returning to pre-pandemic levels, after a slight decline between 2020 and 2021 (see figure 4).
- There were about 3,000 more samples (49,312) and about 5,400 more test results (96,896) in 2023-2024 compared to the previous year (46,277 and 91,445 respectively).
- 97.81% of 96,896 drinking water test results submitted from small drinking water systems during 2023-2024 have consistently met Ontario drinking water quality standards as set out in Ontario Regulation 169/03 made under the *Safe Drinking Water Act, 2002*. Public health inspectors work with the system owners and operators to bring their systems into compliance.
- As of March 31, 2024, 28,080 risk assessments have been completed for the approximately 10,000 small drinking water systems since the inception of the current program in December 2008. The risk assessment is used by the public health inspector to develop the directive for the system which is a site-specific plan for the operator. The directive may include requirements regarding:
 - the frequency and location of sampling
 - water samples to be taken and tested for biological, chemical, radiological, or other potential contamination

- operational tests such as checking disinfection levels and conducting turbidity tests
- operator training
- record-keeping
- installation of treatment equipment
- posting and maintaining warning signs

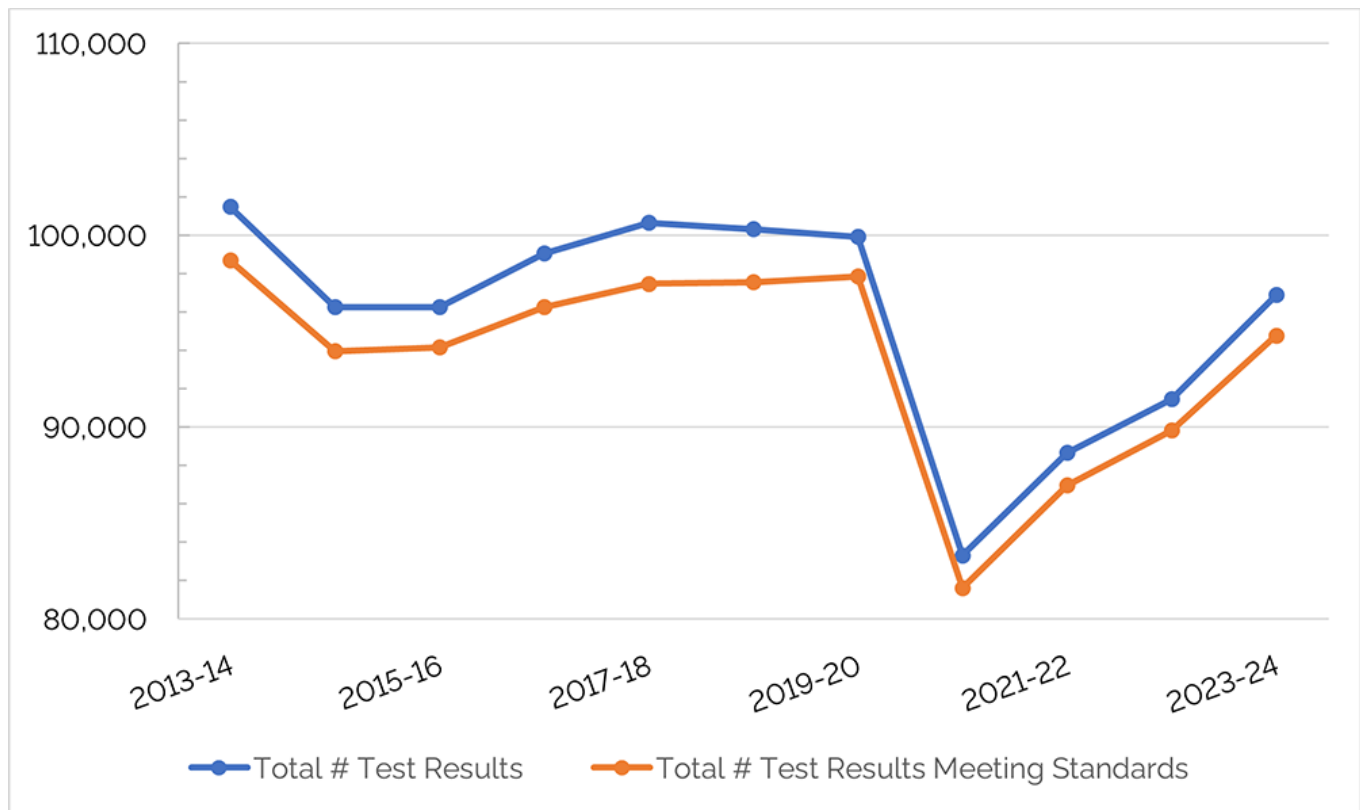


Figure 4. Total Number of Test Results and Test Results that Met the Standards for Small Drinking Water Systems, 2013-14 to 2023-24

A chart showing trends in the total number of small drinking water system test results and those results that met the Ontario Drinking Water Quality Standards from 2013-2014 to 2023-2024. The chart shows that sampling, which dropped to its lowest in 2020-2021, during the COVID-19 pandemic, appears to be gradually returning to pre-pandemic levels. The percentage of samples that met the standard have remained relatively consistent with a median of 97.81%.

Through the Ministry of Health’s Small Drinking Water System Program, public health units provide information to small drinking water system owners and operators on:

- how to protect their drinking water at the source by identifying possible contaminants

- how and when to test their water
- treatment options and maintenance of treatment equipment, where necessary
- when and how to notify the public, whether in relation to a poor water sample test result or equipment that is not working properly
- what actions need to be taken to mitigate the problem

In the event of an adverse test result, the laboratory involved will notify both the owner/ operator of the small drinking water system and the local medical officer of health for immediate response to the incident. Details of the adverse water quality incident will also be tracked by the public health unit in the Drinking Water Advisory Reporting System.

Adverse water quality incidents can result from an observation (for example, an observation of treatment malfunction) or adverse test result (i.e., water sample does not meet drinking water standards under Ontario Regulation 169/03).

- Since 2013-2014, a significant downward trend in both total adverse water quality incidents and the number of systems that reported an adverse water quality incident has occurred, with some fluctuations. The greatest impact to date was the COVID-19 pandemic:
 - In the past year, adverse drinking water quality incidents (AWQIs) and number of small drinking water systems with an AWQI, which had decreased to their lowest during the COVID-19 pandemic, appear to be returning closer to pre-pandemic levels (see figure 5).
- 2018-2019 had 1,232 AWQIs across 969 small drinking water systems, while there were 831 AWQIs across 646 small drinking water systems in 2020-21. In 2023-2024, there were a total of 1,175 adverse water quality incidents reported by 853 small drinking water systems.
- In the past year, the total number of adverse water quality incidents (1,175) increased 29.55% from the previous year (907) and the number of small drinking water systems that reported an adverse water quality incident increased 26.93% (from 672 in 2022-2023 to 853 in 2023-2024).
- Overall, the total number of incidents in 2023-2024 is still down 22.54%; and 29.85% fewer systems reported an adverse water quality incident compared to 2013-2014 data which had 1,517 AWQIs across 1,216 systems. [4]

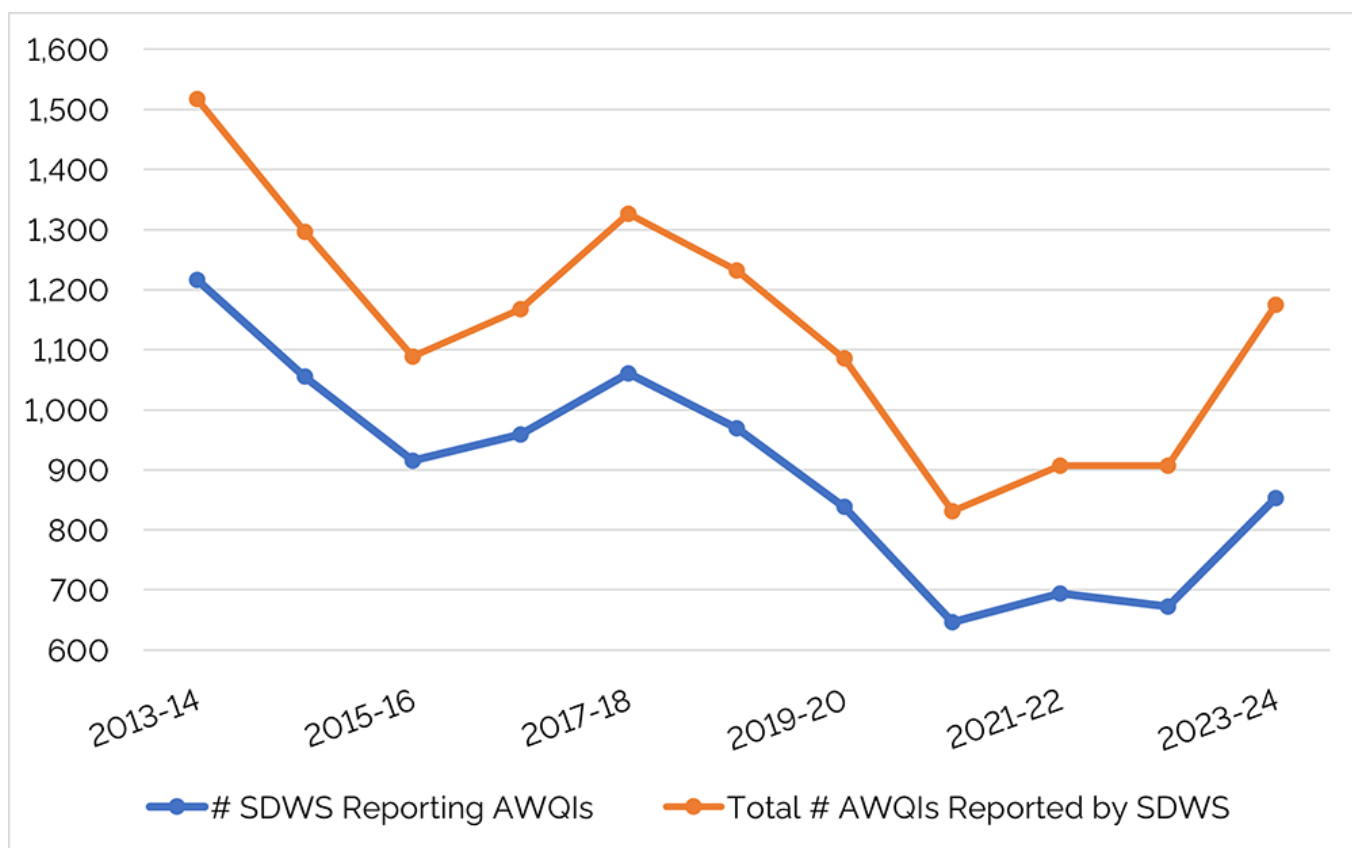


Figure 5. Number of Small Drinking Water Systems (SDWS) Reporting Adverse Water Quality Incidents (AWQIs) and Total number of adverse Water Quality Incidents Reported by SDWS from 2013-2014 to 2023-2024

A chart showing trends in the number of small drinking water systems reporting an AWQIs and the number of AWQIs from 2013-2014 to 2023-2024. The chart shows a significant downward trend since 2013—14, in both total adverse water quality incidents and the number of systems that reported an adverse water quality incident. Notably, AWQIs and number of small drinking water systems with an AWQI, which had decreased to their lowest during the COVID-19 pandemic, appear to be returning closer to pre-pandemic levels in 2023—24.

The small drinking water system adverse water quality incident data demonstrates the success of the Small Drinking Water System Program. Adverse incidents are now being systematically captured and appropriate action can now be taken and tracked to help protect drinking water users.

Reductions in adverse water quality incidents in small drinking water systems have occurred over time since the start of the program, as owners/operators have complied with sampling requirements in accordance with their directives and have instituted improvements in their drinking water systems.

Note, the Ministry of Health is not aware of any reported illnesses related to these incidents. This may in part be because, through the Small Drinking Water System Program, operators now know when and how to notify users that their drinking water may not be safe to drink and are working with public health units to take appropriate corrective actions to mitigate any potential problems.

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Footnotes

- [1] ^ There were slight variations in the methods used to tabulate the percentages year-over-year due to regulatory changes and different counting methods.
- [2] ^ A tailored report, which summarized available ministry data, including drinking water system profile information, sampling information and a list of adverse water quality incidents reported for their system.
- [3] ^ The ministry is following up with owners of schools and child care centres of the remaining inventories to determine whether they met the requirement to sample all fixtures.
- [4] ^ An adverse test result does not necessarily mean that users are at risk of becoming ill. When an adverse water quality incident is detected, the small drinking water system owner/operator is required to notify the local medical officer of health and to follow up with any action that may be required. The public health unit will perform a risk analysis and determine if the water poses a risk to health if consumed or used and may take additional action as required to inform and protect the public. Response to an adverse water quality incident may include issuing a drinking water advisory that will notify potential users if the water is safe to use and drink or if it requires boiling to render it safe for use. The public health unit may also provide the owners and/or operators of a drinking water system with necessary corrective action(s) to be taken on the affected drinking water system to address the risk.