Schedule A

2024 Drinking Water System Operations Report

2024

Drinking Water System

Operations Report

City of Barrie

Water Operations Branch

January 1, 2024 to December 31, 2024

Effective Date: 2025-02-04

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1.0 Introduction

The purpose of this report is to summarize the City of Barrie (the City) Municipal Drinking Water System's (the System) operating year from January 1st to December 31st, 2024. This report is a compilation of information that demonstrates the commitment of the Water Operations Branch (the Branch) to provide safe drinking water while remaining transparent, financially accountable, and demonstrating initiative in driving continual improvement.

The Branch's priorities align with its mission and vision outlined in the Water Operations Strategic Plan 2022-2026:

VISION

To be Barrie's preferred choice for drinking water by providing the *highest quality product and service*

MISSION

Protect public health, provide uninterrupted supply of potable water, reduce climate change impacts, and empower a skilled team of drinking water professionals

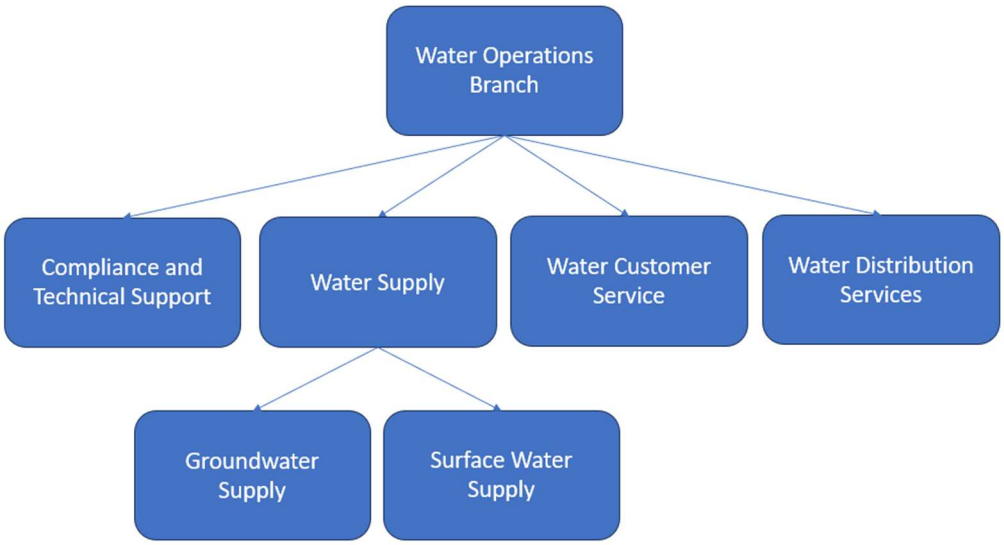
The following sections provide details of the 2024 achievements that support the Branch priorities listed above.

1.1 Water Operations Branch

The primary objective of the Branch is the production and delivery of potable water from two sources:

- A deep groundwater aquifer accessed through twelve (12) active groundwater wells.
- Surface water from Lake Simcoe that is drawn to the Surface Water Treatment Plant (SWTP) from an intake in Kempenfelt Bay.

Comprised of four (4) organizational Sections, the Branch works collaboratively to ensure high quality drinking water is produced and delivered to the City residents. Highlights regarding the performance and operations of these Sections are discussed in Sections 2.0 to 3.4 of this report.



2.0 Operational Highlights

2.1 Training

The Branch recognizes the importance of employee training as not only a legislated requirement for certified operators but also a positive way to foster improved performance and adaptability of its workforce. Approximately 5,380 hours of certified operator training occurred, and twenty-seven (27) certificate renewals or upgrades were awarded to operations staff within the calendar year.

2.2 Research and Educational Partnerships

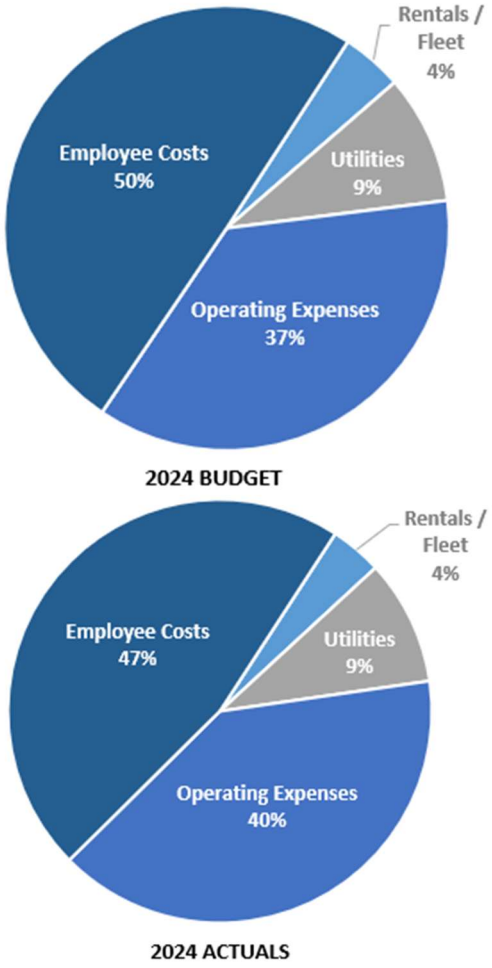
In partnership with both the University of Toronto and University of Waterloo, the Branch provides sponsorship to the Natural Sciences and Engineering Research Council (NSERC) which supports university students in advanced studies and promotes discovery research. Not only does the partnership allow the Branch to participate in water treatment research but it also helps guide the research conducted by these schools.

Research conducted by the Universities involves membrane filtration, microplastics and per- and polyfluoroalkyl substances (PFAS) in drinking water, membrane aging, and odour control through granular activated carbon (GAC). Participation and involvement in the research projects allow staff to benefit by providing more operational insight.

2.3 Budget and Cost

The Branch's budget for 2024 was $34.1 million. Forty percent (42%) of the budget was transferred to reserves and other departments to fund projects and positions. The remaining balance of $14.7 million (including expenses and revenues) was utilized for operating the drinking water system which includes but is not limited to: salaries and benefits, services, utilities, insurance, minor capital, materials, and supplies. The Branch expended 103.5% of the 2024 operating budget.

Figure 1 - Water Operations Budget and Fund Allocation



In accordance with O.Reg. 453/07, the Operating Authority developed a financial plan to ensure sustainability of the drinking water system. The Financial Plan is valid for a ten (10) year period and contains details of the financial position, financial operations, and cash flow of the System. The Financial Plan was updated in April of 2021 and a copy can be found at www.barrie.ca/waterservices.

2.4 Energy Optimization

The Branch has become eligible as a Class A customer under the Industrial Conservation Initiative, through the Independent Electricity Systems Operator (IESO). This eligibility allows the Branch to access reduced energy rates while helping the IESO defer investments in new electricity infrastructure in Ontario. To qualify, Water Operations staff adjusted water production by increasing treated water output during off-peak hours and reducing production during peak hours. This initiative not only eases the burden on the electrical grid but also gives the Branch an opportunity to lower overall utility costs.

2.5 Preventative Maintenance

The following sections summarize the significant maintenance activities that were completed by the Branch:

Ground Water Supply	Surface Water Supply

• Cleaned and disinfected:
  ○ Sunnidale Reservoir
  ○ Ferndale Water Tower
  ○ Well 12 surge tank
  ○ Well 9 and Well 11 clear wells
	• Completed pump and motor maintenance on backwash and primary pumps.

• Replaced station valves at Well 12, Well 15 and Harvie Reservoir.	• Contracted services to complete camera inspections of the raw water intake pipe.
• Completed well pump and motor maintenance at Well 3A and Well 12.	• Replaced valve (36”) at LLPS.
• Completed pump and motor maintenance at Harvie Booster Pumping Station.	• Completed maintenance and repairs to the SWTP strainer.

Water Distribution Services	Water Customer Services
• Approximately 17.9 km of watermain were cleaned in Pressure Zone 2N by scouring it with foam swabs as part of the Annual Swabbing Program.	• 1,582 hydrants were flushed within the calendar year, representing approximately 37% of the distribution system.
• The valve turning program continued to test the functionality of valves throughout the City including Critical valves (400mm to 1200mm).	• Thirty-eight (38) flush boxes (from April 2024 to November 2024) and twenty (20) below grade Autoflushers helped to maintain water quality in the drinking water system.
• The hydrant inspection program continued to identify any necessary replacements or repairs and scheduled the work for completion.	• 1098 new water meters were installed, and 3529 water meters were replaced, representing a 71% increase from 2023.

3.0 Service Delivery

Water Treatment is one of the first steps in ensuring the production and distribution of safe drinking water. Water Treatment Services is responsible for all water treatment processes, storage tank monitoring, ongoing operation and maintenance, and water quality sampling. This involves overseeing a System consisting of the SWTP and associated low lift pumping station (LLPS), 12 groundwater wells, 3 in-ground storage facilities, 7 booster stations, and 3 elevated storage towers.

3.1 Treatment System Performance

A total of 14,791 ML of drinking water was produced, which represents a 5.7% increase from 2023.

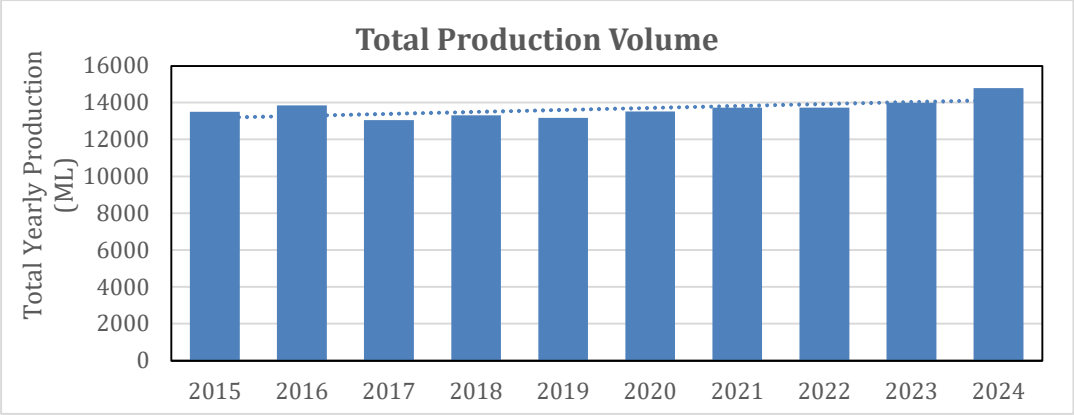


Figure 2 - Total yearly production of drinking water (ML)

3.2 Water Distribution Services

The quality of drinking water in the distribution system is ensured through ongoing water quality monitoring, and preventative and reactive maintenance completed by Water Distribution Services. Consisting of approximately 4,238 hydrants, 7,042 valves, and 695 kilometers of watermain, the City's distribution system continues to reliably direct potable water to the community.

4,238
Hydrants

7,042
Valves

695
Km of Watermain

3.2.1 Reactive Maintenance

Reactive maintenance in the event of infrastructure failure is an inevitability in the distribution system. In 2024, 22 watermain breaks occurred; This is an 8% decrease compared to the number of watermain breaks in 2023.

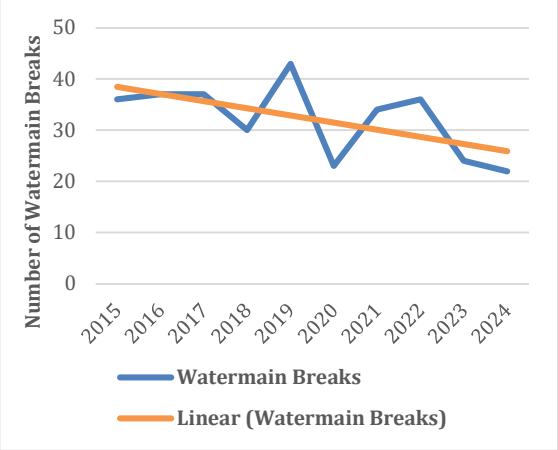


Figure 3 - Number of watermain breaks (2015-2024)

3.3 Water Customer Services

Customer service continues to be a priority for the Branch. The Water Customer Services Section ensures our residents have access to quality water at the tap. They also offer a wide range of services, such as conducting annual system maintenance and providing infrastructure locates of all corporately owned water, sanitary sewer, storm sewer, traffic light and streetlight cabling in the municipal right-of-way or on any of the City's easements.

3.3.1 Available Services

Customers have 24/7 access to services such as routine inquiries and/or emergency requests. Calls made regarding water quality complaints averaged six (6) complaints per month in 2024, remaining consistent with the previous year (2023).

Water Customer Services is also responsible for installing and maintaining water meters and their associated remote reading devices. A total of 1,098 new water meters were installed, and 3,529 water meters were replaced, representing a 71% increase from 2023. The increase can be attributed to the ongoing development taking place in the south end of Barrie and the ongoing Water Meter Replacement Program which aims to replace both Industrial, Commercial and Institutional (ICI) and residential meters on a predetermined schedule. This replacement program is based on industry standards and ensures that meters continue to provide accurate consumption measurement while in use. Monitoring water consumption in residential and ICI applications is accomplished through the Advanced Metering Infrastructure (AMI) system.

3.3.2 Infrastructure Damage Prevention Program

The Branch has dedicated Utilities Technicians that ensure utility locates are provided for all corporately owned water, sanitary sewer, storm sewer, traffic light and streetlight cabling in the municipal right of way or on any of the City's easements. As an Ontario OneCall member and in accordance with provincial legislation, locate requests are completed within the required five (5) business days, unless otherwise agreed upon with the locate requestor. The level of service achieved this year for locates was 85.8%.

3.4 Compliance and Technical Support

The Compliance and Technical Support (CTS) Section is responsible for regulatory conformance/compliance and reporting with respect to the System, as well as development and implementation of quality/risk management and optimization functions for the Branch. The core responsibilities of the CTS team include the Computerized Maintenance Management System (CMMS), Quality Management System (QMS), inventory and materials management, and technical support as it relates to water infrastructure.

4.0 Quality Management System Summary

This section summarizes the updates, changes, and relevant information regarding the requirements of the Safe Drinking Water Act and the City's QMS in accordance with Staff Report 20-G-209, Delegation of Owner Representative for QMS and Safe Drinking Water Act Requirements. The Staff Report designates the Infrastructure Department head as the Owner Representative for the City's Drinking Water System for all matters related to the Safe Drinking Water Act and the QMS.

4.1 Adverse Water Quality Incidents (AWQIs)

There were ten (10) AWQIs reported in 2024, eight (8) of which were rescinded by the Ministry of the Environment, Conservation and Parks (MECP). Refer to Schedule B – 2024 Annual Report, Section 11 O. Reg 170/03 for more details on each AWQI.

4.2 Emergency Scenario

Two emergency events that occurred in 2024 were utilized as live emergency scenario testing as required by the Drinking Water Quality Management System:

1. Zone 1 Pressure Surge and Watermain/Service Breaks – June 2024.
2. Fox Run Watermain Replacement – July 2024.

Given the nature of the incidents and their potential impact on the City, this presented an opportunity for the Branch to evaluate its emergency response plan and related documentation. The incidents required coordinated efforts from all staff within the Water Operations Branch, along with support from other branches within the Corporation. Through the diligent efforts of staff, the Branch successfully ensured the continued delivery of safe drinking water to residents.

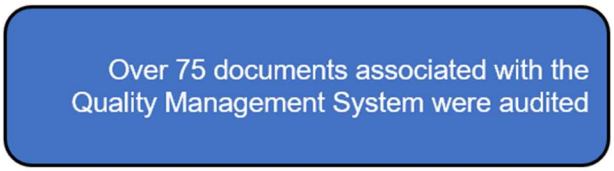
Debrief meetings were held following both emergency events, during which staff and management shared feedback on the incidents and identified opportunities for improvement.

4.3 Internal Audit

Six (6) Internal Audits were conducted in 2024 which focused on QMS Processes and Procedures. Two (2) non-conformances and three (3) opportunities for improvement were identified. All items have been addressed and are in the process of being completed or have already been implemented.

4.4 External Audit

The 2024 External Audit conducted by a third party was a re-accreditation audit which consisted of an off-site audit of the Operational Plan, and on-site audit of associated documents and records. There were zero (0) non-conformances identified by the external auditor and accreditation was maintained until 2027.



4.5 Ministry of the Environment, Conservation and Parks (MECP) Inspection

The MECP conducted one (1) announced, focused inspection of portions of the System. No non-compliances or opportunities for improvement were identified in the inspection report. The overall Final Inspection Score for the Barrie Drinking Water System was 100%. Refer to Schedule C – 2024 Annual Report, Schedule 22 O. Reg 170/03 for more details.

4.6 Management Review

Management Review is a key component of the continual improvement process, where potential deficiencies and opportunities for improvement are identified, and action plans are developed to address them. Management Review meetings were conducted on a quarterly basis on the following dates: May 24, 2024, September 3, 2024, and December 6, 2024, and scheduled for February 21, 2025.

A copy of the 2023 Q4, 2024 Q1, Q2 and Q3 Management Review Meeting Minutes are included in Schedule E for reference. Note that the 2024 Q4 Management Review meeting is scheduled to take place on February 21, 2025, and as a result the meeting minutes are to be included in the 2025 Annual Report.

5.0 Closure

It is the belief that this report provides a summary of the operational and performance success of the Branch for 2024. If you have any questions concerning the contents of this report, please contact the Supervisor of Compliance and Technical Support.

Schedule B

2024 Annual Report, Section 11

Ontario Regulation 170/03

2024

Drinking Water System

Annual Report

City of Barrie

Water Operations Branch

January 1, 2024 to December 31, 2024

Section 11, O.Reg. 170/03

Effective Date: 2025-02-04

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1.0 Introduction

The City of Barrie Water Operations Branch (the Branch) prepared this Annual Report (Report) to satisfy the requirements of Section 11 of Ontario Regulation (O.Reg.) 170/03. Section 11 (1) requires that the owner of a drinking water system prepare a report in accordance with subsection (3) and (6) for the preceding calendar year. The annual report must be prepared no later than February 28th of each year.

This Report covers the period of January 1st to December 31st, 2024, and the information provided complies with the reporting requirements outlined in Section 11 of O.Reg.170/03.

A summary of the City of Barrie's Municipal Drinking Water System (the System) description is outlined below:

- Drinking-Water System Number: 220001192
- Drinking-Water System Name: City of Barrie Drinking Water System
- Drinking-Water System Owner: Corporation of the City of Barrie
- Drinking-Water System Category: Large Municipal Residential

2.0 Reporting Requirements under Section 11

Section 11 requires that the Report include the following information relating to the period covered by the report:

- Include a statement of where a Report prepared under Schedule 22 will be available for inspection by any member of the public during normal business hours without charge;
- Contain a brief description of the drinking water system, including a list of water treatment chemicals used by the system;
- Describe any major expenses incurred to install, repair, or replace required equipment;
- Summarize any reports made to the Ministry of Environment, Conservation and Parks (MECP) for Adverse Water Quality Incidents (AWQIs);
- Summarize the results of tests required under O.Reg. 170/03, or under an approval; Municipal Drinking Water Licence (MDWL) or order, including any Ontario Water

Resources Act order, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;

- Specify the number of points sampled during the periods, the number of samples taken, and the number of points where samples exceeded the prescribed standard regarding Schedule 15.1 - Lead; and
- Describe any corrective actions taken.

3.0 Evidence of Compliance

3.1 Availability of the Annual Report

In accordance with Section 11 of O.Reg. 170/03, a copy of the Report is available to the public, free of charge from the City of Barrie website and from the Branch by request. The Schedule 22 Report is available to the public free of charge from the Branch by request.

The public will be advised of the Report's availability and how to obtain a copy, without charge, on the City of Barrie's website and on social media outlets by February 28, 2025.

3.2 Description of the Municipal Drinking Water System

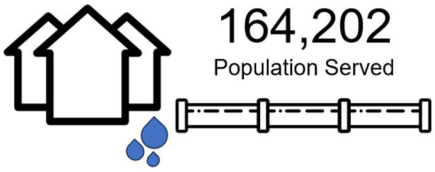
The System consists of a Surface Water Treatment Plant (SWTP) and associated low lift pumping station (LLPS), 12 groundwater wells, 3 in-ground storage facilities, 7 booster stations, and 3 elevated storage towers.

Treatment at the SWTP consists of primary screening, flocculation, membrane filtration, granular activated carbon contactors (for taste and odour control), and disinfection with chlorine gas. Primary disinfection is achieved through chlorine contact time (CT) in the four baffled wall chlorine contact chamber and reservoir. Secondary disinfection is achieved by boosting the chlorine residual of the treated water upon entry into the distribution system from the SWTP's reservoir.

Treatment at each of the well consists of iron sequestration by addition of sodium silicate and disinfection with chlorine gas. Primary disinfection is achieved through CT prior to the first consumer, except for Well 5, which uses ultraviolet disinfection.

Secondary disinfection is maintained throughout the distribution system with booster chlorination applied at 7 locations throughout the distribution system.

The distribution system consists of approximately 4,238 hydrants and approximately 695 kilometers of watermain and transmission main ranging in sizes from 32mm to 1200mm and as of January 2025, delivering drinking water to a population of approximately 164,202 residents.



3.3 Water Treatment Chemicals

The following water treatment chemicals were used during the reporting period:

- Polyaluminum Chloride – Pre-filtration Coagulant – SWTP
- Chlorine – Primary and Secondary Disinfection – SWTP and Wells
- Sodium Silicate – Iron and Manganese Sequestration – Wells

3.4 Significant Expenses Incurred

A summary of the major expenses incurred during the reporting period to install, repair, or replace required equipment, and the value of each is included in Table 1.

Table 1 – Summary of Expenses Incurred

Activity	Cost Incurred (2024)
Check Valve Replacements (Mapleview Tower)	$26,176.45
Valve Chamber Installation (Bayfield Tower)	$75,500.00
Well Pump Column Replacement (Well 12, Centennial Park)	$30,000.00
Well Column Liner Installation (Well 12, Centennial Park)	$79,500.00
Valve House Roof Replacement (Harvie Road Reservoir)	$29,500.00
Roof Replacement (Well 13, Johnson Street)	$24,500.00
Valve Replacement (Harvie Road Reservoir)	$73,500.00
Exterior Painting (Ferndale Water Tower)	$555,101.00
Long Term Membrane Replacement (SWTP)	$249,996.00
Spare 2nd Stage Permeate Pump (SWTP)	$39,500.00
Primary Membrane Pump Repair (SWTP)	$34,700.00
Controls Upgrade – Control System Replacement (SWTP)	$1,105,310.00
Watermain break repairs (22)	$209,000.00
Hydro excavation contractors for water infrastructure repairs	$86,764.00
Emergency watermain installation on Fox Run	$473,313.00
50mm watermain installed on Nelson Square West	$24,529.50
Emergency event contractor water service repairs	$56,584.64
Advanced Metering Infrastructure (AMI) Service Agreement & Tower Maintenance	$127,900.65
Meter Replacement Program	$1,410,000.00

3.5 Operational Checks, Sampling and Testing

Throughout the reporting period, operational checks were conducted, and drinking water samples were collected in accordance with O.Reg. 170/03 and the MDWL. However, Well 3A was not in service and only sodium samples were collected at that location. The Branch utilizes a subcontracted laboratory to analyze drinking water samples that have been collected throughout the System. The laboratory results for all analyzed samples regulated by O.Reg. 170/03 are summarized in Table 2 through Table 10 in Appendix A for reference.

Details of the sampling and testing conducted in 2024 are discussed below in Sections 3.5.1 through 3.5.5, inclusive.

3.5.1 Schedule 7 – Operational Checks – O.Reg. 170/03

Operational checks, including measurements of free chlorine in both treated and distribution water, as well as turbidity levels in raw and treated water, were conducted in accordance with Schedule 7 of O.Reg. 170/03, except for Well 3A which was not in service. The data presented in the table reflects analyzer calibration and maintenance activities and does not indicate any issues with water treatment.

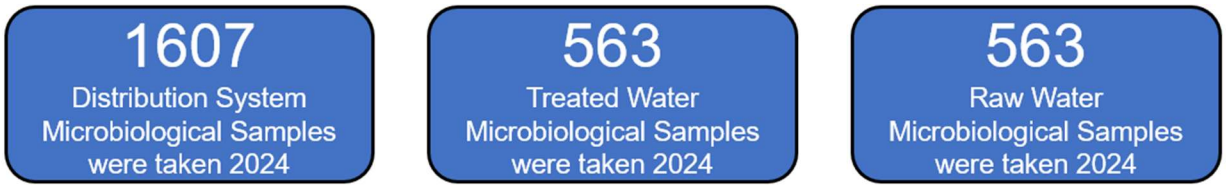
The operational checks conducted during this reporting period are summarized in Table 2, included in Appendix A for reference.

3.5.2 Schedule 10 – Microbiological Sampling and Testing – O.Reg. 170/03

Raw, treated, and distribution water samples were analyzed for microbiological parameters specified in Schedule 10-2, 10-3 and 10-4 of O.Reg. 170/03 and Heterotrophic Plate Count (HPC), and Background bacteria (Background) pursuant to the Public Health Inspector's Guide (PHIG).

Laboratory results for most samples analyzed for E.coli, Total Coliforms and Background met the requirements and did not exceed the applicable standards stipulated in O.Reg. 169/03 and the PHIG. There were several raw water samples collected before treatment that indicated the presence of bacteria.

The samples analyzed for microbiological parameters during this reporting period are summarized in Table 3, included in Appendix A for reference.

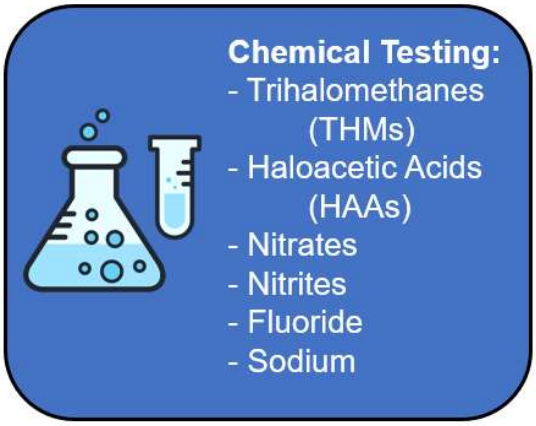


3.5.3 Schedule 13 – Chemical Testing – O.Reg. 170/03

Treated water samples collected from the Water Distribution and Supply Subsystem were analyzed for organic and inorganic chemical parameters in accordance with O.Reg. 170/03, Schedule 13, Section 13.2 (Schedule 23), Section 13.4 (Schedule 24), Section 13.8, and Section 13.9. Analytical results for samples analyzed for organic and inorganic chemical parameters met the requirements and remained within the applicable standards stipulated in O.Reg. 169/03.

Treated water samples collected from the distribution system were analyzed for Trihalomethanes (THMs) and Haloacetic Acids (HAAs) in accordance with O.Reg. 170/03,

Schedule 13.6 and 13.6.1. Treated water samples collected from the wells and SWTP were analyzed for nitrates, nitrites, fluoride, and sodium in accordance with Schedules 13.7, 13.8 and 13.9 of O.Reg.170/03 respectively. Laboratory results for all samples analyzed for THMs, HAAs, fluoride, nitrate and nitrite met the requirements and remained within the applicable standards stipulated in O.Reg. 169/03 and 170/03. Although sodium levels in the analyzed samples exceeded the applicable standards outlined in O.Reg. 170/03, there were no reporting requirements to the MECP for these results during the 2024 reporting period. The above noted results are summarized in Tables 4, 5, and 6 in Appendix A for reference.



Where analysis for a specific parameter required under O.Reg. 170/03 was not conducted during the reporting period, the most recent analytical results for that parameter have been included in this Report, in accordance with O.Reg. 170/03, s.11(6)(b).

3.5.4 Schedule 15.1 – Lead – O.Reg. 170/03

Lead samples are collected from the plumbing at five (5) industrial and commercial locations and ten (10) hydrants within the distribution system during the winter and summer sampling period in accordance with Schedule 15.1.

Samples were taken in accordance with Schedule D Table 2 of the Municipal Drinking Water License.

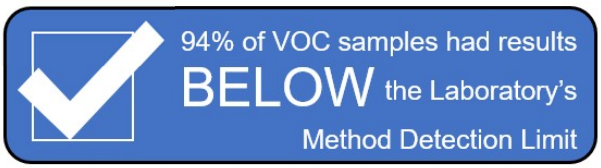
Analytical results showed that lead concentrations were below the established limit of 10 µg/L (0.01 mg/L) at all sampled locations.

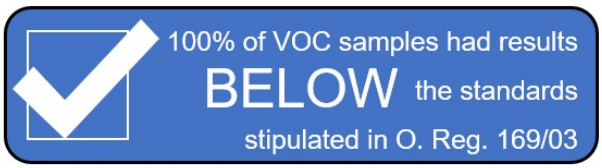
The samples analyzed for lead during this reporting period are summarized in Table 7 and included in Appendix A for reference.

3.5.5 Municipal Drinking Water Licence

In addition to the sampling and monitoring mandated by O.Reg. 170/03, specific conditions outlined in the City's MDWL required additional sampling and monitoring at select locations for certain Volatile Organic Compounds (VOCs), sodium, and UV disinfection at Well 5.

Analytical results for all samples tested for VOCs were below the applicable standards set forth in O.Reg. 169/03.





The MDWL mandates additional sodium sampling for raw water at six (6) well locations. The samples taken as part of this requirement also exceeded the applicable standards outlined in O.Reg. 170/03; however, there were no reporting requirements of the results to the MECP during the 2024 reporting period.

The samples analyzed for select VOCs and sodium during the reporting period are summarized in Table 8 and Table 9, respectively, and included in Appendix A for reference. UV monitoring documented during this reporting period is summarized in Table 10 and included in Appendix A for reference.

3.6 Reporting and Corrective Actions

3.6.1 Schedule 16 – Reporting of Adverse Test Results and Other Problems

There were ten (10) AWQIs reported during the 2024 reporting period in accordance with Schedule 16 of O.Reg. 170/03. Eight (8) of the ten (10) AWQIs were rescinded by the Ministry of the Environment, Conservation and Parks (MECP).

3.6.2 Schedule 17 – Corrective Actions

Corrective actions related to each of the reported AWQIs, as noted above, were completed in accordance with O.Reg. 170/03, Schedule 17. The Branch resolved the AWQIs in consultation with the Simcoe Muskoka District Health Unit (SMDHU) and the MECP in a timely manner.

The AWQIs and associated corrective actions that occurred during this reporting period are summarized in Table 11, included in Appendix A for reference.

4.0 Closure

It is the belief of the Branch that this Report satisfies the requirements of Section 11 of O.Reg. 170/03. If you have any questions concerning the contents of this Report, please contact the Supervisor of Compliance and Technical Support at the Branch.

Appendix A

Tables

Table 2 – Schedule 7 Operational Checks*

Sample Location	Sample Count	Free Chlorine		Turbidity			
		(min)	(max)	(min)	(max)	(min)	(max)
		Treated Water		Raw Water		Treated Water	
Well 5	**8760	0.09	3.33	0.00	0.24	-	-
Well 7	**8760	0.46	2.11	0.01	4.82	-	-
Well 9	**8760	0.65	3.49	0.00	5.90	-	-
Well 11	**8760	0.00	1.99	0.02	7.23	-	-
Well 12	**8760	0.17	5.00	0.04	11.18	-	-
Well 13	**8760	0.49	3.49	0.01	2.18	-	-
Well 14	**8760	0.23	5.00	0.02	10.00	-	-
Well 15	**8760	0.24	1.76	0.02	0.77	-	-
Well 16	**8760	0.42	1.69	0.02	1.52	-	-
Well 17	**8760	0.26	5.00	0.03	4.09	-	-
Well 18	**8760	0.18	3.76	0.01	2.67	-	-
Surface Water Treatment Plant	**8760	0.00	5.00	0.00	117.97	0.02	10.44
Bayfield Tower	**8760	0.00	2.64	-	-	-	-
Ferndale Tower	**8760	0.00	2.80	-	-	-	-
Mapleview Tower	**8760	0.00	1.14	-	-	-	-
Anne Reservoir	**8760	0.01	2.27	-	-	-	-
Harvie Reservoir	**8760	0.00	2.48	-	-	-	-
Sunnidale Reservoir	**8760	0.00	2.76	-	-	-	-

Notes:

** 8760 - Represents continuous monitoring

-- - Analysis not required

NTU - Turbidity measured in Nephelometric Turbidity Units

mg/L - Free Chlorine measured in milligrams per litre

* Data used to populate this table contains numbers reflective of analyzer calibration and maintenance activities and are not an indication of improperly treated water

Table 3 – Schedule 10 Microbiological Sampling and Testing

Sample Location	E.Coli		Total Coliform		Background		HPC		Sample Count
	(min)	(max)	(min)	(max)	(min)	(max)	(min)	(max)	
Distribution System									
North Sampling Points	0	0	0	0	-	-	<10	30	802
South Sampling Points	0	0	0	0	-	-	<10	20	790
Other (i.e., main breaks, maintenance)	0	0	0	0	0	1	-	-	15
								Sub-Total Distribution Samples	1607
Treated Water									
Well 5	0	0	0	0	0	1	10	30	53
Well 7	0	0	0	0	0	2	10	80	53
Well 9	0	0	0	0	0	0	10	10	41
Well 11	0	0	0	0	0	5	10	10	50
Well 12	0	0	0	0	0	0	10	10	12
Well 13	0	0	0	0	0	0	10	70	53
Well 14	0	0	0	0	0	0	10	30	49
Well 15	0	0	0	0	0	0	10	10	53
Well 16	0	0	0	0	0	0	10	30	53
Well 17	0	0	0	0	0	0	10	50	40
Well 18	0	0	0	0	0	1	10	60	53
Surface Water Treatment Plant	0	0	0	0	0	0	10	10	53
								Sub-Total Treated Samples	563
Raw Water									
Well 5	0	0	0	0	0	0	-	-	53
Well 7	0	0	0	0	0	0	-	-	53
Well 9	0	0	0	1	0	60	-	-	41
Well 11	0	0	0	0	0	1	-	-	50
Well 12	0	0	0	0	0	0	-	-	12
Well 13	0	0	0	0	0	0	-	-	53
Well 14	0	0	0	0	0	0	-	-	49
Well 15	0	0	0	1	0	0	-	-	53
Well 16	0	0	0	0	0	9			53
Well 17	0	0	0	0	0	0	-	-	40
Well 18	0	0	0	0	0	0	-	-	53
Surface Water Treatment Plant	0	2	0	63	0	140	-	-	53
								Sub-Total Raw Samples	563

Notes:

CFU/100mL - E. coli, Total Coliform and Background results are expressed as Colony Forming Units (CFU)/100mL

CFU/1mL - Heterotrophic Plate Count (HPC) results are expressed as CFU/1mL

-- - Analysis not required

Table 4 – Schedule 13 Chemical Sampling and Testing – Inorganics and Organics

	Sample Location	Well 5	Well 7	Well 9	Well 11	Well 12	Well 13	Well 14	Well 15	Well 16	Well 17	Well 18	SWTP
	Date Sampled	2024-04-15	2024-04-15	2024-04-15	2024-04-15	2024-09-18	2024-04-15	2024-04-15	2024-04-15	2024-04-15	2024-04-15	2024-04-15	2024-08-26
	MDL	Analytical Result											
Treated Water - Inorganic Parameters													
Antimony	0.0005	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Arsenic	0.001	<MDL	MDL	MDL	0.002	0.003	MDL	0.003	MDL	<MDL	<MDL	<MDL	MDL
Barium	0.001	0.204	0.285	0.117	0.276	0.283	0.123	0.239	0.319	0.110	0.318	0.273	0.036
Boron	0.002	0.008	0.005	0.004	0.011	0.021	0.007	0.009	0.005	0.004	0.007	0.011	0.016
Cadmium	0.0001	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Chromium	0.001	0.003	0.002	0.002	<MDL	<MDL	<MDL	0.002	<MDL	0.003	<MDL	<MDL	<MDL
Mercury	0.0001	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Selenium	0.0002	0.0006	0.0004	0.0005	0.0005	0.0005	0.0005	0.0004	0.0003	0.0005	<MDL	<MDL	0.0006
Uranium	0.001	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Treated Water - Organic Parameters													
Alachlor	0.000236	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Atrazine+metabolites	0.0005	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Azinphos-methyl	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Benzene	0.0002	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
Benzo(a)pyrene	0.00001	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Bromoxynil	0.000113	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*
Carbaryl	0.003	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Carbofuran	0.005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Carbon Tetrachloride	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Chlorpyrifos	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Diazinon	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Dicamba	0.0001	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*
1,2-Dichlorobenzene	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
1,4-Dichlorobenzene	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
1,2-dichloroethane	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
1,1-Dichloroethylene (vinylidene chloride)	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
Dichloromethane	0.005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
2,4-Dichlorophenol	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
2,4-Dichlorophenoxy acetic acid (2,4-D)	0.000424	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*
Diclofop-methyl	0.000445	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*
Dimethoate	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Diquat	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Diuron	0.02	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Glyphosate	0.02	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Malathion	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
MCPA	0.00706	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*
Metolachlor	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Metribuzin	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Monochlorobenzene	0.0005	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Paraquat	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Pentachlorophenol	0.0003	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Phorate	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Picloram	0.0001	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*
Polychlorinated Biphenyls (PCB)	0.00006	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Prometryne	0.00006	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Simazine	0.000177	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Terbufos	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Tetrachloroethylene (perchloroethylene)	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
2,3,4,6-Tetrachlorophenol	0.0003	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Triallate	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Trichloroethylene	0.0005	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL
2,4,6-Trichlorophenol	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Trifluralin	0.000118	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*	<MDL*
Vinyl Chloride	0.0001	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL

Notes:

mg/L - All units presented in milligrams per litre
MDL - Method Detection Limit for laboratory analysis
<MDL - Analytical Result did not exceed the laboratory Method Detection Limit (MDL)
SWTP - Surface Water Treatment Plant
* - Sample dilution was performed resulting in modified MDL

Table 5 – Schedule 13 Chemical Sampling and Testing – Trihalomethanes & Haloacetic Acids

Parameter	Running Annual Average
	2024
Trihalomethanes	0.0336
Haloacetic Acids	0.0264

Notes:

mg/L - Reported in milligrams per litre

Table 6 – Schedule 13 Chemical Sampling and Testing – Sodium, Fluoride, Nitrite and Nitrate

Parameter	MDL	Date Sampled	Analytical Results											
		Sample Location	Well 5	Well 7	Well 9	Well 11	Well 12	Well 13	Well 14	Well 15	Well 16	Well 17	Well 18	SWTP
Sodium	0.1	2021-08-30	--	--	--	--	--	--	--	--	--	--	--	32.0
		2024-09-16	15.9	15.1	53*	99*	--	65*	41*	28.0*	12.0	15.9	9.6	--
		2024-09-18	--	--	--	--	136*	--	--	--	--	--	--	--
Fluoride	0.2	2021-08-30	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-09-16	<MDL	<MDL	<MDL	0.06	--	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	--
		2024-09-18	--	--	--	--	0.06	--	--	--	--	--	--	--
Nitrite	0.05	2024-01-08	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-02-26	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-03-11	<MDL	--	--	<MDL	--	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	--
		2024-03-26	--	--	<MDL	--	--	--	--	--	--	--	--	--
		2024-05-27	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-06-10	--	--	<MDL	<MDL	--	<MDL	<MDL	<MDL	--	--	--	--
		2024-06-11	<MDL	<MDL	--	--	--	--	--	--	<MDL	<MDL	<MDL	--
		2024-08-26	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-09-09	<MDL	<MDL	<MDL	<MDL	--	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	--
		2024-09-18	--	--	--	--	<MDL	--	--	--	--	--	--	--
		2024-09-30	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-11-25	--	--	--	--	--	--	--	--	--	--	--	<MDL
		2024-12-09	<MDL	<MDL	<MDL	<MDL	--	<MDL	--	<MDL	<MDL	--	<MDL	--
		2024-12-18	--	--	--	--	--	--	<MDL	--	--	--	--	--
Nitrate	0.05	2024-01-08	--	--	--	--	--	--	--	--	--	--	--	0.17
		2024-02-26	--	--	--	--	--	--	--	--	--	--	--	0.17
		2024-03-11	<MDL	<MDL	--	0.97	--	2.44	0.25	<MDL	1.09	<MDL	<MDL	--
		2024-03-26	--	--	1.1	--	--	--	--	--	--	--	--	--
		2024-05-27	--	--	--	--	--	--	--	--	--	--	--	0.17
		2024-06-10	--	--	3.79	0.76	--	1.86	0.08	<MDL	--	--	--	--
		2024-06-11	<MDL	<MDL	--	--	--	--	--	--	1.16	<MDL	<MDL	--
		2024-08-26	--	--	--	--	--	--	--	--	--	--	--	0.22
		2024-09-09	<MDL	0.05	3.67	0.8	--	1.84	0.18	0.05	1.25	<MDL	<MDL	--
		2024-09-18	--	--	--	--	<MDL	--	--	--	--	--	--	--
		2024-09-30	--	--	--	--	--	--	--	--	--	--	--	0.2
		2024-11-25	--	--	--	--	--	--	--	--	--	--	--	0.13
		2024-12-09	<MDL	<MDL	4.15	0.79	--	2.03	--	<MDL	1.2	--	<MDL	--
		2024-12-18	--	--	--	--	--	--	<MDL	--	--	--	--	--

Notes:

-- - Analysis not required
MDL - Method Detection Limit for laboratory analysis
<MDL - Analytical Result did not exceed the laboratory Method Detection Limit (MDL)
mg/L - All units reported in milligrams per litre
SWTP - Surface Water Treatment Plant
* - Sample dilution was performed resulting in modified MDL

Table 7 – Schedule 15.1 – Lead

Parameter	MDL	Sample Count	Range of Results	
			(min)	(max)
Lead (Plumbing)	0.0001	20	0.0001	0.0017
Lead (Distribution System)		20	<MDL	0.0004

Notes:

mg/L - All units reported in milligrams per litre

MDL - Method Detection Limit for laboratory analysis

Table 8 – Municipal Drinking Water Licence – Raw Water Sampling and Testing – Volatile Organic Compound

Parameter	MDL	Analytical Results							
		(min)	(max)	(min)	(max)	(min)	(max)	(min)	(max)
Sample Location		**Well 11**		**Well 12**		**Well 14**		**Well 15**	
Benzene	0.0002	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
Carbon Tetrachloride	0.0002	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
1,2-Dichlorobenzene	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
1,4-Dichlorobenzene	0.0005	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
1,2-Dichloroethane	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
1,1-Dichloroethene	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
Cis-1,2-Dichloroethene	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	0.0007	0.0007	0.0017
Dichloromethane	0.005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
Monochlorobenzene	0.0005	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
Tetrachloroethylene	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL	<MDL*	<MDL
Trichloroethylene	0.0005	<MDL*	<MDL	<MDL*	<MDL	<MDL*	0.0006	<MDL*	<MDL
Vinyl Chloride	0.0001	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL

Notes:

mg/L - All units reported in milligrams per litre

MDL - Method Detection Limit for laboratory analysis

<MDL - Analytical result did not exceed the laboratory Method Detection Limit (MDL)

* - Sample dilution was performed resulting in modified MDL

Table 9 – Municipal Drinking Water Licence – Raw Water Sampling and Testing - Sodium

Sample Location	Sodium	
	(min)	(max)
*Well 3A	35.0	45.0
Well 9	42.0	57.0
Well 11	84.0	111.0
Well 12	138.0	149.0
Well 13	51.0	76.0
Well 14	26.0	68.0

Notes: mg/L - All units reported in milligrams per litre

* - Although 3A was not in service, analytical results required as a condition of the MDWL

Table 10 – Municipal Drinking Water Licence – Ultra Violet Monitoring*

Parameter	Minimum	Well 5	
		(min)	(max)
UV Dosage *Monitored Continuously*	40	0	131.9
UVT *Monitored Weekly*	85	86.7	99.3

Notes: (mJ/cm^2) - UV Dosage measured in millijoules per centimeter squared

% - UVT measured in percent

* Data used to populate this table contains numbers reflective of analyzer calibration and maintenance activities and are not an indication of improperly treated water

Table 11 – Schedule 16 and 17 – Summary of Adverse Water Quality Incidents (AWQIs)

AWQI #	Incident Date	Location	Parameter	Result	Unit of Measure	Summary	Corrective Action Date
164617	2024-03-13	Murray St.	Low Distribution Chlorine	0.00	mg/L	While completing dead-end flushing on Murray St., a sample taken three (3) minutes after opening the hydrant indicated a 0.00 mg/L result of free chlorine. The operator continued to flush the hydrant until an acceptable residual was maintained.	2024-03-13
164769	2024-04-08	Sunnidale Reservoir	Microbiological	NDOGN	CFU	During routine distribution system sampling, multiple AWQIs were reported by the contracted lab for adverse analytical results for Total Coliforms (TC) and E.coli (EC). Operations staff were notified and dispatched to complete system flushing and resampling. Results of the re-sample showed no issues. The contracted lab investigated the issue and determined that it was the result of labratory equipment contamination. On May 10, 2024, the MECP rescinded the AWQIs.	2024-04-10
164770	2024-04-08	Anne St Sample Station	Microbiological	NDOGN	CFU		2024-04-10
164771	2024-04-08	Cloughley Sample Station	Microbiological	NDOGN	CFU		2024-04-10
164772	2024-04-08	Duckworth Sample Station	Microbiological	NDOGN	CFU		2024-04-10
164773	2024-04-08	Bayfield Elevated Tower	Microbiological	NDOGN	CFU		2024-04-10
164774	2024-04-08	Ferndale North Elevated Tower	Microbiological	NDOGN	CFU		2024-04-10
164775	2024-04-08	Anne Well 3A	Microbiological	NDOGN	CFU		2024-04-10
164776	2024-04-08	Perry St. Well 4	Microbiological	NDOGN	CFU		2024-04-10
165423	2024-07-03	Centre St.	Pressure	-	-	On July 3, 2024, Fire Flow testing was occurring at Innisfil Street near Essa Road. During the testing, valve 8048 was turned to the off position. The Operations Support Administrators received 3 calls of no water reports at residential dwellings on Centre Street (near the Fire Flow testing). Operations Staff responded to the calls and investigated the issue. Upon traveling down Centre Street, the operator noticed valve 8044 was in the off position. The operator located and directionally flushed the the blow off valve. The valve was then re-opened and directionally flushed until system pressure and water quality were confirmed. The WDS ORO was then notified and directed to call in an AWQI.	2024-07-03

Notes: NDOGN - No Data: Overgrown with non-target contamination
CFU - Colony-forming Unit

Schedule C

2024 Municipal Summary Report, Schedule 22

Ontario Regulation 170/03

2024

Drinking Water System

Municipal Summary Report

City of Barrie

Water Operations Branch

January 1, 2024 to December 31, 2024

Schedule 22. O.Reg. 170/03

Effective Date: 2025-02-04

Table of Contents

1.0 Introduction

The City of Barrie Water Operations Branch (the Branch) has prepared this summary report to satisfy the requirements of Schedule 22-2 of Ontario Regulation 170/03 (O.Reg.170/03). Schedule 22-2 (1) and (1)(a) require that the owner of a drinking water system (the System) ensure that a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year. The summary report must be provided to the members of the municipal council, in the case of drinking water systems owned by a municipality and must be available no later than March 31st of each year.

This report includes the period from January 1st to December 31st, 2024, and the information provided complies with the reporting requirements outlined in Schedule 22-2 (2) and (3) of O.Reg.170/03.

2.0 Schedule 22-2 Reporting Requirements

Schedule 22-2 requires that the report include the following:

- Schedule 22-2 (2) requires:
    - List the requirements of the Safe Drinking Water Act (SDWA), the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the System that were not met at the time during the period covered by the report; and,
    - For each requirement referred to above that was not met, specify the duration of the failure and the measures that were taken to correct the failure.
- Schedule 22-2 (3) requires:
    - A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows; and
    - A comparison of the summary referred to above to the rated capacity and flow rates approved in the System's approval, drinking water works permit or municipal drinking water licence.

3.0 Evidence of Compliance

3.1 Compliance with Schedule 22-2 (2).

The following sections discuss the requirements in Schedule 22-2 (2).

3.1.1 Orders

The System was not issued any orders during the 2024 reporting period.

3.1.2 Ministry of Environment, Conservation and Parks (MECP) Drinking Water System Inspection

The MECP conducted one (1) announced, focused inspection of the System. The inspection was from November 2023 to October 2024. Following the System inspection, the MECP issued a report summarizing the findings, including regulatory non-compliances, best practice issues, and recommendations.

3.1.2.1 2024 Drinking Water System Inspection Findings

There were zero (0) non-compliances with regulatory requirements and zero (0) recommendations reported in the 2024 MECP Inspection Report issued on October 16, 2024.

A copy of the MECP Drinking Water System Inspection Summary is included in Appendix A for reference.

3.1.2.2 Historical Drinking Water System Inspection Findings

The Branch summarized the regulatory non-compliances and MECP recommendations for best practices that were presented in the historical Drinking Water System Inspection Reports, along with actions taken by the Branch in response to inspection findings on the MECP Drinking Water System Inspection Summary, which spans the 2020 to 2024 reporting periods, inclusive.

A copy of the MECP Drinking Water System Inspection Summary is included in Appendix A for reference.

3.2 Compliance with Schedule 22-2 (3)

The following section discusses the requirements in Schedule 22-2 (3).

3.2.1 Drinking Water System Production and Flow Rates

In accordance with Schedule 22-2 (3) and to assist the Owner in assessing the capability of the System to meet existing and planned uses of the system, the Branch prepared a summary of the quantities of water supplied during the reporting period, including monthly average and maximum daily flows in comparison to the rated capacities. The flows presented below are reported in Megalitres (ML) to reflect the large quantities of water produced by the system.

The Branch supplied 14,791 ML of water in the reporting period. The average monthly flow from all sources within the System was 1,233 ML, which ranged from 551 ML (SWTP) to 9.38 ML at Well 12.

The Branch was approved to supply a total of 148.26 ML (148,264,000 L) of water per day from fifteen (15) sources, with approved capacity of each source ranging from 6.55 ML/day (various sources) to 65 ML/day (SWTP). The maximum volume of water supplied in any day (maximum day flow) from each source ranged from 3.63 ML (Well 13) to 26.84 ML (SWTP) during the reporting period, as illustrated in the Flow Summary graph included in Appendix B. Each source was operated within its respective permitted capacity during the reporting period, except for Well 3A, 4A and 19 which were not operated in 2024.

4.0 Closure

It is the belief of the Branch that this report satisfies the requirements of O.Reg. 170/03, Schedule 22. If you have any questions concerning the contents of this report, please contact the Supervisor of Compliance and Technical Support.

Appendix A

MECP Drinking Water System Inspection Summary

Ministry of Environment, Conservation & Parks
Drinking Water System Inspection Summary

Item No	Applicable Requirement	MECP Non-Compliance With Regulatory Requirements	Actions Taken	MECP Recommendations and Best Practice Issues	Actions Taken	Status
2024						
		Not Applicable		Not Applicable		Complete
2023						
1	Subsection 13-6.1 of Schedule 13 and Subsection 6-1.1 of Schedule 6 of O. Reg. 170/03	The latest HAA sample obtained on October 17, 2023, exceeded the required sampling window of 120 days from the previous sample.	The Branch immediately conducted the required haloacetic acid sampling.		Adjust the sampling window of opportunity during each quarter to ensure adequate time to observe, review, check that sampling is upcoming, has been conducted and is complete and accurate.	Complete
2	Subsection 13-6.1 of Schedule 13 and Subsection 6-1.1 of Schedule 6 of O. Reg. 170/03	The latest THM sample obtained on October 17, 2023, exceeded the required sampling window of 120 days from the previous sample.	The Branch immediately conducted the required trihalomethane sampling.		Adjust the sampling window of opportunity during each quarter to ensure adequate time to observe, review, check that sampling is upcoming, has been conducted and is complete and accurate.	Complete

Item No	Applicable Requirement	MECP Non-Compliance With Regulatory Requirements	Actions Taken	MECP Recommendations and Best Practice Issues	Actions Taken	Status
3				Adverse Water Quality Incident #163918 was submitted on an older version of the form 4444E (2020/04**)**	A link to the MECP form was added to the QMS Home Page for Operational Staff to always access the most current version of the form	Complete
4				The following items were noted during the physical inspection: - WPS07 access hatches were unsecured without a lock. - WPS07 & WPS09 had antifreeze/coolant/mineral oil being stored near a floor drain without proper containment. - WPS09 spill containment dike for sodium silicate had a spilled volume of material on the floor	Locks were added to access hatches at WPS07. Chemicals stored near floor drains were placed in proper chemical storage or removed from the property at WPS07 & WPS09. WPS09 spill containment dike was cleared of spilled sodium silicate.	Complete
2022						
		Not Applicable		Not Applicable		Complete
2021						
		Not Applicable		Not Applicable		Complete

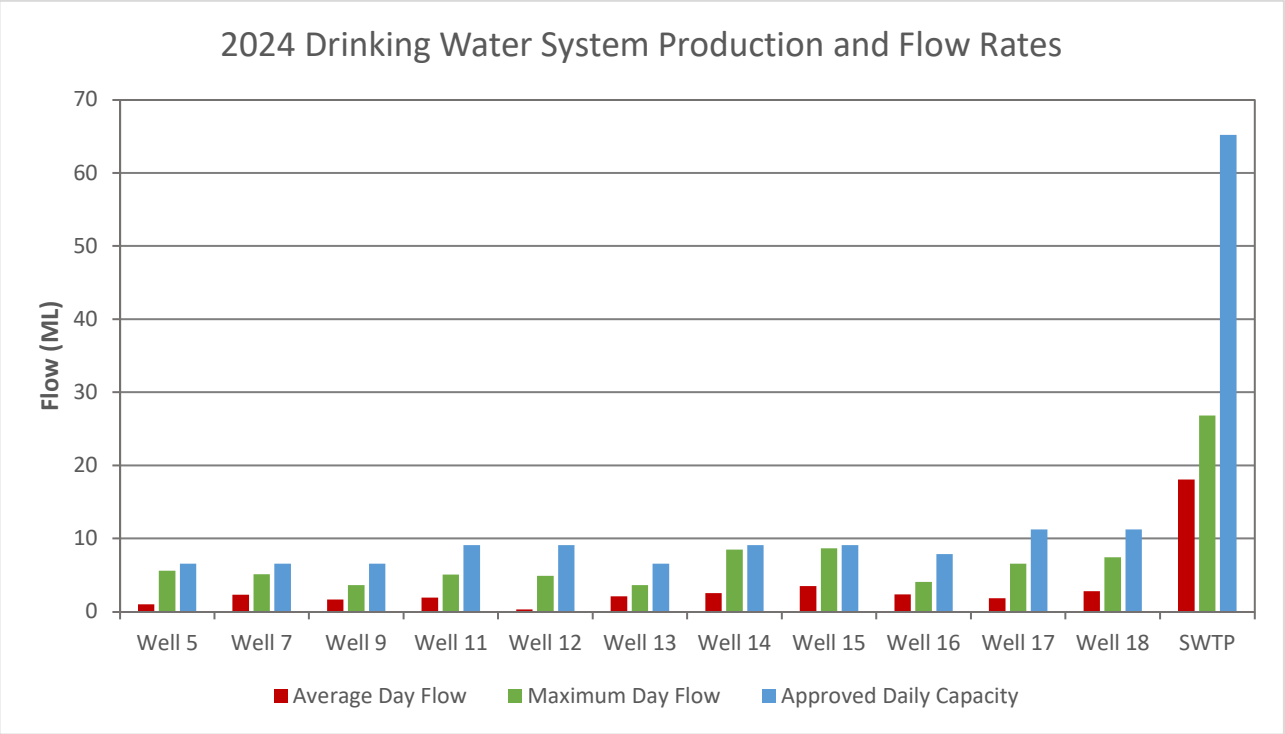
Item No	Applicable Requirement	MECP Non-Compliance With Regulatory Requirements	Actions Taken	MECP Recommendations and Best Practice Issues	Actions Taken	Status
2020						
1	Subsection 1-2 (2)4 of Schedule 1 of O. Reg. 170/03	Records did not confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/L free or 0.25 mg/L combined	Residuals were verified, and water was able to mix in the reservoir with water of acceptable residual and microbiological samples collected			Complete

Appendix B

Tables and Figures

Drinking Water System Usage

Source	Approved Daily Capacity (ML/day)	Maximum Day Flow (ML/day)	Average Day Flow (ML/day)	Monthly Average Flow (ML/month)	Annual Total Volume (ML)
Well 5	6.55	5.62	1.03	31.38	376.54
Well 7	6.55	5.14	2.31	70.52	846.19
Well 9	6.55	3.65	1.66	50.61	607.34
Well 11	9.10	5.09	1.91	58.35	700.15
Well 12	9.10	4.89	0.31	9.38	112.58
Well 13	6.55	3.63	2.11	64.20	770.46
Well 14	9.10	8.48	2.55	77.87	934.39
Well 15	9.10	8.65	3.48	106.26	1,275.15
Well 16	7.86	4.06	2.35	71.68	860.17
Well 17	11.23	6.57	1.83	55.72	668.65
Well 18	11.23	7.42	2.82	85.96	1,031.48
SWTP	65.20	26.84	18.06	550.70	6,608.38
System	158.12	90.04	40.41	1,232.62	14,791.48



Schedule D

Ministry of Environment, Conservation and Parks

Standard of Care

TAKING CARE OF YOUR DRINKING WATER

A Quick Guide For Members Of Municipal Councils

If you are a municipal councillor, this quick guide is intended to help you better understand the Safe Drinking Water Act, 2002 (SDWA) and provide information about your statutory standard of care responsibilities. You are encouraged to also read ***Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils***. It provides more details about these responsibilities as well as information about how Ontario's drinking water is protected.

Ontarians expect safe, high quality drinking water. It is a matter vital to public health. As a member of a municipal council, you have an important role to play to ensure that your community has access to safe, high quality drinking water — and you are legally obliged to do so.

THREE THINGS TO REMEMBER AS A MUNICIPAL COUNCILLOR:

It's Your Duty. The Safe Drinking Water Act, 2002 includes a statutory standard of care for individuals who have decision-making authority over municipal drinking water systems or who oversee the operating authority of the system. This can extend to municipal councillors. There are legal consequences for not acting as required by the standard of care, including possible fines or imprisonment.

Be Informed. Ask questions. Get answers. You don't have to be an expert in drinking water operations, but you do need to be informed about them. Your decisions can have an impact on public health. Seek advice from those with expertise and act prudently on that advice.

Be Vigilant. Complacency can pose one of the greatest risks to drinking water systems. It is critical that you never take drinking water safety for granted or assume all is well with the drinking water systems under your care and direction. The health of your community depends on your diligent and prudent oversight of its drinking water.

> *"Water is unique as a local service. It is, of course, essential to human life and to the functioning of communities, (and) the consequences of a failure in the water system (are) most seriously felt by those who depend on it locally. Municipal ownership, and the ensuing responsibilities, should provide a high degree of public accountability in relation to the local water system."*
> — Justice Dennis O'Connor,
> 2002 Report of the Walkerton Inquiry

Legal Disclaimer – This quick guide should not be viewed as legal or other expert advice. For specific questions regarding the legal application of the Safe Drinking Water Act, 2002 and its regulations, please consult a lawyer and/or consult the text of the Act at ***www.e-laws.gov.on.ca***.

Ontario

Key Sections of the SDWA for Municipal Councillors

Section 11: Duties of Owners and Operating Authorities

Section 11 of the SDWA describes the legal responsibilities of owners and operating authorities of regulated drinking water systems. It is important for you to understand the scope of your municipality or operating authority's day-to-day responsibilities.

Owners and operators are responsible for ensuring their drinking water systems:

- provide water that meets all prescribed drinking water quality standards
- operate in accordance with the act and its regulations, and are kept in a fit state of repair
- are appropriately staffed and supervised by qualified persons
- comply with all sampling, testing and monitoring requirements
- meet all reporting requirements

Examples of actions required of owners and operators under Section 11:

- Sampling and testing of drinking water with a frequency appropriate to the type, size and users of the system in accordance with the act and corresponding regulations
- Using an accredited and licensed laboratory for drinking water testing services
- Reporting of adverse test results that exceed any of the standards in the Ontario Drinking Water Quality Standards Regulation, both verbally and in writing, to the local medical officer of health and the Ministry of the Environment and Climate Change (MOECC)
- Obtaining a drinking water licence for a municipal residential drinking water system from the MOECC, which includes a financial plan
- Ensuring the drinking water system is operated by an accredited operating authority
- Hiring certified operators or trained persons appropriate to the class of the system
- Preparing an annual report to inform the public on the state of the municipality's drinking water and the system providing it, and an annual summary report for the owners of the drinking water system

Section 19: Your Duty and Liability – Statutory Standard of Care

Section 19 of the SDWA expressly extends legal responsibility to people with decision-making authority over municipal drinking water systems and those that oversee the accredited operating authority for the system. It requires that they exercise the level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation and that they exercise this due diligence honestly, competently and with integrity.

Meeting your statutory standard of care responsibilities

Meeting the statutory standard of care is the responsibility of:

- the owner of the municipal drinking water system
- if the system is owned by a municipality, every person who oversees the accredited operating authority or exercises decision-making authority over the system – **potentially including but not limited to members of municipal councils**
- if the municipal drinking water system is owned by a corporation other than a municipality, every officer and director of the corporation

Maintaining an Appropriate Level of Care

Standard of care is a well-known concept within Ontario legislation.

For example, the Business Corporations Act requires that every director and officer of a corporation act honestly and in good faith with a view to the best interests of the corporation and exercise the care, diligence and skill that a reasonably prudent person would in comparable circumstances.

Statutory standards of care address the need to provide diligent oversight. What is considered to be an appropriate level of care will vary from one situation to another. As a municipal councillor, it is important to educate yourself on this statutory requirement and to gain an understanding of the operation of drinking water systems in your community to help you meet the standard of care requirements.

You are not expected to be an expert in the areas of drinking water treatment and distribution. Section 19 allows for a person to rely in good faith on a report of an engineer, lawyer, accountant or other person whose professional qualifications lend credibility to the report.

Enforcing the Statutory Standard of Care

As a municipal councillor, you need to be aware that not meeting your statutory standard of care responsibilities comes with serious consequences. Section 19 provides the province with an enforcement option when needed.

A provincial officer has the authority to lay a provincial offence charge against a person to whom the standard applies. The range of penalties includes maximum fines of up to $4 million for a first offence and provision for imprisonment for up to five years. No minimum penalties are established. Actual penalties would be decided by the courts depending on the severity and consequences of the offence.

It is important to note the difference between the provision of the Municipal Act, 2001, that limits the personal liability of members of municipal councils and officials, and the standard of care imposed under the SDWA. Under sections 448-450 of the Municipal Act, 2001, municipal council members and officials have relief from personal civil liability when they have acted in good faith. However, despite that protection, municipal councillors and officials that are subject to the duty imposed by Section 19 of the SDWA could be penalized if a prosecution is commenced and a court determines they have failed to carry out the duty imposed under that section.

☑ Actions You Can Take – to be better informed about your drinking water oversight responsibilities.

General

- ☐ Read ***Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils,*** which provides more details about your responsibilities as well as information about how Ontario's drinking water is protected and reference material on drinking water.
- ☐ Consider taking the Standard of Care training with the Walkerton Clean Water Centre. Get course details and session offerings at **www.wcwc.ca** or by phoning toll free 1-866-515-0550.
- ☐ Learn about drinking water safety and its link to public health. Speak to water system and public health staff to learn more.
- ☐ Become familiar with your municipal drinking water system. Ask your water manager to give a presentation to council and/or arrange a tour of your drinking water facilities.
- ☐ Review the reports of the Walkerton Inquiry, specifically sections related to municipal government (Chapter 7 in Report I, Chapters 10 and 11 in Report II). The reports are available online at **www.attorneygeneral.jus.gov.on.ca/english/about/pubs/walkerton**.
- ☐ Become further acquainted with drinking water legislation and regulations, available on the Ontario Government e-Laws website at **www.e-laws.gov.on.ca**.

Drinking Water Operational Plan

- ☐ Ask your operating authority to speak to your municipal council about your operational plan.
- ☐ Consider and act on any advice (including identified deficiencies and action items) identified during the annual management review process.
- ☐ Review the Quality Management System policy in your operational plan and its commitments.
- ☐ Ask your operating authority to show how it is meeting these commitments.

Drinking Water Reports and Inspections

- ☐ Obtain and thoroughly review copies of the most recent annual and summary reports.
- ☐ Ask for explanations of any information you don't understand.
- ☐ Consider, act on and correct any deficiencies noted in the reports.
- ☐ Review your annual inspection results and ask questions if there is any indication of declining quality.
- ☐ Clarify any technical terms.
- ☐ Ask how deficiencies are being addressed.
- ☐ Review your system's standing in the ratings reported in the Chief Drinking Water Inspector's Annual Report. If your rating is less than 100 per cent, ask why.
- ☐ Consider, act on and correct any deficiencies highlighted in the inspection.

Infrastructure Planning

- ☐ Find out what maintenance, rehabilitation and renewal plans are in place for your drinking water system.
- ☐ Ask your operating authority to present the findings of its annual infrastructure review.

Communicating with Your Operating Authority

- ☐ Determine when and how your operating authority will communicate to you as an owner.
- ☐ Find out what information is made available to the public and how.

Emergency Planning for Drinking Water

- ☐ Ask your operating authority to review the drinking water emergency plan with council and to explain what responsibilities have been assigned to the owner.
- ☐ Know who will be the spokesperson during a drinking water emergency.
- ☐ Ensure critical staff have taken necessary training on emergency procedures and have participated in testing.

Drinking Water System Operators

- ☐ Ensure there are sufficient resources for appropriate levels of training for municipal staff involved in operating a drinking water system.
- ☐ Confirm that an overall responsible operator (ORO) has been designated and that procedures are in place to ensure all required staff and contractors are certified.
- ☐ Check to see if drinking water operator succession planning is being done and that measures are taken to address any current or anticipated challenges to recruiting skilled employees.
- ☐ Ensure your municipality or operating authority has contingency plans in place for situations where your certified operators may not be available (e.g. labour disputes, illnesses, vacancies, etc.) and, if activated, confirm that these contingency plans have been, where required, approved by the Ministry of the Environment and Climate Change and are working.

Source Protection Planning

- ☐ Review the source protection plan for your area and find out what actions are being taken to protect vulnerable areas around your drinking water sources.
- ☐ Find out if your municipality has appointed risk management officials and inspectors to support source protection planning and whether you are sharing these duties with other municipalities or delegating to a local source protection authority.

For more information, call the Ministry of the Environment and Climate Change at **1-800-565-4923**
Email: **drinking.water@ontario.ca**

PIBS 9810e

Schedule E

Quality Management System
Management Review Meeting Minutes

Meeting Minutes

Meeting Details

Date
2024-02-23
Start Time
8:30:00 AM
End Time
12:00:00 PM
Type
Management Review

Attendance

Attendee Role	Initials	Name
Facilitator	SB	Bradt, Sarah
Attendee	DM	Moreau, Diane
Recorder	JD	Dumais, Jeanette
Attendee	JG	Giffen, Jason
Attendee	LH	Hywarren, Lenita
Attendee	BM	Miller, Brenden
Attendee	MV	Vandergeest, Mark
Attendee	BAF	Astop-Ford, Brittany
Attendee	DS	Smith, Diana

Meeting Minutes

Agenda Item	Action Item No	Description
01) Introduction and Welcome Slide		Thank you to everyone for attending and participating in the Q4 and Summary of 2023.
02) Meeting Agenda - Quarterly Topics		SB reviewed the table with the group - no comments.
03) Meeting Agenda - Annual Topics		SB reviewed the table with the group - no comments.
04) Review Q3 Meeting - Title Slide		
05) Action Items - Title Slide		
06) Q3 Action Item Follow Up	720	Update a Computerized Maintenance Management System (CMMS) Lead Hand and Operator Manuals to include how to update the work order category and include the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. DS needs to complete action items 23-722 to 23-725 before completing this action item. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-07-01 Support: Completion Date:
	721	Ensure WDS Mobility Lead Hand and Operator Manuals include how to update the work order category and the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. This action item is awaiting the completion of Action item 23-722. Also, it should be reassigned to DS. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-07-01 Support: Completion Date:
	722	Review work order categorization for all Water Distribution Services (WDS) work orders. DS is working on confirming the approved categories with Top Management. Also, it should be reassigned to DS. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-07-01 Support: JG Completion Date:
	866	Review what other Municipalities are doing with regards to Annual Maintenance plans and monitoring throughout the year to come up with a plan for reviewing of maintenance activities (yearly plan with quarterly reviews). Work is ongoing in Element 15. A program overview of maintenance programs is to become part of Element 15. These maintenance “programs” will be a collection of the “work”. - The QMS Action Log was revised to reflect the following: Lead: JD Due Date: 2024-09-01 Support: LH Completion Date:
07) Q3 Action Item Follow Up - con't	723	Review work order categorization for all Water Customer Services (WCS) work orders.

		DS is working on confirming the approved categories with Top Management. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: BM	Due Date: 2024-07-01 Completion Date:
	724	Review work order categorization for all Surface Water Supply (SWS) work orders. DS is working on confirming the approved categories with Top Management. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: MV	Due Date: 2024-07-01 Completion Date:
	725	Review work order categorization for all Ground Water Supply (GWS) work orders. DS is working on confirming the approved categories with Top Management. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: MV	Due Date: 2024-07-01 Completion Date:
	790	Determine a process for reviewing both SOPs and Work Order templates, including the required frequency to review and update each. SB took over action item as part of Element 5 and created a template for each section. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support:	Due Date: 2024-01-01 Completion Date: 2024-02-23
08) Q3 Action Item Follow Up con't	525	Conduct research on whether the health of a distribution system can be measured by establishing a percentage of "Inoperable" valves and determine our COB benchmark. DM would like to see how we can better reflect this. JG noted this is unachievable based on some areas of the City that are in need of infrastructure upgrades making it very difficult to turn valves. DM suggested to avoid "known bad" areas but get a benchmark for the other areas. JG explained that in the valve turning app, these are identified as inoperable then fixed, so cannot be tracked in the app but could be trackable in Cityworks. This is where the work will continue to be tracked and reports created moving forward. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: JG	Due Date: 2024-05-01 Completion Date:
	835	Determine how to calculate total water loss from commissioning activities (e.g., recorded on an inspection?). Add water loss from commissioning activities to the water loss summary spreadsheet and graph going forward. JD reports that calculations are added to work orders to collect this number now. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2024-01-01 Completion Date: 2024-02-23
	836	Add auto flusher water loss volume to water loss calculation. Currently only flush box water volume is recorded in the calculation. BM is working with GIS to get autoflushers designated better in our GIS mapping. BAF is working on getting data added to Work Orders for Autoflushers. JD to work on GIS asset table additions so the data is available at all times. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: BM	Due Date: 2024-05-01 Completion Date:
	839	Meet with GIS to consider solutions to deal with segmenting issues in CMMS when only a portion of watermain is replaced. An update of the software is required in GIS. GIS has requested this be pushed to 2025. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2025-03-01 Completion Date:

	842	Create and implement the use of a Microsoft Form for the Notice of Change to On-Call Form (F11-03). DM requested to close this item out, no longer applicable or required. - The QMS Action Log was revised to reflect the following: Lead: AIP Due Date: 2024-01-01 Support: Completion Date: 2024-02-23
09) Action Item Review Summary		The Action Item Summary is as follows: Complete: 23% In Progress: 69% Incomplete: 8%
10) Incidents of Adverse Drinking Water Test - Title Slide		
11) Incidents of Adverse Drinking Water Tests - 2023 Q4 Summary		There were a total of 4 AWQIs in 2023 Q4. Further information on these AWQIs are included in the AWQI Annual Summary section.
12) Incidents of Adverse Drinking Water tests - 2023 Summary		In 2023, there were a total of 6 AWQIs: 1. Reference #162058: Low Pressure 2. Reference #163240: Low Pressure 3. Reference #163918: Low Pressure 4. Reference #163993: Low Pressure 5. Reference #164167: Category 2 Watermain Break 6. Reference #164198: Total Coliform
13) Incidents of Adverse Drinking Water Tests - Table with CIPs denoted		SB reviewed the table of Continual Improvement Plans (CIPs) with the group. No further comments.
14) Incidents of Adverse Drinking Water Tests - Table with CIPs denoted		SB reviewed the table of CIPs with the group: CIP 167: No action items generated for the root cause. OFIs were documented in action items 23-944 to 23-951. CIP 170: SB - A new action item has been opened to update the necessary documents. CIP 174: One action Item still open and due 2024-03-01.
15) Incidents of Adverse Drinking Water Tests - Table with CIPs denoted		SB reviewed the table with the group: CIP 178: Root Cause Analysis was not required as water was not directed to users. CIP 177: Root Cause Analysis was not required.
16) CIPs from AWQIs - 2023 Summary		SB reviewed the table outlining 3 CIPs.
17) CIPs from AWQIs - 2023 Summary		SB reviewed the table outlining 2 CIPs.

18) Deviations from CCP Limits and Response Actions - Title Slide				
19) Deviations from SCADA CCP Limits - SWS	There was no use of the CCP Deviation Label in this quarter. No comments.			
20) Deviations from SCADA CCP Limits - GWS	There was one occurrence of CCP Deviation label in GWS. It was in relation to low distribution system pressure. BAF highlighted that our CCP and CCP Limits require a wholesome review as this "should" be noted in the WCS/WDS logbook but that our CCP and CCP Limits are not exactly in line with our distribution of work and pointed to the current T08-02 table requiring refinement during this years Risk Assessment Review.			
21) Deviations from CCP Limits - WCS/WDS	SB reviewed the table with the group. SB to send BM the work orders that reflected less than 0.2 Free chlorine residual at start up to get denoted properly as having reached the CCP Limit on those occasions, as well as reflected in the Water Distribution Services (WDS) eLogbook.			
22) Quarterly Flushing Activities Summary - over 100m3	There were 84 of 390 (21.5%) Work Orders with Deviations (>100m3).			
23) Quarterly Flushing Activities Summary - over 3NTU @ start up	There were 86 of 390 (22.1%) Work Orders with Deviation (>3NTU).			
24) Quarterly Flushing Activities Summary - less than 0.2 Free Chlorine @ start up	There were 4 of 390 (1.0%) Work Orders with Deviations (<0.2Cl).			
	1004	BM to look into H733 to see if an autoflusher at this location would be feasible. - The QMS Action Log was revised to reflect the following:	Lead: BM Support: SB	Due Date: 2024-08-01 Completion Date:
25) Flushing Summary - Title Slide				
26) Annual Flushing - over 100 m3	SB reviewed the map with the group. The group agrees that these Heat Map areas are becoming larger unfortunately rather than smaller as was the intent of this work over time. 759 of 2758 (27.5%) of Work Orders with Deviations (>100m3).			
27) Annual Flushing - over 3NTU	SB reviewed the map with the group. The group agrees that these Heat Map areas are becoming larger unfortunately rather than smaller as was the intent of this work over time. 627 of 2758 (22.7%) with deviations (>3NTU).			
28) Annual Flushing - less than 0.2 Free Chlorine @ start up	SB reviewed the map with the group. The group agrees that these Heat Map areas are becoming larger unfortunately rather than smaller as was the intent of this work over time. 7 of 2758 (0.25%) Work Orders with Deviations (<0.2Cl).			
29) 2023 Flushing Activity Summary Graph	SB reviewed the graph summarizing the deviations in each zone with the group.			
30) Cyclical Flushing Activity Summary	MV - these results could be related to WPS13 going on and offline, as a disturbance. Zone 3N is now doing tower turnover more often, and this same work is going to start this year in Zone 2N. BM noted that he would like to do an ATP study. MV noted that this is in the works with the Lab Tech already. MV noted that the Master Plan is looking at GWS expansion not SWS expansion primarily due to cost. JG noted that WDS are going to be doing more swabbing and that the last runs in 2023 were not very dirty.			

		MV noted that there is a significant amount of construction going on which really changes the flow of water in these areas. The group agreed that all of the aforementioned topics contribute to the flushing issues encountered and will continue to be looked into as part of the flushing/system optimization project.
31) Preventative vs Corrective Flushing Work Orders Graph		SB reviewed the graph - the corrective is low and this is highly reflective of the great deal of work happening in flushing.
32) Operational Performance - Title Slide		
33) System Wide Production compared to 5 year average		In Q4 2023, system production was above the 5-year average.
34) System Wide Production compared to 5 year production with Temp and Precip.		LH and DM both noted that there may not be a great deal of value in seeing this. The group decided to remove this graph from future presentations at this time.
35) SWS vs GWS Production		In Q4 2023, Groundwater consistently produced more than Surface Water.
36) SWS vs GWS Production with Linear Projection		DM - Development in the South end was expected to have an impact, however that has not seemed to show here yet.
37) Closed Pressure Zones in Q4		SB noted that there were no closed zones in Q4 of 2023.
38) SWS vs GWS ICI and RES Production		The surface water vs. groundwater production for ICI and residential properties was reviewed. There were no comments provided.
39) Average Monthly Efficiency of the SWTP		SB reviewed the graph with the group. The efficiency is trending down. MV noted that SWS staff are doing several maintenance activities that are affecting this efficiency number.
40) Average Monthly Efficiency of the SWTP - explained		See below.
	926	Investigate the SWTP monthly efficiency dip that occurred in July of 2023 as noted on slide 21 of the Q3 Management Review Presentation. The dip that appeared in July of 2023 in the graph was caused by maintenance work. Water was flushed through the membrane tanks into the EQ tank for cleaning purposes, the EQ tanks were drained, cleaned and inspected. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-03-01 Support: MV Completion Date: 2024-02-23
41) Water Loss Graphic		SB reviewed the graphic with the group and explained that fire recommends that we still proceed with estimated water usage volumes as they are unable to provide accurate numbers DM noted that previously WOB was working with Fire to get this number more accurate volumes for water loss as it relates to training.
	1005	Have follow-up discussion with new deputy fire chief (Derek) regarding obtaining water loss values from the fire department. - The QMS Action Log was revised to reflect the following: Lead: DM Due Date: 2024-08-01 Support: SB Completion Date:
42) Water Loss - including AutoFlusher data		BM noted that this number is reflective of the autoflusher running for the entire 12 months and misrepresents the actual number. BAF did rerun numbers for the corrected timeframe where autoflushers were running however it still renders a water loss negative number.
	1006	BM to work with the new water modeler (Olu) on the negative number WOB is getting for water loss. Consider working on this after Master Plan Updates have been completed. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-10-01

		Support: BM	Completion Date:
43) Sectional Work Order Summary - GWS		SB reviewed the table with the group. 17 outstanding sampling work orders. When looking into the outstanding work orders further, it was found that these are for stations that are out of service. MV explained that depending on the frequency and timeline these are either cancelled over time or completed when the station is brought back online.	
	1007	Add additional notes to the sectional work order summary tables when necessary to reflect why work orders are incomplete helping to really highlight only those that are truly of concern (if any). - The QMS Action Log was revised to reflect the following:	Lead: SB Support: LH Due Date: 2024-05-01 Completion Date:
44) Sectional Work Order Summary - SWS		There were a total of 91 outstanding work orders, and 422 cancelled work orders. SB reviewed the table with the group. No additional comments were provided.	
45) Sectional Work Order Summary - WDS		There were a total of 164 outstanding work orders, and 131 cancelled work orders in the WDS group. SB reviewed the table with the group, no additional comments were provided.	
46) Sectional Work Order Summary - WCS		There were a total of 327 outstanding work orders, and 254 cancelled work orders in the WCS group. SB reviewed the table with the group, no additional comments were provided.	
47) Work Order Summary - 2023 - created vs completed		Preventative Maintenance had the highest number of created/completed Work Orders in 2023, followed by Urgent, Emergency, Corrective, and lastly, Sampling.	
48) Backflow Program Review		DM noted that the Backflow Program has been achieving this high rate of compliance for a few years now and asked the group if this is valuable anymore. The group decided that this graph could be removed from future Management Review Presentations.	
49) Locates - 2023 completion compared to 5 year average		In each month of 2023, Locates completed were above the 5-year average, with the exception of August and October.	
50) Locates - Monthly vs Yearly		SB reviewed the graph with the group - it is very similar to the previous one and the previous one is preferred. The group decided that this graph could be removed from future iterations of Management Review.	
51) Watermain Breaks Monthly compared to 5 year average		SB reviewed the graph with the group - this graphic is well received. Looking at the 5-year average for watermain breaks, it is clear that Q1 tends to experience the highest number of breaks typically. However, in January 2023 there was only 1 watermain break, which is much lower than the 5-year average of 5.4 breaks.	
52) Watermain Breaks - Yearly		SB reviewed the graph with the group - this graphic is also well received. Since 2015, the year 2019 had the highest number of watermain breaks with a total of 43. There were a total of 24 breaks in 2023.	
53) Valve Exercising - Q4 Progress on Critical Valves		SB reviewed the valve exercising data produced in the app dashboard - no comments were provided.	
54) Valve Exercising - Q4 Progress on the SE Quadrant		DM would like follow up on what are the 7 complications are on this slide. JG noted that the comments are in the app and will reflect things like: dirt in the valve box. These valves will be actioned asap when there are several to action. The lead hand of WDS sends out a crew once there is a collection of them to action.	
55) CTS - Action Item Summary		SB noted that in 2023, 4.7% of action items are taking longer than 16 months to close. However, the majority of action items are closed within 1 month.	
56) CTS Action Item Summary - 2022 compared to 2023		SB noted that in 2023, 70% of action items are being closed within 6 months, which is a consistent improvement from 58% in 2022.	
57) Raw Water Supply and Drinking Water Trends - Title Slide			

58) Sodium Trend - 2020 to Q4 2024	JD reviewed the sodium trending graphs with the group. All wells are below the 200 mg/L guideline however, Well 11 reached above half the aesthetic objective of 200 mg/L as per Guidelines for Canadian Drinking Water Quality Guideline Technical Document (1992).
59) Sodium Trend - Historical to Present 2012 to 2024	JD reviewed the graphs with the group. DM is adding a raw water sodium discussion to a meeting with the Environmental Risk Management Team on 2024-03-06.
60) Sodium Trend -Historical to Present 2012 to 2024 con't	MV noted that the on and off cycle at well 13 is likely the cause of these up and down dips in the trending we are seeing now since 2018.
61) THMs - 2015 to Present	JD reviewed the graph with the group and noted the spike in THM in Q4 2023.
62) HAAs - 2017 to Present	JD reviewed the graph with the group and noted the decrease in HAA trending for Q4 2023.
63) General Chemistry - GWS - Alkalinity/Colour/Hardness	JD reviewed the graphs with the group; there were no anomalies identified.
64) VOCs	JD noted there were no exceedances to report but that the auto-generated report is not rendering results from eRIS. A manual run of the report does however work and this will be repaired with eRIS.
65) Sampling Review - General Overview	JD reviewed the table with the group. DM noted that several work orders require ELM and FAR details. MV noted that he will be investigating these to ensure they are resolved.
66) Health Canada Guideline Technical Documents Review	JD reported that there were none received to report on but that the email protocol has changed and so these are no longer received to waterqms@barrie.ca and require each CC to sign up. Therefore there will be Health Canada Guideline Technical Documents to review in Q1 2024.
67) Golder and Assoc. Report Summary on TCE Plumes	DM noted that the liaison meeting with the Environmental Risk Management group covers topics such as this, therefore we may not need to cover this moving forward. More details to follow.
68) Golder and Assoc. Report Summary on TCE Plume con't	JD reviewed the summary of the VOC plume report, including the latest VOC detection data, and recommendations from the consultant.
69) Golder and Assoc. Report Summary on TCE Plume con't	JD reviewed the slide with the group - no comments.
70) SWTP In-House Lab Data - Title Slide	
71) Silicate Optimization - Wells	SB reviewed the graph with the group in conjunction with the following graph of the same for Distribution.
72) Silicate Optimization - Distribution	MV noted that Natalia Contreras (Lab Tech) is going to present this data at a Branch meeting to speak to these results, how the silicate is not staying in solution in the distribution system and what the next steps are going to be.
73) Consumer Feedback - Title Slide	
74) Summary of Consumer Feedback	SB noted that 90% of calls are resolved over the phone.
75) Summary of Consumer Feedback - After-hours	SB noted that there are 2 missing SRs for Q4. A group discussion about callouts one after the other and how some are missed because staff are already in the field at another callout. JG will follow up on these two SRs.

	1008	Create and add the new process to the Cityworks manual for staff on how to get the Service Request (SR) "Call Date" corrected from Cityworks App constraints. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2024-05-01 Completion Date:
76) KPIs - Title Slide				
77) KPIs - WDS		1. Percentage of valves turned in the SE quadrant in 2023: Completed 65% of non-critical valves, and 56% of critical vales. 2. Percentage of System Swabbing: 15.03km was completed in 2023. DM noted that we can remove system swabbing from 2024. Further review is needed as to what would be more relative.		
	1009	Create a new WDS KPI regarding system swabbing. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: DM	Due Date: 2024-04-01 Completion Date:
78) KPIs - GWS		1. Reducing number of callouts annually to less than 300: In 2023 there were a total of 228 callouts 2. Reduce % of well downtime to 0%: Well 5 – 11.2% Well 7 – 0% Well 9 – 15.06% Well 11 –0% Well 12 – 88.2% Well 13 – 57.26% Well 14 – 7.6% Well 15 – 0% Well 16 – 20% Well 17 –0% Well 18 –0%		
79) KPIs - SWS		1. Achieve monthly SWTP efficiency of 98%: In 2023, the average efficiency was 96.4%.		
80) KPIs - WCS		1. Achieve target of 1,400 meter replacements annually: In 2023, WOB replaced 1,229 and WAMCO replaced 1,636 meters. 2. Achieve 90% target of volume of water produced vs. accounted for: In 2023, achieved 95.4%		
81) KPIs - CTS		SB reviewed the slide with the group. SB asked if the data from Homepage views is useful. The group decided to keep the QMS homepage views - yes.		
82) Operational Plan - Currency and Updates		Each of the 21 Elements have been successfully reviewed for 2023.		
83) SOP Review Progress		The WCS group has reviewed all SOPs, while the other sections still have some for review.		
84) Work Order Review Progress		Each of the sections still have outstanding Work Order templates to review.		
85) CIPs - Title Slide				
86) CIP Summary		There are 18 CIPs open currently: 7 are Corrective 11 are Preventative Of these 18, 5 are older than 1 year.		
87) CIP 140		SB reviewed the slide with the group. DM noted that some action items are written like giant project undertakings so she fully understands how these can end up taking so long to complete.		

		DM reiterated that she is aware that LH is working on these types of actions and it is showing improvement.
88) CIP 144		This CIP has one remaining action item in progress.
89) CIP 150		All action items for this CIP have been completed and it is currently in the assessment period.
90) CIP 155		SB reviewed the slide with the group. DM noted that something needs to be done with the cell phones and SIM cards that have been procured. DS to investigate further before closing the CIP.
91) CIP 156		All action items for this CIP have been completed and it is currently in the assessment period.
92) CIP 159		All action items for this CIP have been completed and it is currently in the assessment period.
93) CIP 160		All action items for this CIP have been completed and it is currently in the assessment period.
94) CIP 164		After the review of the T11-02 in this meeting, this CIP can be closed.
95) CIP 165		The action items for CIP165 have all been completed, and JD needs to complete the paperwork to close this CIP. Currently in the assessment period, with a due date of 2024-04-01.
96) CIP 166		This CIP has one remaining action item in progress.
97) CIP 169		This CIP has four remaining action items in progress.
98) CIP 170		This CIP has one remaining action item in progress.
99) CIP 172		This CIP has four remaining action item in progress.
a100) CIP 173	983	Implement a Lead Hand and Project Operator Meeting with some key agenda items to be discussed at each meeting. Determine the frequency and agenda items. DM noted they have added the project operators to a weekly meeting that the lead hands and Al Miller are already attending to review projects there. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-03-01 Support: DM Completion Date: 2024-02-23
	984	Consider posting projects/work happening in the system on the QMS Homepage or somewhere that staff can access what is taking place within the whole system. DM noted that the Managers updates for communications on our SharePoint Home Page has proven to be easy and well received. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-03-01 Support: DM Completion Date: 2024-02-23
a101) CIP 174		This CIP has one remaining action item in progress.
a102) CIP 175		All action items for this CIP are complete, and the CIP can be closed after the assessment period.
a103) CIP 179		This CIP has three remaining action items in progress.
a104) CIP 180		This CIP has two remaining action items in progress.
a105) Asset Calibration - coming soon		SB explained to the group that the reporting that has resulted from this work was an indigestible 950 pages. JD will perform further work to get better data out of CityWorks to present for Q1 2024.
	1010	Create/Rework a Regulatory Calibration Report from Cityworks to include: analyzers, flowmeters, hand-helds (for genealogy), dataloggers - that's shows asset identifier, regulatory frequency, and actual frequency of calibration. - The QMS Action Log was revised to reflect the following: Lead: JD Due Date: 2024-05-01 Support: LH Completion Date:
a106) Results of External Audit		The surveillance 2 audit was conducted on our DWQMS Operational Plan documentation on December 11th, 2023. There were no findings or kudos shared by the Auditor.

	The CTS group however has realized some efficiency with fewer documents requiring signatures and you will see these in the coming weeks if you have not already. The CTS group will be working diligently throughout 2024 in preparation of the On-Site External Audit in Q4 of 2024.
a107) Internal Audit Schedule	SB reviewed the progress of the Internal Audit Schedule.
a108) MOE Inspection Summary	-Ministry inspection was an “unannounced, focused” Inspection -Review of documents started on September 21st, 2023 -Physical Inspection took place on November 2nd, 2023 (GWS) and November 3rd, 2023 (SWS) -Staff were knowledgeable and co-operative with the Inspector -2 Non-compliances were identified -5 Best Management Practices were recommended by the Inspector -Inspection Rating = 97.21%
a109) MOE Inspection - non-compliances	The two non-compliances related to THM and HAA sampling were reviewed with the group as well as the Compliance Response/Corrective Action(s).
a110) MOE Inspection - Best Management Practices	1. AWQI paperwork submitted on an older version of the Form 2. WPS07 – maintenance hatch on contact chamber was unsecured without a lock 3. WPS07 – Antifreeze/coolant observed stored near a floor drain 4. WPS09 – mineral oil observed stored in facility not is spill containment area 5. WPS09 – Spill containment dike or sodium silicate observed to have a volume spilled on the floor All items have been actioned and resolved.
a111) Summary of Staff Suggestions	SB noted that there were no staff comments submitted to review.
a112) Changes afftecting QMS	Technology We have officially switched to SharePoint Feedback from Staff has been positive so far Issues with Training Database that required updating/repairs to reports. Staffing Amanda extended in Operations until December 2024, Sarah extended to backfill Amanda (remain short staffed until Gwen returns)
a113) Changes affecting QMS Summary	Technology We have officially switched to SharePoint Feedback from Staff has been positive so far Staffing OPCs became CCs and changed buckets Amanda went to Operations, Gwen went on maternity leave Sarah joined as a CC
a114) List of OROs	SB reviewed the list with the group highlighting the new additions and subtractions from the list.
a115) New Business	DM noted that Liaison Meetings with Environmental Risk Management and Compliance Team are commencing in 2024 - appropriate items will be reported back to QMS in future. More details to follow.

Note:
These meeting minutes have been reviewed and approved by the meeting attendees noted at the top of the document.

Meeting Minutes

Meeting Details

Date
2024-05-24
Start Time
9:00:00 AM
End Time
11:30:00 AM
Type
Management Review

Attendance

Attendee Role	Initials	Name
Recorder	SB	Bradt, Sarah
Regrets	JV	van Leusen, Jeremy
Attendee	MV	Vandergeest, Mark
Attendee	BM	Miller, Brenden
Attendee	DM	Moreau, Diane
Recorder	JD	Dumais, Jeanette
Attendee	JG	Giffen, Jason
Attendee	SD	Diemert, Sherry
Regrets	MF	Foster, Mike
Regrets	KAC	Cornwall, Kari-Anne
Regrets	SS	Steele, Shane

Meeting Minutes

Agenda Item	Action Item No	Description
01) Review Q4 Management Review Meeting Minutes		Reviewed and approved with minor edits.
02) Management Review Action Item Follow Up		
	525	Conduct research on whether the health of a distribution system can be measured by establishing a percentage of "Inoperable" valves and determine our COB benchmark. In Progress - BAF to collect data and determine internal benchmarks based on system history. - The QMS Action Log was revised to reflect the following: Lead: BAF Due Date: 2024-08-01 Support: JG Completion Date:
	836	Add auto flusher water loss volume to water loss calculation. Currently only flush box water volume is recorded in the calculation. In Progress - Action Item moving to BAF who is working on it with Operator Maitlin Archer. - The QMS Action Log was revised to reflect the following: Lead: BAF Due Date: 2024-08-01 Support: BM Completion Date:
	903	Review of Flushing Program. Refer to system optimization group that previously existed in GWS. Review historical flushing, complaints received and areas of improvement. Not Started - JD has asked Management to consider the target date change to end of 2024. - The QMS Action Log was revised to reflect the following: Lead: JD Due Date: 2024-12-01 Support: BM Completion Date:
	924	Operations staff to add the corresponding CCP Deviation Label to the 2023-08-30 low pressure event in the WD eLogbook There is no low-pressure label in the WD eLogbook for staff to be able add. This is on the docket to be considered during the upcoming risk assessment. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-03-01 Support: BM Completion Date: 2024-03-05
	925	Ensure the CCP Deviation label is added in the WD eLogbook for the one (1) low chlorine flushing event noted on slide 15 of Q3 Management Review. Operator Denis Castro has added the label. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-03-01

		Support: BM	Completion Date: 2024-03-05
927	WOB Branch Management Team (BMT) to clarify and work through: active vs non-active assets versus assumed and not assumed, and how to address this infrastructure and maintenance required during these construction/assumption phases of development In Progress with BMT. - The QMS Action Log was revised to reflect the following:	Lead: DM Support: SB	Due Date: 2024-08-01 Completion Date:
928	Review internal and External Gen. Chem. Reports. Denote any red highlighted values and present findings in Q4 each year. Add this detail to the Management Review reference documents to be completed by the CC responsible for Sampling. Presented at last Management Review. The reason this action item appeared on this management review is that the due date did not line up with the scheduled date of the management review. - The QMS Action Log was revised to reflect the following:	Lead: JD Support:	Due Date: 2024-03-01 Completion Date: 2024-05-24
929	Request a Service Barrie call log query for May 31st. If calls have addresses recorded, record these in CW, if not calls will be deemed unrecordable and removed from on-call results. These calls are deemed unrecordable and therefore removed from the on-call afterhours data. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: BM	Due Date: 2024-03-01 Completion Date: 2024-03-05
930	Record the accepted five OFIs from the Q3 Internal Audit Report into the Action Log database to be worked through in 2024. - these are action items: 23-1020/ 24-1021/ 23-1022/ 23-1023/ and 23-1024. All Opportunities for Improvement (OFI) actions are recorded to be actioned. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: LH	Due Date: 2024-03-01 Completion Date: 2024-05-24
931	Refine OFI #2 from the Q4 Internal Audit Report to better describe how the instruction for this work is communicated and recorded by staff so that the COC relates clearly and properly demonstrates WOB due diligence. See action item: 23-1026 for rewording. OFI action is recorded. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: LH	Due Date: 2024-03-01 Completion Date: 2024-05-24
932	Develop the appropriate on the job forms for WCS and WDS to document the competencies and hourly requirements to become an Operator in Charge (OIC). In Progress - LH is following up with Supervisors. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: BM	Due Date: 2024-08-01 Completion Date:
1007	Add additional notes to the sectional work order summary tables when necessary to reflect why work orders are incomplete helping to really highlight only those that are truly of concern (if any). Note has been added to the management Review presentation side deck template to include the information on the slide. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: LH	Due Date: 2024-05-01 Completion Date: 2024-05-24
1008	Create and add the new process to the Cityworks manual for staff on how to get the Service Request (SR) "Call Date" corrected from Cityworks App constraints. A suggestion solution is to contact the ORO - as this can only be done on the desktop version and not using the in-field application. SB to investigate further with OPAs and bring findings back to BMT for decision. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2024-08-01 Completion Date:

	1009	Create a new WDS KPI regarding system swabbing. WDS KPI for swabbing in 2024 is 20km. - The QMS Action Log was revised to reflect the following: Lead: SB Support: DM Due Date: 2024-04-01 Completion Date: 2024-05-24
	1010	Create/Rework a Regulatory Calibration Report from Cityworks to include: analyzers, flowmeters, hand-helds (for genealogy), dataloggers - that's shows asset identifier, regulatory frequency, and actual frequency of calibration. Action item is in Progress and to be reviewed at next Management Review in Q2. Reassigned to CC Gwen Gilbank. - The QMS Action Log was revised to reflect the following: Lead: GG Support: LH Due Date: 2024-08-01 Completion Date:
03) Incidents of Adverse Drinking Water Tests		There was 1 AWQI in Q1 of 2024. On 2024-03-13, while dead end flushing on Murray St the first sample was taken 3 (three) minutes after opening and showed 0.00mg/L of free chlorine. The second sample was taken after 6 (six) minutes and showed 0.32mg/L of free chlorine. The initial turbidity was very high - 120NTU. This incident is explored further in CIP 184.
04) Deviations from Critical Control Point Limits and Response Actions - SWS		The CCP Deviation Label was not used in the Surface Water (SW) Logbook between January 1, 2024 and March 31, 2024.
05) Deviations from SCADA Critical Control Limits - GWS		The CCP Deviation Label was not used in the Groundwater (GW) Logbook between January 1, 2024 and March 31, 2024.
06) Deviations from Critical Control Limits - WCS/WDS		The CCP Deviation Label was not used in the Water Customer Services (WCS) / Water Distribution Services (WDS) Logbook in Q1. The CCP of Infrastructure Failure recorded 1 Deviation during Q1. There was a Category 2 Break on Albert St @ Codrington. One resident was without water while this repair was completed. The CCP of Backflow Prevention recorded 100 Notices of Disconnection and 4 properties turned off for non-compliance during Q1. The CCP of Distribution Disinfection (<0.2mg/L Cl (F) at start up recorded 8 deviations. These were on the following Work Orders: 563320, 571256, 554768, 563321, 542928, 559031, 562620 and 568475.
08) Flushing Summary - 2024 Q1 Flushing Activities (>100m3)		34 out of 365 Work Orders (9.3%) were recorded with deviations.
09) Flushing Summary - 2024 Q1 Flushing Activities (>3NTU Turbidity at Start Up)		69 out of 365 Work Orders (18.9%) were recorded with deviations.
10) Deviations from Critical Control Point Limits - 2024 Q1 Flushing Activities (<0.20 Cl (F) at Start Up)		8 out of 365 Work Orders (2.2%) were recorded with deviations.
11) Operational Performance - System-wide		In Q1 of 2024 the Total System Production is above the previous 5-year average (2019-2023).

Production		The increase in production is as follows: January - 109% February - 114% March - 108%
12) Operational Performance - SWS vs GWS Production		In Q1, the SWS vs GWS Production followed the trend of 2023 with GWS producing more than SWS. BMT would like to continue to view the second graph only. The following Action Item was created:
	1057	CCs to remove the "difference in Monthly Production Volumes between GWS and SWS" graph from the data provided and from the templated slide deck for ongoing Management Reviews. (slide 22 in Q1 2024 presentation) This action item is complete, see slide 22 in the Q1 2024 Management Review presentation. - The QMS Action Log was revised to reflect the following: Lead: SB Support: LH Due Date: 2024-08-01 Completion Date:
13) Operational Performance - SWTP Average Monthly Efficiency		In Q1, the SWTP Plant Efficiency was as follows: January - 96.84% February - 97.69% March - 96.96%
14) Operational Performance - Locates		In Q1, the monthly locates were above average. The increase above average is as follows: January - 118% February - 144% March - 142%
15) Operational Performance - Watermain Breaks		There were a total of 6 watermain breaks in Q1 2024. The number of main breaks in Q1 is below the 5-year average.
16) Operational Performance - Valve Exercising		Data recorded in the valve turning app is not reliable. GIS (John Cochrane), Jason Giffen, Madelaine Woodward-Willems and Jeanette Dumais to meet to discuss the ongoing issues encountered in the app and its integration with CMMS Work Orders.
17) Operational Performance - CTS Action Item Summary		This is deferred to Q4 annually moving forward.
18) Raw Water Supply and Drinking Water Quality Trends - Q1 Sampling Review		All categories of sampling were completed on time and all Work Orders are being actioned for any missing data.
19) Drinking Water Quality Trends - Sodium		Sodium trends at Wells 3A, 9, 11, 13 and 14 continue to follow the expected regular trends and are below the Canadian Guideline for Drinking Water Quality.
20) Drinking Water Quality Trends - THMs/HAAs		A quarterly review of Trihalomethanes (THMs) and Haloacetic Acids (HAAs) was conducted. THMs/HAAs continue to follow expected trendlines. Samples and Running Annual Averages (RAA) are well below the regulated standards established.
21) Drinking Water Quality Trends - Lead		Lead sampling was conducted in January with no exceedances found. All results recorded are well below half Maximum Acceptable Concentration (MAC).
22) Drinking Water Quality Trends - GWS		All general chemistry in-house parameters, alkalinity, colour and hardness follow typical trends, except for WPS14, which appears to have quite a low result for average hardness.

General Chemistry (In-House)		The following Action Item was created:
	1058	Investigate the deviation for "average hardness" recorded at WPS14 in Q1 2024 Management Review. - The QMS Action Log was revised to reflect the following: Lead: GG Support: LH Due Date: 2024-08-01 Completion Date:
23) Drinking Water Quality Trends - VOCs		There were no exceedances at Wells 11, 14 and 15 during Q1. Well 12 remains Out of Service (OOS).
24) Drinking Water Quality Trends - Q1 Sampling Review (Health Canada)		1. Health Effects of Fluoride in Drinking Water Summary Report: Current guideline is 1.5mg/L, the highest result in our DWS is 0.4mg/L 2. Guideline Technical Document on Antimony: MAC is 0.006mg/L and the HBV is 0.003mg/L. The results from active wells and the SWTP are 0.00mg/L 3. Guideline Technical Document on Recreational Water Quality - Micro Sampling: Micro sampling at beaches is not a program function of the Water Operations Branch 4. Guideline Technical Document on drinking water quality: Operational Parameters: Calcium, Magnesium, Hardness, Chloride, Sulphate, TDS, and Hydrogen Sulphide - There are no AO or MAC for calcium, magnesium, hardness. To maintain AO of <250mg/L for chloride is proposed. To maintain AO of <500mg/L for sulphate is proposed. To maintain AO of <500mg/L for TDS is proposed. This document is available for a 60-day consultation period closing 2024-05-31. DM is working with the Communications Team on education about water softeners and other drinking water items regarding consumers.
25) Drinking Water Quality Trends - Groundwater Monitoring Program Report		The report was reviewed and the same recommendations were made as in previous years. No change to sampling or reporting is required on behalf of WOB.
26) SWTP In-House Lab Data -cATP		Cellular ATP is being tested at the Surface Water Treatment Plant. Both raw water and treated water are tested at the production wells and at 11 Distribution Locations (Reservoirs and Towers). The Water Customer Service (WCS) group is expanding this testing and adding 22 locations.
27) Summary of Consumer Feedback - Response Efficiency		January resulted in only 11% of calls resulting in an operator attending. February resulted in 14% calls resulting in an operator attending. March resulted in 35% of calls resulting in an operator attending. An average of 79% of calls were resolved over the phone by front line staff over the quarter.
28) After-Hours Water Quality Complaints		15 Afterhours Water Quality Complaints were received in Q1. All calls are logged in Cityworks.
29) Review of Asset Maintenance, Verification & Calibration		JD continues to work on a comprehensive list to be housed in QMS. This task will be transferred to CC Gwen Gilbank.
30) Water Operations KPIs - WDS		Water Distribution has the following KPIs: 1. Exercise 100% of the non-critical valves in the SW Quadrant: Currently 35% complete - however, not accurate due to app issues. 2. Exercise 50% of the critical valves: Currently 30% complete - however, not accurate due to app issues. 3. Complete 20km of System Swabbing in Zone 2N: 0 swabbing has occurred thus far.
31) Water Operations KPIs - GWS		Groundwater Supply has the following KPIs: 1. <300 Call Outs Annually: In Q1 2024, GWS had 37 callouts. 2. Target of 0% well station downtime. Percentage of downtime in Q1 has be outlined below: Well 5 – No Downtime = 0% Well 7 – No downtime = 0% Well 9 – Down for 91 out of 91 days =100%

	Well 11 – No Downtime = 0% Well 12 – Down for 91 out of 91 days =100% Well 13 – No Downtime = 0% Well 14 – No Downtime = 0% Well 15 – No Downtime = 0% Well 16 – No Downtime = 0% Well 17 –No Downtime = 0% Well 18 –No Downtime = 0% (Total = 91 days in Q1)		
32) Water Operations KPIs - SWS	Surface Water Supply has the following KPIs: 1. SWTP Efficiency of 98% or greater: Q1 was an average efficiency of 97.16%. Mark Vandergeest is looking into how the 98% will decrease over time due to SWTP aging. DM prefers to keep the 98%t and use this as the continued benchmark and can be tracked as equipment is serviced and or replaced.		
33) Water Operations KPIs - WCS	Water Customer Service has the following KPIs: 1. Replace 1,400 meters annually: In Q1 WCS replaced 405 and WAMCO replaced 371. 2. Ensure 90% of water produced is accounted for: To be presented in Q4.		
34) Water Operations KPIs - CTS	Compliance and Technical Support has the following KPIs: 1. Have renewals sent to OWWCO within 6 weeks lead time: 4 out of 6 (66%) in Q1. 2. Increase QMS engagement: 9,633 views in the last 90 days.		
35) Operational Plan, Currency and Updates	Elements 6,7,8,11,16,17 and 18 remain to be reviewed.		
36) SOP Review	The number of SOPs left to be reviewed on the 3-year cycle (2023-2025) is as follows: WOB - 19 WDS - 4 WCS - 0 GWS - 11 CTS - 6		
37) Work Order Review	The number of Work Order Instructions left to be reviewed on the 3-year cycle (2023-2025) is as follows: WDS - 72 WCS - 109 SWS - 320 GWS - 247		
38) CIPs	There are currently 17 Continual Improvement Plans (CIPs) open. Of these 17 CIPs, 6 are greater than 1 year old. Each of the open CIPs and their associated action items were reviewed.		
39) CIP 140			
582	Review and update (as necessary) the eRIS Report Narratives, with a focus on ensuring water level data requirements are being met. Currently remains open while report narratives get approved for the first time. Reports are affecting eRIS reports and they are getting updated as the reports are reviewed. - The QMS Action Log was revised to reflect the following:	Lead: GG Support: MV	Due Date: 2024-08-01 Completion Date:
40) CIP 144			
890	Purchase and Install VFD in WPS13 GWS awaiting quote for installation. - The QMS Action Log was revised to reflect the following:	Lead: MV	Due Date: 2024-08-01

			Support: DS	Completion Date:
41) CIP 150		The assessment period for this CIP is complete. Diana Smith to complete and submit the paperwork to close out the CIP.		
42) CIP 155		The assessment period for this CIP is complete. Diana Smith to complete and submit the paperwork to close out the CIP.		
43) CIP 156		JD is reviewing the data for all devices requiring calibration. To be presented in Q2 Management Review by Gwen Gilbank.		
44) CIP 160		Documentation received and approved in QMS closing out action item 23-844. Action Item 843 is already closed. There is no assessment period assigned.		
45) CIP 166				
	882	Host crew meetings with each operational section to share information regarding water flow/direction within the City. MV to present on this at the next Branch Meeting scheduled for June 27th, 2024. - The QMS Action Log was revised to reflect the following:	Lead: MV Support: BAF	Due Date: 2024-10-01 Completion Date:
47) CIP 169		2 action items are in progress and assigned to Diana Smith.		
	900	Create a collection of Swabbing Plans for the 2023 Swabbing events. Include (at a minimum) specific information on launch and end hydrants, valves being operated, information on GWS involvement, delivery of notices (identify ICI properties), media releases (including placement of road signs) and water modelling for each run. Currently in progress. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: JG	Due Date: 2024-07-01 Completion Date:
	902	Review and update WDS-SOP-14 “How to Create an Annual Swabbing Plan” to include (at a minimum) information for reviewing Swabbing Plan with Top Management (including the media release plan and delivery of notices), Review of swabbing runs with water modeller and to ensure coordination can be done with GWS. Diana Smith is continuing to work on this plan with Distribution and anticipates it will be ready for July. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: JG	Due Date: 2024-07-01 Completion Date:
48) CIP 170				
	982	Review work procedures for maintenance activities and update to include flushing and obtaining numbers before directing water to users. SB is waiting on the "Correct Pressure Loss" template to be created by the OPAs in Cityworks. This is anticipated to be completed in July. - The QMS Action Log was revised to reflect the following:	Lead: OPA Support: SB	Due Date: 2024-07-01 Completion Date:
49) CIP 172				
	934	Create a tailgate scenario for training purposes that would engage staff to make eLogbook entries as part of the scenario This action item is in progress. - The QMS Action Log was revised to reflect the following:	Lead: JD Support:	Due Date: 2024-06-01 Completion Date:
	936	Perform another eLogbook audit focused on: weekend shift/ in and out times/ Work Order numbers recorded for task assigned/ work description in past tense. JD to be completed in June. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: LH	Due Date: 2024-07-01 Completion Date:
50) CIP 173		This CIP is in the assessment period. Due to be assessed and closed in June.		

51) CIP 174				
	938	Replace Check Valves that resulted in low pressure at Harvie Reservoir. This CIP remains open awaiting the delivery of the Check Valve. - The QMS Action Log was revised to reflect the following:	Lead: MV Support: BAF	Due Date: 2024-08-01 Completion Date:
52) CIP 179				
	952	Create a document Work Procedure or SOP or Work Order to document when the mussel control will start and end each season based exclusively on the water temperature. The new Work Order is underway and due to be processed next month. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: MV	Due Date: 2024-06-01 Completion Date:
	953	SWS staff shall ensure that there are two tonners on hand at all times at the LLPS. This past practice shall be added to an appropriate checklist for that location. (station check) Work Order perhaps. MV has made this process change. No further action required. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: MV	Due Date: 2024-06-01 Completion Date:
	954	It was noted that missing from SWS-SOP-05 is instruction to "TARE" the scale before placing a new tonner on the scale. Add this detail to SWS-SOP-05. Edits to SWS-SOP-05 submitted for Management approval. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: MV	Due Date: 2024-06-01 Completion Date:
53) CIP 180				
	993	Add notification stickers/signs to the Diesel Tanks to remind staff to turn on the tank fill alarm/buzzer. Signs have been placed - CIP is ready to be closed. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: MV	Due Date: 2024-06-01 Completion Date:
54) Internal Audit		Elements 2, 13, 15, 18, 19, 20 and 21 remain outstanding in the 3-year cycle.		
55) Results of Internal Audit - Elements 1,3&4		Deferred - Internal Audit Closing Meeting to occur.		
56) Results of Internal Audit - Elements 7,8&14		Deferred - Internal Audit Closing Meeting to occur.		
57) Results of Infrastructure Review		Table created for Management Review out of the 2024 Capital Plan. MV has sent Internal Memos to Vertical Infrastructure for infrastructure that has had needs assessment performed. The following action items were created:		
	1061	DM to follow up on the line item in the Capital Plan regarding "Frozen Services". - The QMS Action Log was revised to reflect the following:	Lead: DM Support:	Due Date: 2024-08-01 Completion Date:
	1062	Move the Infrastructure Review performed in Management Review to Q2 moving forward. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2024-08-01 Completion Date:

	1063	WDS to provide a list of Requests made to Linear Infrastructure. - The QMS Action Log was revised to reflect the following:	Lead: JG Support: DM	Due Date: 2024-08-01 Completion Date:
58) Summary of Staff Suggestions		The email recap cannot be changed by WOB - this is Microsoft. Brittany Astop-Ford has voted on this with Microsoft for future consideration. The following new Action Item was created:		
	1064	Approval from BMT to go ahead and add new Plug and Play (PnP) to the SharePoint page for "Elements". - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: LH	Due Date: 2024-10-01 Completion Date:
59) Changes Affecting QMS		Gwen Gilbank CC, has returned from maternity leave. The QMS Reps are now at full compliment. Parker Salom has been hired as a CTS summer student. He will be helping mainly with CMMS but may transition to QMS activities later in the contract. WOB will be creating new “Maintenance Program Plans” to document our maintenance work in the QMS.		
60) Review List of OROs		List of OROs was reviewed and no changes are required.		
61) New Business		No new business discussed.		

Note:
These meeting minutes have been reviewed and approved by the meeting attendees noted at the top of the document.

Meeting Minutes

Meeting Details

Date
2024-09-03
Start Time
9:00:00 AM
End Time
11:30:00 AM
Type
Management Review

Attendance

Attendee Role	Initials	Name
Recorder	GG	Gilbank, Gwen
Facilitator	SB	Bradt, Sarah
Attendee	MV	Vandergeest, Mark
Attendee	DM	Moreau, Diane
Attendee	LH	Hywarren, Lenita
Attendee	BM	Miller, Brenden
Attendee	JV	VanLeusen, Jeremy
Attendee	JG	Giffen, Jason
Attendee	KAC	Cornwall, Kari-Anne
Regrets	MF	Foster, Mike
Regrets	SS	Steele, Shane
Regrets	SD	Diemert, Sherry

Meeting Minutes

Agenda Item	Action Item No	Description
01) Review Q1 Management Review Meeting Minutes		Q1 2024 meeting minutes were reviewed and approved with minor edits.
02) Management Review Action Item Follow Up		
	525	Conduct research on whether the health of a distribution system can be measured by establishing a percentage of "Inoperable" valves and determine our COB benchmark. Water Operations Branch (WOB) to complete data analysis from information in the Valve Turning App to generate a benchmark. Data export on hold until changes/updates are made to ensure functionality/accuracy of the Valve Turning App. - The QMS Action Log was revised to reflect the following: Lead: BAF Due Date: 2024-10-01 Support: JG Completion Date:
	720	Update a Computerized Maintenance Management System (CMMS) Lead Hand and Operator Manuals to include how to update the work order category and include the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. One manual has been completed, while the remaining are in progress. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-10-01 Support: Completion Date:
	721	Ensure WDS Mobility Lead Hand and Operator Manuals include how to update the work order category and the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. This action item is in progress. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-10-01 Support: Completion Date:
	722	Review work order categorization for all Water Distribution Services (WDS) work orders. This action item is complete. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-07-01 Support: JG Completion Date: 2024-09-03
	723	Review work order categorization for all Water Customer Services (WCS) work orders.

	This action item is complete. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: BM	Due Date: 2024-07-01 Completion Date: 2024-09-03
724	Review work order categorization for all Surface Water Supply (SWS) work orders. This action item is with MV for review. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: MV	Due Date: 2024-10-01 Completion Date:
725	Review work order categorization for all Ground Water Supply (GWS) work orders. This action item is with MV for review. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: MV	Due Date: 2024-10-01 Completion Date:
836	Add auto flusher water loss volume to water loss calculation. Currently only flush box water volume is recorded in the calculation. This action item is complete. Brittany Astop-Ford (BAF) and BM worked together to create a Standard Operating Procedure (SOP) + Work Order (WO) template + Water Loss Data sheet for staff. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: BM	Due Date: 2024-08-01 Completion Date: 2024-09-03
904	Review the flushing Program. Research a solution to establish a way to validate service requests that come from water quality issues. This action item is currently in progress. Met with Operations Program Administrators (OPAs) and decision was made to use custom fields on the Service Request. Current draft proposed will include Internal, External, or Emergency. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: BM	Due Date: 2024-10-01 Completion Date:
905	Review of flushing program and possibility to target Zone 3N for ATP Analysis This action item is no longer desired / relevant. A new action item will be created to reflect the desired approach: In 2024, WCS will sample from all zones for the year to establish a baseline, and then in 2025, conduct ATP field testing while flushing and compare results with the 2024 baseline results. - The QMS Action Log was revised to reflect the following:	Lead: GG Support: BM	Due Date: 2024-10-01 Completion Date: 2024-09-03
927	WOB Branch Management Team (BMT) to clarify and work through how to address WOB infrastructure and associated maintenance in unassumed areas. Updates have been received from Top Management. Need to implement in the training database and create the On-the-Job (OTJ) forms. - The QMS Action Log was revised to reflect the following:	Lead: DM Support: SB	Due Date: 2024-10-01 Completion Date:
932	Develop the appropriate on the job forms for WCS and WDS to document the competencies and hourly requirements to become an Operator in Charge (OIC). Updates have been received from Top Management. Need to implement in the training database and create the OTJ forms. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: BM	Due Date: 2024-10-01 Completion Date:
1004	BM to investigate if an autoflusher is feasible at H733. BM has ordered a new autoflusher. - The QMS Action Log was revised to reflect the following:	Lead: BM Support: SB	Due Date: 2024-10-01 Completion Date:
1005	Have follow-up discussion with new deputy fire chief (Derek Wilson) regarding obtaining water loss values from the Fire Department. This action item is in progress.		

		- The QMS Action Log was revised to reflect the following:	Lead: DM Support: SB	Due Date: 2024-10-01 Completion Date:
	1008	Create and add the new process to the Cityworks manual for staff on how to get the Service Request (SR) "Call Date" corrected from Cityworks App constraints. SB to follow up with the OPAs on the progress of this action item. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2024-10-01 Completion Date:
	1010	Create/Rework a Regulatory Calibration Report from Cityworks to include: analyzers, flowmeters, hand-helds (for genealogy), dataloggers - that's shows asset identifier, regulatory frequency, and actual frequency of calibration. Example reports with all required information has been submitted to the OPA's for creation of the reports in CMMS. - The QMS Action Log was revised to reflect the following:	Lead: GG Support: LH	Due Date: 2024-10-01 Completion Date:
	1057	CCs to remove the "difference in Monthly Production Volumes between GWS and SWS" graph from the data provided and from the templated slide deck for ongoing Management Reviews. (slide 22 in Q1 2024 presentation) This action item is complete. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: LH	Due Date: 2024-08-01 Completion Date: 2024-09-03
	1058	Investigate the deviation for "average hardness" recorded at WPS14 in Q1 2024 Management Review. No comments provided in eRIS explaining low result. A general chemistry sample was sent to Testmark on the same day and a typical result of 308mg/L was received. Currently, there are no "Low" limits set for this parameter, only "High". - The QMS Action Log was revised to reflect the following:	Lead: GG Support: LH	Due Date: 2024-08-01 Completion Date: 2024-09-03
	1061	DM to follow up on the line item in the Capital Plan regarding "Frozen Services". A decision was made to not move forward with this action item as all known locations had been addressed or will be addressed during reconstruction. - The QMS Action Log was revised to reflect the following:	Lead: DM Support:	Due Date: 2024-08-01 Completion Date: 2024-09-03
	1062	Move the Infrastructure Review performed in Management Review to Q2 moving forward. This action item is complete. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2024-08-01 Completion Date: 2024-09-03
	1063	WDS to provide a list of Requests made to Linear Infrastructure. This action item is complete. - The QMS Action Log was revised to reflect the following:	Lead: JG Support: DM	Due Date: 2024-08-01 Completion Date: 2024-09-03
	1064	Approval from BMT to go ahead and add new Plug and Play (PnP) to the SharePoint page for "Elements". BAF completed the creation of new SharePoint List Features in QMS and QMS (Draft Library). SB and BAF republished content with Elemental Information. Require Assistance from IT to make Element a refinable string for PnP. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: LH	Due Date: 2024-10-01 Completion Date:
03) Incidents of Adverse Drinking Water Tests		There were 8 Adverse Water Quality Incidents (AWQI's) reported for samples collected on April 8, 2024. The MECP was aware of similar issues being reported with other municipalities. After investigation, the external laboratory determined that it was a result of laboratory equipment contamination. The MECP's laboratory inspection team reviewed the issue and rescinded the		

		AWQIs.
4) Deviations from Critical Control Point Limits and Response Actions - SWS		There were no Critical Control Limit labels used by the SWS group in Q2.
5) Deviations from SCADA Critical Control Limits and Response Actions - GWS		No Critical Control Limit deviations were identified in Q2 by the GWS group.
6) Deviations from Critical Control Limits -WCS/ WDS		One deviation was identified in Q2 where a low chlorine residual was detected. An autoflusher unit was left off. To correct this, extra flush time was added to the unit and flush duration was increased to 180 minutes.
7) Flushing Summary - 2024 Q2 Flushing Activities (>100m3)		274 out of 630 Work Orders (43.5%) were recorded with deviations.
8) Flushing Summary - 2024 Q2 Flushing Activities (>3NTU Turbidity at Start Up)		43 out of 630 Work Orders (6.8%) were recorded with deviations.
9) Deviations from Critical Control Point Limits -2022 Q2 Flushing Activities (<0.20 Cl (F) at Start Up)		0 out of 630 Work Orders (0%) were recorded with deviations.
10) Operational Performance - System-wide Production		For each month in Q2, there was an increase in monthly water production (ML) above the 5-year average.
11) Operational Performance - SWS vs GWS Production		Groundwater continued to produce more water than Surface Water in Q2 2024.
12) Operational Performance - Closed Pressure Zones		There were no closed pressure zones between April 1, 2024 and June 30, 2024.
13) Operational Performance - SWTP Average Monthly Efficiency		Plant efficiency continues to be approximately 97%. Discussion if we wanted to reduce the efficiency line. A decision was made that WOB would not revise the rated efficiency in the future. The following Action Item has been created:
	1091	On the Operational Performance (Average Monthly Efficiency of the SWTP) slide, would like to include comments on the graph to label historical events which have impacted the efficiency. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-10-01 Support: Completion Date:
14) Operational Performance - Locates		The percentage of locates completed in June was below the 5-year average, at 77%. This was the first month in 2024 that the number of locates has been below the 5-year average. There was a brief discussion about the decrease in June; may be related to construction and interest rate uncertainty.
15) Operational Performance - Watermain Breaks		Both April and June had 3 watermain breaks each, while May had 0 watermain breaks.
16) Operational Performance - Water Loss		There was a request from DM to investigate opportunity to review Calgary's Water Loss, to see if WOB might want to follow a similar method. They are using the Water Balance Method –

		From AWWA M36. BAF mimicked a water balance chart with information that WOB already collects. Several data gaps were identified during this process. Further work is required to refine the water loss collection process. Discussion took place, WOB would like to continue refining our own version of calculating Water Loss, adapted from the AWWA M36.		
17) Operational Performance - Valve Exercising		The issues with the valve turning app are currently with JG/GIS. JG to discuss further with GIS as staff are still experiencing issues.		
18) Raw Water Supply and Drinking Water Quality Trends - Q2 Sampling Review		A Q2 Sampling Review was conducted and the results are outlined below.		
19) Drinking Water Quality Trends - Sodium		Sodium trends at Wells 3A, 9, 11, 12, and 14 continue to follow the expected regular trends and are below the Canadian Guideline for Drinking Water Quality. Well 13 demonstrated a slight increase above the projected trendline in Q2 2024.		
20) Drinking Water Quality Trends - THMs / HAAs		For Trihalomethanes (THMs), the Running Annual Average (RAA) for Q2 coincidentally was the same as Q1, with an average of 38.08 ug/L. For Haloacetic Acids (HAAs), Q2 saw a slight increase in the RAA from 27.6 ug/L in Q1, to 30.1 ug/L. Both values are well below the regulated standards established.		
21) Drinking Water Quality Trends - Lead		During the June 15th – October 15th lead sampling window, sampling was conducted at 5 ICI locations and 10 hydrants. There were zero exceedances at all locations. No samples exceeded ½ MAC.		
22) Drinking Water Quality Trends - VOCs		There were 0 exceedances above the established internal VOC limits in Q2 2024.		
23) Drinking Water Quality Trends - Q2 Sampling Review		During the Q2 Sampling Review, there were 0 non-compliances identified.		
24) 19) Drinking Water Quality Trends - Sampling Review (Health Canada Documents)		One consultation closed during Q2 (Guidelines for Canadian drinking water quality: Operational parameters) and was already reviewed in the Q1 Management Review meeting.		
25) Drinking Water Quality Trends - In-house Lab Data (ATP)		A lot of variation between Q1 and Q2 cATP results for Groundwater sites. There does not appear to be any trends at this time. However, cATP for Distribution illustrated some similarities between Q1 and Q2. For example, Anne Z2 had the highest cATP result for both quarters. The Free Chlorine results also share a similar pattern. The Water Customer Service section also start taking cATP samples recently. More data collection is required to identify any possible trends. The following Action Items were created:		
	1092	Moving forward would like to combine the quarterly cATP results for GWS and WDS onto one graph (for each section) for comparison, rather than separate graphs for each quarter. - The QMS Action Log was revised to reflect the following:	Lead: GG Support:	Due Date: 2024-10-01 Completion Date:
	1096	WCS cATP sampling: In 2024, sample from all zones for the year to establish a baseline, and then in 2025, conduct cATP field testing while flushing and compare results with the 2024 baseline results. - The QMS Action Log was revised to reflect the following:	Lead: GG Support:	Due Date: 2025-01-01 Completion Date:
26) Summary of Consumer Feedback		Response Efficiency: The Operations Support Administrator's (OSA's) continue to resolve most calls over the phone.		

	After-hours Water Quality Complaints: All after hours calls were logged into CMMS.
27) Water Operations KPIs - WDS	1. Percent of valves turned in the southwest quadrant: The valve turning app is experiencing technical difficulties. Progress for this KPI will be updated in Q3 2024. 2. Percentage of system swabbing complete: No swabbing was completed in Q2.
28) Water Operations KPIs - GWS	1. Reducing the number of callouts annually to less than 300: In Q2, there were 81 callouts. Total number of callouts for 2024 is 118. 2. Reduce the percentage of well downtime annually: In Q2 2024: Well 5 – No Downtime = 0% Well 7 – No downtime = 0% Well 9 – Down for 92 out of 182 days =50.5% Well 11 – No Downtime = 0% Well 12 – Down for 182 out of 182 days =100% Well 13 – No Downtime = 0% Well 14 – No Downtime = 0% Well 15 – No Downtime = 0% Well 16 – No Downtime = 0% Well 17 –No Downtime = 0% Well 18 –No Downtime = 0% (Total = 182 days in Q1 + Q2)
29) Water Operations KPIs - SWS	1. Achieve average monthly Surface Water Treatment Plant efficiency of 98% or greater: In Q2, the average efficiency was 96.92%.
30) Water Operations KPIs - WCS	1. Achieve 1,400 meter replacements annually: Total progress for the year 2024 is 1,912 meter replacements. 2. Volume of water produced vs. accounted for: To be reported on in Q4 2024.
31) Water Operations KPIs - CTS	1. Decrease time to gather renewal application information: All renewals in Q2 were sent within the 6 weeks lead time. 2. Increase QMS engagement: In the last 90 days, there have been 11,900 page views, which is an increase from Q1.
32) CIP Summary	So far in 2024, there have been 9 CIPs opened in 2024, and 25 closed in 2024. There are currently 2 open CIPs that are greater than 1 year old. CIP 144: There is one action item in progress. CIP 166: There is one action item in progress. CIP 169: There is one action item in progress. CIP 174: There is one action item in progress. CIP 183: There is one action item in progress. CIP 188: There are three action items in progress. CIP 189: There is one action item in progress. CIP 190: There is one remaining action item in progress.
33) Results of Internal Audit	An internal audit was conducted in March 2024 on 24 GWS Remote Station Security, which covered Elements 7, 8, and 14. The audit focus was on the security of stations including wells, reservoirs, booster stations, and elevated storage facilities. The following recommendations were accepted and actioned: 1. Create a memo to vertical infrastructure requesting the installation of fences and cameras

		2. Facility security reviewed during the annual Risk Assessment to ensure likelihood ratings are accurate. Jeanette Dumais joined the meeting to discuss the following internal audit: An elemental audit was conducted on Elements 1, 3, & 4 between March 26, 2024 - April 16, 2024. The audit interviews were conducted with 6 staff participating, from a variety of roles and responsibilities within the branch. Accepted Recommendations: Ensure that the QMS Representative clearly communicates document changes and types of changes so that communications to staff are clear and concise when coming through BMT, Top Management.
34) Operational Plan, Currency, and Updates		There are only 2 Elements that remain outstanding for review for 2024: Elements 6 & 11
35) SOP Review		All SOPs in the WCS group have been reviewed in the 3-year cycle. The remaining groups still have SOPs to be reviewed.
36) Work Order Instruction Review		The Work Order Instructions are reviewed on a 3-year cycle (2023-2025). There are still many outstanding instructions to be reviewed by the end of 2025. The following Action Item was created:
	1093	Would like to include the "percentage complete" on the WO Instruction Review slide in the presentation moving forward. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-10-01 Support: Completion Date:
37) Efficacy of Risk Assessment		An annual review of the Risk Assessment was completed where the following items were discussed: Changes to Hazards, Changes to Critical Control Points, What we Learned, and Future Goals. Back flow Prevention, and Infrastructure Failure were removed from the Critical Control Point table.
38) Results of Relevant Emergency Response Testing		On June 5, 2024 a Zone 1 pressure sure caused several watermain/service breaks. A discussion of the emergency took place, including, the positives (communication, collaboration, and consumer impact), and the opportunities for improvement (process improvements, communication, and facility/equipment improvements).
39) Results of Infrastructure Review		A list of memos submitted to Engineering in 2024 was provided. An update from MV was received, stating that the roofs have been replaced at Well 13 and the Harvie Valve House. The following Action Items were created:
	1094	Include more details on the Watermain Renewal Request item on this slide (Results of Infrastructure Renewal) in the future. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-10-01 Support: Completion Date:
	1095	Would like to keep better track of which memos have been approved. Consider including a Status column moving forward on the Results of Infrastructure slide. Include project number to follow these memos. - The QMS Action Log was revised to reflect the following: Lead: SB Due Date: 2024-10-01 Support: Completion Date:
40) Summary of Staff Suggestions		In Q1, staff suggested that they'd like having an easier way to view the Operational Plan. As a result, Elements have been added as a "search feature".
41) Changes Affecting QMS (Q2)		A blackout period to prepare for the External Audit has been defined, and will be from October 7th to October 25th.
42) Review List of OROs		The list of ORO's was reviewed. One operator is anticipated to receive his WT4 license soon, and this table will be updated at that time.
43) 2023 Afterhours Calls		A review of the afterhours calls was conducted, including the total calls, calls resulting in a Work Order and/or Service Request, as well as the Call Type (water quality, internal/plumbing,

	hydrant, etc.), among others. The majority of afterhours calls was found to be "private" issues, i.e. inside the callers residence.
44) New Business	No new business to discuss.

Note:
These meeting minutes have been reviewed and approved by the meeting attendees noted at the top of the document.

Meeting Minutes

Meeting Details

Date
2024-12-06
Start Time
9:00:00 AM
End Time
11:30:00 AM
Type
Management Review

Attendance

Attendee Role	Initials	Name
Facilitator	SB	Bradt, Sarah
Recorder	GG	Gilbank, Gwen
Attendee	LH	Hywarren, Lenita
Attendee	MV	Vandergeest, Mark
Attendee	JG	Giffen, Jason
Attendee	BM	Miller, Brenden
Attendee	KAC	Cornwall, Kari-Anne
Attendee	MF	Foster, Mike
Attendee	SS	Steele, Shane
Regrets	DM	Moreau, Diane
Regrets	JV	van Leusen, Jeremy
Regrets	SD	Diemert, Sherry

Meeting Minutes

Agenda Item	Action Item No	Description
01) Review Q2 Management Review Meeting Minutes		Q2 2024 meeting minutes were reviewed and approved with minor edits.
02) Management Review Action Item Follow Up		
	525	Conduct research on whether the health of a distribution system can be measured by establishing a percentage of "Inoperable" valves and determine our COB benchmark. This Action Item has been completed. A recommended benchmark of 1% inoperable valves has been established for both Critical and Non-critical valves. - The QMS Action Log was revised to reflect the following: Lead: BAF Due Date: 2024-10-01 Support: JG Completion Date: 2024-12-06
	720	Update a Computerized Maintenance Management System (CMMS) Lead Hand and Operator Manuals to include how to update the work order category and include the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. All WOB Manuals have been updated. 2 of 3 WCS Manuals have been updated. WCS-Manual-01 remains as further updates are required. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2025-01-01 Support: Completion Date:
	721	Ensure WDS Mobility Lead Hand and Operator Manuals include how to update the work order category and the category definitions (Preventative, Corrective, Emergency and Urgent) in the manuals. This Action Item can be closed as the last manual has been approved. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-10-01 Support: Completion Date: 2024-12-06
	724	Review work order categorization for all Surface Water Supply (SWS) work orders. All work order categories have been updated in CMMS. - The QMS Action Log was revised to reflect the following: Lead: DS Due Date: 2024-10-01 Support: MV Completion Date: 2024-12-06

725	Review work order categorization for all Ground Water Supply (GWS) work orders. All work order categories have been updated in CMMS. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: MV	Due Date: 2024-10-01 Completion Date: 2024-12-06
839	Meet with GIS to consider solutions to deal with segmenting issues in CMMS when only a portion of watermain is replaced. Jeanette Dumais met with JG to discuss ensuring that this GIS item appears as a standing item in the GIS Liaison meetings. JG says this is ongoing and that the purposed solution is a version upgrade which will happen in time. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: JG	Due Date: 2025-03-01 Completion Date: 2024-10-22
904	Review the flushing Program. Research a solution to establish a way to validate service requests that come from water quality issues. Have added fields to the Service Request to indicate if it is internal issue, external issue or an emergency issue. - The QMS Action Log was revised to reflect the following:	Lead: JD Support: BM	Due Date: 2024-10-01 Completion Date: 2024-12-06
927	WOB Branch Management Team (BMT) to clarify and work through how to address WOB infrastructure and associated maintenance in unassumed areas. BMT has met and will compile their notes. - The QMS Action Log was revised to reflect the following:	Lead: DM Support: SB	Due Date: 2025-01-01 Completion Date:
932	Develop the appropriate on the job forms for WCS and WDS to document the competencies and hourly requirements to become an Operator in Charge (OIC). Information has been received from WCS and WDS. Need to create the OTJ forms, update Protocol and have started working on a report in the training database. - The QMS Action Log was revised to reflect the following:	Lead: DS Support: Lead: DS Support:	Due Date: 2025-01-01 Completion Date: Due Date: 2025-01-01 Completion Date:
1004	BM to investigate if an autoflusher is feasible at H733. Autoflusher has been ordered and is waiting to be installed. - The QMS Action Log was revised to reflect the following:	Lead: BM Support: SB	Due Date: 2025-01-01 Completion Date:
1005	Have follow-up discussion with new deputy fire chief (Derek Wilson) regarding obtaining water loss values from the Fire Department. Derek Wilson has left the City but indicated there was no way to provide more accurate information. - The QMS Action Log was revised to reflect the following:	Lead: DM Support: SB	Due Date: 2024-10-01 Completion Date: 2024-12-06
1006	BM to work with the new water modeler (Olu) on the negative number WOB is getting for water loss. Consider working on this after Master Plan Updates have been completed. As WOB works on the adapted AWWA water loss calculation, this will be addressed at that time. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: BM	Due Date: 2024-10-01 Completion Date: 2024-12-06
1008	Create and add the new process to the Cityworks manual for staff on how to get the Service Request (SR) "Call Date" corrected from Cityworks App constraints. Operations Program Administrators have submitted suggestion to CityWorks. - The QMS Action Log was revised to reflect the following:	Lead: SB Support: JG	Due Date: 2024-10-01 Completion Date: 2024-12-06
1010	Create/Rework a Regulatory Calibration Report from Cityworks to include: analyzers, flowmeters, hand-helds (for genealogy), dataloggers - that’s shows asset identifier, regulatory frequency, and actual frequency of calibration.		

		Three reports were created in CMMS: chlorine, flow, turbidity. For the hand-helds, a Saved Work Order Search has been created. - The QMS Action Log was revised to reflect the following:	Lead: GG Support: LH	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1064	Approval from BMT to go ahead and add new Plug and Play (PnP) to the SharePoint page for "Elements". This action item is complete. - The QMS Action Log was revised to reflect the following:	Lead: BAF Support: LH	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1091	On the Operational Performance (Average Monthly Efficiency of the SWTP) slide, would like to include comments on the graph to label historical events which have impacted the efficiency. Comments on historical events have been added to the Operational Performance slide. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1092	Moving forward would like to combine the quarterly cATP results for GWS and WDS onto one graph (for each section) for comparison, rather than separate graphs for each quarter. The cATP graphs have been updated accordingly. - The QMS Action Log was revised to reflect the following:	Lead: GG Support:	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1093	Would like to include the "percentage complete" on the WO Instruction Review slide in the presentation moving forward. The corresponding slide has been updated in the Q3 2024 Management Review presentation. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1094	Include more details on the Watermain Renewal Request item on this slide (Results of Infrastructure Renewal) in the future. This Action Item is complete. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2024-10-01 Completion Date: 2024-12-06
	1095	Would like to keep better track of which memos have been approved. Consider including a Status column moving forward on the Results of Infrastructure slide. Include project number to follow these memos. This Action Item is anticipated to be closed in January 2025. - The QMS Action Log was revised to reflect the following:	Lead: SB Support:	Due Date: 2025-01-01 Completion Date:
03) Incidents of Adverse Drinking Water Tests		One incident occurred on 2024/07/03 related to "No Pressure" at Centre Street. The operator investigated water main valves in the area and discovered a valve had been left “OFF” on Centre Street.		
04) Deviations from Critical Control Point Limits and Response Actions - SWS		The Critical Control Point (CCP) Deviation Label was not used in the SWS Logbook between July 1, 2024 and September 30, 2024.		
05) Deviations from Critical Control Point Limits and Response Actions - GWS		The Critical Control Point (CCP) Deviation Label was not used in the GWS Logbook between July 1, 2024 and September 30, 2024.		
06) Deviations from Critical Control Point Limits and Response Actions - WCS/WDS		The Critical Control Point (CCP) Deviation Label was not used in the WCS/WDS Logbook between July 1, 2024 and September 30, 2024.		

07) Flushing Summary - 2024 Q3 Flushing Activities (>100m3)	485 out of 1012 Work Orders (47.9%) were recorded with deviations.
08) Flushing Summary - 2024 Q3 Flushing Activities (>3NTU Turbidity at start up)	124 out of 1012 Work Orders (12.3%) were recorded with deviations.
09) Flushing Summary - 2024 Q3 Flushing Activities (<0.2 Cl (F) at start up)	0 out of 1012 Work Orders (0%) were recorded with deviations.
10) Operational Performance - System-wide Production	In Q3, system-wide production (ML) was consistently higher each month than the 5-year average.
11) Operational Performance - SWS vs GWS Production	Groundwater continued to produce more water than Surface Water in Q3 2024. It was discussed that some contributing factors to the consistently high water usage could be related to commissioning in the North end of the City, Detached Accessory Dwelling Unit (DADU's,) construction in the North, as well as condominium buildings, etc.
12) Operational Performance - Closed Pressure Zones in Q3	Pressure Zone 3N became a Closed Pressure Zone on July 30, 2024 as Ferndale Tower was taken offline for exterior painting to be completed. The tower returned to normal operations on October 21, 2024.
13) Operational Performance - Average Monthly Efficiency of the SWTP	Surface Water Treatment Plant efficiency continues to remain between 97% - 98% in Q3 2024. WOB anticipates seeing a decrease in efficiency in the near future due to Plant upgrades requiring significant amounts of water being sent to waste.
14) Operational Performance - Locates	The number of locates completed in Q3 2024 is below the 5-year average for each month (July - September). It was discussed that the reason for the decrease is related to a reduction in construction with the increase in interest rates. Many projects are coming to a close and there are not as many replacing these.
15) Operational Performance - Monthly Watermain Breaks	There were a total of 8 watermain breaks in Q3 2024. This is a slight increase from the 5-year average of 6.6 for Q3.
16) Operational Performance - Valve Exercising	The issues with the valve turning app are currently with JG/GIS. GIS has reported that issues with the app have been fixed. WOB staff will test it in the field to ensure the issues have been resolved.
17) Raw Water Supply and Drinking Water Quality Trends - Sodium	Sodium trends at Wells 3A, 9, 11, and 14 continue to follow the expected regular trends and are below the Canadian Guideline for Drinking Water Quality. Well 13 demonstrated a slight increase above the projected trendline in Q3 2024. Well 12 showed a slight decrease below the projected trendline, however this Well was offline for several months for maintenance, creating a gap in data analysis.
18) Raw Water Supply and Drinking Water Quality Trends - THM's	For Trihalomethanes (THMs), the Running Annual Average (RAA) for Q3 was slightly lower than in Q2, with an average of 36.95 ug/L (compared to 38.08 ug/L in Q2).
19) Raw Water Supply and Drinking Water Quality Trends - HAA's	For Haloacetic Acids (HAAs), Q3 saw a decrease in the RAA from 30.1 ug/L in Q2, to 23.75 ug/L.
20) Raw Water Supply and Drinking Water Quality Trends - Lead	The latest lead sampling results were presented in Q2 2024.

21) Raw Water Supply and Drinking Water Quality Trends - VOCs	There were 0 exceedances above the established internal VOC limits in Q3 2024.
22) Q3 Sampling Review	During the Q3 Sampling Review, there were 0 non-compliances identified.
23) Health Canada Guideline Technical Document Review	One updated Objective was published in Q3 2024 for per- and polyfluoroalkyl substances (PFAS). WOB conducted PFAS sampling on August 26, 2024 and all results were less than Method Detection Limit (MDL). This sampling is scheduled to be conducted on a 9-month cycle. A Consultation for Canadian drinking water quality – Radiological Parameters opened on October 11, 2024. Proposed to increase objective from 0.1 millisievert per year (mSv/y) to 1 mSv/y. Not identified as a concern for WOB as this pertains more to industrial workplaces, and also the proposed requirements are less stringent than the current values.
24) Raw Water Supply and Drinking Water Quality Trends - In-house GWS cATP	The GWS and WDS cATP results were presented (Q1 - Q3 2024). Well 11 has the highest result (0.65 pg/mL), while Well 17 has the lowest (0.1 pg/mL). All results are considered "low", as they are well below 10 pg/mL.
25) Raw Water Supply and Drinking Water Quality Trends - In-house WCS cATP	The WCS cATP results were presented (Q2 - Q3 2024). ATP results are relatively stable at all locations (all below 0.5 pg/mL).
26) Raw Water Supply and Drinking Water Quality Trends - In-house SWS cATP	The SWS cATP results were presented (Q1 - Q3 2024). There is some fluctuation between months. However, all results are still considered "low" as nothing exceeds 1.2 pg/mL.
27) Summary of Consumer Feedback - Consumer Response Efficiency	In Q3 2024 there were a total of 46 calls received. Most calls are resolved over the phone. Less than 20% require an operator to attend.
28) Summary of Consumer Feedback - After-hours Water Quality Complaints	In Q3 2024, there were 31 after-hours water quality complaints. Majority were related to swabbing/pressure complaints. Of these, 29 were registered in CMMS, and the remaining 2 were added in after.
29) Review of Asset Maintenance, Verification & Calibration	Three new CityWorks reports have been created to assist with auditing calibration activities: 1. GWS-SWS Chlorine Analyzer Calibration 2. GWS-SWS Flow Meter Calibrations 3. GWS-SWS Turbidity Analyzer Calibrations The results for the 2024 review were presented. There were 29 instances where GWS Chlorine Analyzer calibrations were completed <20 or >40 days between calibrations. A CIP meeting has been booked in the New Year to address this finding.
30) Water Operations KPIs	Water Distribution Services: 1. Percent of valves turned in the southwest quadrant: The valve turning app is experiencing technical difficulties. Progress for this KPI will be updated in Q4 2024. . Percentage of system swabing complete: 17.874 km of swabbing was completed, with a goal of 20 km. Groundwater Supply: 1. Reducing the number of callouts annually to less than 300: In Q3, there were 103 callouts. Total number of callouts for 2024 is 220. 2. Reduce the percentage of well downtime annually: Well 5 – No Downtime = 0% Well 7 – No downtime = 0% Well 9 – Down for 92 out of 274 days =33.5% Well 11 – No Downtime = 0%

	Well 12 – Down for 266 out of 274 days =97.8% Well 13 – No Downtime = 0% Well 14 – No Downtime = 0% Well 15 – No Downtime = 0% Well 16 – No Downtime = 0% Well 17 –No Downtime = 0% Well 18 –No Downtime = 0% (Total 274 days in Q1 - Q3) Surface Water Supply: 1. Achieve average monthly Surface Water Treatment Plant efficiency of 98% or greater: In Q3, the average efficiency was 97.35%. Water Customer Services: 1. Achieve 1,400 meter replacements annually: Total progress for the year 2024 is 2,694 meter replacements. 2. Volume of water produced vs. accounted for: To be reported on in Q4 2024. Compliance and Technical Support: 1. Decrease time to gather renewal application information: All renewals in Q3 were sent within the 6 weeks lead time. 2. Increase QMS engagement: In the last 90 days, there have been 11,169 page views.
31) CIP Summary	There were 30 CIPs closed in 2024 so far. There were 11 new CIPs created in 2024. There are a total of 5 CIPs which remain open, and of these, 1 is older than one year. CIP 144: There is one action item in progress. CIP 166: There is one action item in progress. CIP 188: There are three action items in progress. CIP 189: There is one action item in progress. CIP 191: There are 4 remaining action items in progress. CIP 192: There are 4 remaining action items in progress.
32) Operational Plan, Currency and Updates	All Elements in the Operational Plan have been reviewed for 2024.
33) SOP Review	The WCS section has completed their 3-year SOP review, with 66 SOPs reviewed. The other sections of the Branch still have several outstanding SOPs to review by end of 2025.
34) Work Order Instruction Review	The Water Distribution Section has reviewed 74% of their Work Order Instructions so far in the 3-year review cycle (2023 - 2025). The other sections still have several Work Order instructions to review by the end of 2025, but are making progress.
35) Results of Internal Audit	1. Q3 Elemental Audit (Elements 13 & 18): - 6 staff were interviewed over the course of 2 days - No non-conformances were noted during the audit 2. Auditing P16-06 Protocol for Response to VOCs: - A review of the Protocol for Response to VOCs prompted the lead auditor to check historical limits to ensure 1/4 MAC had not been exceeded in the past year. There was one instance where Trichloroethylene exceeded 1/4 MAC. WOB did not provide notification to the two other departments as outlined in the Protocol. - 1 non-conformance was identified. The notification was promptly sent, and the limits in eRIS were adjusted to better reflect the Protocol limits.
36) MOE Inspection Summary	- Inspection was an “unannounced, focused” Inspection. The review of documents started on September 5th, 2024. The physical Inspection took place on October 3rd, 2024 (GWS) and October 4th, 2023 (SWS). - Inspector complimented WOB on the cleanliness of the facilities. - WOB received an inspection rating of 100%.
37) Utah Water Research Study	- A review and summary of the Utah Water Research Study was presented. - More than 800 Water Utilities were surveyed across Canada and the US.

		- 90% of watermain are made of 4 types of materials (PVC, ductile iron, cast iron, and asbestos cement). - Average age of failing watermains is 53 years. - The cost to repair watermain breaks in the US and Canada each year is approximately $2.6 billion.
38) Summary of Staff Suggestions		Several staff suggestions were reviewed such as: - Moving the search bar on the QMS Access Page to make it easier for staff to find. - A Staff member provide feedback that some of the SOP titles are unclear and asked if it would be possible to make the SOPs titles more reflective of what is contained in them. - It was suggested by GWS that the micro sampling be split into North, Central and South as it can be difficult to complete all the sampling on time. The following new Action Item was created:
	1146	Split the GWS Microbiological Distribution Sampling into three areas: North, Central, and South. Currently, having the sampling split into two sections (North and South) is proving to be difficult for Operators to collect all required samples and bring them back in time for the Laboratory pickup. - The QMS Action Log was revised to reflect the following: Lead: GG Due Date: 2025-02-01 Support: MV Completion Date:
39) Changes Affecting QMS		- Canada Post Strike – Renewal/Upgrade Certificates not being mailed out by OWWCO. - Re-accreditation audit December 2 and 3. - Updated MDWL has resulted in several action items that will get our QMS/DWS to align with new requirements. - Full compliment of CCs in permanent position. - Staffing Changes: Ops2 and Water Meter Installer changes coming January 1, 2025. Senior Utilities Technician position was created and Kendra started in the role September 11, 2024.
40) Review List of OROs (T11-02)		The list of ORO's was reviewed. One new staff addition can be added in the New Year.
41) New Business		No new business was discussed.

Note:
These meeting minutes have been reviewed and approved by the meeting attendees noted at the top of the document.