

**Subject: Drinking Water Quality Management System 2023 Management
Review Report**

File Number: ACS2024-IWS-WF-0001

**Report to Environment and Climate Change Committee on 15 October 2024
and Council 30 October 2024**

**Submitted on October 3, 2024 by Marie-Geneviève (Gen) Nielsen, Director, Water
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and

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Ward: Citywide

**Objet : Rapport de 2023 de l'examen par la direction du Système de gestion
de la qualité de l'eau potable**

Numéro de dossier : ACS2024-IWS-WF-0001

Rapport présenté au Comité de l'environnement du changement climatique

Rapport soumis le 15 octobre 2024

et au Conseil le 30 octobre 2024

**Soumis le 2024-10-03 par Marie-Geneviève (Gen) Nielsen, Directrice, Services des
installations d'adduction et de purification de l'eau**

et

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Quartier : À l'échelle de la ville

REPORT RECOMMENDATION(S)

That the Environment and Climate Change Committee recommend that Council receive the 2023 Management Review report of the Drinking Water Quality Management System for information.

RECOMMANDATION(S) DU RAPPORT

Que le Comité de l'environnement et du changement climatique recommande au Conseil de prendre connaissance du Rapport de 2023 de l'Examen par la direction du Système de gestion de la qualité de l'eau potable à titre d'information.

EXECUTIVE SUMMARY

Ontario's [Safe Drinking Water Act, 2002](#) mandates the City to develop a Quality Management System for the operation, maintenance, and management of the City of Ottawa's drinking water systems. This Quality Management System must conform with the province's [Drinking Water Quality Management Standard](#) (the Standard) and be documented in an Operational Plan.

This Standard requires that the City conducts an annual management review on the suitability, adequacy, and effectiveness of the Quality Management System, and to ensure that the results of the review are communicated to the Owner.

The 2023 review completed on August 20, 2024, found that the Quality Management System in place has been successful and effective. The annual external audit of the Quality Management System conducted by NSF International Strategic Registrations received a score of 100 per cent for the twelfth straight year; as this audit was for purposes of re-accreditation, these results led to all of the drinking water systems receiving Certificates of Accreditation. Additionally, the City's drinking water systems received scores of 100 per cent from Provincial inspections for all but two systems, and our Water Quality Health Index received scores of 100 per cent in comparing Ottawa's drinking water quality against all guidelines and regulatory limits.

During the review, it was noted that staff consistently responded effectively to all incidents impacting the drinking water systems, ensuring the continuous safety of the

drinking water.

RÉSUMÉ

La [Loi de 2002 sur la salubrité de l'eau potable](#) de l'Ontario oblige la Ville à mettre au point un système de gestion de la qualité pour l'exploitation, l'entretien et la gestion des réseaux d'eau potable de la Ville d'Ottawa. Ce système de gestion de la qualité doit être conforme à la [Norme de gestion de la qualité de l'eau potable](#) (la « Norme ») du gouvernement provincial et faire l'objet d'un plan opérationnel.

Cette norme exige que la Ville mène un examen annuel de la gestion sur l'à-propos, l'adéquation et l'efficacité du Système de gestion de la qualité, et qu'elle s'assure que les résultats de l'examen sont communiqués au maître de l'ouvrage.

L'examen de 2023, qui a pris fin le 20 août 2024, a permis de constater que le Système de gestion de la qualité en place est fructueux et efficace. La vérification externe annuelle menée pour ce système par NSF International Strategic Registrations (NSF-ISR) a mérité la note de 100 % pour la douzième année d'affilée; puisque cette mission de vérification avait pour objectif de renouveler l'agrément, ces résultats ont donné lieu à des certificats d'agrément pour tous les réseaux d'eau potable. En outre, tous les réseaux d'eau potable de la Ville sauf deux ont mérité des notes de 100 % à l'issue des inspections du gouvernement provincial, et nous avons obtenu, d'après notre cote de salubrité de l'eau, des notes de 100 % dans la comparaison de la qualité de l'eau potable d'Ottawa avec l'ensemble des recommandations et des limites réglementaires.

Durant cet examen, on a constaté que le personnel a toujours réagi efficacement à tous les incidents qui ont eu des répercussions sur les réseaux d'eau potable, en veillant à la salubrité continue de l'eau potable.

BACKGROUND

In 2002, Justice Dennis O'Connor published [Part Two of the Report of the Walkerton Inquiry](#), which recommended the adoption of a quality management approach for municipal drinking water systems. The report also recommended that a quality management standard, specifically designed for drinking water systems, be developed and implemented in Ontario; leading to the creation of the [Drinking Water Quality Management Standard](#). The requirement to implement this Standard is now mandated through the [Safe Drinking Water Act, 2002](#).

As the Owner of the municipal drinking water systems, Council has a number of duties

and responsibilities under the [Safe Drinking Water Act, 2002](#), described in sections 11, 13, 16 and 17 of the Act. The duties of the Owner related to the Standard of Care are described under Section 19 and came into force on December 31, 2012. To ensure that Members of Council were made aware of their duties and responsibilities under the Act, staff organized an orientation session for newly elected members on November 8, 2022.

In his 2002 report, Justice O'Connor further commented that municipalities that had an accredited Operating Authority¹ would be making a significant step in meeting the Owner's due diligence and responsibilities under the Act, including the Standard of Care. One of the primary tools that the Owner has in place to satisfy the Standard of Care under the Act is to have Municipal Drinking Water Licences for all its drinking water systems.

The City of Ottawa maintains valid licences for all its municipal drinking water systems listed below:

- Central System (Britannia and Lemieux Island Water purification plants and central water distribution system)
- Carp Well System
- Kings Park Well System
- Munster Hamlet Well System
- Richmond West Well System
- Shadow Ridge Well System (owned by a private developer, operated, and maintained by the City of Ottawa)
- Vars Well System

The requirements of the licensing program include:

- A permit to take water
- A drinking water works permit
- An operational plan
- A financial plan
- An accredited operating authority

To meet the requirements of the licensing program, the City of Ottawa received the first phase of the Operating Authority's accreditation effective April 29, 2009, with full scope accreditation on October 3, 2011. Accreditation is the verification by a third party that an Operating Authority has a Quality Management System in place that meets the requirements of the Standard. The Operating Authority is subject to a triennial

¹ As per the Standard, Operating Authority means, "...the person or entity that is given responsibility by the Owner for the operation, management, maintenance or alteration of the Subject System". For the City of Ottawa, this would be management and staff within Infrastructure and Water Services Department with duties related to the drinking water system.

re-accreditation process, with the most recent re-accreditation occurring in 2023. When it is not a re-accreditation year, the City's drinking water Quality Management System undergoes an external surveillance audit on an annual basis.

The Standard requires the Operating Authority to document the Quality Management System in an Operational Plan and to conduct an annual management review of the Quality Management System. The results of this review must be communicated to the Owner by Top Management. Top Management is a term defined in this Standard as,

“A person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS (Quality Management System) and recommendations to the Owner respecting the subject system or subject systems.”

At the City of Ottawa, Top Management is comprised of Infrastructure and Water Services Department's General Manager, Directors, and select Managers. This requirement is achieved through a series of meetings attended by Top Management and other Operating Authority staff, where a review of items specified in the Provincial Standard assesses the Quality Management System's performance during the previous year.

The main purpose of this report is to provide Council, as the Owner of the municipal drinking water systems, with an update on the implementation and the performance of the Quality Management System in 2023.

DISCUSSION

The Quality Management System is a critical tool that supports and assures Council, as the Owner of the drinking water systems, that they are meeting their duties and responsibilities under the [Safe Drinking Water Act, 2002](#) and the Statutory Standard of Care (section 19).

The Standard mandates that the Operating Authority conducts an annual comprehensive management review of the Quality Management System, with the obligation to communicate the results to Council, who serve as the Owner of the drinking water systems.

The management review included a series of meetings attended by Top Management. This review and any recommendations for improvement are included in the Management Review Report prepared annually for the previous calendar year. Top Management and staff from the Infrastructure and Water Services Department met in

April and August 2024 and the final report documenting the outcome of these meetings was completed on August 20, 2024.

The report concludes that the City successfully implemented its Operational Plan in 2023. Some examples from the Management Review report that demonstrate this achievement include:

- Consistent excellent external audit results have been received since the Operating Authority's initial accreditation in 2009. In 2023, the third-party accreditation body conducted a re-accreditation audit of the City's Quality Management System. The results of this audit marked the City's twelfth year of receiving 100 per cent conformance of its Quality Management System. As a result, the accreditation body issued Certificates of Accreditation for all of the City's drinking water systems.
- Ministry of Environment, Conservation and Parks' inspections for all of Ottawa's municipal water systems were completed in 2023 and the City received 100 per cent ratings for all but two systems. Two systems, the Carp Well System and Munster Hamlet Well System, had slightly reduced ratings due to a gap in the microbial sampling of the distribution system. This was resolved by staff through updated procedures and training.
- The results of Quality Management System processes, including internal audits, emergency response testing, and risk assessment were discussed during the Management Review. Observations from these processes showed overall compliance with processes and procedures. All corrective actions and opportunities for improvement identified during these reviews and assessments are tracked for completion.
- The Quality Management System review also involves an analysis of operational performance through key performance indicators. Some significant indicators discussed during the Management Review include:
 - The Water Quality Health Index compares Ottawa's drinking water quality against all guidelines and regulatory limits for both microbial and chemical parameters. All systems for both indexes in 2023 again received scores of 100 percent.
 - The total costs per megalitre of water produced increased by 9.2 per cent, primarily due to increased chemical prices and contracted services. Bulk

chemical prices started stabilizing in 2023 and it is expected that this trend will continue. However, operational optimization activities in 2023 led to decreased costs relating to waste sludge processing.

- Occurrences of emergency breakdowns and the associated labour hours remained low in 2023, with only three emergency events occurring.
- The management review also includes discussing topics reported to Council in the annual [Municipal Drinking Water – 2023 Summary Report](#) to Council on April 16, 2024. These topics include the Ministry of the Environment, Conservation and Parks' inspection results, non-compliance events, water quality monitoring activities and results, and changes in legislation or regulations that may have an impact on drinking water systems.
- The management review meetings included updates on infrastructure programs and project updates.
 - Work on the [Infrastructure Master Plan](#) continued in 2023 and approved by Council in 2024.
- The Quality Management System ensures that the infrastructure is safe and in good condition through several programs, including:
 - The Management Review process includes a summary of the Large-Diameter Watermain Condition Assessment Program results and follow-up activities, to continue meeting Recommendation 8 of the 2012 Audit of Construction Supervision. The assessment program includes the inspection of critical water transmission mains for leaks and structural conditions. For Council's additional information on this program, please see Document 1.
- During the 2023 management review, staff discussed topics specified in the Provincial Standard to assess the Quality Management System's performance during the previous year. This discussion identified 2 action items for process or administrative improvements and will be tracked for implementation.

These efforts as outlined in the Management Review report collectively reinforces the City produces and delivers some of the best quality and safest drinking water in the World.

FINANCIAL IMPLICATIONS

There are no financial implications associated with this report.

LEGAL IMPLICATIONS

There are no legal impediments to receiving this report for information.

COMMENTS BY THE WARD COUNCILLOR(S)

This is a City-wide report.

ADVISORY COMMITTEE(S) COMMENTS

There was no advisory committee consultation as part of this report.

CONSULTATION

Ottawa Public Health (OPH) is a key partner in the provision of safe drinking water for Ottawa residents and businesses. To maintain continuity and responsiveness, Infrastructure and Water Services and OPH staff meet bi-monthly to review water quality test results, adverse water quality incidents, communication protocols, and potential risks of new and emerging issues in drinking water. In addition, a formal meeting is held each year to review the water quality results achieved over the last year.

ACCESSIBILITY IMPACTS

There are no accessibility impacts associated with this report.

ASSET MANAGEMENT IMPLICATIONS

The recommendations documented in this report are consistent with the City's Comprehensive Asset Management program objectives, which support the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable service levels to community users. The annual Drinking Water Quality Management System report is an important reference for the City's Drinking Water Asset Management Plan.

Specifically, the Drinking Water Quality Management System considers asset management system elements from the acquisition of new assets to support growth, considering the City's commitment to fund future operations, maintenance, and renewal costs.

This informs decision making processes necessary to protect the assets that form

Ottawa's drinking water system, which maintains the expected level of service and reduces public health risks. This is accomplished in a socially, culturally, environmentally, and economically conscious manner.

CLIMATE IMPLICATIONS

There are no climate implications associated with this report.

RISK MANAGEMENT IMPLICATIONS

All risks associated have been identified and explained in the report and are being mitigated by the appropriate staff.

RURAL IMPLICATIONS

Residents supplied by the six municipal well systems receive safe drinking water that meets all regulations, standards, inspections, and includes comprehensive management oversight by the Quality Management System.

TECHNOLOGY IMPLICATIONS

There are no technology implications to this report.

TERM OF COUNCIL PRIORITIES

The 2023 to 2026 Term of Council Priorities includes a city that is green and resilient. The City of Ottawa implements protective measures to maintain the quality of Ottawa's drinking water sources at the provincially mandated standard. The City maintains an excellent water quality index rating.

SUPPORTING DOCUMENTATION

Document 1 – Large-Diameter Watermain Condition Assessment Program

DISPOSITION

Staff will continue to work to provide safe drinking water, following all legislation. Staff will implement any direction received as a result of this report.