

JOINT AGENDA

AYLMER AREA SECONDARY WATER SUPPLY SYSTEM PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT

March 6, 2024 – 1:00 PM
Malahide Council Chambers
51221 Ron McNeil Line, Springfield, ON

Board Members:

Municipality of Central Elgin – Norman Watson
Town of Aylmer – Pete Barbour
Township of Malahide – Chester Glinski
Municipality of Bayham – Tim Emerson

Staff:

Municipality of Central Elgin – Alex Piggott, Geoff Brooks
Town of Aylmer – Rob Johnson, and Connor Bailey
Township of Malahide – Nathan Diaz, Jason Godby, Sam Gustavson, Adam Boylan, and Allison Adams
Municipality of Bayham – Ed Roloson, and Thomas Thayer

(1) Call to Order

(_____) is appointed Chair and the meeting is called to order at (_____).

(2) Disclosure of Pecuniary Interest

Disclosures of pecuniary interest may be declared at this time: (_____).

(3) Adoption of Prior Minutes

Moved by:

Seconded by:

THAT the minutes of the Port Burwell Area Secondary Water Supply System Joint Board of Management meeting held on December 6, 2023, be approved as circulated.

Moved by:

Seconded by:

THAT the minutes of the Aylmer Area Secondary Water Supply System Joint Board of Management meeting held on December 6, 2023, be approved as circulated.

(4) Reports

- *2023 Flow Consumption and Water Loss Report*

Moved by:

Seconded by:

THAT Report No. PBASWSS-24-01 entitled “Port Burwell Area Secondary Water Supply System (PBASWSS): 2023 Flow Consumption and Water Loss Report” be received.

Moved by:

Seconded by:

THAT Report No. AASWSS-24-01 entitled “Aylmer Area Secondary Water Supply System (AASWSS): 2023 Flow Consumption and Water Loss Report” be received.

- *2023 Drinking Water Quality Trends Report*

Moved by:

Seconded by:

THAT Report No. PBASWSS-24-02 entitled “Port Burwell Area Secondary Water Supply System: DWQMS Element 20: 2023 Drinking Water Quality Trends Report” be received.

Moved by:

Seconded by:

THAT Report No. AASWSS-24-02 entitled “Aylmer Area Secondary Water Supply System: DWQMS Element 20: 2023 Drinking Water Quality Trends Report” be received.

- *2023 MECP Final Inspection Report*

Moved by:

Seconded by:

THAT Report No. PBASWSS-24-03 entitled “Port Burwell Area Secondary Water Supply System Inspection- 2023 MECP Final Inspection Report” be received.

- *2023 Fourth Quarter Operations Report*

Moved by:

Seconded by:

THAT Report No. PBASWSS-24-04 entitled “2023 Fourth Quarter Operations Report” be received.

Moved by:
Seconded by:

THAT Report No. AASWSS-24-03 entitled “2023 Fourth Quarter Operations Report” be received.

-2023 Section 11 Annual Report and Schedule 22 Summary Report

Moved by:
Seconded by

THAT Report No. PBASWSS-24-05 entitled “Port Burwell Area Secondary Water Supply System (PBASWSS): 2023 Section 11 Annual Report and Schedule 22 Summary Report” be received.

Moved by:
Seconded by

THAT Report No. AASWSS-24-04 entitled “Aylmer Area Secondary Water Supply System (AASWSS): 2023 Section 11 Annual Report and Schedule 22 Summary Report” be received.

(5) Correspondence

i) Letter to R.V. Anderson Associates Limited and City of St. Thomas relating to Highbury Avenue Widening Class Environmental Assessment

(6) New Business

(7) Adjournment

Moved by:
Seconded by:

THAT the Aylmer Area Secondary Water Supply System Joint Board of Management adjourn at __ p.m. to meet again on June 5, 2024 at 1:00 p.m.

Moved by:
Seconded by:

THAT the Port Burwell Secondary Water Supply System Joint Board of Management adjourn at __ p.m. to meet again on June 5, 2024 at 1:00 p.m.

MINUTES

AYLMER AREA SECONDARY WATER SUPPLY SYSTEM PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT

**December 06, 2023 – 1:00 PM
Malahide Council Chambers
51221 Ron McNeil Ln, Springfield, ON**

In Attendance

Board Members:

*Municipality of Central Elgin – Norman Watson
Town of Aylmer – Pete Barbour
Town of Aylmer – Jamie Chapman
Township of Malahide – Chester Glinski
Municipality of Bayham – Tim Emerson*

Staff:

*Municipality of Central Elgin – Alex Piggott
Town of Aylmer – Andy Grozelle
Township of Malahide – Jason Godby, Sam Gustavson, Adam Boylan, and Allison Adams
Municipality of Bayham*

(1) Call to Order

Peter Barbour is appointed Chair and the meeting is called to order at 1:03pm.

(2) Disclosure of Pecuniary Interest

N/A

(3) Adoption of Prior Minutes

**Moved by: Norman Watson
Seconded by: Chester Glinski**

THAT the minutes of the Aylmer Area Secondary Water Supply System Joint Board of Management meeting held on September 06, 2023, be approved as circulated.

Carried

Moved by: Tim Emerson
Seconded by: Norman Watson

5

THAT the minutes of the Port Burwell Area Secondary Water Supply System Joint Board of Management meeting held on September 06, 2023, be approved as circulated.

Carried

(4) 2023 Final Inspection

Moved by: Norman Watson
Seconded by: Chester Glinski

THAT Report No. AASWSS-23-09 entitled “Aylmer Area Secondary Water Supply System Inspection - 2023 MECP Final Inspection Report” be received.

Carried

(5) Review and Provision of Infrastructure

Moved by: Chester Glinski
Seconded by: Tim Emerson

THAT Report No. AASWSS-23-10 entitled “Aylmer Area Secondary Water Supply System (AASWSS): 2023 Review and Provision of Infrastructure Report” be received.

Carried

Moved by: Chester Glinski
Seconded by: Tim Emerson

THAT Report No. PBASWSS-23-11 entitled “Port Burwell Area Secondary Water Supply System (PBASWSS): 2023 Review and Provision of Infrastructure Report” be received.

Carried

Moved by: Norman Watson
Seconded by: Chester Glinski

THAT Report No. AASWSS-23-11 entitled “Aylmer Area Secondary Water Supply System (AASWSS): Elgin Middlesex Pumping Station (EMPS) – 2023 Review and Provision of Infrastructure Report” be received.

Carried

(6) 2024 Draft Budgets

**Moved by: Norman Watson
Seconded by: Chester Glinski**

THAT Report No. AASWSS-23-12, being the Draft 2024 Budget, be received;

AND THAT the 2024 Budget be approved as presented;

AND THAT the 2024 water rate, in the amount of 1.41 per cubic metre, be approved.

Carried

**Moved by: Tim Emerson
Seconded by: Norman Watson**

THAT Report No. PBASWSS-23-12, being the Draft 2024 Budget, be received;

AND THAT the 2024 Budget be approved as presented;

AND THAT the 2024 water rate, in the amount of 3.47 per cubic metre, be approved.

Carried

(7) Correspondence

**Moved by: Norman Watson
Seconded by: Chester Glinski**

THAT the following correspondence be noted and filed:

- i. Letter to Elgin Area Primary Water Supply System Regarding the Proposed St. Thomas Industrial Development from the administering municipality on behalf of PBASWSS and AASWSS**
- ii. Letter from Elgin Area Primary Water Supply System Response to Questions Regarding the Proposed St. Thomas Industrial Development**
- iii. R.V. Anderson Associates Limited Notice of Study Completion – Highbury Avenue Widening Municipal Class Environmental Assessment**
- iv. Highbury Avenue Widening Class EA Letter to R.V. Anderson Associates Limited from the administering municipality on behalf of AASWSS**

Carried

(8) New Business

7

Upcoming 2024 Meeting Dates – March 6, 2024, June 5, 2024, September 4, 2024, December 4, 2024

(9) Adjournment

Moved by: Norman Watson
Seconded by: Chester Glinski

THAT the Aylmer Area Secondary Water Supply System Joint Board of Management adjourn at 2:05 p.m. to meet again on March 6, 2024 at 1:00 p.m.

Carried

Moved by: Norman Watson
Seconded by: Tim Emerson

THAT the Port Burwell Secondary Water Supply System Joint Board of Management adjourn at 2:05p.m. to meet again on March 6, 2024 at 1:00 p.m.

Carried

Pete Barbour - Board Chair

Clerk



Port Burwell Area Secondary Water Supply System

REPORT NO.: PBASWSS-24-01
DATE: March 6, 2024
ATTACHMENT: None
SUBJECT: **PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM (PBASWSS): 2023 FLOW CONSUMPTION AND WATER LOSS REPORT**

Recommendation:

THAT Report No. PBASWSS-24-01 entitled “Port Burwell Area Secondary Water Supply System (PBASWSS): 2023 Flow Consumption and Water Loss Report” be received.

Background:

The PBASWSS purchases water on an ongoing basis through the main metering chamber known as MV1 which is located close to the Elgin Area Water Treatment Plant. All water conveyed through this chamber is considered to be purchased water by the Secondary Board. From there, each municipality purchases water from the Secondary Board using various billing methods to supply their residents with potable water. The difference between the water purchased by the Board and that which was sold by the Secondary Board is known as non-revenue water.

As a distribution system that purchases potable water from the Primary Board, it is extremely important to very closely monitor and record flows on a continual basis. Not only is water loss management critical to obtaining a sustainable water system, but it also serves to protect the health of the residents by removing potential points of entry of a contaminant into the system.

Comments/Analysis:

The purpose of this report is to outline the flow consumptions purchased and sold over the past year on the (300 mm) waterline for the Board’s review.

In 2023, the Port Burwell Area Secondary Water Supply System purchased a total of 264,824m³ of water for 0.9649 cents/m³. For the 2023 year, the secondary line used 18,482 m³ less than the previous year. The PBASWSS was billed \$255,528.68 in 2023 (\$11,175.59 less than 2022) by the Elgin Area Primary Water Supply System: Joint Board.

The total volume purchased is determined to be the annual sum of water conveyed through the billing meter located at the MV1 chamber. This meter is owned and maintained by the Primary Board. Each municipality was billed by the Administering Authority for their usage.

The 2023 summary of billable flows by each municipality is as follows:

- Central Elgin submitted flows of 9,764 m³ for 2023. This is a decrease of 97 m³ comparing 2023 to 2022 flows Total flow submitted also includes 2m³ used by Central Elgin for Firefighting purposes.
- Malahide Township submitted flows of 86,550 m³ for 2023. This is a decrease of 2024 m³ comparing 2023 to 2022 flows. No fire flows were included by Malahide for Firefighting purposes.
- Bayham submitted flows of 151,755 m³ for 2023. This is a decrease of 10,174 m³ comparing 2023 to 2022 flows.

Standard Billing Practices:

Flow breakdown for each municipality is determined by the following:

- Central Elgin flows are determined to be the total sum of all of their water accounts. These flows are submitted on an annual basis.
- Malahide flows are determined to be the sum of all of their water accounts + the total annual volume of water conveyed through chambers P.B.01, P.B.02 and Copenhagen booster station. These flows are submitted on an annual basis.
- Bayham flows are historically determined to be the sum of all water conveyed through billing chambers V001 and EO38 + the sum of their water customers between EO34, V001 and EO38. These flows are submitted on an annual basis. No firefighting related flows are required to be submitted by Bayham Township as this is included in their total volume purchased for all water which enters their water system as measured at the boundary meter at V001 (water entering Vienna) and E038 (water entering Port Burwell). In 2023, the E038 meter unexpectedly failed and required replacement. As a result, the reading for E038 could not be used in 2023. Bayham flows in 2023 were based on the Boundary meter reading at E034 (Lakeview) which was deemed to be more accurate due to the missing data at E038.

For various reasons, the boundary meter chambers at EO14 and EO34 are not generally used for billing purposes. Those chambers are only used when there have been metering issues found at tertiary chambers. In 2023, the E034 meter was used due to the issues noted above.

2023 Water Loss Summary:

The 2023 overall summary is as follows:

- Total used from the three municipalities: 248,069 260,372 Cubic Meters.
- Total purchased from the Primary Board: 264,824 283,306 Cubic Meters.
- Total non-revenue lost water: 16,755 22,934 Cubic Meters.

Water loss in the distribution system can be grouped into two main categories; 1) real loss which can be attributed to line leakage and service leakage, and 2) apparent Loss which is unauthorized consumption, inaccuracies of billing meters, data used for billing and theft of water. Non-revenue water is the sum of both real loss and apparent loss for which the Secondary Board does not receive compensation.

Based on the flows submitted by Malahide, Central Elgin and the sum of Bayham flows equates to 248,069 m³ of water. The Primary Board billed the Secondary Board for 264,824 m³ of water. Therefore, the difference is a non-revenue loss of 16,755 m³ or 6.33% in 2023. Water loss in 2022 was 22,934 m³. When comparing flows with 2022, there has been a moderate decrease in total water loss in 2023.

Acceptable Water Loss:

According to AWWA, if a water system has a water loss of 10% or below, it is considered to be acceptable. AWWA does mention that even though the loss is acceptable, continuous monitoring is necessary to ensure that the system does not go above 10%.

Water loss Breakdown:

Water loss is divided to each municipality based on the percentage of water purchased by each Municipality. As an example, if Malahide Township uses 1% of the annual volume of water that is conveyed through the secondary transmission, then Malahide Township is responsible to pay for 1% of the lost water that occurs on the secondary waterline.

For 2023, each municipality's share of the water loss is as follows:

Formula: % of water purchased from the PBASWSS X Total Non-Revenue Water = m³

- Municipality of Bayham: 61.2% X 16,755m³ = 10,254 m³
- Malahide Township: 34.9% X 16,755m³ = 5,848 m³
- Central Elgin: 3.93% X 16,755m³ = 653 m³.

Summary:

Over the last year, the PBASWSS was able to meet the AWWA standards for water loss at less than 10%. Overall the distribution system performed well in 2023.

Water loss management is an ongoing practice that all municipalities that own water infrastructure should participate in on a continual basis. The Staff of the Administering Municipality, along with OCWA, regularly monitors SCADA flows and trends throughout the system, implements leak detection programs, and investigates emerging technologies, in an effort to minimize non-revenue loss on the distribution system.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



Aylmer Area Secondary Water Supply System

REPORT NO.: AASWSS-24-01
DATE: March 6, 2024
ATTACHMENT: None
SUBJECT: **AYLMER AREA SECONDARY WATER SUPPLY SYSTEM (AASWSS): 2023 FLOW CONSUMPTION AND WATER LOSS REPORT**

Recommendation:

THAT Report No. AASWSS-24-01 entitled “Aylmer Area Secondary Water Supply System (AASWSS): 2023 Flow Consumption and Water Loss Report” be received.

Background:

The AASWSS purchases water on an on-going basis through the meter which is located at the Elgin Middlesex Pumping Station (EMPS). All water conveyed through this meter is considered to be purchased water by the Secondary Board. From there, each municipality purchases water from the Secondary Board using various billing methods to supply their residents with potable water. The difference between the water purchased by the Board and that which was sold by the Secondary Board is known as non-revenue water.

As a distribution system that purchases potable water from the Primary Board, it is extremely important to very closely monitor and record flows on a continual basis. Not only is water loss management critical to obtaining a sustainable water system, but it also serves to protect the health of the residents by removing potential points of entry of a contaminant into the system.

Comments/Analysis:

The purpose of this report is to outline the flow consumption purchased and sold over the past year on the (450mm) waterline for the Board’s review.

In 2023, the Aylmer Area Secondary Water Supply System purchased a total of 1,783,661 m³ of water for 0.9649 cents/m³. For the 2023 year, the secondary line used 44,078 m³ more than the previous year. The Board was billed \$1,721,054.50 in 2023 (\$83,411.06 more than in 2022) by the Elgin Area Primary Water Supply System: Joint Board.

The 2023 summary of billable flows by each municipality is as follows:

- The Town of Aylmer purchased 1,707,285 m³ (flow through billing chamber 16). This is an increase of 20,472 m³ comparing 2023 to 2022 flows. The total volume invoiced to Aylmer represents all flow which entered the Town of Aylmer's Distribution System at chamber 16. No firefighting related flows are required to be submitted by the Town of Aylmer as this is included in their total volume purchased for all water which enters their water system as measured at the boundary meter at chamber 16.
- Malahide Township purchased 11,001 m³ of water. (The sum of all customer meter readings as provided by the Township of Malahide. The total flow submitted also includes 66 m³ used by Malahide for Firefighting purposes). This is an increase of 453 m³ comparing 2023 to 2022 flows.
- Central Elgin purchased 31,091 m³ of water. (The sum of all customers' meter readings as provided by the Municipality of Central Elgin. The total flow submitted also includes 43 m³ used by Central Elgin for Firefighting purposes). This is a decrease of 31 m³ comparing 2023 to 2022 flows.

Standard Billing Practices:

For the Town of Aylmer, chamber 16 is used as the billing meter. Malahide and Central Elgin are billed using a different billing system. The sum of the residential meter readings including fire hydrant usage and the sale of bulk water are submitted to the Administering Municipality for billing purposes. For various reasons, both chambers 13 and 16 are not used as billing meters to bill back Malahide Township and Central Elgin.

2023 Water Loss Summary:

The 2023 overall summary is as follows:

- Total used from three Municipalities: 1,749,377 m³.
- Total purchased from Primary Board: 1,783,661 m³.
- Total non-revenue lost water: 34,284 m³.

Water loss in the distribution system can be grouped into two main categories; 1) real loss which can be attributed to line leakage and service leakage, and 2) apparent loss which is unauthorized consumption, inaccuracies of billing meters, data used for billing and theft of water. Non-revenue water is the sum of both real loss and apparent loss for which the Secondary Board does not receive compensation.

Based on the flows submitted by Malahide, Central Elgin and the sum of chamber 16 equates to 1,749,377 m³ of water. The Primary Board billed the Secondary Board for 1,783,661 m³ of water. Therefore, the difference is a non-revenue loss of 34,284 m³ or 1.92% in 2023. Water loss in 2022 was 11,100 m³. When comparing flows with 2022, there has been a moderate increase to total water loss in 2023.

Acceptable Water Loss:

According to AWWA, if a water system has a water loss of 10% or below, it is considered to be acceptable. AWWA does mention that even though the loss is acceptable, continuous monitoring is necessary to ensure that the system does not go above 10%.

Water loss Breakdown:

Water loss is divided to each municipality based on the percentage of water purchased by each Municipality. As an example: If Malahide Township uses 1% of the annual volume of water that is conveyed through the system via the EMPS, then Malahide Township is responsible to pay for 1% of the lost water that occurs on the secondary waterline.

For 2023, each municipality's share of the water loss is as follows:

Formula: % of water purchased from the AASWSS X Total Non-Revenue Water = m³

- The Town of Aylmer: 97.59% X 34,284 m³ = 33,458 m³
- Malahide Township: 0.63% X 34,284 m³ = 216 m³
- Central Elgin: 1.78% X 34,284 m³ = 610 m³

Summary:

Over the last year, the AASWSS was able to meet the AWWA standard for water loss at less than 10%. Overall the distribution system performed well in 2023.

Water loss management continues to be an important aspect of the operations and maintenance of the AASWSS budget. Even though the systems within the AWWA standard of less than 10% loss, continual monitoring and leak detection programs are essential tools that the Staff implement to ensure water loss is kept to a minimum.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson, Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



Port Burwell Area Secondary Water Supply System

REPORT NO.: PBASWSS-24-02

DATE: March 6, 2024

ATTACHMENT: Drinking Water Quality Trends Report 2023, and Management Review Minutes

SUBJECT: **PBASWSS: DWQMS ELEMENT 20: 2023 DRINKING WATER QUALITY TRENDS REPORT**

Recommendation:

THAT Report No. PBASWSS-24-02 entitled “Port Burwell Area Secondary Water Supply System: DWQMS Element 20: 2023 Drinking Water Quality Trends Report” be received.

Background:

On an annual basis, the Operating Authority, being the Ontario Clean Water Agency (OCWA), is required to submit to the owner, a drinking water quality trends report for the Port Burwell Area Secondary Water Supply System (PBASWSS). This report is subsequently reviewed with the owner which is a requirement of Element 20: Management Review of the DWQMS Operational Plan.

Comments/Analysis:

On January 19th, 2024, the Ontario Clean Water Agency provided the drinking water quality trends report to the Staff of the Township of Malahide.

The attached report as provided by OCWA is a detailed summary of drinking water quality parameters that are monitored by the operators which include chlorine residuals, microbiological testing, and trihalomethanes. Haloacetic acids (HAAs) have also been included in sampling as a new requirement which began in 2017. The attached report charts the minimum and maximum for these parameters over the last 10 years against the operational guidelines and adverse water quality limits set by O. Reg. 170/03.

On August 3rd, 2023, Township Staff met with OCWA to conduct the annual Management Review meeting for the Secondary System. The meeting minutes from the Management

Review that was conducted are also attached to this report for the Board's information. The purpose of the review is to evaluate the continuing suitability, adequacy and effectiveness of OCWA's Quality & Environmental Management System (QEMS).

Summary:

The information, provided to the Staff by OCWA, is used to make certain that the Staff and Owners are aware of drinking water quality trends of the PBASWSS. The report also helps the Owners make decisions in an effort to provide a continual safe supply of potable water for the residents connected to the PBASWSS.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



Ontario Clean Water Agency

Management Review Minutes

Port Burwell Area Water Supply System

Issue Date: 2023-08-03
Pages: 1 of 9

Reviewed by: QEMS Representative Approved by: Operations Management

Drinking Water System Name:

Port Burwell Area Water Supply System

Owner and Location:

Port Burwell Area Secondary Water Supply System
Joint Board of Management

Review Period: July 20th, 2022 to August 2nd, 2023

Meeting Information/Introduction

Date/Time: August 3rd, 2023

Location:

Township of Malahide - 87 John Street South, Aylmer

Attendees: Top Management: Mark Harris, Senior Operations Manager, Maegan Garber, SPC Manager, Vitaliy Talashok, Capital Manager
Owner Representative: Sam Gustavson, WWOM
QEMS Representative: Matt Belding
Operator(s) for the DWS(s): n/a
Other: n/a

Regrets: Jason Godby, Director

Distribution: Dale LeBritton, Jason Godby, Sam Gustavson, Mark Harris, Vitaliy Talashok & Maegan Garber

Minutes Taken By: Matt Belding

Introduction:
Purpose:

To evaluate the continuing suitability, adequacy and effectiveness of OCWA's QEMS.

Objectives:

The Management Review participants will review/discuss the standing agenda items and the data presented, identify deficiencies, make recommendations and/or initiate action plans to address identified deficiencies as appropriate.

The Management Review includes a review of the DWQMS operational plan, SAI audit report(s), OCWA internal audit report(s) and other related operational documents/records as detailed in the meeting minutes. The information reviewed during the Management Review was provided/made available to attendees prior to the meeting by email, and as a powerpoint at the meeting.

This meeting covers *the* standing agenda items for the DWSs noted above. Details of the discussion, any deficiencies identified, decisions made and applicable action items related to each standing agenda item are described under the appropriate item number within the following table. Additional comments/discussion items are described under section 2.

The minutes from the previous Management Review held on *July 21st, 2022* were also reviewed. Any follow up on actions and/or additional actions required are detailed under item i.

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
1 [a]	<p>Incidents of regulatory non-compliance: The last routine MECP Inspection was conducted on July 28th, 2022 by Jim Miller. An inspection rating of 100% was received.</p> <p>The 2023 inspection has commenced with a review of documentation but a site visit has not yet been scheduled.</p>	N/A	N/A	N/A
[b]	<p>Incidents of adverse drinking water tests: There were no incidents of adverse drinking water tests during the review period.</p>	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
[c]	<p>Deviations from Critical Control Point limits and response actions: Critical control point limit exceedances were previously tracked using the critical control point limit reached tracking form. Since the implementation of the electronic logbooks, CCPs are now being tracked in the logbook using the Alarm-CCP label.</p> <p>The following CCPs were noted during the review period:</p> <p>Port Burwell Tower:</p> <ol style="list-style-type: none"> 1. September 9th, 2022: Low chlorine alarm received. Calibration required. 2. September 10th, 2022: raise pump start points. 3. November 14th, 2022: Calibration required. 4. November 16th, 2022: Low chlorine alarm <p>Dexter Line:</p> <ol style="list-style-type: none"> 5. August 9th, 2022: low chlorine alarm received. Calibration required. <p>Lakeview:</p> <ol style="list-style-type: none"> 6. September 10th, 2022: Low chlorine. Calibrated and raised pump start point. 	Review with staff the CCP limit reached SOP.	N/A	N/A
[d]	<p>Effectiveness of the risk assessment process: As per OP-08A, the 36 month risk assessment was conducted on February 3rd, 2022 as required. The annual review will be completed as part of the management review.</p>	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
	Cyber security is required to be considered as part of the Annual Review and the Table updated to include it as a threat.			
[e]	<p>Internal and third-party Audit results: A reaccreditation audit was conducted on September 30th, 2022 by Sandra Tavares of SAI Global. There were no non-conformances and 4 Opportunities for Improvements (OFIs).</p> <p>The Internal Audit was conducted by Matt Belding on July 17th, 2023. There were no non-conformances and 4 OFIs identified in the report.</p> <p>The OFIs can be found in the Summary Table of Action Items.</p>	Refer to the Summary Table of Action Items (#95-101).	Refer to the Summary Table of Action Items (#95-101)	Refer to the Summary Table of Action Items (#95-101)
[f]	<p>Results of emergency response testing: On December 7th, 2022 the contingency plan CP-1, CP-2, and CP-5 were reviewed and CP-5 Unsafe Water was tested. The operators reviewed the response to an AWQI with a boil water advisory at the WTP. There were no action items from the test.</p> <p>There were no action item from the testing.</p> <p>The QEMS Representative maintains a tracking sheet to ensure the frequency of the CP reviews and tests is maintained.</p>	N/A	N/A	N/A
[g]	Operational performance:	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
	The PBASWSS performed very well over the past year. Chlorine residuals throughout the system remain adequate.			
[h]	<p>Raw water supply and drinking water quality trends:</p> <p>The 2022 Drinking Water Quality Trends Report was reviewed. No issues to report.</p> <p>2022 Annual report for the EAPWSS was reviewed. There were two notable events discussed.</p> <ol style="list-style-type: none"> 1. People other than certified operators made adjustments to the treatment system. 2. The had not provided security measures to protect components of the drinking water system. 	N/A	N/A	N/A
[i]	<p>Follow-up on action items from previous Management Reviews:</p> <p>The last Management Review was conducted on July 21st, 2022. A review of the Summary Table of Action Items did outline action items that were ongoing. These items have been reviewed and an update provided where required.</p>	N/A	N/A	N/A
[j]	<p>Status of management action items identified between reviews:</p> <p>Action items identified between reviews were a result of internal and external audit results.</p>	N/A	N/A	N/A
[k]	Changes that could affect the QEMS:	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
	There have been several new staff hired during the review period. The QEMS Representative is actively initiating DWQMS training at staff meetings and providing corporately lead training opportunities to staff as well.			
[l]	Consumer feedback: A community complaint was received on April 4 th , 2023 as a result of low water pressure. After a review on the Municipal side, it was determined that the internal plumbing in the home may be the cause of the reduced pressure. No further action required.	N/A	N/A	N/A
[m]	Resources needed to maintain the QEMS: There are sufficient resources to maintain the QEMS.	N/A	N/A	N/A
[n]	Results of the infrastructure review: <u>2022 Capital:</u> <u>MV1 Valvehouse</u> -Replace PLC micrologix controller (complete, spare onsite) <u>Dexter Line</u> -Spare inventory for chemical system (as needed) -Replace PLC UPS batteries (spare on order) <u>Port Burwell Tower</u> -Annual corrosion inspection (completed) -Anode installation (Corrosion Services to advise whether it is required) / rectifier upgrade (completed) -Replace PLC micrologix controller (spares onsite)	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
	<p><u>Lakeview</u> -Replace PLC micrologix controller (completed)</p> <p><u>Transmission Main</u></p> <ul style="list-style-type: none"> - Hydrant maintenance and repairs (as needed) - Sample station maintenance and repairs (Operator identified locations in need of repairs, SOM to provide WWOM locations) - PVC transmission main: Condition assessment on 12 inch from town to end of main (pushed to 2023) - Chamber maintenance (as required) <p><u>2023 Capital:</u> MV1 Valvehouse - Replace PLC UPS battery (Annual UPS inspections going to now be completed by Summa. A spare is onsite.)</p> <p><u>Dexter Line</u> -Spare inventory purchase (On an as needed basis. Operations staff to review inventory when items are used and notify SOM & WWOM.)</p> <p><u>Port Burwell Tower</u> -Corrosion inspection (Anode installation completed as part of the water tower inspection.) -Replace PLC UPS battery (complete)</p>			

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	<p><u>Lakeview</u> -Replace PLC controller (complete)</p> <p><u>Transmission Main</u> -hydrant/station maintenance -SS#90 replacement (repaired) -SS#94 replacement (replaced in 2022) -Chamber maintenance - Condition Assessment (on-going and underway)</p> <p>WWOM has ordered a UPS for Dexter but it is on back order.</p> <p>A review of the recommendations from Landmarks Tower inspection was completed with the attendees. No further action required at this time.</p>			
[o]	<p>Operational Plan currency, content and updates: The Operational Plan was last revised 2022-07-21 with some procedures being updated. The Operational Plan will be revised with the action items identified in the Summary Table of Action Items.</p> <p>A statement has been added to the Municipalities website to indicate how the Operational Plan can be accessed by the public.</p> <p>The Operational Plan was endorsed in January, 2023 to represent changes to OCWA's Top Management and the Owners Top Management.</p>	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/Assigned To	Target Date
	MDWL Issue 4 was issued on April 16 th , 2021. The DWWP Issue 4 was also issued on April 16 th , 2021.			
[p]	Staff suggestions: No suggestions.	N/A	N/A	N/A
[q]	Review/consideration of any applicable Best Management Practices (BMPs): The 2022 MECP inspection report did not identify any BMPs. There have been no formal BMPs by OCWA's corporate office or the MECP at this time. Should any BMPs be identified in the 2023 MECP Inspection report, they will be considered.	N/A	N/A	N/A
2.	Roundtable/Other: No further discussion.		N/A	N/A

Details of next Management Review meeting:

Next Meeting:

The next Management Review meeting will occur in 2024, unless it is warranted to do so earlier.

Reviewed by: SPC Manager

Approved by: Operations Management

Overview

As part of the DWQMS Element 20: Management Review it is required to review the drinking water quality trends for the facility. This report details the drinking water quality parameters that are monitored for the Port Burwell Area Secondary Water Supply System (PBASWSS). These parameters are:

- Distribution Free Chlorine Residuals
- Distribution Water E.coli, Total Coliform and Heterotrophic Plate Count
- Distribution Water Trihalomethanes
- Distribution Water Haloacetic Acids

Free Chlorine

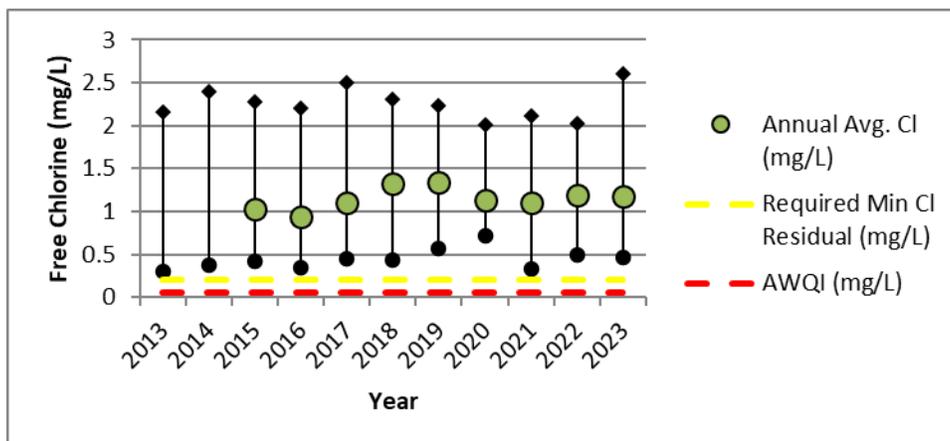
Each week seven residuals are taken on the system in accordance with O. Reg. 170/03. The annual minimum and maximum chlorine residuals for the last ten years were:

Year	Minimum Free Chlorine Residual (mg/L)	Maximum Free Chlorine Residual (mg/L)
2013	0.30	2.16
2014	0.37	2.40
2015	0.42	2.28
2016	0.35	2.21
2017	0.45	2.50
2018	0.43	2.30
2019	0.57	2.24
2020	0.72	2.01
2021	0.33	2.12
2022	0.50	2.02
2023	0.46	2.60
Operational Guideline	0.20	4.00
AWQI Limit	0.05	n/a

The chart below depicts the minimum and maximum free chlorine residuals taken as grab samples in the Port Burwell Area Secondary Water Supply System, comparing the last ten years (2013-2023) against the operational guideline and adverse water quality limits set by O. Reg. 170/03. The required minimum is 0.20mg/L, which is a guideline from the MECP for the drinking water system to achieve in all parts of the distribution system. If a residual is found below this requirement, action is required to increase this residual. The usual means of increasing the residual is by flushing in the area or by increasing the dosing set point at a re-chlorination facility. An Adverse Drinking Water Quality Indicator (AWQI) occurs when the free chlorine residual taken as a grab sample is below 0.05mg/L, this residual is to be reported the MECP Spills Action Centre (SAC) and the local Medical Officer of Health. Immediate action is required to bring the residual above 0.2mg/L in the affected area and take any further action as directed by the Medical Officer of Health.

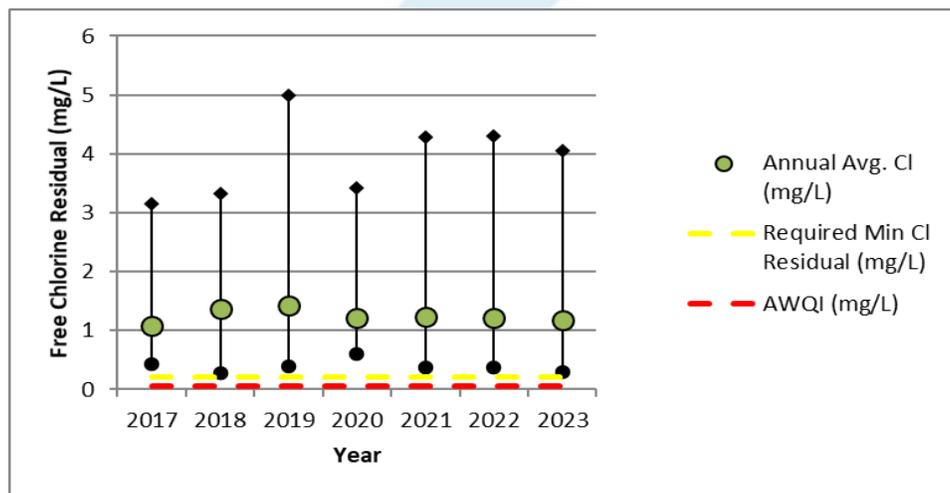
In 2023, the average free chlorine residual taken as a grab sample in the distribution system was 1.17mg/L. This is down 1.71% when comparing it to the 2022 average free chlorine residual (1.19mg/L). Refer to Chart 1.

Chart 1. Minimum and maximum free chlorine residuals throughout distribution system compared against the required minimum and the AWQI limit. Note: average residual indicated starting in 2015 data collection.



The free chlorine residual is continuously monitored at the Dexter Line Re-chlorination facility. The facility re-chlorinates only when the valve at the valve house is open to fill the Port Burwell Tower, which results in large fluctuations of residuals. Chart 2, shows the minimum, maximum and average free chlorine residuals at the Dexter Line Re-Chlorination Facility for 2017-2023.

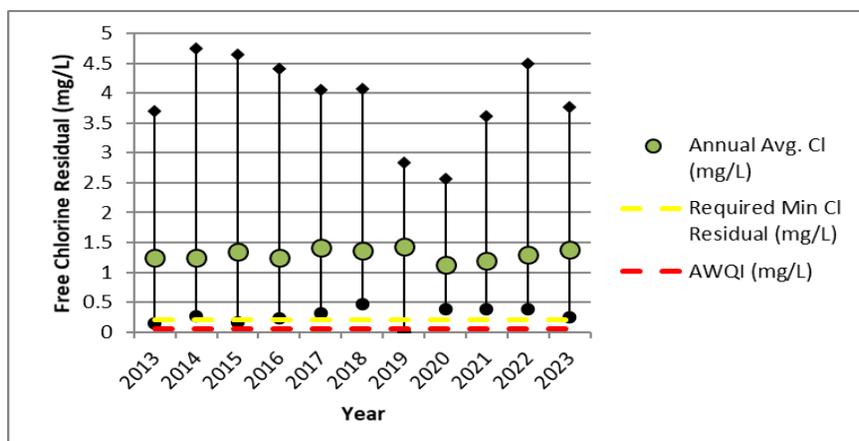
Chart 2. Minimum, maximum and average free chlorine residuals at the Dexter Line Re-chlorination Facility compared against the required minimum and the AWQI limit.



Free chlorine residual is monitored at the Port Burwell Tower. There is only one watermain feeding the tower for filling and draining. The free chlorine residuals fluctuate based on the fill cycles. The facility is equipped with re-chlorination equipment that operates during the fill cycle in manual mode and when the tower is draining it operates based on a set point residual on the SCADA system. In 2023, the annual average free chlorine residual was 1.38mg/L, this is up 6.15% when compared to 2022 (1.30mg/L). Chart 3 below shows the annual minimum,

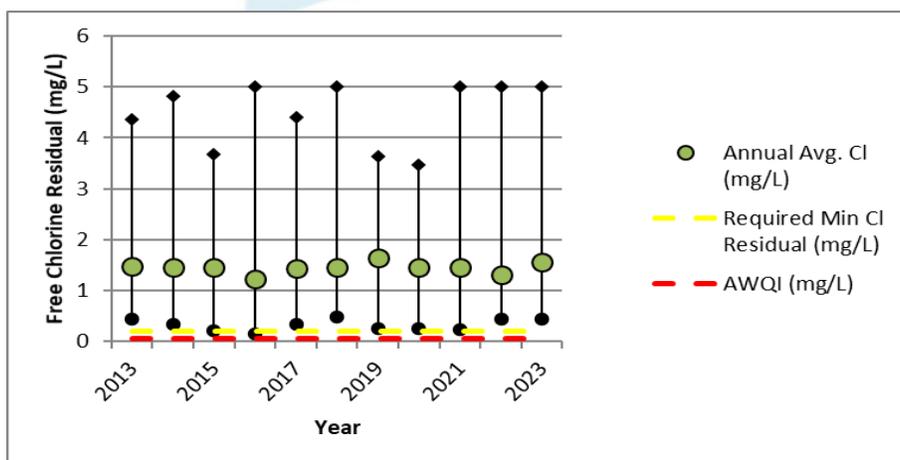
maximum and average chlorine residuals for 2013 to 2023. When the tower is filling the free chlorine is generally lower, this water is from the Elgin Area Water Treatment Plant travels a great distance before getting to the tower. This is especially true during the summer months when chlorine demand is higher. In 2013 and 2015 the minimum residual was below the required free chlorine residual of 0.2mg/L. The operators of the system monitored the residual to ensure the system was adequately disinfected. Also, during these high chlorine demand seasons the operators will flush the system in order to rid the system of any residuals that don't meet the required 0.2mg/L. There were no Adverse Water Quality Incidents as a result of the lower residuals. The Dexter Line Re-Chlorination Facility was added to the system in 2017 to help improve the residuals in the system. In July of 2019 the chlorine system was temporarily out of service due to panel work, which is the result of a chlorine residual reading of 0.0 mg/L, the residual was being monitored at both the Lakeview and Dexter Line facilities.

Chart 3. Minimum, maximum and average free chlorine residuals for 2013-2023 at the Port Burwell Tower.



The free chlorine residual is continuously monitored at the Lakeview Re-Chlorination facility where the incoming water is re-chlorinated in order to provide adequate residuals to the Bayham Distribution System. In 2023, the annual average free chlorine residual was 1.55mg/L. This is up 19.2% compared to 2022 (1.30mg/L). The required minimum residual of 0.2mg/L was met in 2023.

Chart 4. Minimum, maximum and average free chlorine residuals at Lakeview Re-chlorination.



Microbiological Samples

The distribution water of the Port Burwell Area Secondary Water Supply System is sampled weekly for E.coli, Total Coliform and Heterotrophic Plate Count (HPC), following O. Reg.170/03. Each week three samples are tested for E. coli and Total Coliform and one sample is tested for HPC. The Ontario Drinking Water Quality Standard for E.coli and Total Coliform is non-detectable for both. Heterotrophic Plate Count is used as an operational tool to determine if there is an issue.

There was one sample that had a result of NDOGN (no data: over grown with non-target bacteria) in 2021. On October 15th, 2021 SGS Laboratories reported the AWQI from Sample Station 90. Samples were collected upstream, downstream and at the source as required. All re-sample results were satisfactory.

The range of HPC results were 0 to 80cfu/mL for 2021. The table below shows the sample results compared for the last ten years (2011-2021).

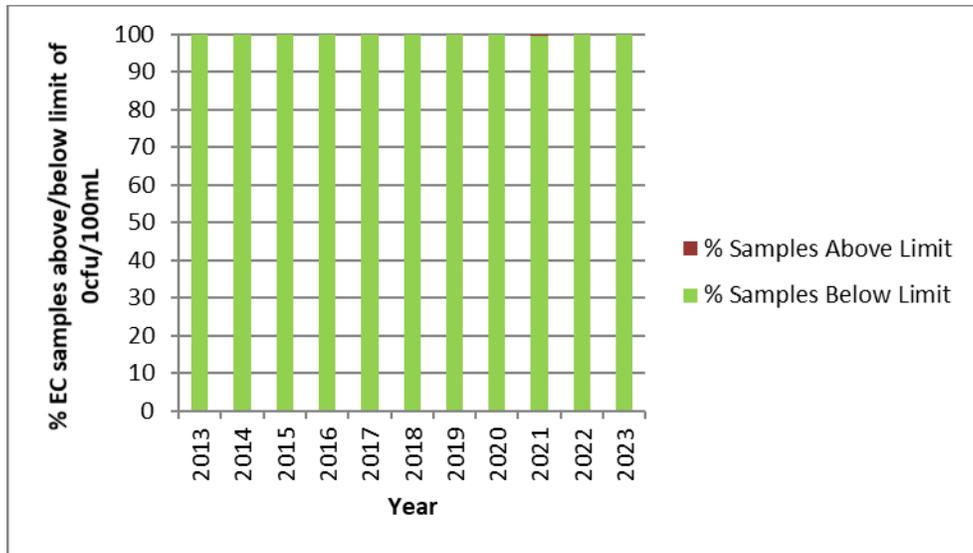
Year	# TC & EC Samples	E. coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)	# HPC Samples	Heterotrophic Plate Count Range (cfu/mL)
2011	154	0 – 0	0 – 1*	56	<10 - 250
2012	163	0 – 0	0 – 0	61	<10 - 50
2013	167	0 – 0	0 – 0	61	<10 - >2000
2014	166	0 – 0	0 – 0	62	<10 - 1970
2015	170	0 – 0	0 – 0	66	0 - 30
2016	174	0 – 0	0 – 0	71	<10 - >2000
2017	156	0 – 0	0 – 0	52	<10 - 170
2018	156	0 – 0	0 – 0	52	<10 - 560
2019	154	0 – 0	0 – 0	57	<10 - 170
2020	156	0 – 0	0 – 0	52	0 - 10
2021	159	0 – NDOG	0 – NDOG**	52	0 - 80
2022	160	0 – 0	0 – 0	52	<10 - <220
2023	163	0 - 0	0 – 8***	50	<10 - <10

*there were two AWQI's in 2011. First was August 4, 2011 at the Tower, resamples were taken with no further issues. The second occurred on September 14, 2011, resamples were taken with no further issues. Both AWQI's were reported as required to the MECP and MOH.

**As mentioned above, there was one sample collected in 2021 that exceeded the MAC for E.coli with a result of NDOGN.

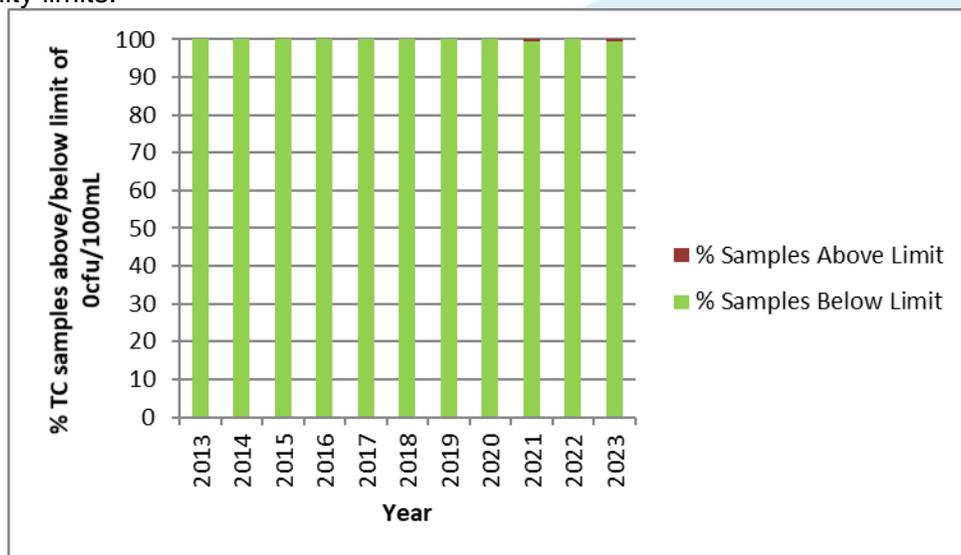
***There was an AWQI reported by SGS for a TC of 8cfu/100mL. Samples were collected upstream, downstream and at the source as required. All re-samples were satisfactory.

Chart 5. E. coli results from 2013 to 2023 as a percentage of samples below drinking water quality limits.



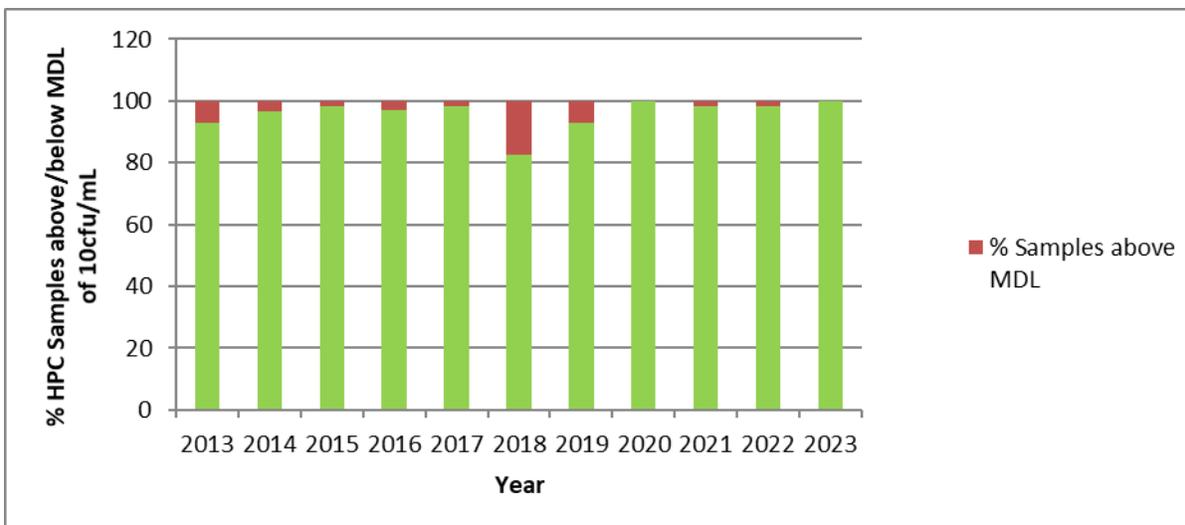
There were two AWQI's in 2011 for Total Coliform which were reported to the MECP and MOH, one in 2021 related to a result of NDOGN, and one in 2023 that was reported to MECP. Refer to Chart 6.

Chart 6. Total coliform results from 2013 to 2023 as a percentage of samples below drinking water quality limits.



HPC results fluctuate, however, the majority of results show no issues (less than Method Detection Limit (MDL)), refer to chart 7 below. There is only a concern with high HPC results if they stay consistently high as this could indicate biofilm formation in the water mains. There were elevated results in 2018, upon further investigation the results are coming from the Lakeview Re-chlorination facility. A new sampling location was constructed in 2019 and results have returned to normal.

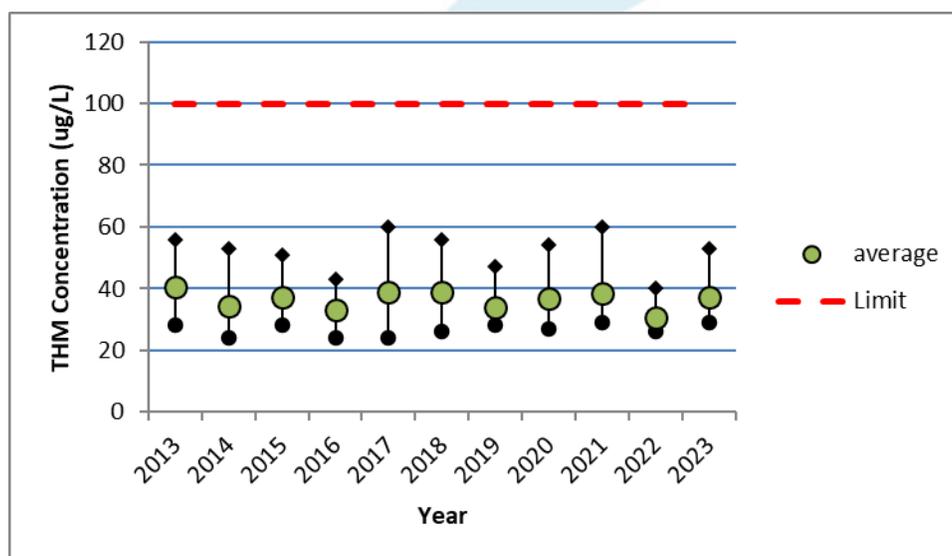
Chart 7. HPC results from 2013 to 2023 depicted as % below method detection limit (MDL) and % above MDL.



Trihalomethanes

The distribution system is sampled for Total Trihalomethanes (THMs) on a quarterly basis, as per O. Reg. 170/03. The Ontario Drinking Water Quality Standard for THMs is 100µg/L. The range of THM results for the Port Burwell Area Secondary Water Supply System in 2023 was 29 to 53µg/L compared to 2022 the range was 26 to 40µg/L. Refer to the chart 8 for the THM results compared for the last ten years. Overall, the running average of 37.25µg/L in 2023 has increased by 19.5% compared to 2022 (30.75µg/L).

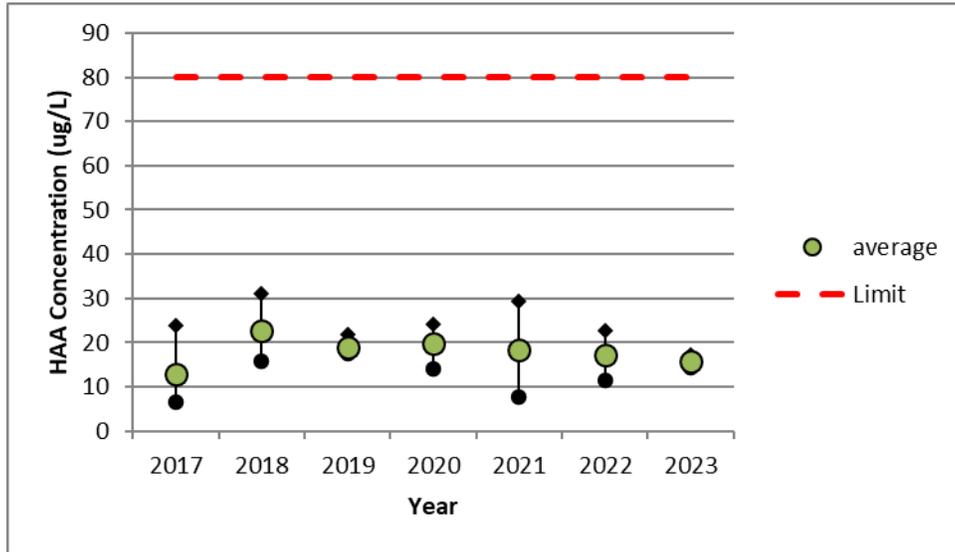
Chart 8. THM results for 2013-2023 compared against the drinking water quality limit.



Haloacetic Acids

The distribution system is sampled for Total Haloacetic Acids (HAAs) on a quarterly basis, as per O. Reg. 170/03. The Ontario Drinking Water Quality Standard for HAAs is 80µg/L. The range of HAA results for the Port Burwell Area Secondary Water Supply System in 2023 was 14.4 to 17.1µg/L compared to 11.5 to 22.6µg/L in 2022. Overall, the running average of 15.9µg/L in 2023 and has decrease by 7.4% compared to 2022 (17.2µg/L).

Chart 9. HAA results for 2017-2023 compared against the drinking water quality limit.



Discussion

Overall the Port Burwell Secondary Supply System provides quality water meeting all regulatory requirements.

Revision History

Date	Revision #	Reason for Revision	Revision By
2024-01-17	0	Create Report	Matthew Belding



Aylmer Area Secondary Water Supply System

REPORT NO.: AASWSS-24-02

DATE: March 6, 2024

ATTACHMENT: Drinking Water Quality Trends Report 2023, EMPS and Distributions System Management Review Minutes (2)

SUBJECT: **AASWSS: DWQMS ELEMENT 20: 2023 DRINKING WATER QUALITY TRENDS REPORT**

Recommendation:

THAT Report No. AASWSS-24-02 entitled “Aylmer Area Secondary Water Supply System: DWQMS Element 20: 2023 Drinking Water Quality Trends Report” be received.

Background:

On an annual basis, the Operating Authority, being the Ontario Clean Water Agency (OCWA), is required to submit to the owner, a drinking water quality trends report for the Aylmer Area Secondary Water Supply System (AASWSS). This report is subsequently reviewed with the owner which is a requirement of Element 20: Management Review of the DWQMS Operational Plan.

Comments/Analysis:

On January 19th, 2024, the Ontario Clean Water Agency (OCWA) provided the drinking water quality trends report to the Staff of the Township of Malahide.

The attached report as provided by OCWA is a detailed summary of drinking water quality parameters that are monitored by the operators which include chlorine residuals, microbiological testing, and trihalomethanes. Haloacetic acids (HAAs) have also been included in sampling as a new requirement which began in 2017. The attached report charts the minimum and maximum for these parameters over the last 10 years against the operational guidelines and adverse water quality limits set by O. Reg. 170/03.

On August 3rd, 2023, Township Staff met with OCWA to conduct the annual Management Review meeting for the Transmission main. Additionally, the EMPS Management review was conducted separately by the OCWA hub responsible for the EMPS facility on December 19th, 2023. The meeting minutes from both of the Management Reviews that

were conducted are also attached to this report for the Board's information. The purpose of the review is to evaluate the continuing suitability, adequacy and effectiveness of OCWA's Quality & Environmental Management System (QEMS).

Summary:

The information provided to the Staff by OCWA is used to make certain that the Staff and Owners are aware of drinking water quality trends of the AASWSS. The report also helps the Owners make decisions in an effort to provide a continual safe supply of potable water for the residents connected to the AASWSS.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer

Management Review Minutes
Issued: January 2 2024

Drinking Water System Name: Elgin Middlesex Pumping Station (EMPS) – St. Thomas, Aylmer and City of London	Address: 490 South Edgeware Rd. St Thomas, ON
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Meeting Information			
Subject/Title:	DWQMS Management Review Minutes		
Date/Time:	December 19 2023 11:00 am	Location:	St. Thomas City Hall

Meeting Participants	
Attendees:	Matt Bender, Greg Henderson, Allison McCann, Courtney Miller, Simon Flanagan, Jason Godby, Sam Gustavson John Simon and Shane Reitsma
Regrets:	Karel Kamerman, Chris Andrew
Distribution:	All noted above.
Notes Taken By:	Allison McCann

Meeting Minutes				
Item No.	Discussion Points/ Issues Raised/ Decisions Made	Corrective Action Items	Responsible	Due Date

1. Introductions

The following people were in attendance, for the Elgin Middlesex Pumping Station (EMPS) London, Aylmer & St Thomas Portions during the DWQMS Management Review:

- Greg Henderson, Sr. Operations Manager, Facility Level Top Management (OCWA)
- Allison McCann, Safety, Process & Compliance Manager, QMS Rep (OCWA)
- Courtney Miller, Regional Hub Business Manager (OCWA)
- Matt Bender, Regional Hub Manager (OCWA)
- London: John Simon
- Aylmer: Sam Gustavson
- St. Thomas: Shane Reitsma

The purpose and objectives of the Management Review meeting were reviewed as follows: To evaluate the continuing suitability, adequacy, and effectiveness of OCWA's QMS.

2. Review of minutes from most recent Management Review.

The minutes from the most recent Management Review were reviewed by all and all standing items were reviewed. Corrective action items were assigned and closed out.

Minutes were sent out via email on December 7th 2023

[a]	Incidents of regulatory non-compliance: 2022-2023 MECP Inspections 1. EMPS Aylmer = 100% 4.Elgin = 2. EMPS St. Thomas = 97.01% 92.31% 3. EMPS London = 100%	Annual and Compliance Reports submitted to the owner 2 weeks before deadlines.	Allison McCann	Completed
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Meeting Minutes				
Item No.	Discussion Points/ Issues Raised/ Decisions Made	Corrective Action Items	Responsible	Due Date
[b]	<p>Incidents of adverse drinking water tests: There were no incidents of adverse drinking water tests.</p> <p>No AWQI at the EMPS No AWQI at the EAPWSS</p>	None	NA	NA
[c]	<p>Deviations from critical control limits and response actions:</p> <p>Secondary Chlorination (Rechlorination) Free Chlorine Residual – Minimum 0.50 mg/L Maximum 2.5 mg/L</p> <p>Set points are requested within these defined limits at the owner's request. In 2023 (YTD) any exceedances of critical control limits (CCP) was document on the monthly water quality reports.</p>	Monthly water quality reports are included in the monthly O&M report.	Greg Henderson	Ongoing – monthly basis
[d]	<p>Effectiveness of the risk assessment process: Review and updated the Summary of Risk Assessment Outcomes</p>	Completed annual risk assessment on November 15 2023	Allison McCann	Completed

[e]	<p>Internal and third-party audit results: Reviewed the 2023 OCWA-Internal Audit report.</p> <p>Internal Audit was completed August 1-2 2023</p> <p>NC's = 0 OFI's = 3</p> <p>Emergency training & testing (EI. 18): Consider scheduling a formal Debrief of the ice storm events that occurred in spring 2023 with all staff (re: running EMPS on back-up diesel generator power for days).</p> <p>Instrument verifications (EI. 17): Check the DPD's in cases for expiry dates along with the colorimeter verification activities.</p> <p>Document control (EI. 5): Noted the EMPS Generator Monthly Test Record didn't have document control (e.g. revision date and/or version number).</p> <p>Third-party audit results: External DWQMS Reaccreditation Audit results were emailed to the owners on November 28 2023</p> <p>NC's = 1 OFI's = 3</p> <p>Minor NC - There is no evidence the review of infrastructure considers the outcomes of the risk assessment. (OFI repeat from the Nov-2022 ReAccreditation Audit)</p> <p>Element 6 Drinking Water System – Consider clarifying the frequency of Raw Water Characteristics update (last completed 2020).</p> <p>Element 7 Risk Assessment – There is an opportunity to clarify when the 36-month risk assessment was completed. 30-Dec-2022 Management Review Minutes states it took place 3-Aug-2022 whereas OP-08A Table 3 identifies 31-Aug-2021.</p> <p>Element 21 Continual Improvement – There is an opportunity to ensure EMPS CAF Tracking actions: i) are all included (e.g., Nov-2022 REACC External Audit Elements 12 and 13 OFIs). ii) deadlines are addressed (e.g., Nov-2022 REACC Audit Element 13 OFI due 31-Oct-2023). ii) Completion is clear (e.g., Nov-2022 REACC External Audit and 2023 Internal Audit Element 5 OFIs are identified as NA and Management Review determined to leave as is but also includes a complete 'Comment').</p>	<p>Completed review of storm event</p> <p>Discard expired DPD packets</p> <p>Added controlled header to EMPS Generator run sheet</p> <p>Reviewed Major Maintenance Recommendation Spreadsheet and risk assessment column.</p> <p>OCWA to complete annual raw water characteristics review similar to Primary</p> <p>OCWA unable to find, reviewed and ensured 36 month risk assessment was completed</p> <p>OCWA to review CAF action item spreadsheet</p>	<p>Greg Henderson</p> <p>Glenn McEown</p> <p>Allison McCann</p> <p>Greg Henderson</p> <p>Allison McCann</p> <p>Allison McCann</p>	<p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p> <p>Completed</p>
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Meeting Minutes				
Item No.	Discussion Points/ Issues Raised/ Decisions Made	Corrective Action Items	Responsible	Due Date
[f]	Results of emergency response testing: EMC-3 Power Failure & EMC-4 Spill Reporting Requirements	On the job, training records completed. Contingency Plan Review/Test Summary Form completed. No OFI's	Allison McCann	Completed
[g]	<p>Operational performance: The operation of the facility meets all regulatory and contractual requirements.</p> <p>Water quality review completed every 24 hours by duty operator.</p> <p>Monthly O&M Reports send to client.</p> <ol style="list-style-type: none"> 1. Chlorine residuals 2. Flows 3. Microbiological tests 4. THM's and HAA's (quarterly) 5. Work order Summary 	None	NA	NA
[h]	<p>Raw water supply and drinking water quality trends</p> <ol style="list-style-type: none"> 1. Annual Harmful Algal Bloom (HAB) sampling for Microcystin (ELISA) at the Elgin WTP from June - October. 2. Monitor the Lake Erie Harmful Algal Bloom Bulletin – NOAA 3. Sharing info with neighboring systems – Chatham-Kent, West Elgin 4. Storm sampling at the EAPWSS 5. 4 Geosmin hit this summer. Increased PAC 6. Brief Iron & Manganese event in Sep & Taste/odor event in Nov 	None	NA	NA
[i]	Follow-up on action items from previous Management Reviews: CAF status = 99% completion. See CAF tracking spreadsheet.	None	NA	NA
[j]	<p>Status of management action items identified between reviews: None. No new action items identified</p>	None	NA	NA

Meeting Minutes				
Item No.	Discussion Points/ Issues Raised/ Decisions Made	Corrective Action Items	Responsible	Due Date
[k]	<p>Changes that could affect the QEMS:</p> <p>New Staff:</p> <p>Courtney Miller - Regional Hub Business Manager</p> <p>Joe Daly - CMMS Specialist</p> <p>Matt Colbridge - Operator/Mechanic</p> <p>Troy Deziel - Operator/Mechanic</p> <p>Cody Blay - Electrical/UPIT Apprentice</p> <p>OCWA moved to Office 365 using Share Point application for document storage</p>	None	NA	NA
[l]	<p>Consumer feedback: Taste & Odor Event late November</p>	None	NA	NA
[m]	<p>Resources needed to maintain the QEMS:</p> <p>The resources needed to maintain the QMS are adequate with management and staff supporting the program.</p>	None	NA	NA
[n]	<p>Results of the infrastructure review:</p> <ol style="list-style-type: none"> 1. Monthly O&M reports – maintenance summary 2. Capital plans have been submitted to client and reviewed in October 2023 3. Quarterly Meetings – Capital update status 	None	NA	NA
[o]	<p>Operational Plan currency, content and updates:</p> <p>The Operation Plans have been updated and conform to the revised DWQMS V2.0 standard.</p> <p>There will be some procedures & forms that were updated based on audit OFI's.</p>	None	NA	NA
[p]	<p>Staff suggestions:</p> <p>None this past year</p>	None	NA	NA

Meeting Minutes				
Item No.	Discussion Points/ Issues Raised/ Decisions Made	Corrective Action Items	Responsible	Due Date
[9]	Considerations of applicable best management practices Reviewed: Corporate Compliance emails & MECP website	None	NA	NA
	All 3 systems DWQMS policies re-endorsed in 2023			

Next Meeting Date:	December 2024
Location:	St. Thomas – City Hall
Senior Operations Manager Acknowledgement	Greg Henderson

Other Business Notes

4. Roundtable/Other: N/A

	AASWSS Drinking Water Quality Trends Report 2023	Issued: 2024-01-17 Rev.#: 0 Pages: 1 of 5
Reviewed by: SPC Manager	Approved by: Senior Operations Manager	

Overview

As part of the DWQMS Element 20: Management Review it is required to review the drinking water quality trends for the facility. This report details the drinking water quality parameters that are monitored for the Aylmer Area Secondary Water Supply System (AASWSS). These parameters are:

- Distribution Free Chlorine Residuals
- Distribution Water E.coli, Total Coliform and Heterotrophic Plate Count
- Distribution Water Trihalomethanes
- Distribution Water Haloacetic Acids

Free Chlorine

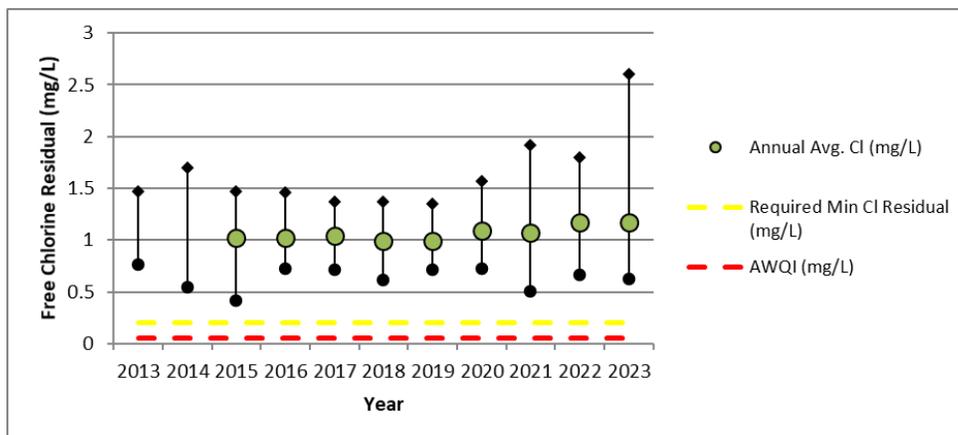
Each week seven residuals are taken on the system according to the regulations. The annual minimum and maximum chlorine residuals for the last ten years were:

Year	Minimum Free Chlorine Residual (mg/L)	Maximum Free Chlorine Residual (mg/L)
2013	0.76	1.47
2014	0.55	1.70
2015	0.42	1.47
2016	0.72	1.46
2017	0.71	1.37
2018	0.62	1.37
2019	0.71	1.35
2020	0.72	1.57
2021	0.51	1.92
2022	0.66	1.80
2023	0.63	2.60
Operational Guideline	0.20	4.00
AWQI Limit	0.05	n/a

The chart below depicts the minimum and maximum free chlorine residuals taken as grab samples in the Aylmer Area Secondary Water Supply System, comparing the last ten years (2013-2023) against the operational guideline and adverse water quality limits set by O. Reg. 170/03. The required minimum is 0.20mg/L, which is a guideline from the MECP for the drinking water system to achieve in all parts of the distribution system. If a residual is found below this requirement, action is required to increase this residual. The usual means of increasing the residual is by flushing in the area. An Adverse Drinking Water Quality Indicator (AWQI) occurs when the free chlorine residual taken as a grab sample is below 0.05mg/L, this residual is to be reported the MECP Spills Action Centre (SAC) and the local Medical Officer of Health. Immediate action is required to bring the residual above 0.2mg/L in the affected area and take any further action as directed by the Medical Officer of Health.

In 2023, the average free chlorine residual taken as a grab sample in the distribution system was 1.17mg/L. This is the same as the 2021 average for free chlorine residual. Refer to Chart 1.

Chart 1. Minimum and maximum free chlorine residuals throughout distribution system compared against the required minimum and the AWQI limit. Note: average chlorine residual data collection began in 2015.



Microbiological Samples

The distribution water in the Aylmer Area Secondary Water Supply System is sampled weekly for E.coli, Total Coliform and Heterotrophic Plate Count (HPC), following O.Reg.170/03. Each week three samples are tested for E. coli and Total Coliform and one sample is tested for HPC. The Ontario Drinking Water Quality Standard for E.coli and Total Coliform is not detectable for both. Heterotrophic Plate Count is used as an operational tool to determine if there is an issue.

There were two samples that had detectable Total coliform in 2021. On June 23rd, 2021 SGS Laboratories reported an AWQI of 4 cfu/100mL of Total coliform from Sample Station 86. On August 11th, 2021 SGS Laboratories reported a second AWQI of 1 cfu/100mL of Total coliform from Sample Station 80. Re-samples were collected upstream, downstream and at the source as required. All re-sample results were satisfactory.

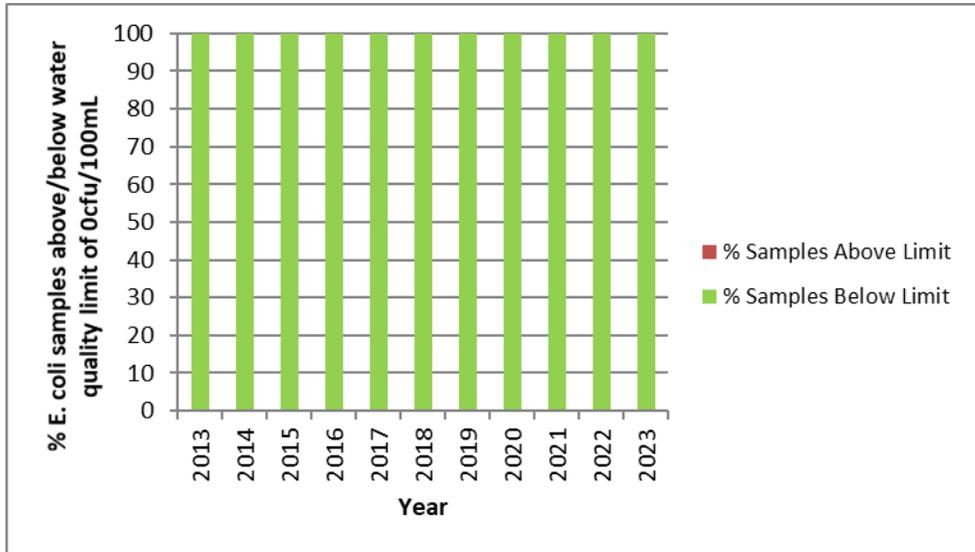
In 2023, the range of HPC was <10 to <60cfu/mL. The table below shows the sample results compared for the last ten years (2013-2023).

Year	# TC & EC Samples	E. coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)	# HPC Samples	Heterotrophic Plate Count Range (cfu/mL)
2013	156	0 – 0	0 – 0	52	<10 - 10
2014	156	0 – 0	0 – 0	52	<10 - >2000
2015	162	0 – 0	0 – 0	58	0 - 10
2016	156	0 – 0	0 – 0	52	<10 – 20
2017	156	0 – 0	0 – 0	52	<10 – 110
2018	156	0 – 0	0 – 0	52	<10 – 30
2019	161	0 – 0	0 – 0	55	<10 – 20
2020	156	0 – 0	0 – 0	57	0 – 80
2021	164	0 – 0	0 – 4*	54	0 – 20
2022	157	0 – 0	0 – 0	52	<10 - <10
2023	160	0 – 0	0 – 0	56	<10 - <60

*There were two AWQIs report in 2021. The first was reported on June 23rd, 2021 and the second on August 11th, 2021.

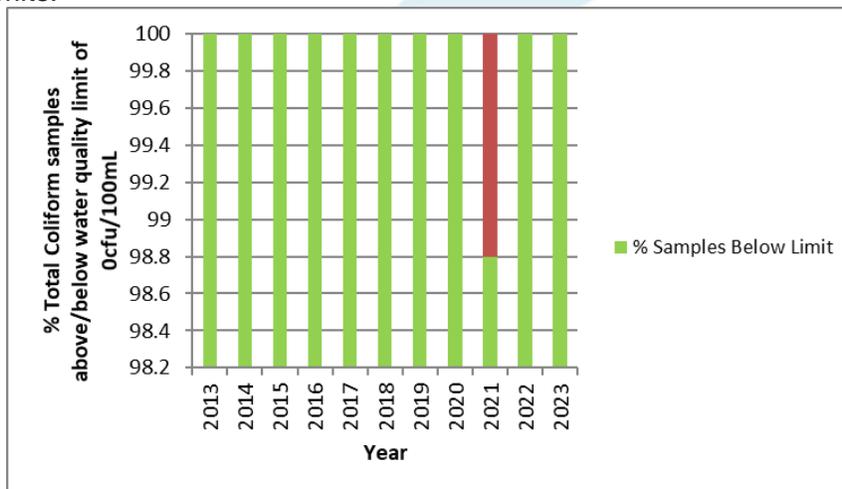
There have been no issues with E. coli in the last ten years, refer to Chart 2.

Chart 2. E. coli results from 2013 to 2023 as a percentage of samples below drinking water quality Limits.



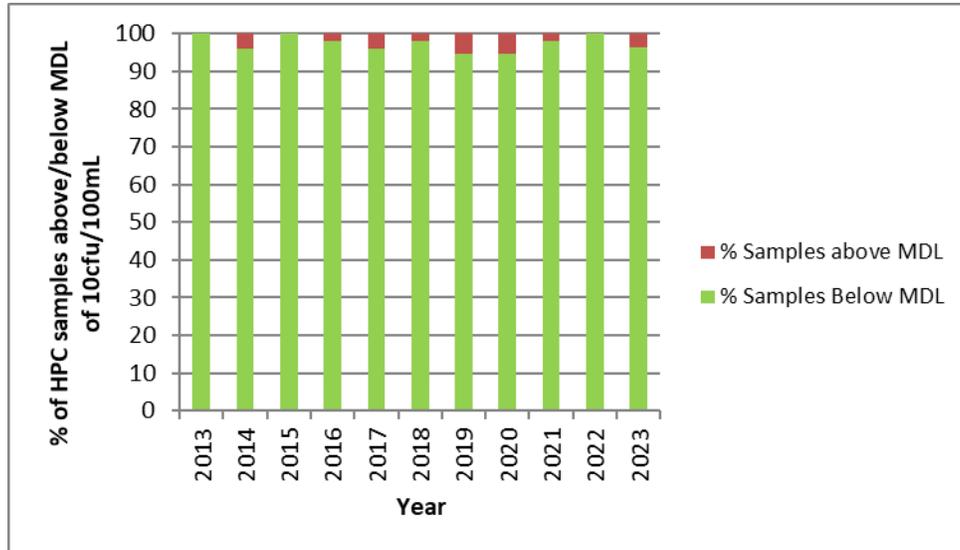
There were two issues with total coliform in 2021 but no other issues in the last ten years, refer to Chart 3.

Chart 3. Total coliform results from 2013 to 2023 as a percentage of samples below drinking water quality limits.



HPC results fluctuate, however, the majority of results show no issues (less than Method Detection Limit (MDL)), refer to chart 4 below. There is only a concern with high HPC results if they stay consistently high as this could indicate biofilm formation in the watermain.

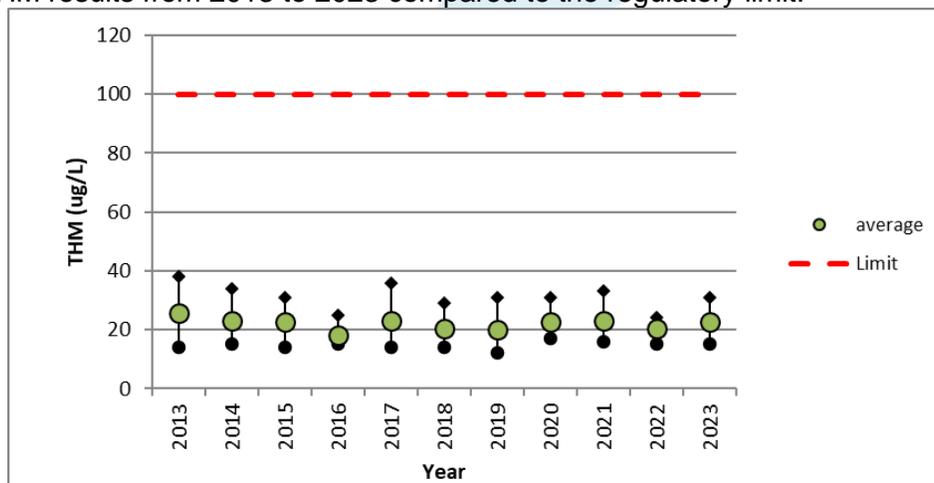
Chart 4. HPC results from 2013 to 2023 depicted as % below method detection limit (MDL) and % above MDL.



Trihalomethanes

The distribution system is sampled for Total Trihalomethanes (THMs) on a quarterly basis, as per O. Reg. 170/03. The Ontario Drinking Water Quality Standard for THM is $100\mu\text{g/L}$. The range of THM results for the AASWSS in 2023 was 15 to $31\mu\text{g/L}$. Refer to the chart 5 for the THM results for the last ten years; the running average of $22.50\mu\text{g/L}$ has increased 11.1% compared to 2022.

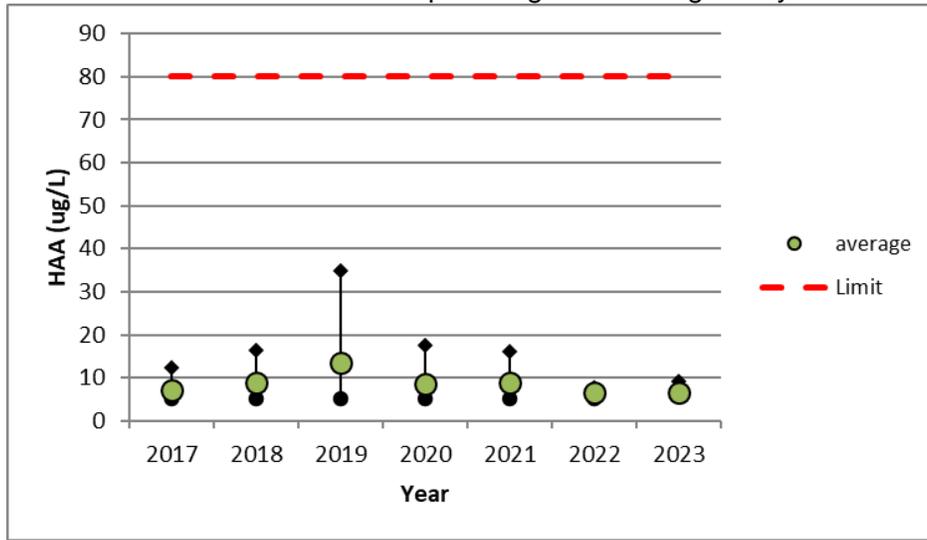
Chart 5. THM results from 2013 to 2023 compared to the regulatory limit.



Haloacetic Acids

The distribution system is sampled for Total Haloacetic Acids (HAAs) on a quarterly basis, as per O. Reg. 170/03. The Ontario Drinking Water Quality Standard for HAAs is $80\mu\text{g/L}$. The range of HAA results for the Aylmer Area Secondary Water Supply System in 2023 was 5.3 to $9.2\mu\text{g/L}$. Refer to chart 6 for the HAA results for the last six years (monitoring requirements came into effect in 2017). The running average of $6.5\mu\text{g/L}$ for 2023 has stayed the same since 2022.

Chart 6. HAA results for the 2017-2023 compared against the regulatory limit.



Discussion

Overall the Aylmer Area Secondary Water Supply System provided quality water meeting all regulatory requirements.

Revision History

Date	Revision #	Reason for Revision	Revision By
2024-01-17	0	Create Report for 2023	Matthew Belding

Drinking Water System Name: Aylmer Area Secondary Water Supply System	Owner and Location: Aylmer Area Secondary Water Supply System Joint Board of Management, Administered by the Township of Malahide
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Review Period: July 20th, 2022 to August 2nd, 2023

Meeting Information/Introduction

Date/Time: August 3 rd , 2023 12:30	Location: Township of Malahide - 87 John Street South, Aylmer
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Attendees: Top Management: Maegan Garber, SPC Manager, Mark Harris, Senior Operations Manager, Vitaliy Talashok, Capital Manager
Owner Representative: Sam Gustavson, WWOM
QEMS Representative: Matt Belding
Operator(s) for the DWS(s): n/a
Other: n/a

Regrets: Jason Godby, Director

Distribution: Dale LeBritton, Sam Gustavson, Mark Harris, Vitaliy Talashok & Maegan Garber

Minutes Taken By: Maegan Garber

Introduction:

The purpose and objectives of the Management Review was reviewed as follows:

Purpose:

To evaluate the continuing suitability, adequacy and effectiveness of OCWA's QEMS.

Objectives:

The Management Review participants will review/discuss the standing agenda items and the data presented, identify deficiencies, make recommendations and/or initiate action plans to address identified deficiencies as appropriate.

The Management Review includes a review of the DWQMS operational plan, SAI audit report(s), OCWA internal audit report(s) and other related operational documents/records as detailed in the meeting minutes. The information reviewed during the Management Review was provided/made available to attendees through email correspondence.

This meeting covers *all* standing agenda items for the DWSs noted above. Details of the discussion, any deficiencies identified, decisions made and applicable action items related to each standing agenda item are described under the appropriate item number within the following table.

The minutes from the previous Management Review held on *July 21st, 2022* were also reviewed. Any follow up on actions and/or additional actions required are detailed under item i.

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
1 [a]	Incidents of regulatory non-compliance: An announced MECP Inspection was conducted on September 21 st , 2022 by Angela Stroyberg. There were no incidents of regulatory non-compliance and no best management practices identified. The system received a 100% inspection rating.	N/A	N/A	N/A
[b]	Incidents of adverse drinking water tests: There were no AWQI to report in the review period.	N/A	N/A	N/A
[c]	Deviations from Critical Control Point limits and response actions: No CCPs identified for the system.	N/A	N/A	N/A
[d]	Effectiveness of the risk assessment process: As per OP-08A, the 36 month risk assessment was conducted on February 3 rd , 2022 as required. The	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	<p>annual review will be completed as part of the management review.</p> <p>Cyber security is required to be considered as part of the Annual Review and the Table updated to include it as a threat.</p>			
[e]	<p>Internal and third-party Audit results:</p> <p>An external systems audit was conducted by Sandra Tavares on September 21st, 2022. There were no non-conformances identified and 2 opportunities for improvement.</p> <p>An internal audit was conducted on July 24th, 2023 by Matt Belding. There were no non-conformances identified and 4 opportunities for improvement.</p> <p>The OFIs can be found on the Summary Table of Action Items.</p>	See Summary Table of Action Items (#93-96).	See Summary Table of Action Items #93-96	See Summary Table of Action Items #93-96
[f]	<p>Results of emergency response testing:</p> <p>On December 7th, 2022 the contingency plan CP-1, CP-2, and CP-5 were reviewed and CP-5 Unsafe Water was tested. The operators reviewed the response to an AWQI with a boil water advisory at the WTP. There were no action items from the test.</p>	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	The QEMS Representative maintains a tracking sheet to ensure the frequency of the CP reviews and tests is maintained.			
[g]	Operational performance: The AASWSS performed well over the past year.	N/A	N/A	N/A
[h]	Raw water supply and drinking water quality trends: The 2022 Drinking Water Quality Trends report was reviewed. There were no AWQIs reported in 2022. 2022 Annual report for the EAPWSS was reviewed. There were two notable events discussed. <ol style="list-style-type: none"> 1. People other than certified operators made adjustments to the treatment system. 2. The had not provided security measures to protect components of the drinking water system. 	N/A	N/A	N/A
[i]	Follow-up on action items from previous Management Reviews: The last Management Review was conducted on July 21 st , 2022. A review of the Summary Table of Action Items did outline action items that were ongoing. These items have been reviewed and an update provided where required.	Update the Summary Table of Action Items spreadsheet to the template issued by Corporate Compliance.	QEMS Representative	2023-09-01
[j]	Status of management action items identified between reviews:	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	Action items identified between reviews were a result of internal and external audit results.			
[k]	Changes that could affect the QEMS: There have been several new staff hired during the review period. The QEMS Representative is actively initiating DWQMS training at staff meetings and providing corporately lead training opportunities to staff as well.	N/A	N/A	N/A
[l]	Consumer feedback: Nothing received during the review period.	N/A	N/A	N/A
[m]	Resources needed to maintain the QEMS: There are sufficient resources to maintain the QEMS.	N/A	N/A	N/A
[n]	Results of the infrastructure review: 2022 Capital: <ul style="list-style-type: none"> - - Chamber 13 and 16 PLC micrologix controller replacement (waiting on parts) - - Air Valve Refurbishment Program (completed) - -Sample station maintenance/ repairs/ rebuild (as required) - -Hydrant maintenance and repairs (as required, cap gaskets ordered to be replaced during flushing) 	N/A	N/A	N/A

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	<p><u>2023 Capital:</u></p> <ul style="list-style-type: none"> - Chamber 13 UPS replacement (deferred to 2024) - Chamber 16 UPS replacement (deferred to 2024) - Hydrant and SS Maintenance (as required) - Leak Detection (water loss calculations have been completed, not completed as results were below 10%) - Chamber condition assessment and asset ID review (annual inspections completed by operations) 			
[o]	<p>Operational Plan currency, content and updates: The Operational Plan will be revised with the action items identified in the Summary Table of Action Items.</p> <p>A statement has been added to the Municipalities website to indicate how the Operational Plan can be accessed by the public.</p> <p>The Operational Plan was endorsed in January, 2023 to represent changes to OCWA's Top Management and the Owners Top Management.</p>			

Meeting Minutes				
Item #	Documentation Reviewed/Discussion Points/Issues Raised/Action Taken to Date /Decisions Made	Actions Identified during Management Review	Responsibility/ Assigned To	Target Date
	MDWL Issue 4 was issued on May 7 th , 2021. The DWWP Issue 3 was also issued on May 7 th , 2021.			
[p]	Staff suggestions: None	N/A	N/A	N/A
[q]	Review/consideration of any applicable Best Management Practices (BMPs): There were no best practice recommendations in the last MECP inspection report. Nor has the MECP or OCWA issued any BMPs. Should any BMPs be identified in the 2023 MECP Inspection report, they will be considered.	N/A	N/A	N/A
2.	Roundtable/Other: No further discussion.	N/A	N/A	N/A

Details of next Management Review meeting:

Next Meeting:

The next Management Review meeting will occur in 2024, unless it is warranted to do so earlier.



Port Burwell Area Secondary Water Supply System

REPORT NO.: PBASWSS-24-03
DATE: March 6, 2024
ATTACHMENT: 2023 MECP Inspection Report, 2023 MECP Inspection Summary Rating Record
SUBJECT: **SUMMARY OF PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM INSPECTION- 2023 MECP FINAL INSPECTION REPORT**

Recommendation:

THAT Report No. PBASWSS-24-03 entitled “Port Burwell Area Secondary Water Supply System Inspection- 2023 MECP Final Inspection Report” be received.

Background:

On October 25, 2023, the Ministry of Environment, Conservation and Parks (MECP) conducted the required annual inspection of the Port Burwell Area Secondary Water Supply System. The primary focus of this inspection is to confirm compliance with applicable legislation, as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period.

The inspection process conducted by the Provincial Officer Karen Machado consisted of a variety of elements, including but not limited to:

- Physical inspection of the Port Burwell Area Secondary Water Supply System on September 14, 2023.
- Document and records review of Port Burwell Area Secondary Water Supply System Joint Board of Management, Drinking Water Works Permit (DWWP), and Municipal Drinking Water License (MDWL).
- Review of operational documents maintained by the owner/operating authority for the period of July 1, 2022, through June 30, 2023, for the Port Burwell Area Secondary Water Supply System.

- Operational documents/ logbooks and Microbiological and chemical sample test results
- Online Continuous Monitoring Data
- Compliance and operating practices in relation to O. Reg. 170/03, Water Quality Standard O. Reg. 169/03, Safe Drinking Water Act 2002, Ontario Water Resources Act 1990, O. Reg. 128/04 regarding certification of System Operators and Water Quality Analysts.

Comments/Analysis:

The MECP has a rigorous scoring system for municipal water systems in Ontario. The scoring is based on a risk rating methodology. The primary goal of the scoring system is to encourage municipalities across Ontario to improve their systems and to establish a way to measure their improvements based on previous inspection scoring. An average inspection rating would not necessarily indicate the municipality is operating an unsafe drinking water system. However, it identifies that a municipality has room for improvement of the system.

For this inspection period, the Port Burwell Area Secondary Water Supply System received a mark of 100%. There were no non-compliances with regulatory requirements identified during this inspection period. This inspection report was positive. As such, the Board (as the “Owner”) and the Operating Authority (OCWA) will continue to strive toward continual improvements on how the water system is operated and maintained.

Financial Implications to Budget

N/A

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/ Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer

Ministry of the Environment,
Conservation and Parks

Drinking Water and Environmental
Compliance Division
Southwest Region
733 Exeter Road
London, ON N6E 1L3
Tel (519) 873-5000

Ministère de l'Environnement, de la Protection
de la nature et des Parcs

Division de la conformité en matière d'eau potable et
d'environnement
Région Sud-Ouest
733, rue Exeter
London, ON N6E 1L3
Tel (519) 873-5000



November 28, 2023

The Corporation of the Township of Malahide
87 John Street South
Aylmer, Ontario N5H 2C3

Attention: Nathan Dias, Chief Administrative Officer

Re: Ontario Regulation 170/03 Drinking Water Inspection Report
Port Burwell Area Secondary Water Supply System (Water Works #260004735)
Inspection conducted on September 14, 2023

The enclosed Drinking Water Inspection Report outlines non-compliance, if any, with Ministry legislation, and policies for the above noted water system. Violations noted in this report, if any, have been evaluated based on community risk. These violations will be monitored for compliance with the minimum standards for drinking water in Ontario as set forth under the *Safe Drinking Water Act* and associated regulations. Where risk is deemed to be high and/or compliance is an ongoing concern, violations will be forwarded to this Ministry's Investigation and Enforcement Branch.

Section 19 of the *Safe Drinking Water Act* (Standard of Care) creates several obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in "*Taking Care of Your Drinking Water: A guide for members of municipal council*" found under "Resources" on the Drinking Water Ontario website at www.ontario.ca/drinkingwater.

Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report.

If you have any questions regarding the report, please feel free to contact me at <mailto:karen.machado2@ontario.ca>.

Yours truly,

A handwritten signature in cursive script that reads "Karen Machado".

Karen Machado
Provincial Officer
London District Office

cc. Southwestern Public Health
London District File



PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM
,
INSPECTION REPORT

Entity: ONTARIO CLEAN WATER
AGENCY
PORT BURWELL AREA
SECONDARY WATER SUPPLY
SYSTEM JOINT BOARD OF
MANAGEMENT

Inspection Start Date: October 25, 2023
Inspection End Date: November 28, 2023
Inspected By: Karen Machado
Badge #: 1415



(signature)

NON-COMPLIANCE

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

RECOMMENDATIONS

This should not be construed as a confirmation of full conformance with all potential applicable BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

Ministry Program: DRINKING WATER | **Regulated Activity:** DW Municipal Residential

Question ID	DWMR1001000	Question Type	Information
Legislative Requirement(s): Not Applicable			
Question: What was the scope of this inspection?			
<p>Compliance Response(s)/Corrective Action(s)/Observation(s):</p> <p>The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.</p> <p>This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O. Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.</p> <p>This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.</p> <p>The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.</p> <p>This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O. Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.</p> <p>This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.</p> <p>A physical inspection was conducted of the Port Burwell Area Secondary Water Supply System,</p>			

Drinking Water System Works #260004735 on September 14, 2023.

Documents reviewed but were not limited to:

1. Ministry of the Environment Port Burwell Area Secondary Water Supply System Joint Board of Management, Drinking Water Works Permit (DWWP) Number 303-201, Issue Number 4.
2. Ministry of the Environment Port Burwell Area Secondary Water Supply System Joint Board of Management, Municipal Drinking Water Licence (MDWL) Number 303-101, Issue Number 3.
3. Ministry of Environment Drinking Water Inspection Report 1-105857710 dated, September 6, 2022, entitled Port Burwell Area Secondary Water Supply System Drinking Water System Inspection Report inspection date July 28, 2022.

This report also includes a review, and assessment of compliance and operating practices in relation to the following Acts and Regulations:

1. Safe Drinking Water Act, 2002
2. Ontario Regulation 170/03
3. Ontario Drinking-Water Quality Standards O. Reg. 169/03
4. Certification of Drinking-Water System Operators and Water Quality Analysts Regulation, O. Reg. 128/04.

Additional operational documents maintained by the owner/operating authority for the period from July 1, 2022, through June 30, 2023, were also reviewed in conjunction with the compliance evaluation.

The Port Burwell Area Secondary Water Supply System (PBASWSS) is owned by the Port Burwell Secondary Water Supply System Joint Board of Management which includes the Municipality of Bayham, Municipality of Central Elgin, and the Township of Malahide. The system is managed by the Township of Malahide, which act as the administering municipality on behalf of the Joint Board. OCWA is the Operating Authority for the water system.

Treated water is supplied via the transmission main to the Municipality of Central Elgin, The Township of Malahide and the Municipality of Bayham via the Elgin Area Primary Water Supply System.

Additional operational documents maintained by the owner/operating authority for the period from July 1, 2022, through June 30, 2023, were also reviewed in conjunction with the compliance evaluation.

The Port Burwell Area Secondary Water Supply System (PBASWSS) is owned by the Port Burwell Secondary Water Supply System Joint Board of Management which includes the Municipality of Bayham, Municipality of Central Elgin, and the Township of Malahide. The system is managed by the Township of Malahide, which act as the administering municipality on behalf of the Joint Board. OCWA is the Operating Authority for the water system.

Treated water is supplied via the transmission main to the Municipality of Central Elgin, The

Township of Malahide and the Municipality of Bayham via the Elgin Area Primary Water Supply System.

Question ID	DWMR1000000	Question Type	Information
Legislative Requirement(s): Not Applicable			
Question: Does this drinking water system provide primary disinfection?			
Compliance Response(s)/Corrective Action(s)/Observation(s): This drinking water system provides for only secondary disinfection and distribution of water. Primary disinfection is undertaken by another regulated drinking water system which provides treated water to this drinking water system.			
Primary disinfection is provided by the Elgin Area Primary Water Supply System that supplies water to the Port Burwell Distribution System. The Port Burwell system provides secondary disinfection and distribution of water only.			

Question ID	DWMR1018000	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.			
The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.			
During the onsite inspection, the equipment located at the Re- Chlorination Facilities were reviewed against the description in the DWWP, Number 303-201, Issue Number 4.			
The equipment at the Dexter Re-Chlorination Facility, Port Burwell Tower Re- chlorination Facility and the Lakeview Road Re-Chlorination Facility was observed to be comparatively consistent with the descriptions in the DWWP issued April 16, 2021.			

Question ID	DWMR1025000	Question Type	Legislative
<p>Legislative Requirement(s): SDWA 31 (1);</p>			
<p>Question: Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?</p>			
<p>Compliance Response(s)/Corrective Action(s)/Observation(s): All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.</p> <p>The Owner and Operating Authority indicated that they follow AWWA procedures for the disinfection of water system components.</p> <p>Drinking Water Works Permit # Number 303-201, Issue Number 4 Section 2.3 of Schedule B stipulates that all parts of the drinking water system in contact with drinking water which are added, modified, replaced, extended; or taken out of service for inspection, repair or other activities that may lead to contamination, shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:</p> <ul style="list-style-type: none"> a) Until April 18, 2021, the ministry's Watermain Disinfection Procedure, dated November 2015. As of April 19, 2021, the ministry's Watermain Disinfection Procedure, dated August 1, 2020; b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure; c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities; d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and e) AWWA C654 – Standard for Disinfection of Wells. 			

Question ID	DWMR1024000	Question Type	Legislative
<p>Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2);</p>			
<p>Question: Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required?</p>			
<p>Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed 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.</p>			

At the time of inspection, all equipment including online continuous analyzers; data loggers; duty and stand-by metering pumps were operational and connected to the system.
Documentation reviewed for the inspection period, indicate that the free chlorine residual for the distribution system was within acceptable limits.

Question ID	DWMR1033000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 7-2 (3); SDWA O. Reg. 170/03 7-2 (4);			
Question: Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The secondary disinfectant residual was measured as required for the large municipal residential distribution system.			
All distribution free chlorine residual measurements provided by the Owner/Operating Authority during the inspection review were appropriately documented including the time, date, free residual and the person who analyzed the sample.			
The operator typically sampled seven (7) times each week from multiple locations in the distribution system on a 4 and 3 rotation, with minimum 48 hours apart each week.			

Question ID	DWMR1035000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;			
Question: Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.			

Question ID	DWMR1038000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-5 (1)1-4;			
Question:			

Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?

Compliance Response(s)/Corrective Action(s)/Observation(s):

Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.

Question ID	DWMMR1037000	Question Type	Legislative
Legislative Requirement(s):			
SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10; SDWA O. Reg. 170/03 6-5 (1.1);			
Question:			
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?			
Compliance Response(s)/Corrective Action(s)/Observation(s):			
All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.			

Question ID	DWMMR1040000	Question Type	Legislative
Legislative Requirement(s):			
SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10;			
Question:			
Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?			
Compliance Response(s)/Corrective Action(s)/Observation(s):			
All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.			

Question ID	DWMMR1108000	Question Type	Legislative
Legislative Requirement(s):			
SDWA O. Reg. 170/03 6-5 (1)1-4; SDWA O. Reg. 170/03 6-5 (1)5-10; SDWA O. Reg. 170/03 6-5 (1.1);			
Question:			
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total			

chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):

Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.

Question ID	DWMR1099000	Question Type	Information
Legislative Requirement(s): Not Applicable			
Question: Do records show that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03)?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03).			

Question ID	DWMR1081000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 10-2 (1); SDWA O. Reg. 170/03 10-2 (2); SDWA O. Reg. 170/03 10-2 (3);			
Question: For LMR systems, are all microbiological water quality monitoring requirements for distribution samples being met?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met.			
All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met.			
A review of the statement of analytical results for the inspection period confirmed that a minimum of three (3) distribution samples were taken each week and analyzed for E. coli, total coliform and HPC.			
In accordance with O. Reg. 170/03, Schedule 10-2, and based on the population served of less			

than 1000 persons, the Owner/Operating Authority is required to take a minimum of eight (8) distribution system samples each month, ensuring that at least one sample is taken in each week of the month. Each of the distribution samples are to be analyzed for E. coli, total coliform and 25% of the samples must be analyzed for background colony counts based on a heterotrophic plate count (HPC).

Question ID	DWMR1096000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-3 (1);			
Question: Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.			

Question ID	DWMR1086000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 13-6.1 (1); SDWA O. Reg. 170/03 13-6.1 (2); SDWA O. Reg. 170/03 13-6.1 (3); SDWA O. Reg. 170/03 13-6.1 (4); SDWA O. Reg. 170/03 13-6.1 (5); SDWA O. Reg. 170/03 13-6.1 (6);			
Question: Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.			
<p>In accordance with Section 5(1) of O.Reg. 170/03, on July 2017 the owner of a drinking water system that obtains all of its water from a large municipal residential system must sample in accordance with Section 13-6.1 (1). This section requires the owner of a drinking water system that provided chlorination or chloramination and the operating authority for the system to ensure that at least one distribution sample is taken in each quarter, from a point in the distribution system that is likely to have an elevated potential for the formation of haloacetic acids.</p> <p>A review of the records provided for the inspection period indicate that samples were collected on April 3, 2023, January 3, 2023, October 3, 2022 and July 11, 2022.</p>			

Question ID	DWMMR1087000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 13-6 (1); SDWA O. Reg. 170/03 13-6 (2); SDWA O. Reg. 170/03 13-6 (3); SDWA O. Reg. 170/03 13-6 (4); SDWA O. Reg. 170/03 13-6 (5); SDWA O. Reg. 170/03 13-6 (6);			
Question: Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.			
<p>O.Reg. 170/03 - Schedule 13-6 stipulates that distribution water samples are required to be collected and tested every three months for trihalomethane compounds on a quarterly basis as prescribed by Schedule 6-1.1 (4).</p> <p>According to the samples results provided by the Owner/Operating Authority for the inspection period the samples were collected and tested on April 3, 2023, January 3, 2023, October 3, 2023 and July 12, 2023 which met with regulatory requirements.</p>			

Question ID	DWMMR1113000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 10.1 (3);			
Question: Have all changes to the system registration information been provided to the Ministry within ten (10) days of the change?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All changes to the system registration information were provided within ten (10) days of the change.			

Question ID	DWMMR1059000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 28;			
Question: Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.			

The Owner/Operating Authority provided documentation confirming that the operators and maintenance personnel in the subsystem have been provided ready access to comprehensive operation and maintenance manuals that contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the subsystem as required by O. Reg. 128/04, s. 28.

Also, in the manual is a sampling plan which includes instructions pertaining to the identification of adverse drinking water conditions as well as prescribed notifications and corrective actions.

Question ID	DWMR1060000	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.			
<p>The Operations Manual contains the following sections: Overview, System Description, Flow Chart of the Port Burwell Secondary Distribution System, Sample Locations, Chamber Locations.</p> <p>The Appendix Section contains the Municipal Drinking Water Licence, Drinking Water Works Permit, Standard Operating Procedures, SCADA Manual, Manufacturer Equipment Manuals and AWWA Standards.</p>			

Question ID	DWMR1061000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 27 (1); SDWA O. Reg. 128/04 27 (2); SDWA O. Reg. 128/04 27 (3); SDWA O. Reg. 128/04 27 (4); SDWA O. Reg. 128/04 27 (5); SDWA O. Reg. 128/04 27 (6); SDWA O. Reg. 128/04 27 (7);			
Question: Are logbooks properly maintained and contain the required information?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Logbooks were properly maintained and contained the required information.			

Logbook records identifying daily activities, operational checks, etc. was in place at the time of inspection.

Operational logs are a key component for the safe and efficient operation of a facility. Logs or other record-keeping mechanisms are required to document the operation of the drinking water system and corrective actions taken to adverse situations.

It should be noted that OCWA has implemented a new electronic digital log recording system. Operators are entering operational activities (secured log entry) in real time via a portable tablet system. All information entered is validated as per the date and time entries made by each operator. The digital log information is currently backed up at three separate locations to help prevent any loss of information.

Question ID	DWMR1062000	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 7-5;			
Question: Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.			

Question ID	DWMR1071000	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Has the owner provided security measures to protect components of the drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had provided security measures to protect components of the drinking water system.			
At the time of inspection, the PBASWSS facilities were securely locked. Operators typically visit the remote facilities multiple times during the week to ensure that the system integrity has not been compromised.			

Question ID	DWMR1073000	Question Type	Legislative
Legislative Requirement(s):			

SDWA | O. Reg. 128/04 | 23 | (1);

Question:

Has the overall responsible operator been designated for all subsystems which comprise the drinking water system?

Compliance Response(s)/Corrective Action(s)/Observation(s):

The overall responsible operator had been designated for each subsystem.

The Owner/Operator provided the 2022 and 2023 Schedules for the Overall Responsible Operator (ORO) designated for the PBASWSS Transmission Main. The OROs identified in the schedules held certification equal to or greater than the classification levels of the system (Water Distribution and Supply Sub-System 2).

Question ID	DWMR1074000	Question Type	Legislative
Legislative Requirement(s):			
SDWA O. Reg. 128/04 25 (1);			
Question:			
Have operators-in-charge been designated for all subsystems which comprise the drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s):			
Operators-in-charge had been designated for all subsystems which comprise the drinking water system.			
<p>During the inspection period, it was found that the Operators responsible for the operations of the PBASWSS recorded the names of the operator-in-charge (OIC) in the facility log records.</p> <p>The Owner must ensure that one or more operators are designated as operator-in-charge (OIC) for each day that the facility is in operation. An OIC can be any operator with an applicable certificate to the type of operated subsystem.</p> <p>An operator-in-training (OIT) cannot be designated as an OIC; any log entries made by the OIT must be approved by the OIC and clearly documented in the log at the time of entry.</p> <p>In accordance with O. Reg. 128/04 s. 25 (1) The owner or operating authority of a subsystem or a person authorized by the owner or operating authority shall designate one or more operators as operators-in-charge of the subsystem. O. Reg. 128/04, s. 25 (1).</p>			

Question ID	DWMR1075000	Question Type	Legislative
Legislative Requirement(s):			
SDWA O. Reg. 128/04 22;			

<p>Question: Do all operators possess the required certification?</p>
<p>Compliance Response(s)/Corrective Action(s)/Observation(s): All operators possessed the required certification.</p>

Question ID	DWMR1076000	Question Type	Legislative
<p>Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2);</p>			
<p>Question: Do only certified operators make adjustments to the treatment equipment?</p>			
<p>Compliance Response(s)/Corrective Action(s)/Observation(s): Only certified operators made adjustments to the treatment equipment.</p>			

Stakeholder Appendix

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/page/drinking-water



Click on the publication below to access it

- [Drinking Water System Profile Information Form - 012-2149E](#)
- [Laboratory Services Notification Form – 012-2148E](#)
- [Adverse Test Result Notification Form – 012-4444E](#)
- [Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils](#)
- [Procedure for Disinfection of Drinking Water in Ontario](#)
- [Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids](#)
- [Filtration Processes Technical Bulletin](#)
- [Ultraviolet Disinfection Technical Bulletin](#)
- [Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments](#)
- [Certification Guide for Operators and Water Quality Analysts](#)
- [Training Requirements for Drinking Water Operator](#)
- [Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption](#)
- [Drinking Water System Contact List – 7128E01](#)
- [Ontario's Drinking Water Quality Management Standard - Pocket Guide](#)
- [2020 Watermain Disinfection Procedure](#)
- [List of Licensed Laboratories](#)

Inspection Rating and Inspection Risk Methodology

DWS Name: PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM
DWS Number: 260004735
DWS Owner: PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT
Municipal Location: AYLMER

Regulation: O.REG. 170/03
DWS Category: DW Municipal Residential
Type of Inspection: Focused
Inspection Date: Oct-25-2023
Ministry Office: London District Office

Maximum Risk Rating: 311

Inspection Module	Non Compliance Risk (X out of Y)
Certification and Training	0/42
Logbooks	0/18
Operations Manuals	0/28
Reporting & Corrective Actions	0/25
Treatment Processes	0/147
Water Quality Monitoring	0/51
Overall - Calculated	0/311

Inspection Risk Rating: 0.00%

Final Inspection Rating: 100.00%

DWS Name: PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM
DWS Number: 260004735
DWS Owner Name: PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM JOINT BOARD OF MANAGEMENT
Municipal Location: AYLMER

Regulation: O.REG. 170/03
DWS Category: DW Municipal Residential
Type of Inspection: Focused
Inspection Date: Oct-25-2023
Ministry Office: London District Office

All legislative requirements were met. No detailed rating scores.

Maximum Question Rating: 311

Inspection Risk Rating: 0.00%

FINAL INSPECTION RATING: 100.00%



Port Burwell Area Secondary Water Supply System

REPORT NO.: PBASWSS-24-04
DATE: March 6, 2024
ATTACHMENT: OCWA Fourth Quarter Operations Report 2023
SUBJECT: **FOURTH QUARTER 2023 OPERATIONS REPORT**

Recommendation:

THAT Report No. PBASWSS-24-04 entitled “2023 Fourth Quarter Operations Report” be received.

Background:

The Ontario Clean Water Agency (OCWA) and the Township Staff, formally meet on a quarterly basis to specifically review the operations and maintenance of the PBASWSS. OCWA and Township Staff discuss recommended lifecycle/capital work, bacteriological/chemical sample results, regulatory compliance, and possible emerging issues. OCWA provides detailed operations reports and performance assessment reports at these meetings.

Comments/Analysis:

This report is a summary of the operations and maintenance for the fourth quarter of 2023, as well as a condensed summary of the overall operations for the year. This report is submitted to the Joint Board of Management to satisfy specific requirements of the QEMS Operational Plan for the PBASWSS. Additionally, this approach ensures that the Joint Board of Management is kept informed on the operational performance of the water system on a continual basis by Township Staff.

The Township Staff formally met with the OCWA on February 5th, 2024, to review system operations for the third and fourth quarters. Some of the specific items that were discussed during these meetings are outlined below.

Compliance Summary:

On October 18th, notification of AWQI (Adverse Water Quality Incident) was given to MECP for a sample taken at station #94 which had a result 8 cfu/100ml of Total Coliform. Samples were collected at the source, as well as upstream and downstream. All resamples yielded normal results.

Inspections:

The MECP conducted a physical inspection of the PBASWSS on September 14th, 2023 during the third quarter. The final inspection report was received on December 4th, 2023. The report identified no non-compliances and received an IRR of 100% for the inspection period.

QEMS Update:

An Internal audit was conducted by OCWA on July 17th, 2023. There were no non-conformances and four (4) Opportunities for Improvement (OFI). The Audit findings and other standing agenda items were discussed during the Management Review which was held on August 3rd, 2023.

The S1 External audit was conducted by SAI Global on September 7th, 2023. The report found no non-conformances and two (2) Opportunities for Improvement (OFI).

On December 6, 2023 the Facility Emergency Plan testing was completed to fulfill the requirements of OP-18. Two (2) contingency plans were reviewed and tested.

Performance Assessment:

In 2023, the average daily flow to the secondary system from the Elgin Area Primary Water Supply System (recorded at MV1) was 727.38 m³/d. This is a 4.5% decrease when compared to 2022 (761.5 m³/d).

There was one (1) AWQI sample result in 2023 as noted above and in the attached report from OCWA. There were no other adverse sample results in 2023. Weekly microbiological sample results were tested for E. coli, Total coliforms and HPC. Samples are shipped to SGS laboratories which is an accredited laboratory.

OCWA tested for free chlorine residuals throughout the distribution system two times per week. Quarterly samples were collected for Trihalomethanes (THMs) and Halo Acetic Acids (HAAs) in accordance with regulatory requirements. All sample results tested were well below the Maximum Allowable Concentrations (MAC) set forth in O.Reg. 170/03. OCWA continues to meet or exceed the Provincial Regulations pertaining to microbiological sampling requirements. Further information regarding samples results is outlined in attached report.

Occupational Health & Safety:

OCWA completed the annual health and safety inspection on November 3rd, 2023. There were no issues identified during the inspection.

General Maintenance:

OCWA conducted various maintenance activities in 2023. Activities include but are not limited to, regular readings and checks, the inspection and pumping of air release chambers, and monthly alarm testing. Chemical feed system maintenance. Annual flow meter calibrations were completed. OCWA also completed 5-year fire flow testing and painting of all hydrants in the spring of 2023. Fall hydrant flushing and winterization of hydrants was also completed. Further information regarding maintenance completed in 2023 can be found in the attached report.

Alarms:

There were a variety of alarms reported in the third quarter and fourth quarter. Most of these alarms were minor in nature. The SCADA system allows Staff to effectively monitor and respond to alarms on a continuous basis. As the Operating Authority, OCWA responded to alarms as required, the details of which are outlined in the attached report.

Complaints & Concerns:

There were no complaint or concerns received from the general public that required a response from OCWA and the Township Staff in 2023.

Summary:

Quarterly meetings with OCWA are an effective tool used to keep the Township Staff well informed as to the operations and maintenance of the drinking water system. The information provided to the Board by OCWA is used to help the Joint Board of Management make well thought out decisions in an effort to provide a continual safe supply of potable water.

Submitted by:	Approved by:	Approved by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Port Burwell Area Secondary
Water Supply System
Operations Report
Fourth Quarter 2023

Ontario Clean Water Agency, Southwest Region
Vitaliy Talashok, Sr. Operations Manager, Aylmer Cluster
Date: February 5, 2024

Facility Description

Facility Name:	Port Burwell Area Secondary Water Supply System
Regional Manager:	Dale LeBritton - (519) 476-5898
Sr. Operations Manager:	Vitaliy Talashok - (226-378-8986)
Business Development Manager:	Robin Trepanier - (519) 791-2922
Facility Type:	Municipal
Classification:	Class 2 Water Distribution
Drinking Water System Category:	Large Municipal Residential
Title Holder:	Municipality
Operation Status:	OCWA

Service Information

Area(s) Serviced:	Municipality of Central Elgin, Malahide & Bayham
Population Serviced:	730
Malahide Direct Connections:	204
Central Elgin Connections:	75

Operational Description

This is a 12-inch watermain from the Elgin Area Water Treatment Plant to Port Burwell including an elevated tank west of Pt. Burwell. Includes re-chlorination at the tower and at Lakeview Re-Chlorination Facility.

CLIENT CONNECTION MONTHLY CLIENT REPORT

Facility Name: Port Burwell Secondary - Lakeview, Burwell tower, Valve house
ORG#: 5911

SECTION 1: COMPLIANCE SUMMARY**FIRST QUARTER:**

There were no compliance issues reported during the first quarter.

SECOND QUARTER:

There were no compliance issues reported during the second quarter.

THIRD QUARTER:

There were no compliance issues reported during the third quarter.

FOURTH QUARTER:

On October 18th, notification of an AWQI was given to MECP for a sample from station #94 that had returned a total coliform result of 8 cfu/100mL. The free residual chlorine at the time of the sample was 1.62mg/L. Samples were collected at the source, upstream, and downstream of the incident. All samples returned normal results.

SECTION 2: INSPECTIONS**FIRST QUARTER:**

There were no Ministry of Environment, Conservation and Parks or MOL inspections conducted during the first quarter.

SECOND QUARTER:

There were no Ministry of Environment, Conservation and Parks or MOL inspections conducted during the second quarter.

THIRD QUARTER:

On September 14th Angela Stroyberg of the MECP conducted the physical inspection of the PBASWSS. All questions have been answered and supporting documentation has been provided to Karen Machado, from the MECP, who will be conducting the document review and issuing the inspection report.

FOURTH QUARTER:

On December 4th we received the inspection report and IRR. We received a rating of 100%.

SECTION 3: QEMS UPDATE**FIRST QUARTER:**

There were no QEMS updates this quarter.

SECOND QUARTER:

There were no QEMS updates this quarter.

THIRD QUARTER:

An internal audit was conducted on July 17th, 2023 by Matt Belding. The audit report identified no non-conformances and four opportunities for improvement.

On August 3rd, 2023 a Management Review was conducted to discuss the standing agenda items and to review the Internal Audit findings.

On September 7th, 2023 Sandra Tavares from SAI Global conducted an S1 audit. The audit report identified no non-conformances and two opportunities for improvement.

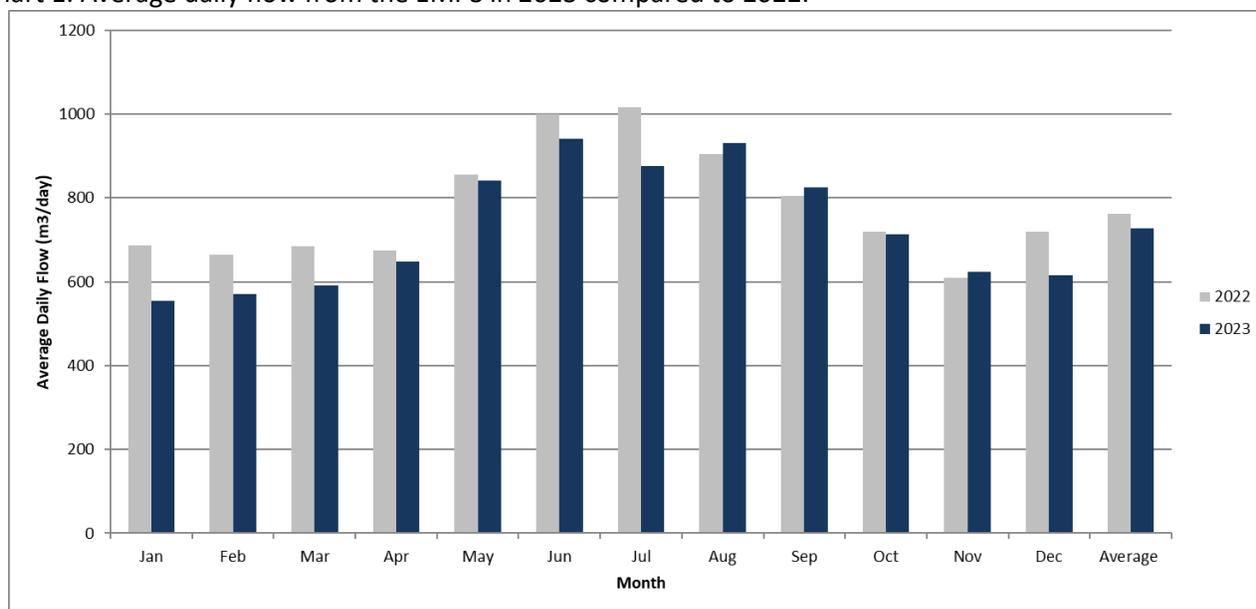
FOURTH QUARTER:

On December 6th Facility Emergency Plan testing was conducted to satisfy the requirements of OP-18. Two contingency plans were reviewed and tested.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

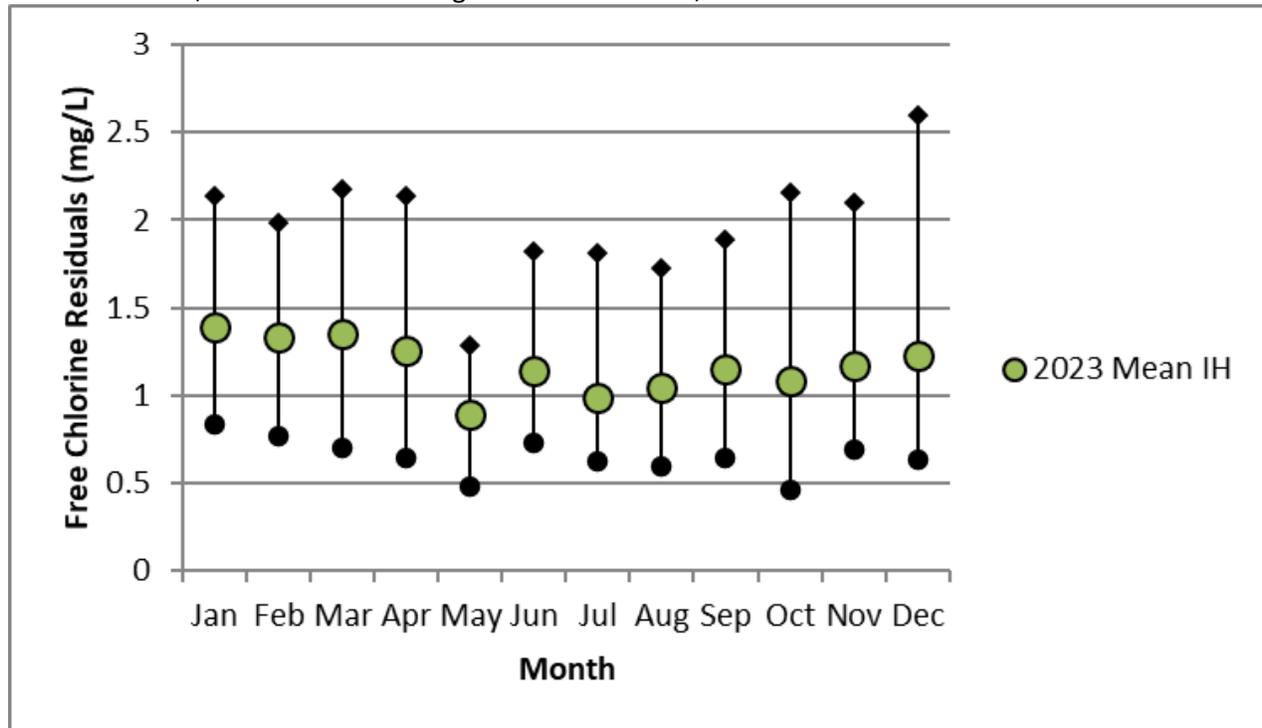
Flows are recorded at various points within the distribution system. The average daily flow to the system from the Elgin Area Primary Water Supply System (recorded at MV1) in 2023 was 727.38m³/d. This is down 4.5% when comparing to 2022 (761.5 m³/d). Chart 1 below depicts the average daily flow in 2023 compared to 2022.

Chart 1. Average daily flow from the EMPS in 2023 compared to 2022.



Chlorine residuals are obtained throughout the distribution system two times per week, with 4 residuals taken on sample days (usually Mondays) and three residuals taken at least 48 hours after the first set (usually on Fridays) to meet the regulatory requirements. Chart 2 below depicts the minimum, maximum and average chlorine residuals taken in the distribution system in 2023. The concentration of free chlorine varies depending on the location of sample taken. All results met regulatory requirements.

Chart 2. Minimum, maximum and average chlorine residuals, 2023.



The chlorine residuals are continuously monitored at the re-chlorination facilities at Dexter Line, the Tower and Lakeview.

Chart 3 below provides the monthly average, minimum and maximum free chlorine residuals at the Dexter Line Re-Chlorination Facility in 2023.

Chart 3. Minimum, maximum and average chlorine residuals recorded at Dexter Line Re-chlorination, 2023.

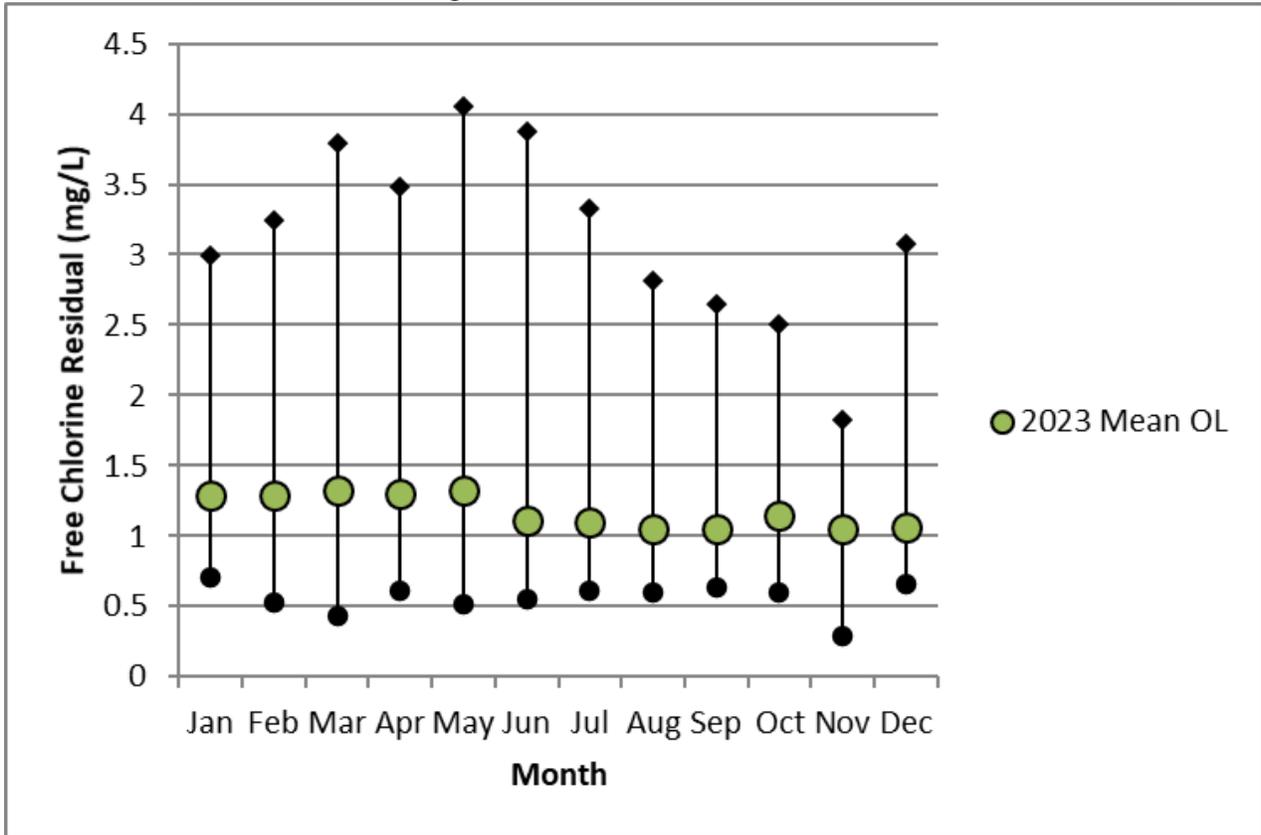


Chart 4 below provides the monthly average, minimum and maximum free chlorine residuals at the Port Burwell Tower in 2023. The residuals at the tower fluctuate depending on the fill cycles.

Chart 4. Minimum, maximum and average chlorine residuals recorded at Port Burwell Tower, 2023.

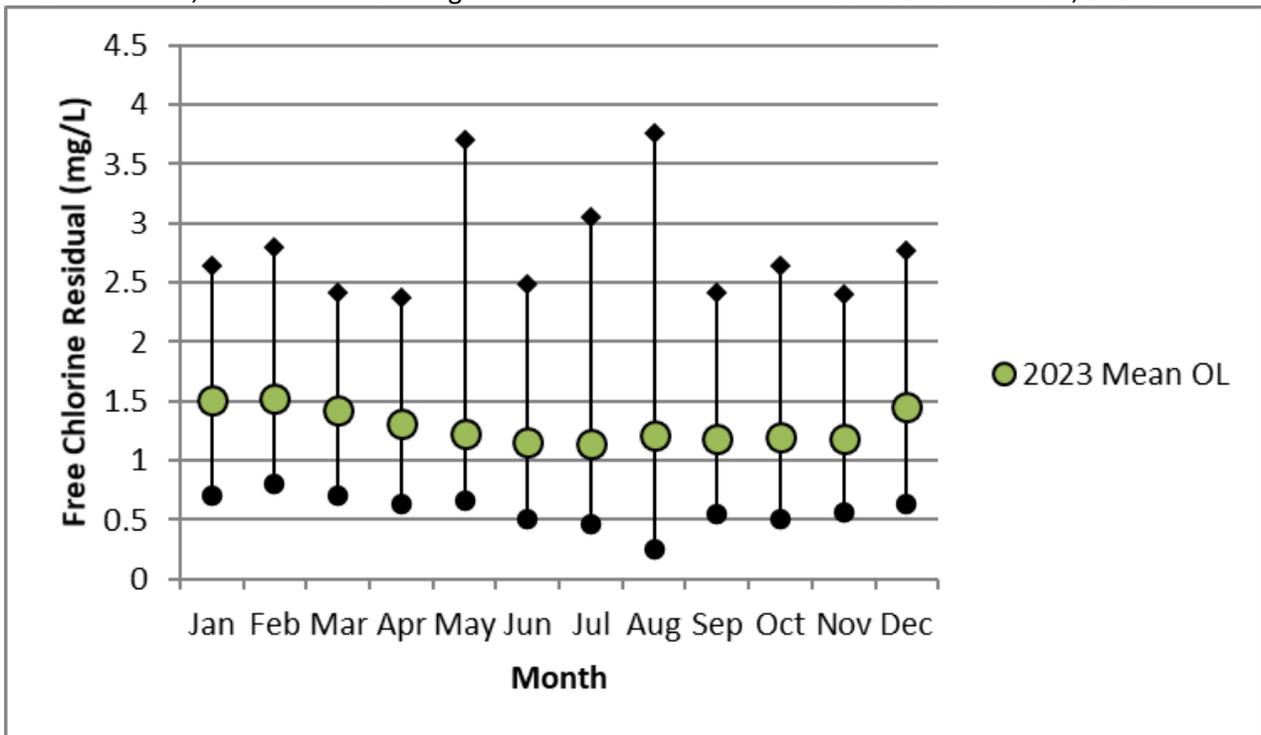
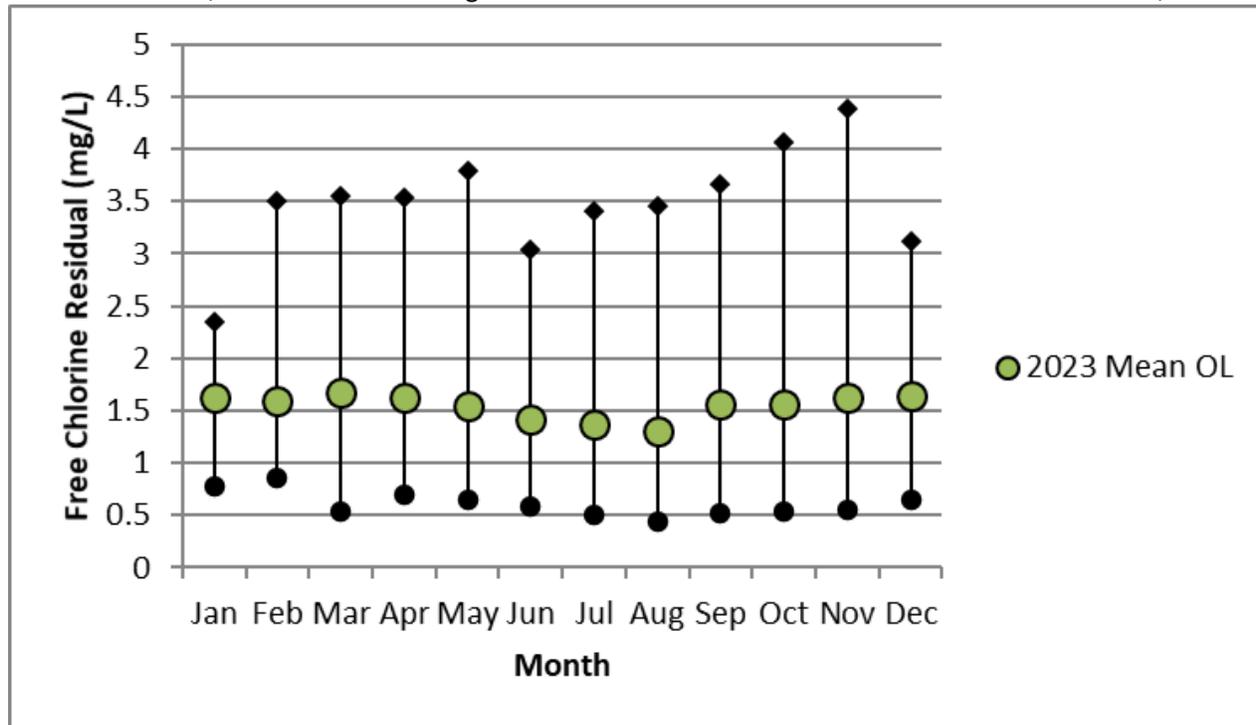


Chart 5 below provides the daily average, minimum and maximum free chlorine residuals at the Lakeview Re-chlorination Facility in 2023.

Chart 5. Minimum, maximum and average chlorine residuals recorded at Lakeview Re-chlorination, 2023.



Samples are obtained once per week at three locations in the distribution system. Table 1 summarizes the results of the microbiological sampling.

Table 1. Summary of microbiological sampling

Month	# Samples	E. coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)	# Samples	Heterotrophic Plate Count Range (cfu/mL)
January	10	0 – 0	0 – 0	5	<10 - <10
February	8	0 – 0	0 – 0	4	<10 - <10
March	10	0 – 0	0 – 0	6	<10 - <10
April	8	0 – 0	0 – 0	4	<10 - <10
May	11	0 – 0	0 – 0	6	<10 - <10
June	8	0 – 0	0 – 0	4	<10 - <10
July	10	0 – 0	0 – 0	5	<10 - <10
August	8	0 – 0	0 – 0	3	<10 - <10
September	8	0 – 0	0 – 0	4	<10 - <10
October	14	0 – 8	0 – 0	5	<10 - <10
November	8	0 – 0	0 – 0	4	<10 - <10
December	8	0 – 0	0 – 0	4	<10 - <10

Trihalomethanes (THMs) are sampled on a quarterly basis; the current running average is 37.25µg/L. When comparing the current running average to the 2022 average (30.75µg/L) there has been an increase of 21.1%. The results are well below the limit of 100 µg/L (refer to Table 2).

Table 2. Summary of THM sample results

	Limit (µg/L)	THM Result (µg/L)
January 2023		29
April 2023		29
July 2023		38
October 2023		53
Running Average	100	37.25

Haloacetic Acids (HAAs) are required to be sampled on a quarterly basis. The current 2023 running average is 15.88µg/L (refer to Table 3). When comparing the current running average to the 2022 average (17.2µg/L) there has been a decrease of 7.6%. The results are well below the limit of 80µg/L.

Table 3. Summary of HAA sample results

	Limit (µg/L)	HAA Result (µg/L)
January 2023		15.6
April 2023		14.4
July 2023		17.1
October 2023		16.4
Running Average	80	15.88

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

There were no Health & Safety issues identified during the first quarter.

SECOND QUARTER:

There were no Health & Safety issues identified during the second quarter.

THIRD QUARTER:

There were no Health & Safety issues identified during the third quarter.

FOURTH QUARTER:

On November 3rd the annual occupational health and safety inspection was completed. There were no issues identified. There were no other issues in the fourth quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

- 02: Low chlorine panel pressure. No air bubbles or leaks noted. Removed inlet valve on pump 2 and noted large amount of pressure built up. Clog perhaps present. Primed both pumps. No leaks noted and confirmed chlorine entering panel from both pumps.
- 04: Tested flood alarms at MV1, Dexter Re-Chlor, Lakeview Re-Chlor and Port Burwell tower (tower chamber) Removed injector from main. Cleaned injector and replaced check valve. Primed line and reinstalled in main. Paused pumps and isolated Cl2 panel. Removed injector line from discharge end of Cl2 panel. Nut split and thread damage on connecting union. Removed and replaced. Pumps and panel returned to normal operation upon completion. All normal. Opened meter chamber to test alarm. 2' water in chamber. Sump pump and alarm not functioning. Chamber pumped. Confirmed water is from infiltration and not a

leak in the pipeline. Confirmed failure of sump pump and outlet in chamber supplying power. Notified ORO of findings. In contact with Koolen electric to facilitate electrical repairs.

- 05: Farmington installed new sump pump in meter pit. Remote GFI reset returning power to outlet in pit. Koolen electrical replaced float in meter pit. Tested float. Now normal.
- 10: Section of pipe leading to eyewash station isolated removed and capped due to rupture in pipe
- 17: Critical alarms tested at Dexter Re-Chlor, Port Burwell tower and Lakeview Re-Chlor.
- 19: Power failure at Lakeview Re-Chlor. Power restored before generator could be set up.

FEBRUARY

- 02: On site at MV1 with Jutzi for Cl₂ delivery.
- 08: Tested flood alarms at MV1 and Dexter Re-Chlor.
- 14: Tested critical alarms at Dexter Re-Chlor, Lakeview Re-Chlor and Port Burwell tower via SCADA.
- 15: Koolen Electric on site to diagnose issue with heater. Sequencer and thermostat replaced.
- 21: Received alarm for power failure and UPS fault. On site to investigate. Power on. UPS at 100% charge. All normal.
- 23: Connected generator due to power outage. Process restored. Verified analyzer. Cycled power to cellular fail overs for Lakeview and Port Burwell tower as well as the modem for Lakeview. Communication restored.
High level alarm. Tower level at 99.81% currently discharging. High level due to loss of communication at Lakeview. Site now operating normally.
Summa on site at Lakeview Re-Chlor for PLC replacement.
- 24: Slight leak on discharge of Cl₂ panel at Dexter Re-Chlor. Will return to repair next week after acquiring needed parts.
Found small leak on PRV at Lakeview Re-Chlor. Will repair next week as time permits.
Power restored to site. Shut down generator. Reconnected all plugs to allocated outlets. Confirmed operation of site.
- 28: PLC replaced at the Valve House. Summa stated we will need to put system on pressure mode until PLC is replaced at Port Burwell tower.

MARCH

- 02: PLC replaced at Port Burwell Tower. Chlorine spikes between 3-4mg/l during the installation of the new PLC not reflective of the true value.
- 03: Noticed metering valve pulsing more frequently than normal. Contacted on call operator. Trending looked unusual. Contacted client from township. Client tried closing valve remotely by adjusting pulse. No change. Switched to pressure mode from level and flow. No change. Switched to level mode. Valve closed. Client in contact with SUMMA who will continue troubleshooting remotely.
- 08: Flowmetrix performing inspection/ calibration of flow and pressure meters at Dexter Re-Chlor and E014
- 09: GFCI for sump pump at E038 tripped. Reset. Now working normally.
Flowmetrix performing inspection/ calibration of flow and pressure meters at E038, V001, Lakeview and Port Burwell tower.
Farmington mechanical replaced plumbed in eyewash station. Verified analyzer prior to repair. Flow to analyzer stopped at 10:18. Eyewash station installed and tested. Flow restored to analyzer at 11:05.
Flushed air bubbles from analyzer. Verified analyzer with a grab sample 1.85 at 11:12. All normal.
Watermain break just downstream of Lakeview. PBR Excavating, CC Dance, Township of Malahide, Township of Bayham on site to facilitate repair.
- 10: Flowmetrix completed inspection/ calibration of meters at PB01, PB02, Waneeta beach and Dexter & Imperial.
- 13: High Cl₂ alarm at Lakeview. Pump stroke reduced by 5% at Lakeview Re-Chlor, Dexter Re-Chlor and Port Burwell tower to lower residual in system.
- 15: Tested flood alarms at MV1 and Dexter Re-Chlor.

- 17: Completed monthly testing of Critical alarms at Dexter Re-Chlor, Lakeview Re-Chlor and Port Burwell tower.
- 21: Replaced faulty pressure relief valve on chlorine panel at Lakeview Re-Chlor.
Replaced union connecting discharge line to chlorine panel at Dexter Re-Chlor.
- 22: Farmington Mechanical Replaced inner components of air relief valves at EO36 and EO37
- 30: Received chlorine delivery from Jutzi at Valve House.

SECOND QUARTER:

APRIL

Completed monthly work orders, generator operation and maintenance.

- 04: SS#90 seal replaced by Aqua Fix on end of operating rod due too small leak. Sample station tested and returned back to normal operation.
- 12: Tested flood alarms at MV1, Dexter re-chlor, Lakeview re-chlor and Port Burwell tower
- 20: Tested critical alarms.
- 21: Slight leak on discharge end of chlorine panel. Paused pumps and isolated panel. While unscrewing adapter chlorine was feeding back through line (did not fully remove). Tightened connection. Returned pumps and panel to normal operation. Informed OIC. Repairs to be made as soon as time permits.

MAY

Completed monthly work orders, generator operation and maintenance.

- 02: Landmark and Corrosion Service arrived on site for tower inspection.
Repaired leak on discharge end of chlorine panel at the tower.
- 05: Due to irregular readings began checking panel and lines. Found a large air bubble preventing dosage. On further inspection drain valve on panel was open creating issue. Closed valve. Removed compression fitting downstream of check valve on injection quill. Advanced right hand pump to prime line and clear air from line. Reapplied thread tape and reattached compression fitting. System now normal.
- 09: Lowered lead pump stop residual set point from 1.70 - 1.65 to help reduce max residual as per OIC.
- 10: Tested flood alarms at Dexter Re-chlor and the Valve House.
- 11: On site with Jutzi at Valve House for chlorine delivery.
- 16: Farmington Mechanical on site at Port Burwell tower to replace chlorine injector port and ball valve.
- 17: Replaced PH probe at Dexter Re-chlor.
- 19: Decreased pump stroke from 65-60% and increased flow through analyzer from 60-70 l/h.

JUNE

Completed monthly work orders, generator operation and maintenance.

- 14: Flowmetrix SCG on site at E038 to replace flowmeter.
- 15: Jutzi on site at Valve House for chlorine delivery.
- 16: Found small leak at Dexter Re-Chlor where injector line from pump 1 connects to chlorine panel. Union and fittings replaced.
- 20: Small crack in line found at Port Burwell tower. Damaged section of line removed. Refitted line to Pump.
- 29: Flowmetrix SCG on site at Wanetta Dr. to replace flow meter.

THIRD QUARTER:

JULY

- 11: Lakeview - On site with OIC to clean injection needle.
- 18: Dexter, Lakeview, Port Burwell tower - Tested critical alarms via SCADA.
- 19: Lakeview - Replaced discharge check valve on pump 2.
Valve House, Dexter, Port Burwell tower, Lakeview - Tested flood alarms.
- 28: Dexter - Increased stroke on chlorine pumps from 65% to 70% due to lower distribution residuals.

AUGUST

09: Valve House, Dexter - Tested flood alarms.

18: Lakeview - Execulink completed installation of external antenna for Port Burwell tower cellular fail over.

28: Lakeview - Elgin roofing on site to provide quote.

SEPTEMBER

11: Lakeview - Execulink on site for transferring all communication equipment to new tower.

14: SPCT onsite at PB Tower with Angela Stroyberg to discuss condition assessment to be performed on pipeline after several breaks. Angela also conducted a walk through in anticipation of the onsite portion of the routine inspection which has been initiated and documents provided.

Lakeview and Dexter rechlor sites were also visited. Sam Gustavson present. Mark Harris present at the PB Tower only.

15: Port Burwell DS - On site at Dexter/Imperial with Farmington Mechanical and WWOM Sam Gustavson to make PRV adjustments to reduce distribution pressure by 5%, due to a high pressure complaint by resident at 3163 Lindsey Street. PRV at PB01 not responding to adjustments, further maintenance required. Checked PRV at PB02, determined it may not be opening properly due to back pressure on the outlet. Will return for further adjustment during working hours. All operations running as normal. Distribution left in service.

20: Valve house and Dexter rechlor - Tested flood alarms.

Port Burwell tower, Dexter and Lakeview rechlor – Critical alarms tested via SCADA.

FOURTH QUARTER:OCTOBER

04: Valve House, Dexter, Port Burwell Tower and Lakeview – Tested flood alarms.

05: Valve House – Jutzi on site for chlorine delivery.

10: Lakeview – On site to cycle power to communication devices. No change. Execulink further troubleshooting remotely.

11: Lakeview – Eastlink technician on site to further investigate issues with primary connection. No issues found on site.

20: Dexter, Port Burwell tower and Lakeview - Farmington Mechanical on site to complete annual backflow preventer inspection.

23: Dexter, Port Burwell tower and Lakeview - Tested critical alarms via SCADA.

NOVEMBER

01: Dexter and Imperial - Found pinhole leak off valve in meter chamber on southwest corner of Dexter and Imperial. Notified Duty OIC and WWOM of township.

02: Dexter and Imperial - On site with Farmington mechanical at metering chamber at intersection of Dexter and Imperial. Screws on pilot regulator tightened. Now normal.

08: Dexter, Port Burwell Tower and Lakeview – Tested critical alarms via SCADA.
: Valve House and Dexter – Tested flood alarms.

09: Valve House – Jutzi on site for chlorine delivery.

14: Valve house – Farmington mechanical on site for PRV inspection/service. Isolated PRV using 4-inch AVK gate valve. Disassembled PRV. Inspected seat and diaphragm. No signs of wear. All surfaces sprayed with 12% NSF sodium hypochlorite before reassembling. Removed strainer from casing. Inspected strainer. No signs of fouling. Rinsed strainer and sprayed with 12% NSF sodium hypochlorite. Food grade lubricant applied to the o ring. All piping reinstalled after being sprayed down with 12% NSF sodium hypochlorite. Opened 4-inch gate valve. Flushed through valve until receiving a clear flow. Fully opened valve. Diaphragm now seated. No signs of leakage. Now normal.

DECEMBER

6: Valve house, Dexter Rechlor – Tested flood alarms.

21: Dexter Rechlor - Koolen Electric installed new exterior light.

: Port Burwell Tower - Koolen Electric replaced heater in North East corner of chlorine booth.

: Port Burwell Tower, Dexter Rechlor and Lakeview Rechlor - Tested critical alarms via SCADA by altering set points. Operation confirmed with alert from call service. Set points returned to initial settings upon completion

SECTION 7: ALARMS**FIRST QUARTER:**JANUARY

17: Received high temperature alarm for Dexter Re-Chlor. Heater malfunctioning. Turned heater off. Aired out building. Set up space heater

FEBRUARY

22: Received telephone phone call from Spectrum informing of power failure, pump 1 and 2 faults at Lakeview Re-Chlor. Chlorine analyzer reading 2.27 free ppm. ORO informed to attend site in morning to hook up generator if power remains off

MARCH

14: Received message from Execulink via call service that communication was lost. Logged onto SCADA. Confirmed communication loss. Cycled power to cellular fail over, router and modem. Indicators on devices show connectivity. Still no readings on SCADA. Contacted Execulink. They noted an odd feedback. Execulink reset switch remotely. Communication restored after a waiting period. Confirmed via SCADA. Execulink also confirmed a stable signal

18: Received call for high Cl₂. Proceeded to site. Took a grab sample. False high. Calibrated. Reviewed trending. Cl₂ level spiked when flow stopped. Reviewed eRIS logs. Contacted ORO. Discussed dropping pump stroke % to help stop Cl₂ levels from reaching such a high level when flow stops. Reduced pump stroke from 80% to 78% as per ORO

22: High chlorine alarm at Dexter Re-Chlor. Operator confirmed a false high. Changed electrolyte in probe. Waited for stabilization. Calibrated analyzer. Now operating within 10% range

23: High chlorine alarm at Dexter Re-Chlor. Operator confirmed a false high. Changed electrolyte cap and fluid. Waited for stabilization. Calibrated analyzer. Now operating within 10% range

SECOND QUARTER:APRIL

30: Received notification from Execulink. Communication failure at Lakeview Re-chlor. Notified that the modem needs rebooting. Received power fail alarm at Lakeview Re-chlor. Notified ORO and will continue to monitor. Spoke with Execulink telling them that I do appear to have communication they said may be due to the power outage event, they will pass along the info and call back if it's still a concern. Notified ORO and headed to site. Once onsite verified power on and communication operating normally

MAY

06: High chlorine alarm at Lakeview Re-chlor. Lowered stroke on pump from 70% to 65% to prevent any further chlorine spikes. Continued to monitor chlorine level. Cleaned and flushed sample feed line, ensured clear of bubbles.

13: High chlorine alarm at Dexter Re-chlor. Logged onto SCADA. Reading was 3.87 and dropping. Proceeded to site. Received second call while en route 18:17. Arrived on site at 18:41. Analyzer reading upon entry was 3.43. Opened sample port on analyzer. Chlorine reading plummeted. Took a grab sample as reading was

dropping. Residual was above low measuring range. Analyzer stabilized at 1.04 grab sample was 0.94 at 18:46. Immediately proceeded to hydrant downstream. Took a grab sample after pressurizing and began flushing hydrant 1.09 at 18:58. Took six additional grab samples approximately 2-3 minutes apart. Reviewed trending on SCADA. Event happened while tower was discharging possibly causing a slug in analyzer from reverse flow. Highest reading recorded was 4.07. Contacted ORO about dropping pump stroke by 5% to combat high chlorine residual during tower discharge cycle. Returned to Dexter re-chlor and lowered stroke from 70-65% as per ORO.

18: Received high chlorine alarm at Dexter Re-chlor. On call operator on site to verify analyzer.

25: Received alarms for pump 02 fault and general alarm at Port Burwell tower and UPS alarm at Dexter Re-chlor. Logged onto SCADA. Alarm UPS no longer active. Cleared pump 02 general alarm via SCADA.

JUNE

11: Received high chlorine alarm at Dexter Re-Chlor. High level occurred while tower was discharging. Issue determined to be a slug in the line. Pump stroke reduced by 5% in an attempt to compensate.

18: Received high chlorine alarm at Dexter Re-Chlor. High level occurred while tower was discharging. Stop set point lowered to further help reduce concentration of slug that forms when flow stops.

21: On call operator contacted by SOM. Communication fault at Lakeview Re-chlor. Power cycled to router. Communication re-established.

THIRD QUARTER:

JULY

08: Lakeview - Received alarms for power panel failure, hypochlorite pump 1 fault and hypochlorite pump 2 fault. Logged onto SCADA to confirm communication with site. Communication confirmed. Left for site. Arrived at 02:08. Upon entry breaker for light and exhaust fan tripped. Reset breaker. PSI on chlorine panel higher than normal. Took a grab sample to verify analyzer. Calibrated analyzer. Reviewed data logger. Residual steady since 20:56. Opened PLC and communication cabinets. No signs of damage. Phoned Hydro One. No known issues with power in area (recorded message). Contacted ORO about high pressure on panel and steady residual. Instructed to contact WWOM of township in the morning. Secured site at 03:06. Contacted WWOM of township as residual has continued to drop at Lakeview since last on site and that trending is out of the norm. Informed him of observations while on site this morning and while completing SCADA rounds. Instructed to make changes to set points at Port Burwell tower to boost residual in system.

10: Port Burwell tower - Received high chlorine alarm. Logged onto SCADA. No alarm present in alarm summary. Phoned backup dialer. Alarm acknowledged. Residual was 2.96 upon opening tab for tower. Tower in discharge mode. Pumps were not running. Reviewed trending. 3.01ppm highest residual recorded at this point. Contacted ORO who authorized reducing pump stop set point for fill mode from 1.50 to 1.45. Proceeded to site. Arrived on site at 01:41. Reading upon entry was 3.00ppm. Took a grab sample using high range 1.7ppm. False high. Switched to low range and took a second grab sample. Calibrated analyzer from 2.99 to 1.73ppm. Secured site at 01:56.

12: Lakeview - Contacted WWOM of township as residual has continued to drop at Lakeview since last on site and that trending is out of the norm. Informed him of observations while on site this morning and while completing SCADA rounds. Instructed to make changes to set points at Port Burwell tower as follows to boost residual in system. Reset cellular fail over and verified with Execulink that communication was back up

15: Port Burwell tower – Received low chlorine alarm. Operator proceeded to site. False low. Calibrated analyzer. Hydrant downstream flushed.

Lakeview - Received no communication alarm. Reset modem and cellular fail over communication restored.

20: Received communication fault alarm for Dexter Re-Chlor (17:54). Logged onto SCADA to acknowledge alarm. Communication alarms active for all sites. Contacted WWOM of township to see if there could be an issue with the server. Instructed to contact Summa. Contacted Summa and inquired if they could remote connect to the system. Summa confirmed their connection and that it must be a network issue. In

contact with ORO who contacted OIC to assist. Was later contacted by OIC who was in contact with WWOM who informed communication was restored. Reviewed trending on SCADA. Communication was restored between 20:44 and 20:45 to all sites.

Dexter - Arrived on site to check facility. Chlorine level at 0.88ppm on analyzer, grab taken: 0.86ppm free. Tower currently discharging at 0.38l/sec. Utility power to site. All appears normal.

Port Burwell tower - Arrived on site to check facility due to no communication on APAM. Chlorine level at 1.24ppm free on analyzer, grab: 1.29ppm free. Tower discharging at 6.83l/sec, pressure in panel: 50psi. Secured site.

Lakeview - Arrived at Lakeview rechlor to check site. Chlorine level on analyzer at 1.45ppm free, no pump faults. Pressure in chlorine panel at 39psi. Flow rate through water main: 5.37l/sec. Power to site.

Contacted on call operator and informed communication to all sites has been restored on APAM.

22: Dexter - Contacted by call service for hypochlorite pump 1 lockout and general alarm. Logged onto SCADA and acknowledged alarms. Initial residual reading was 0.91 mg/L. Reset lockout and general alarm in CHP01 tab. Pump now dosing. Monitored site for an hour. Residual was at 1.21 mg/L before logging out. No further issues.

27: Port Burwell tower - Received low chlorine alarm. Acknowledged alarm. Verified via SCADA that chlorine was low AT 0.48 ppm. Arrived on site analyzer reading 0.48 ppm. Took a grab sample 0.53 ppm at 0731. Calibrated analyzer. Panel pressure at 54 psi. Reviewed trending. Confirmed no air bubbles in the lines. Notified OIC. Will continue to monitor. Secured building at 07:40.

Port Burwell tower - Received alarm for communication loss. Acknowledged alarm. Logged on to SCADA to monitor site. Communication had not yet been restored via cellular failover. Spoke with OIC who instructed to go reset modem at Lakeview for tower communications. Arrived on site to find communications restored. Confirmed via SCADA on iPad. All appeared normal. Secured site at 11:30.

29: Received call from WWOM Sam Gustavson for an emergency water shut off. Proceeded to site. Located curb stop and shut off water to property. Water to be left off as per WWOM Sam Gustavson. Township will assist homeowner further in the week to come.

AUGUST

11: Received call from SOM stating Sam Gustavson received a call about a sample station in port Bruce running water. Checked SS92 on the way into port Bruce, checked SS#78 in Port Bruce and SS#90 just outside of Port Bruce. Notified SOM. Checked a few other locations in Port Bruce as directed. Did not find any issues. Reported to SOM.

12: Lakeview - Received several calls through the night of no communication but when logged onto SCADA communication was restored. On-site reset modem and microhard. As of now communication good.

17: Port Burwell tower - Received low chlorine alarm. Logged on SCADA to find chlorine level at 0.49 ppm. Arrived on site at 19:41 chlorine analyzer showing 0.61 ppm, grab sample 0.63 ppm. Tower is filling. Chlorine panel pressure normal at 51 psi. Spoke with ORO who agreed that residual was coming in low from Dexter Re-Chlor, need to increase pump stroke by 5%. Secured site at 20:02. Arrived on site at Dexter at 20:19. Increased chlorine pump stroke by 5% as per ORO, from 70% to 75%. Analyzer showing 1.18 ppm, grab sample 1.39 ppm. Calibrated analyzer. Secured site at 20:36.

18: Port Burwell tower - Received low chlorine alarm. Arrived on site at 06:44. Chlorine analyzer showing 0.40 ppm, grab sample was 0.38 ppm. Panel pressure at 54 psi. Called ORO to notify on findings. He suggested flushing to pull more water downstream after having raised the pump stroke at Dexter rechlor. Flushed hydrant downstream. Starting residual 0.53 ppm. After flushing obtained a residual of 1.88 ppm. Returned back to tower to find analyzer showing 0.92 ppm and dropping. Received another low chlorine alarm. Went to a hydrant upstream from tower to flush. Starting residual was 0.47 ppm, after flushing for 35 minutes residual at hydrant was 0.87 ppm. Closed down hydrant, will continue to monitor tower residual. Site secured at 09:13.

24: Lakeview - Received alarm for ID#1, high chlorine alarm. Got through to Lakeview backup dialer and acknowledged alarm. Reviewed trending to find chlorine level had reached 3.48ppm free at 17:57 which is below the alarm setpoint on SCADA. Chlorine level is now normal. Chlorine level is 1.92ppm free, pressure:

315kpa, flowrate: 5.88 l/sec. Arrived on site at 19:02. Chlorine level at 1.91ppm free, pressure: 311.33kpa, flushed sample line and ensured everything appear normal. No leaks, pumps not running based on SCADA setpoints.

- 25: Port Burwell tower - Received alarm for low Chlorine Port Burwell Tower. Logged onto SCADA iPad, Chlorine level at 0.5ppm free going in and out of alarm. Tower filling at 6.69l/sec. level at 9.24M. Arrived on site at 21:23. Chlorine level at 0.54ppm free on analyzer. Flushed sample line of any bubbles. Grab sample taken: 0.70ppm free, calibrated analyzer. Stroke on pump currently at 80%, confirmed chlorine is dosing at Dexter Line and Tower. No leaks on chlorine panel. Everything appears normal. Tower still filling.
- 26: Port Burwell tower - Received alarm for low chlorine. Logged onto SCADA iPad to find choline level at 0.49ok ppm going in and out of alarm. Tower currently filling. Reviewed Dexter rechlor, appears to be dosing based on trending. Increased target dose setpoint from 1.5ppm to 1.4ppm free to try and bring up residual in distribution system. Arrived on site at 12:23. Chlorine level now at 0.5ppm on analyzer. Obtained a grab sample reading: 0.64ppm free and calibrated the analyzer. Tried calibrating the PH probe but failed due to a bad slope. Tried installing used PH probe on site and tried calibrating which caused even further problems with the chlorine readings. Started flushing hydrant at 52429 Nova Scotia line to bring up residual in tower and bring fresh water down from Port Bruce. Obtained a residual of 0.64ppm from Hydrant. Turned off hydrant. Replaced PH probe and had it calibrated successfully. PH sitting at between 7.2-7.3. Chlorine analyzer reading 0.93ppm free grab obtained 0.65ppm free. Calibrated unit. Everything appears normal.

SEPTEMBER

- 22: Lakeview - Received alert from call service for high chlorine alarm. Upon entry analyzer reading 1.64 ppm. Obtained a grab sample of 1.61 ppm. Analyzer accurate. Flow through analyzer at 60l/h. Reviewed data logger. Event lasted 2 minutes reaching 3.66 ppm. Reviewed trending for Port Burwell tower via SCADA. Tower began discharge cycle at approximately 18:48. Believed that due to the higher residual discharged from tower while Lakeview was dosing caused the high level. Spoke with ORO and authorized to lower the pump stroke by 5% to help prevent further spikes. Pumps reduced from 65% to 60%.

FOURTH QUARTER:

OCTOBER

- 12: Lakeview - Received high chlorine alarm. Obtained grab sample to verify analyzer. Calibrated analyzer. False high due to analyzer being out. Analyzer verified with a second grab sample before securing facility.
- 17: Lakeview - Received alert from call service for high chlorine alarm and high chlorine alarm now normal. Proceeded to site. Obtained a grab sample. Calibrated analyzer. Took another grab sample to verify. Still out. Paused pumps and waited for reading to further stabilize. Took another grab sample and calibrated again. Took several other grab samples to verify. Readings did not match grab sample. Believed that electrolyte cap to be fouled. Unpaused pumps and secured site at 21:00. Obtained an electrolyte cap from Port Burwell tower. Obtained electrolyte, distilled water and PH buffers from the filter building. Returned to Lakeview. Paused pumps and stopped flow through analyzer. Completed a two point calibration of the PH probe before replacing the electrolyte cap and electrolyte on the chlorine probe. Flushed through analyzer and returned flow to 60l/h. Waited for readings on analyzer to stabilize before calibrating. Waited an additional 15 minutes before taking a grab sample to verify analyzer. Now within tolerance. Unpaused pumps. Observed station through one full dosing cycle. Now operating normally. Secured site.
- 21: Lakeview - Received alert from call service for high chlorine alarm. Logged onto SCADA. Acknowledged alarm. Current reading was 3.59. Proceeded to site. Arrived at 22:22. Obtained a grab sample. False high. Calibrated analyzer from 3.05 to 1.87. Verified with a second grab sample.
- 23: Lakeview - Received alert from call service for high chlorine alarm. Acknowledged backup dialer and logged onto SCADA. No alarm present on SCADA system. Current residual 1.73. Reviewed trending. High of 3.48 AT 04:13. Contacted ORO. Instructed to adjust start and stop set points to tighten range. Received second alert from call service for high chlorine. Acknowledged back up dialer. Now normal Alarm now present in SCADA banner. Alarm was active for three minutes. Proceeded to site. Received second alarm notification

while en route to site. Obtained a grab sample to verify analyzer. Analyzer out. Obtained a second grab sample and calibrated analyzer.

NOVEMBER

- 11: Lakeview - Received alarm about power fail. Alarm stated "power off, now normal." Logged on to Scada, all appeared normal and functioning properly. Alarm continued to come out fine more times. Arrived on site to acknowledge back up dialer, verified all functioning as intended. Alarm possibly due to power flicker. Secured site.
- 18: Lakeview - Received alarm for power failure at Lakeview re-chlor. Acknowledged alarms on APAM dialler. Alarms are still active, heading to site to investigate power loss. Arrived on site. No downed power lines or obvious cause of outage en route. Called Hydro One.
- : Outage is planned, estimated restoration at 10:00. Notified ORO of power loss. Allowing facility to run on UPS power for remainder of outage, will continue to monitor for further issues remotely via SCADA. PLC power failure and pump fault alarms for both chlorine pumps active. Currently unable to reach APAM dialler, acknowledged Lakeview backup. 09:53 Power failure alarm ended on SCADA. Reset chlorine pump faults. Tested chlorine pumps in hand from SCADA. Confirmed function, then returned to auto.

DECEMBER

- 14: Valve House - Received notification of alarm for Port Burwell valve chamber CO3 fault status. Logged on to Malahide SCADA. Trending appears normal, noted fault indicator on Water Plant side of valve CO3. No alarms present on SCADA screen. Discussed issue with OIC M. O'Rourke. Valve at issue is not OCWA property - belongs to Elgin Area. Contacted EAWTP to notify on-duty operator of alarm. Fault is a known issue and does not affect valve function, waiting on delivery of replacement part for repairs to be made. Contacted Spectrum and made call service aware of situation.

SECTION 8: COMPLAINTS & CONCERNS

FIRST QUARTER:

There were no complaints or concerns received during this quarter.

SECOND QUARTER:

There were no complaints or concerns received during this quarter.

THIRD QUARTER:

There were no complaints or concerns received during this quarter.

FOURTH QUARTER:

There were no complaints or concerns received during this quarter.



Aylmer Area Secondary Water Supply System

REPORT NO.: AASWSS-24-03
DATE: March 6, 2024
ATTACHMENT: OCWA Fourth Quarter Operations Report 2023
SUBJECT: **2023 FOURTH QUARTER OPERATIONS REPORT**

Recommendation:

THAT Report No. AASWSS-24-03 entitled “2023 Fourth Quarter Operations Report” be received.

Background:

The Ontario Clean Water Agency (OCWA) and the Staff of the Administering Municipality (Township Staff), formally meet on a quarterly basis to review the operations and maintenance of the AASWSS. OCWA and the Township Staff discuss recommended lifecycle/capital work, bacteriological/chemical sample results, regulatory compliance, and possible emerging issues. OCWA provides detailed operations reports and performance assessment reports at these meetings.

Comments/Analysis:

This report is a summary of the operations and maintenance for the fourth quarter of 2023, as well as a condensed summary of the overall operations for the year. This report is submitted to the Joint Board of Management to satisfy specific requirements of the QEMS Operational Plan for the AASWSS. Additionally, this approach ensures that the Joint Board of Management is kept informed on the operational performance of the water system on a continual basis by the Township Staff.

The Township Staff formally met with the OCWA on February 5th, 2024, to review system operations for the third and fourth quarters. Some of the specific items that were discussed during these meetings are outlined below.

Compliance Summary:

There were no compliance issues reported during the third and fourth quarters of 2023. Furthermore, there were no compliance or exceedance issues reported in 2023.

Inspections:

The MECP inspection of the EMPS and transmission main occurred on September 14th, 2023. The final report received from the MECP identified no non-compliances and received an IRR of 100% for the inspection period.

QEMS Update:

An Internal audit was conducted by OCWA on July 24th, 2023. There were no non-conformances and four (4) Opportunities for Improvement (OFI). The Audit findings and other standing agenda items were discussed during the Management Review.

The Management Review was held on August 3rd, 2023. To discuss standing agenda items and to review Internal Audit findings.

On September 5th, 2023 an External S1 Audit was conducted by SAI Global. There were no non-conformances and one (1) OFI was identified during the audit.

Facility Emergency Plan testing was conducted on December 6th, 2023 to satisfy the requirements of OP-18. Two contingency plans were reviewed and tested.

Performance Assessment:

In 2023, the average daily flow to the secondary system from the Elgin Area Primary Water Supply System (recorded leaving EMPS) was 4,888.62 m³/d. This is a 2.8% increase when compared to 2022 (4,749.84 m³/d).

There were no adverse sample results in 2023. Weekly microbiological sample results were tested for E.coli, Total coliforms and HPC. Samples are shipped to SGS laboratories which is an accredited laboratory.

OCWA tested for free chlorine residuals throughout the distribution system two times per week. Quarterly samples were collected for Trihalomethanes (THMs) and Halo Acetic Acids (HAAs) in accordance with regulatory requirements. All sample results tested were well below the Maximum Allowable Concentrations (MAC) outlined in O.Reg. 170/03. OCWA continues to meet or exceed the Provincial Regulations pertaining to microbiological sampling requirements. Further information regarding sample results is outlined in the attached report.

Occupational Health & Safety:

OCWA completed the annual health and safety inspection on October 27th, 2023. There were no issues identified during the inspection.

General Maintenance:

OCWA conducted various maintenance activities in 2023. Activities include but are not limited to, regular readings and checks, the inspection and pumping of all chambers including air release chambers, and monthly alarm testing. Annual flow meter calibrations were completed. OCWA also completed 5-year fire flow testing and painting of all

hydrants in the spring of 2023. Fall hydrant flushing and winterization of hydrants were also completed. Further information regarding maintenance completed in 2023 can be found in the attached report.

Alarms:

There were some alarms reported in the third quarter and fourth quarter. These alarms were minor in nature. The SCADA system allows Staff to effectively monitor and respond to alarms on a continuous basis. As the Operating Authority, OCWA responded to alarms as required, the details of which are outlined in the attached report.

Complaints & Concerns:

There were no complaints from the general public that required a response from OCWA in 2023.

Summary:

Quarterly meetings with OCWA are an effective tool used to keep the Township Staff well informed as to the operations and maintenance of the drinking water system. The information provided to the Board by OCWA is used to help the Joint Board of Management make well-thought-out decisions in an effort to provide a continual safe supply of potable water.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Aylmer Area Secondary Water
Supply System Operations Report
Fourth Quarter 2023

Ontario Clean Water Agency, Southwest Region
Vitaliy Talashok, Sr. Operations Manager, Aylmer Cluster
Date: February 5, 2024

Facility Description

Facility Name: Aylmer Area Secondary Water Supply System
Regional Manager: Dale LeBritton - (519) 476-5898
Sr. Operations Manager: Vitaliy Talashok - (226) 378-8986
Business Development Manager: Robin Trepanier - (519) 791-2922
Facility Type: Municipal
Classification: Class 2 Water Distribution
Drinking Water System Category: Large Municipal Residential
Title Holder: Municipality
Operation Status: OCWA

Service Information

Area(s) Serviced: Central Elgin, Malahide, and Aylmer
Population Serviced: 593
Malahide Direct Connections: 53
Central Elgin Connections: 175

Operational Description

This is an 18" watermain from St. Thomas to Aylmer with booster pumps at the Elgin Middlesex Pumping Station.

CLIENT CONNECTION MONTHLY CLIENT REPORT

Facility Name: Aylmer Area Secondary Water Supply System
ORG#: 6614

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance issues reported the first quarter.

SECOND QUARTER:

There were no compliance issues reported the second quarter.

THIRD QUARTER:

There were no compliance issues reported the third quarter.

FOURTH QUARTER:

There were no compliance issues reported this quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

There were no Ministry of Environment, Conservation and Parks (MECP) or MOL inspections during the first quarter.

SECOND QUARTER:

There were no Ministry of Environment, Conservation and Parks (MECP) or MOL inspections during the second quarter.

THIRD QUARTER:

On September 14th Angela Stroyberg of the MECP conducted an inspection of the AASWSS. The final report was received. There were no non-compliances issued and the system received a 100% inspection rating.

FOURTH QUARTER:

The final inspection rating was received from the MECP on September 30th, 2023. Aylmer Secondary received a final inspection rating of 100%.

SECTION 3: QEMS UPDATE

FIRST QUARTER:

There were no QEMS updates during the first quarter.

SECOND QUARTER:

There were no QEMS updates during the second quarter.

THIRD QUARTER:

An internal audit was conducted on July 24th, 2023 by Matt Belding. The audit report identified no non-conformances and four opportunities for improvement.

On August 3rd, 2023 a Management Review was conducted to discuss the standing agenda items and to review the Internal Audit findings.

On September 5th, 2023 Sandra Tavares from SAI Global conducted a S1 audit. The audit report identified no non-conformances and one opportunity for improvement.

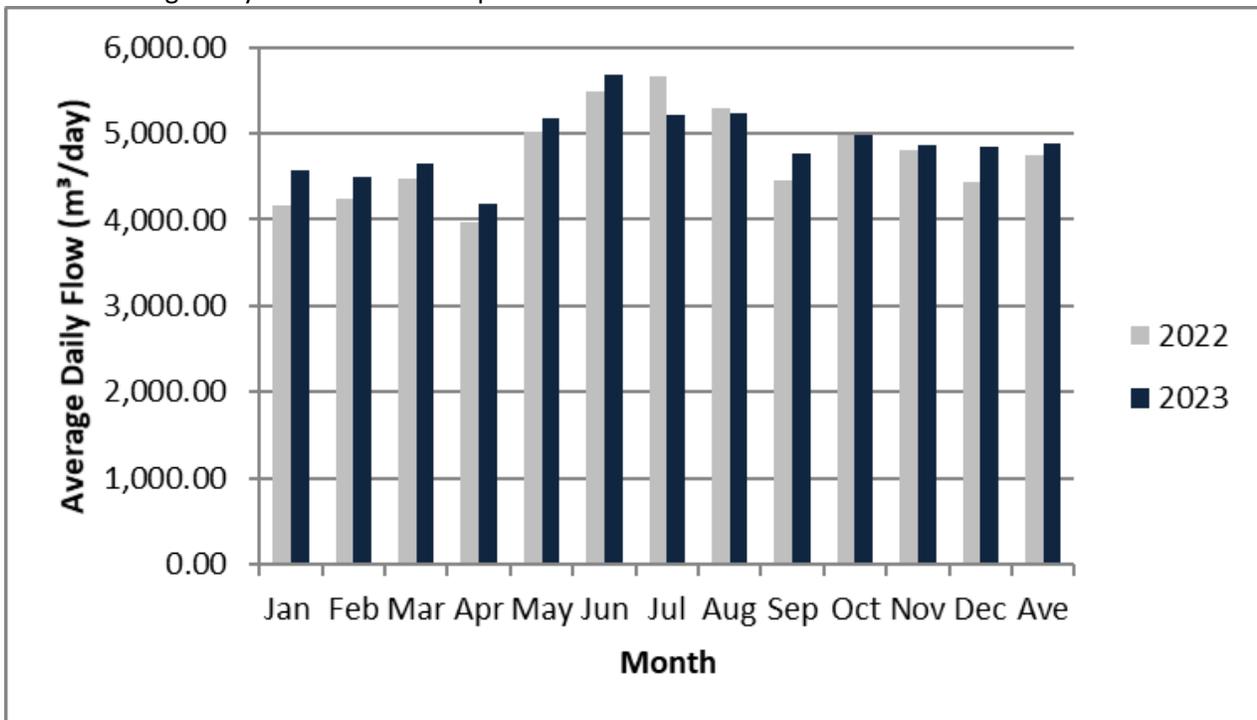
FOURTH QUARTER:

On December 6th Facility Emergency Plan testing was conducted to satisfy the requirements of OP-18. Two contingency plans were reviewed and tested.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

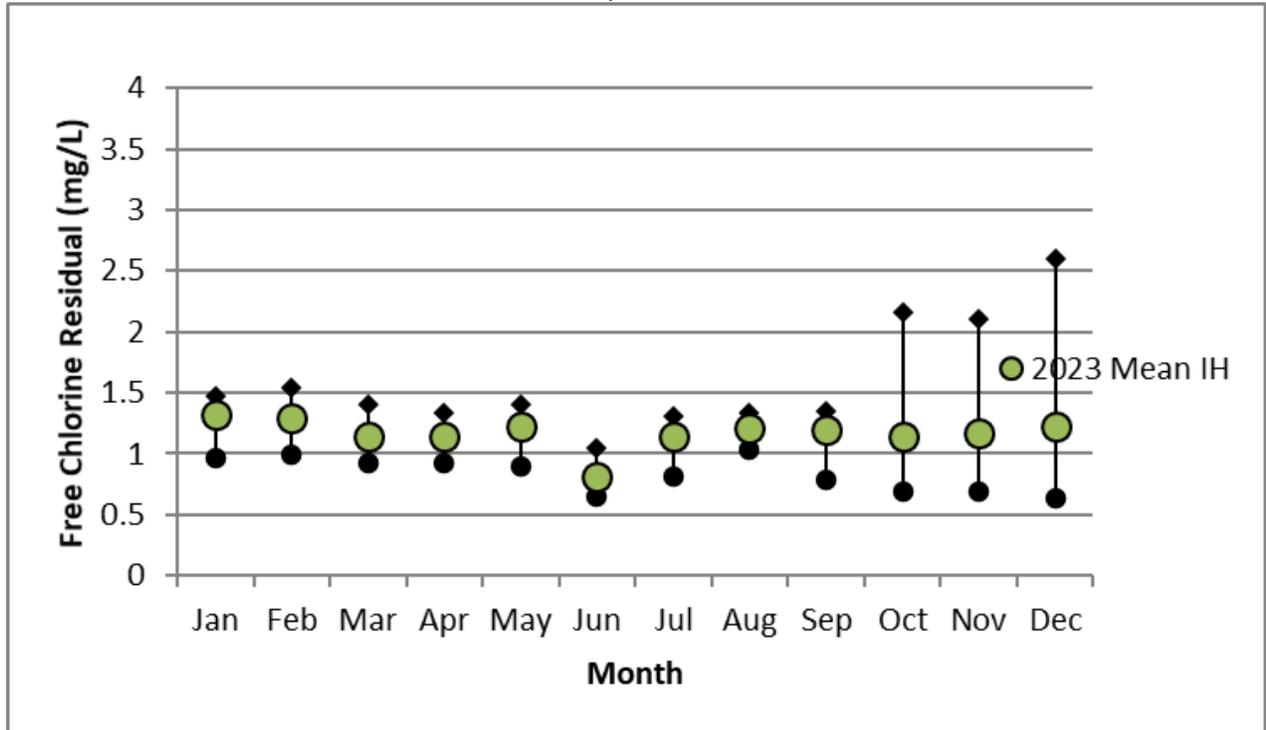
Flows are recorded at various points within the distribution system. The average daily flow to the system from the Elgin Area Primary Water Supply System in 2023 was 4,888.62m³/d which is up 2.8% when comparing to 2022 (4,749.84m³/d). Chart 1 below depicts the average daily flows for 2023 compared to 2022.

Chart 1. Average daily flows in 2023 compared to 2022.



Chlorine residuals are obtained throughout the distribution system two times per week, with 4 residuals taken on sample days (usually Monday’s) and three residuals taken at least 48 hours after the first set (usually on Friday’s) to meet the regulatory requirements. The chart below depicts the minimum, maximum and average chlorine residuals taken in the distribution system for 2023. The concentration of free chlorine varies depending on the location that the sample taken (see chart below).

Chart 2. Free Chlorine Residual in the Distribution System in 2023.



Samples are obtained once per week at three locations along the transmission main. The following table summarizes the results of the microbiological sampling for 2023.

Month	# Samples	E. coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)	# Samples	Heterotrophic Plate Count Range (cfu/mL)
January	15	0 - 0	0 - 0	5	<10 - <10
February	12	0 - 0	0 - 0	4	<10 - <10
March	13	0 - 0	0 - 0	5	<10 - <10
April	12	0 - 0	0 - 0	4	<10 - <10
May	16	0 - 0	0 - 0	6	<10 - <60
June	12	0 - 0	0 - 0	4	<10 - <10
July	15	0 - 0	0 - 0	5	<10 - <10
August	13	0 - 0	0 - 0	5	<10 - <50
September	13	0 - 0	0 - 0	5	<10 - <10
October	15	0 - 0	0 - 0	5	<10 - <10
November	12	0 - 0	0 - 0	4	<10 - <10
December	12	0 - 0	0 - 0	4	<10 - <10

Trihalomethanes (THMs) are sampled on a quarterly basis; the 2023 current running average is 22.50µg/L. When comparing the current running average to the 2022 average (20.25µg/L) there has been an increase of 11.1%. The results are well below the limit of 100 µg/L.

	Limit (µg/L)	THM Result (µg/L)
January 2023	-	15
April 2023	-	16
July 2023	-	28
October 2023	-	31
Running Average	100	22.50

Haloacetic Acids (HAAs) are required to be sampled on a quarterly basis. The 2023 current running average is 6.53µg/L. When comparing the current running average to the 2022 average (6.53µg/L) there has been no change. The results remain well below the limit of 80µg/L.

	Limit (µg/L)	HAA Result (µg/L)
January 2023	-	5.3
April 2023	-	5.5
July 2023	-	9.2
October 2023	-	6.1
Running Average	80	6.53

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

There were no Health & Safety issues identified during the first quarter.

SECOND QUARTER:

There were no Health & Safety issues identified during the second quarter.

THIRD QUARTER:

There were no Health & Safety issues identified during the third quarter.

FOURTH QUARTER:

On October 27th the annual occupational health and safety inspection was completed. There were no issues identified. There were no other issues in the fourth quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY

- 03: Quarterly THM and HAA samples obtained
- 05: Monthly meter reads and chamber inspections completed
- 16: High float and power failure alarms tested at chamber 16 and chamber 13
- 27: Air relief chambers inspected and pumped as needed
- 30: Air relief chambers inspected

FEBRUARY

- 06: Monthly meter reads and chamber inspections completed. Chambers pumped as needed.
- 07: Air relief chamber inspections and pumping
- 16: Summa on site – plc replacement at chamber 16

- 21: High float alarms tested at chambers 16 and 13
- 22: Air relief chamber inspections and pumping
- 27: Air relief chamber inspections

MARCH

- 02: Monthly meter reads and chamber inspections completed. Pumped chambers as needed. Unable to obtain chamber 13 readings due to flow meter issue.
- 03: SCG Flowmetrix on site at chamber 13 to assess flow meter programming issue.
- 07: SCG Flowmetrix completed annual calibrations of Rogers Road and chamber 13 flow meters. Air relief, isolation, bypass valve exercising. Chambers pumped as needed.
- 16: Air relief, isolation, throttling, and bypass valve exercising. Chambers pumped as needed.
- 21: Air relief, isolation and throttling valve exercising. Chambers pumped as needed.
- 24: High float and power failure alarm tested at chambers 13 and 16

SECOND QUARTER:

APRIL

- 03: Obtained quarterly THM and HAA samples
- 13: Monthly air relief chamber inspections/pumping. Tertiary metering chambers pumped.
- 14: Leak noted at Tower Road metering chamber. Nichol Water on site. Leak could not be located.
- 24: Power failure and high float alarms tested at chambers 16 and 13
- 26: Isolation valves, bypass valves, throttling valves at multiple locations tested (see valve inspection records)

MAY

- 02: Tertiary metering chambers pumped out
- 08: Power failure and high float alarms tested at chambers 16 and 13
- 09: PBR and Township of Malahide on site at Tower Road for excavation due to leak. Unable to locate leak.
- 17: Valve exercising at Norton Street
- 18: Valve exercising at Springwater Road. Drain valve chamber pumping.
- 24: Valve exercising at Springwater Road
- 30: Drain valve chamber pumping
- 31: Drain valve chamber pumping

JUNE

- 07: Communication loss at chamber 13 for EMPS. Reset router and modem.
- 09: Farmington Mechanical installed eye bolts in chambers 16 and 13 to facilitate alarm checks.
- 13: Tested high level and power failure alarms at chambers 16 and 13
- 14: Completed monthly air relief chamber inspections/pumping. Pumped out tertiary metering chambers.
- 22: Drain valve chamber pumping
- 29: Drain valve chamber pumping

THIRD QUARTER:

JULY

- 06: Pumped/inspected tertiary metering chambers.
- 24: Power failure/flood alarms tested at chambers 13 and 16.
- 26: Air relief chambers pumped out/inspected.

AUGUST

- 01: Pumped/inspected tertiary metering chambers.
- 02: Pumped/inspected drain valve chamber AS-06.

- 14: Power failure/flood alarms tested at chambers 13 and 16.
- 15: Valve exercising in New Sarum.
- 16: Valve exercising at airport/Tower Road.
- 22: Valve exercising at Rogers Road.
- 31: Pumped/inspected air relief chambers.

SEPTEMBER

- 01: Pumped/inspected tertiary metering chambers.
- 12: Pumped/inspected drain valve chamber AS-02.
- 13: Valve exercising in New Sarum.
- 26: Pumped/inspected air relief chambers.
- 28: Power failure/float alarms tested at chambers 13 and 16.

FOURTH QUARTER:

OCTOBER

- 12: Hydrant flushing along Aylmer Secondary.
- 26: Air relief and metering chambers pumped out/inspected.
- 30: Power failure/flood alarms tested at chambers 13 and 16.

NOVEMBER

- 10: Power failure/flood alarms tested at chambers 13 and 16.
- 16: Pumped/inspected air relief chambers.

DECEMBER

- 08: Power failure/flood alarms tested at chambers 13 and 16.
- 21: Pumped/inspected air relief chambers.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY

- 06: Received communication alarm – chamber 16. Operator attended site. Modem reset. Communications restored.
- 07: Received communication alarm – chamber 16. Operator attended site. Communications already restored upon arrival. Eastlink consulted and will open work order for site visit as needed.
- 12: Received communication alarm – chamber 16. Operator attended site. Reset modem, router, and main power. Communications restored.

FEBRUARY

- Received power failure and flow transmitter fault alarms for chamber 13 due to power outages in the area.
- 23: Received power failure and flow transmitter fault alarms for chamber 16 due to power outages in the area.
- Received power failure and flow transmitter fault alarms for chamber 13 due to power outages in the area.

MARCH

- 20: Received telephone call from Manager, Vitality Talashok, regarding a fire in Aylmer. Contacted WWOM, Sam Gustavson. Monitored Aylmer Tower level and pressure.

SECOND QUARTER:**APRIL**

01: Power failure and flow transmitter fault alarms received at chamber 13.

MAY

No alarms this month.

JUNE

No alarms this month.

THIRD QUARTER:**JULY**

11: Communication loss alarm at chamber 16 – All appeared normal by time operator logged into SCADA.

27: Communication loss alarm at chamber 16 – modem/router reset, communications restored.

AUGUST

No alarms this month.

SEPTEMBER

13: Communication loss alarm at chamber 16 – confirmed to be caused by Execulink maintenance.

14: Communication loss alarm at chamber 16 – confirmed to be caused by Execulink maintenance.

FOURTH QUARTER:**OCTOBER**

19: Notification from call service for PLC communication alarms. Logged onto SCADA. Alarms now inactive.
Acknowledged alarms. Event lasted approximately six minutes.

NOVEMBER

25: Chamber 13 power fail alarm. Verified via Scada and dialer. Inspected panel to see if there was any visible abnormalities, all appeared normal. Contacted hydro one and known outage.
Completed emergency locate #20234714911.

DECEMBER

No alarms this month.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS**FIRST QUARTER:**

There were no community complaints received during the first quarter.

SECOND QUARTER:

There were no complaints or concerns received during the second quarter.

THIRD QUARTER:

There were no community complaints received during the third quarter.

FOURTH QUARTER:

There were no community complaints received during the fourth quarter.



Port Burwell Area Secondary Water Supply System

REPORT NO.: PBASWSS-24-05
DATE: March 6, 2024
ATTACHMENT: Combined Section 11 and Schedule 22 Report
SUBJECT: **PORT BURWELL AREA SECONDARY WATER SUPPLY SYSTEM: 2023 SECTION 11 ANNUAL REPORT AND SCHEDULE 22 SUMMARY REPORT**

Recommendation:

THAT Report No. PBASWSS-24-05 entitled “Port Burwell Area Secondary Water Supply System (PBASWSS): 2023 Section 11 Annual Report and Schedule 22 Summary Report” be received.

Background:

Schedule 22 of O. Reg. 170/03 under the Safe Drinking Water Act requires that the Operating Authority prepare and submit a report to the Owner by no later than March 31st of each calendar year. In addition, the Operating Authority, being the Ontario Clean Water Agency (OCWA), is required to complete Section 11 of O. Reg. 170/03 under the Safe Drinking Water Act. The Section 11 Annual Report must be made available to the public free of charge if requested.

The purpose of the two reports that are submitted by OCWA is to advise the Owner on the operation of the system, the quality of the water, and the quantity of water used throughout the system for the previous year. In 2024, these reports have been combined into one individual report which satisfies the regulatory requirements for Section 11 and Schedule 22.

Comments/Analysis:

OCWA has prepared and submitted the 2023 Ministry of the Environment, Conservation and Parks (MECP) Annual Summary report for the PBASWSS. The Operating Authority is required to complete the Section 11 Annual report by February 28th of each calendar year. The members of the Joint Board of Management are to receive copies of the Schedule 22 report by March 31st of each calendar year. Copies of the combined report were provided to the members of the Joint Board of Management before the required date by email. Reports are also submitted by the Elgin Area Primary Water Supply System

- Joint Board of Management for the Elgin Area Water Treatment Plant and are available to Board members upon request.

The contents of the Schedule 22 report prepared by OCWA include:

- Overview of system
- Compliance with Regulations
- Corrective Actions related to non-compliances
- Flow summary for the previous year.

The contents of the Section 11 report prepared by OCWA include:

- Description of the water system
- A summary of adverse water quality incidents
- Population served
- Expenses incurred
- A summary of microbiological and chemical testing over the year.

Attached for the Joint Board of Management's review is the copy of the combined Section 11 and Schedule 22 Report.

Compliance with Regulations:

The MECP conducted a physical inspection of the PBASWSS on September 14th, 2023. The final inspection report was received on December 4th, 2023. For this inspection period, the Port Burwell Area Secondary Water Supply System received a mark of 100%. There were no non-compliances with regulatory requirements identified during the inspection period.

Availability of Reports:

Copies of the Section 11 and Schedule 22 reports are to be made available for inspection by the public during normal working hours. The Staff have posted the combined Section 11 and Schedule 22 report on the Township of Malahide's website and are available at the front desk upon request. If the general public requests a copy of the report, one must be made available free of charge.

Summary:

The purpose of the reports is to summarize compliance with the regulations, corrective actions and flow monitoring for the previous year's operation of the water system. It also guarantees transparency between the MECP, the general public and the municipal drinking water system. It's an effective tool to confirm to both the public and the MECP that municipal drinking water systems are providing a safe supply of potable water.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



February 22nd, 2024

Jason Godby
Director of Public Works
87 John Street South
Aylmer, ON N5H 2C3

Re: Safe Drinking Water Act, O. Reg. 170/03 Section 11 and Schedule 22 Summary Report

Dear Mr. Godby,

Attached is the 2023 Summary Report for the Port Burwell Area Secondary Water Supply System. This report is completed in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act.

This Summary Report is to be provided to the members of the Port Burwell Area Secondary Water Supply System Joint Board of Management by March 31, 2024.

Section 12 of O. Reg. 170/03, requires the Annual Report required under Section 11 of O. Reg. 170/03 and the Summary Report be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the township, or at a location that is reasonably convenient to the users of the water system.

Please feel free to contact me should you require any additional information regarding these reports. I can be reached at 519-870-7841.

Sincerely,

Matthew Belding
Process and Compliance Technician

c.c. Dale LeBritton, OCWA's Regional Hub Manager
Vitaliy Talashok, OCWA's Senior Operations Manager
Sam Gustavson, Malahide's Water/Wastewater Operations Manager
Maegan Garber, Safety, Process and Compliance Manager

Port Burwell Area Secondary Water Supply System

Waterworks # 260004735
System Category – Large Municipal Residential

Annual Water Report

Prepared For: Port Burwell Area Secondary Water Supply
System Joint Board of Management

Reporting Period of January 1st – December 31st 2023

Issued: February 22nd, 2024

Revision: 0

Operating Authority:



This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11
and Schedule 22

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Revision History

Date	Revision #	Revision Notes
2024-02-22	0	Report issued

Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the Township of Malahide Municipal Office who the administering Municipality of the system. The report will also be made available on the Township of Malahide's Municipal website. Notification will be at the Municipal Office and copies provided free of charge, if requested. The Township of Malahide is located at, 87 John Street South, Aylmer ON.

The Port Burwell Area Secondary System supplies water to the following systems:

Drinking Water System Name	Drinking Water System #	Copy of Annual Report Provided
Bayham Distribution System	260004748	Yes

Compliance Report Card

Compliance Event	Date	# of Events
Ministry of Environment Inspections	September 14 th , 2023	1
Ministry of Labour Inspections	N/A	0
QEMS External Audit	September 8 th , 2023	1
AWQI's/BWA	October 18 th , 2023	1
Non-Compliance	N/A	0
Community Complaints	N/A	0
Spills	N/A	0
Watermain Breaks	March 8 th , 2023	1

System Process Description

Distribution:

The Port Burwell Area Secondary Water Supply System transmission main extends from the Elgin Area Water Treatment Plant servicing Central Elgin, Malahide and Bayham. The watermain serves approximately 279 direct connections to the system (service population estimated at 725). Tertiary lines are connected to the system through metering chambers. The entire system services approximately 3992 people (included population of connected drinking water systems). The system has 50 sub-surface chambers for isolation, metering, air relief and draining. Along the main there are sample stations and hydrants for monitoring and flushing.

The Port Burwell Area Secondary Water System is controlled and monitored by the SCADA system. There is an elevated storage facility located on Nova Scotia Line, which is controlled by the valve house on Dexter Line. This Tower (Port Burwell Tower) has a capacity of 1518m³. The system is re-chlorinated at three locations: the Dexter Line Re-Chlorination Facility, the Port Burwell Tower and Lakeview Re-Chlorination Facility. The re-chlorination facilities contain sodium hypochlorite dosing pumps connected to a Programmable Logic Controller (PLC), with a flow paced signal from the flow meter and chlorine analyzer for residual control by the PLC.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Secondary Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents:

Date	AWQI #	Parameter	Result	Details	Legislation	Corrective Action Taken	Corrective Action Date
2023-10-18	163834	Total Coliform	8 cfu/10 0mL	Sample collected at SS#94.	Section 16-3	Reported to SAC, two sets of sampled taken, upstream, at the source and downstream.	2023-10-23

Non-Compliance:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There was no non-compliance issues reported during the reporting period.				

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There was no non-compliances identified in the inspection report.				

Flows

The current Municipal Drinking Water Licence does not specify a rated capacity for this system. There are several metering sites throughout the system to capture flows.

The flow entering the Port Burwell Area Secondary Water Supply System is monitored at the Port Burwell Valve House (MV1). Refer to Table 1 for the flows through MV1 during the reporting period. The average daily flow for 2023 was 726m³/day which is a decrease of 6.3% from 2022 average day flows. The maximum daily flow for 2023 was 1,370m³/day, which is a decrease of 4.8% from the previous year.

There are various flow meters within to the PBASWSS, these assist with providing flow data for billing purposes, chlorine dosing and line loss studies. Table 2 provides the monthly meter flows for each of these meters.

Table 1: Flows to the PBASWSS from the Port Burwell Valve House Meter (MV1)

Month	2023 Total Flow (m ³)	2022 Total Flow (m ³)	2023 Average Day Flow (m ³ /day)	2022 Average Day Flow (m ³ /day)	% Difference between 2023 and 2022	2023 Max Day Flow (m ³ /day)	2022 Max Day Flow (m ³ /day)	% Difference Between 2023 and 2022
January	15,322	19,268	494	622	-20.6	702	869	-19.2
February	16,428	17,779	587	635	-7.6	717	837	-14.3
March	17,551	21,360	566	689	-17.9	969	1,054	-8.1
April	20,147	19,395	672	647	3.9	800	1,337	-40.2
May	26,112	26,229	842	846	-0.5	1,236	1,232	0.3
June	26,152	30,744	872	1,025	-14.9	1,370	1,439	-4.8
July	28,147	28,973	908	935	-2.9	1,134	1,405	-19.3
August	28,994	31,501	935	1,016	-8.0	1,340	1,186	13.0
September	24,176	22,672	806	756	6.6	1,053	1,143	-7.9
October	23,558	23,074	760	744	2.2	899	987	-8.9
November	18,838	18,833	628	628	0	738	764	-3.4
December	19,399	23,478	626	757	-17.3	783	1,361	-42.5
Total Flow	264,824	283,306						
Average			726	775	-6.3			
Max						1,370	1,439	-4.8

The table below is a summary of flow volumes from the various flow meters in the PBASWS

Table 2: Flow Volumes from Various Flow Meters In the PBASWSS

Month	VC02 FWD (m ³)	VC02 REV (m ³)	VC03 (m ³)	Tower Inlet (m ³)	Tower Outlet (m ³)	Lakeview (m ³)	EO38 (m ³)	VO01 (m ³)
January	13,746	79	3,172	9,967	10,058	9,937	5,403	3,780
February	12,588	60	2,885	8,776	9,109	9,109	4,801	3,524
March	16,826	58	3,890	10,806	9,899	12,446	1,953	4,899
April	14,849	89	3,498	10,099	10,140	10,767	1,456	4,354
May	20,299	61	4,807	10,043	9,913	14,534	1,456	5,300
June	21,177	87	5,055	9,850	9,751	14,834	5,890	5,987
July	21,673	65	5,099	10,812	10,778	15,748	8,174	4,125
August	22,304	73	5,337	10,868	10,515	14,984	9,208	4,874
September	22,254	65	5,241	10,180	10,213	14,781	7,893	4,600
October	16,689	72	3,905	10,695	10,577	11,235	5,956	4,157
November	15,441	21	3,559	9,736	9,826	11,140	6,002	4,070
December	16,808	76	3,923	10,156	10,079	12,240	6,801	4,295
Total Flow	214,654	806	50,371	121,991	120,859	151,755	64,480	53,382

Regulatory Sample Results Summary

Microbiological Testing:

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		No. of HPC Samples	Range of HPC Results	
		Min	Max	Min	Max		Min	Max
Distribution Water	163	0	0	0	8	54	<10	<10

Operational Testing:

	No. of Grab Samples Collected	Range of Results	
		Minimum	Maximum
Free Chlorine Residual, DW Field (mg/L)	364	0.46	2.60

Summary of Lead Testing:

Schedule 15 Sampling:

The Port Burwell System is exempt from Schedule 15 due to the customers on the PBASWSS belong to each municipality and are covered under their sampling program

Organic Parameters:

These parameters are tested quarterly as a requirement under O.Reg 170/03.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2023	37.3	100	0	0
Haloacetic Acids: Total (ug/L) Annual Average- DW	2023	15.9	80	0	0

MAC = Maximum Allowable Concentration as per O.Reg 169/03

Additional Legislated Samples:

There was no additional sampling required.

Major Maintenance Summary

Distribution Maintenance:

Details
<ul style="list-style-type: none"> - Replaced chlorine injector and union connection - Replaced high level switch for sump pump in tower chamber - Piping to eyewash station repaired from breakage due to freezing - Heater sequencer and thermostat replaced - Chlorine panel parts replaced (leaky fittings) - PLC replaced at MV1 valve house, PB tower, and Lakeview (E034) - Replaced faulty PRV on chlorine panel at Lakeview - Replaced discharge line union on chlorine panel at Dexter Rechlor - Replace chlorine injector and ball valve at tower - Watermain break east of Lakeview (Category 1) - Replaced pH probe at Dexter Rechlor - Flow meter replaced at Waneeta Dr., PB02, and E038 - Replaced discharge valve on pump #2 at Lakeview - Installed external antenna at Port Burwell Tower for cellular fail over - Installed new exterior light at Dexter Rechlor - Replaced heater at the Port Burwell tower - New Roof on Lakeview building - New post to mount communication antenna at Lakeview - Installed eye bolts to secure generator at Dexter, Lakeview and PB tower - Painted all sample stations and hydrants - SCADA maintenance - Water tower ROV inspection and cathodic protection system inspection - Started desktop condition assessment (project ongoing)



Aylmer Area Secondary Water Supply System

REPORT NO.: AASWSS-24-04
DATE: March 6, 2024
ATTACHMENT: Section 11 and Schedule 22 Reports
SUBJECT: **AYLMER AREA SECONDARY WATER SUPPLY SYSTEM: 2023 SECTION 11 ANNUAL REPORT AND SCHEDULE 22 SUMMARY REPORT**

Recommendation:

THAT Report No. AASWSS-24-04 entitled “Aylmer Area Secondary Water Supply System (AASWSS): 2023 Section 11 Annual Report and Schedule 22 Summary Report” be received.

Background:

Schedule 22 of O. Reg. 170/03 under the Safe Drinking Water Act requires that the Operating Authority prepare and submit a report to the Owner no later than March 31st of each calendar year. In addition, the Operating Authority, being the Ontario Clean Water Agency (OCWA), is required to complete Section 11 of O. Reg. 170/03 under the Safe Drinking Water Act. The Section 11 Annual Report must be made available to the public free of charge if requested.

The purpose of the two reports that are submitted by OCWA is to advise the Owner on the operation of the system, the quality of the water, and the quantity of water used throughout the drinking water system for the previous year.

Comments/Analysis:

OCWA has prepared and submitted the 2023 Ministry of the Environment, Conservation and Parks (MECP) Annual Summary report for the AASWSS. The Operating Authority is required to complete the Section 11 Annual report by February 28th of each calendar year. The members of the Joint Board of Management are to receive copies of the Schedule 22 report by March 31st of each calendar year. It should be noted, that the Aylmer Secondary, Section 11 report combines pertinent information for both the Elgin Middlesex Pumping Station (EMPS), and the Transmission main. This is done to display all sampling for the system on one document to provide a clearer interpretation of all samples collected for the entire system. There are two separate Schedule 22 reports which are completed for the EMPS and the Transmission main. Copies of these reports for both the EMPS and the Transmission Main were provided to the members of the Joint Board of Management before the required dates by email. Reports are also submitted by the Elgin Area Primary

Water Supply System - Joint Board of Management for the Elgin Area Water Treatment Plant and are available to Board members upon request.

The contents of the Schedule 22 reports prepared by OCWA include:

- Overview of system
- Compliance with Regulations
- Corrective Actions related to non-compliances
- Flow summary for the previous year.

The contents of the Section 11 report prepared by OCWA include:

- Description of the water system
- A summary of adverse water quality incidents
- Population served
- Expenses incurred
- A summary of microbiological and chemical testing over the year.

Attached to this report are the 2023 Section 11 Annual Report and the Schedule 22 Summary Reports for both the Elgin Middlesex Pumping Station (EMPS) as well as for the AASWSS Transmission Main (Watermain from EMPS to the Malahide/Aylmer Border). As the Board is aware, these are both components of the AASWSS. Both the EMPS and the Transmission Main are operated by two separate hubs of OCWA. As such, reports are required to be completed for each component of the Secondary System.

Compliance with Regulations:

The MECP conducted physical inspection of the Elgin Middlesex Pumping Station and the transmission main on September 14th, 2023. For this inspection period, the Aylmer Area Secondary Water Supply System received a mark of 100%. There were no non-compliances with regulatory requirements identified during the inspection period.

Availability of Reports:

Copies of the Section 11 and 22 reports are to be made available for inspection by the public during normal working hours. The Staff have posted the reports on the Township of Malahide's website and are available at the front desk upon request. If the general public requests a copy of the report, one must be made available free of charge.

Summary:

The purpose of the report is to summarize compliance with the regulations, corrective actions and flow monitoring for the previous year's operation of the water system. It also promotes transparency between the MECP, the general public, and the municipal drinking water system. It is an effective tool to confirm to both the public and the MECP that municipal drinking water systems provide a safe supply of drinking water.

Submitted by:	Approved by:	Approved for the Board by:
Sam Gustavson Water/Wastewater Operations Manager	Jason Godby Director of Public Works	Nathan Dias Chief Administrative Officer



February 22nd, 2024

Jason Godby
Director of Public Works
87 John Street South
Aylmer, ON N5H 2C3

Re: Safe Drinking Water Act, O. Reg. 170/03 Schedule 22 Summary Report

Dear Mr. Godby,

Attached is the 2023 Summary Report for the Aylmer Area Secondary Water Supply System. This report is completed in accordance with Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act.

This Summary Report is to be provided to the members of the Aylmer Area Secondary Water Supply System Joint Board of Management by March 31, 2024.

Section 12 of O. Reg. 170/03, requires the Annual Report required under Section 11 of O. Reg. 170/03 and the Summary Report be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the township, or at a location that is reasonably convenient to the users of the water system.

Please feel free to contact me should you require any additional information regarding these reports. I can be reached at 519-870-7841.

Sincerely,

Matthew Belding
Process and Compliance Technician

c.c. Dale LeBritton, OCWA's Regional Hub Manager
Vitaliy Talashok, OCWA's Senior Operations Manager
Sam Gustavson, Malahide's Water/Wastewater Operations Manager
Maegan Garber, Safety, Process and Compliance Manager



Annual Summary Report

For the

**Aylmer Area Secondary
Water Supply System**

2023

**Prepared for the Township of Malahide,
Administering Municipality for the Aylmer Area
Secondary Water Supply System Joint Board of Management**

By the Ontario Clean Water Agency

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Section Number	Contents	Page Number
1	Overview of System	1
<hr/>		
2	Compliance with Regulations Schedule 22-2 (2)(a) List the requirements of the Act, 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 any time during the period covered by the report	1
<hr/>		
3	Corrective Actions Schedule 22-2 (2)(b) For each requirement referred to in section 2 that was not met, specify the duration of the failure and the measures that were taken to correct the failure.	1
<hr/>		
4	Flow Summary Schedule 22-2 (3) <ol style="list-style-type: none"> 1. 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. 2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement. 	1-2
<hr/>		
APPENDICES		
APPENDIX A Elgin Middlesex Pump Station flows for January 1 st , 2023 to December 31 st , 2023		
APPENDIX B Flows for AASWSS meters for January 1 st , 2023 to December 31 st , 2023		

SECTION 1: Overview

This summary report for the Aylmer Area Secondary Water Supply System is published in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1st, 2023 to December 31st, 2023. The Aylmer Area Secondary Water Supply System (waterworks number 260004722) is categorized as a Large Municipal Residential Drinking Water System.

The Aylmer Area Secondary Water Supply System is operated under the Municipal Drinking Water Licence (MDWL) 302-101 and Drinking Water Works Permit (DWWP) 302-201.

This report was prepared by the Ontario Clean Water Agency (OCWA) on behalf of the administering authority, the Township of Malahide.

SECTION 2: Compliance

The Aylmer Area Secondary Water Supply System was operated and maintained in such a manner that water supplied to the consumers and serviced by the system satisfied the requirements in the Safe Drinking Water Act, Municipal Drinking Water License and Drinking Water Works Permit.

The annual routine Inspection of the Aylmer Area Secondary Water Supply System occurred on September 14th, 2023, and was conducted by Provincial Officer, Angela Stroyberg of the Ministry of the Environment, Conservation and Parks (MECP). The final inspection report identified no non-compliances with regulatory requirements.

SECTION 3: Corrective Action

The routine MECP Inspections have an Inspection Rating Record, which evaluates the system to provide information for the owner/operator on areas that need to be improved. The particular areas that were evaluated for the Aylmer Area Secondary Water Supply System were: Treatment Process, Operations Manuals, Logbooks, Certification and Training, Water Quality Monitoring and Reporting and Corrective Actions. This system received 0 out of 232 non-compliance ratings and as such received 100% for the Final Inspection Rating.

SECTION 4: Summary and Discussion of Quantity of Water Supplied

In accordance with Schedule 22-2(3) 1, find a summary and discussion of the quantity of water supplied during the reporting period. There are no rated capacities specified in the Municipal Drinking Water Licence.

Attached as Appendix A, find a summary of flow for the Elgin Middlesex Pumping Station which supplies all of the water to the Aylmer Area Secondary Water Supply System. This data is collected at the Elgin Middlesex Pump Station.

The average daily flow supplied to the Aylmer Area Secondary Water Supply System was 4,887m³/day, which is a 2.7% increase from the previous year. The maximum daily flow for 2023 was 7,344m³/day, which is a 5.2% increase from the previous year.

Attached as Appendix B are the flow totals for all meters that are located in the Aylmer Area Secondary Water Supply System.

APPENDIX A

The table below is a summary of quantities and flow rates from the Elgin Middlesex Booster Pumping Station meter for 2023 compared to 2022 values.

Month	2023 Total Flow (m ³)	2022 Total Flow (m ³)	2023 Average Day Flow (m ³)	2022 Average Day Flow (m ³)	% Difference between 2023 and 2022	2023 Max Day Flow (m ³)	2022 Max Day Flow (m ³)	% Difference Between 2023 and 2022
January	128,095	116,094	4,132	3,745	10.3	4,929	4,808	2.5
February	130,138	113,836	4,648	4,066	14.3	5,137	4,645	10.6
March	139,300	138,155	4,494	4,457	0.8	7,344	5,018	46.4
April	132,518	116,084	4,417	3,869	14.2	5,119	4,778	7.1
May	163,740	152,522	5,282	4,920	7.4	6,690	5,913	13.1
June	156,963	173,162	5,232	5,772	-9.4	6,688	6,982	-4.2
July	167,832	162,680	5,414	5,248	3.2	5,816	6,423	-9.5
August	162,576	181,305	5,244	5,849	-10.3	5,821	5,851	-0.5
September	138,026	129,483	4,601	4,316	6.6	6,237	5,826	7.1
October	164,554	160,237	5,308	5,169	2.7	5,653	5,705	-0.9
November	146,169	148,047	4,872	4,935	-1.3	5,367	5,314	1.0
December	153,750	147,978	4,960	4,773	3.9	5,439	4,949	9.9
Total Flow	1,783,661	1,739,583	-	-	-	-	-	-
Average	-	-	4,887	4,760	2.7	-	-	-
Maximum	-	-	-	-	-	7,344	6,982	-

APPENDIX B

The table below is a summary of quantities and flow rates from the meters on the system for 2023 compared to 2022 values.

Meter	2023 Total Flow (m³)	2022 Total Flow (m³)	% Difference between 2023 and 2022
Chamber 13	1,753,219	1,710,239	2.5
Chamber 16	1,721,990	1,686,813	2.1
Tower Rd.	2,531	2,793	-9.4
Belmont Rd.	2,911	3,320	-12.3
Springwater Rd.	307	505	-39.2
Norton/Church	2,137	2,090	2.2
Rogers Rd.	3,701	2,855	29.6

**ELGIN-MIDDLESEX PUMPING STATION
AYLMER AREA SECONDARY WATER SUPPLY SYSTEM
2023 COMPLIANCE REPORT
(Schedule 22 Summary Report)**

Facility Name: Elgin-Middlesex Pumping Station -
Aylmer Area Secondary Water Supply System

Mailing Address: Elgin Area Primary Water Supply System
P.O. Box 220
Port Stanley, ON N5L 1J4



Average Daily Flow 4,893m³/day
Max. Daily Flow 7,344m³/day
Source Water Elgin Area Primary Water Supply System

CONTACT INFO:

Contract Administration:
Township of Malahide Office
87 John Street South, Aylmer, ON N5H 3C2
Contact: Mr. Jason Godby
Director of Public Works

Operator:
Ontario Clean Water Agency.
P.O. Box 220, Port Stanley, Ontario N5L 1J4
Contact: Mr. Greg Henderson - Senior Operations Manager
(226) 378-5154

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Appendix D: EMPS Aylmer 2023 Annual Report	
Appendix E: EMPS Chemical Consumption for 2023	

System Approvals:

The Aylmer Area Secondary Water Supply System (AASWSS) is supplied water through the Elgin Middlesex Pump Station (EMPS), which receives water from the Elgin Area Primary Water Supply System (EAPWSS) on Dexter Line, east of Port Stanley, Ontario. During the reporting period, the Aylmer Area Secondary Water Supply System was operated pursuant to the approvals, licenses and permits listed below.

The supply and distribution of water to the system was governed by the following Municipal Drinking Water Licenses (MDWL) and Drinking Water Works Permits (DWWP):

- MDWL No. 302-101, issue 4, on May 7, 2021
- DWWP No. 302-201, issue 3, on May 7, 2021

The DWWP and MDWL were issued in accordance with the Safe Drinking Water Act (SDWA), 2002.

Treated Water Requirements:

The requirements fall under the Drinking Water Systems Regulation (O.Reg.170/03) and the Ontario Drinking Water Quality Standards (O.Reg.169/03) under the Safe Drinking Water Act, 2002.

Staff Complement and Training:

In 2023, the Aylmer facility at the EMPS was operated and maintained under the operating authority, Ontario Clean Water Agency. The operational and maintenance staff are based at the EAPWSS and share their time between the two facilities. Employees responsible for the operations and maintenance of the facility included one (1) senior operations manager, two (2) team leads, eight (8) full time operations staff, four (4) full time maintenance staff, one (1) technical support specialist, one (1) asset maintenance specialist and four (4) administrative support positions.

In 2023, all employees received Director Approved and practical on-the-job training which contributed to annual Ministry of the Environment, Conservation and Parks (MECP) training requirements.

History of Facility:

The EMPS is an integrated booster station occupied by three secondary systems, which are fed from two in-ground storage reservoirs, each having a capacity of 27.3 million liters. The two storage reservoirs and the site upon which the three booster stations are situated are owned by the EAPWSS. The original St. Thomas pump station, constructed in 1966, services St. Thomas, and sections of the Municipalities of Central Elgin and Southwold. Two more pump stations were completed in 1994 that service the Town of Aylmer, Municipality of Malahide, and the City of London.

The Aylmer Area Secondary Water Supply System (AASWSS) portion of the EMPS comprised of two high-lift pumps that deliver water through a transmission main that services the AASWSS. A gas re-chlorination system provides re-chlorination for water being directed to the AASWSS.

In the event of a power failure, an on-site generator can provide sufficient standby power to operate the facility and run an Aylmer pump.

Remote monitoring and control of all three pump stations is performed by staff at the EAPWSS. Remote monitoring and control capabilities are made possible via the EAPWSS and the EMPS SCADA systems.

Process Description:



The EMPS receives treated water from the EAPWSS, which treats water at the water treatment plant located on the shores of Lake Erie to the east of Port Stanley. Water from the plant is pumped into the EAPWSS site reservoirs located at the EMPS where it is subsequently fed via a series of headers to each of the pumping stations serving the AASWSS, the City of London Distribution System, and the St. Thomas Area Secondary Water Supply System (STASWSS).

Post-Treatment:



The AASWSS and STASWSS both utilize a gas chlorination system for secondary disinfection. The system consists of two scaled 68 kg gas chlorine cylinders and three chlorinators equipped with booster pumps and a dosing capacity of 1-60kg/h.

High Lift Pumping Station:



The two high lift pumps provide redundant pumping capacity into the AASWSS. The Aylmer pumps are equipped with variable frequency drives (VFD) with each pump having a rated capacity of 130L/sec. With the current VFDs being utilized as soft and stop variable frequency drives.

Maintenance:

Site maintenance was carried out by Ontario Clean Water Agency (OCWA) field services staff based at the EAPWSS. Specialty maintenance services are provided, on an as needed basis by external service providers.

All maintenance scheduling is monitored through a computerized maintenance management system (Maximo).

In addition to the routine preventative maintenance program, several maintenance projects were completed at the EMPS in 2023. A summary of non-routine maintenance is available in Appendix D, of the 2023 Annual Report.

Sampling Procedures:

All samples collected by licensed OCWA personnel are submitted to a Canadian Association for Laboratory Accreditation (CALA) accredited laboratory for both bacterial and chemical analysis.

Distribution water samples are taken twice per week at the inlet to the reservoirs and submitted for bacteriological analysis. The distribution water entering the AASWSS is sampled weekly and submitted to an external laboratory for bacteriological analysis. Chlorine residual, for the water entering AASWSS, is monitored continuously from the EAPWSS by means of the SCADA system.

On a quarterly basis the distribution water entering the reservoirs, as well as the water entering the AASWSS is sampled and submitted to an accredited laboratory for the testing of disinfection by-products total trihalomethanes (THM) and haloacetic acids (HAA). Twice annually, the distribution water entering the reservoirs is sampled and submitted to an accredited laboratory for testing of lead concentrations.

All water quality sampling at the EMPS was performed in accordance with Ontario Regulation 170/03.

Water Quality Monitoring and Flow Measurement:

Water quality is monitored remotely by means of a free chlorine analyzer that was verified by EAPWSS staff. See Appendix A for a summary of 2023 water quality data. Flow leaving the EMPS directed to AASWSS is measured utilizing a magnetic flow measuring device. See Appendix B for 2023 total daily flow values and Appendix C for 2023 daily instantaneous peak flow rates.

Statement of Comparison:

The previous Certificate of Approval and new Municipal Drinking Water License for the AASWSS do not identify a rated capacity for the system. The pumping station has an available capacity of 22,464m³/day, whereby instantaneous peak flow capacity is rated at 260 L/s.

The maximum total daily flow witnessed by the system in 2023 was 7,344 m³/day, approximately 33% of the system's capacity. The maximum instantaneous peak flow witnessed by the system in 2023 was 167 L/s, approximately 64% of the capacity. The average total daily flow witnessed by the system in 2023 was 4,893 m³/day, approximately 22% of the capacity.

Ministry of the Environment Conservation and Parks Inspections:

The MECP conducts an annual inspection of the Aylmer portion of the EMPS annually along with the AASWSS operated by the Ontario Clean Water Agency. A MECP inspection took place September 14, 2023 and the final inspection report was issued on November 1, 2023. There were no non-compliances identified in the inspection report. The final inspection rating received for the 2022-2023 reporting year was 100.00%.

Benefiting Municipalities:

Following the adoption of the Municipal Water and Sewer Transfer Act in 1997, the Ontario Ministry of the Environment and Conservation and Parks transferred the ownership of the three booster stations from the Province of Ontario to the water systems' benefiting municipalities. As a result, the AASWSS portion of the EMPS and associated equipment is owned by the Aylmer Area Secondary Water Supply System Joint Board of Management, the London portion of the EMPS is owned by the Corporation of the City of London, and the St. Thomas Area Secondary Water System portion of the EMPS and associated appurtenances are owned by the St. Thomas Area Secondary Water System Joint Board of Management. Jointly these water systems benefit, and are managed on behalf of, the communities of Aylmer, Central Elgin, London, Malahide, Southwold and St. Thomas. A list of municipalities that receive water directly and indirectly from the AASWSS at the EMPS is provided in Appendix D.

The Ontario Clean Water Agency operates and maintains the EMPS, under contract to the AASWSS, The Corporation of the City of London and the STASWSS.

This report was prepared by Ontario Clean Water Agency, the Operating Authority for the Aylmer portion of the EMPS, on behalf of the Aylmer Area Secondary Water Supply System Joint Board of Management.

**APPENDIX A – 2023 EMPS AYLNER
WATER QUALITY SUMMARY**

MONTH	POST TREATMENT
	Free Cl ₂ mg/L
January	
Minimum	0.88
Maximum	1.42
Average	1.12
February	
Minimum	0.89
Maximum	1.42
Average	1.10
March	
Minimum	0.83
Maximum	1.38
Average	1.07
April	
Minimum	0.78
Maximum	1.43
Average	1.07
May	
Minimum	0.88
Maximum	1.44
Average	1.13
June	
Minimum	0.77
Maximum	1.35
Average	1.07
July	
Minimum	0.72
Maximum	1.85
Average	1.08
August	
Minimum	0.71
Maximum	1.45
Average	1.04
September	
Minimum	0.66
Maximum	1.53
Average	1.05
October	
Minimum	0.72
Maximum	1.49
Average	1.06
November	
Minimum	0.75
Maximum	1.47
Average	1.04
December	
Minimum	0.80
Maximum	1.46
Average	1.09
Yearly Minimum	0.66
Yearly Maximum	1.85
Yearly Average	1.08

Note: Chlorine residuals obtained from SCADA.

**APPENDIX B
EMPS AYLMER TOTAL DAILY FLOW - 2023**

Date	January m ³	February m ³	March m ³	April m ³	May m ³	June m ³	July m ³	August m ³	September m ³	October m ³	November m ³	December m ³	
1	4,325	4,660	4,519	4,213	4,520	6,638	5,478	5,528	5,576	5348	4,615	4,992	
2	4,677	4,590	4,611	4,157	4,287	6,687	4,388	5,480	4,827	5159	5,009	4,624	
3	4,205	4,401	4,344	4,191	4,568	6,356	4,650	5,605	5,262	5606	5,255	4,735	
4	4,619	4,614	4,566	4,560	4,389	5,730	5,743	5,460	5,482	5653	4,832	5,438	
5	4,664	4,440	4,238	4,650	5,490	6,133	5,426	5,003	6,237	5342	4,699	5,056	
6	4,608	4,530	4,894	4,252	4,616	6,067	5,025	4,675	5,529	5475	4,999	4,700	
7	4,419	4,288	4,463	4,258	4,630	5,801	5,085	4,912	5,452	4656	5,367	4,519	
8	4,400	4,695	5,078	4,411	5,558	5,383	4,794	5,372	5,452	4646	4,301	5,252	
9	4,457	4,524	4,584	4,248	5,228	5,859	5,148	5,822	4,701	4978	5,030	5,100	
10	4,906	4,390	4,400	4,448	5,399	5,962	5,526	5,624	5,219	4838	5,255	4,526	
11	4,515	4,313	4,434	4,759	5,547	5,186	5,186	5,375	5,585	4675	4,867	5,110	
12	4,436	4,733	4,608	4,774	5,458	5,026	5,304	5,324	5,686	5339	3,807	5,045	
13	4,707	4,583	4,741	5,039	5,671	5,193	4,908	4,911	5,333	4704	5,249	4,954	
14	4,657	4,024	4,392	5,118	4,742	5,026	5,566	5,343	5,791	4615	4,948	4,655	
15	4,252	4,768	4,953	4,737	5,100	4,753	4,756	5,237	5,812	4687	5,273	4,885	
16	4,845	4,602	4,934	3,854	5,077	5,531	5,230	5,336	4,676	5168	5,182	4,677	
17	4,388	4,304	4,363	2,536	5,032	6,047	5,226	4,885	3,817	4997	4,833	4,925	
18	4,764	4,745	4,485	2,410	5,136	5,562	5,595	5,125	2,788	4734	5,001	4,759	
19	4,123	4,340	4,646	3,419	5,037	5,956	5,780	5,050	2,934	4735	4,751	5,023	
20	4,609	4,587	5,525	3,637	4,421	5,987	4,682	5,082	2,610	5214	5,039	4,753	
21	4,477	4,539	7,344	4,473	4,578	6,081	5,429	5,275	2,229	4684	4,502	4,850	
22	4,624	4,391	4,377	4,148	5,036	5,776	5,394	5,573	2,994	4609	5,151	4,620	
23	4,812	3,671	4,403	3,976	5,672	4,966	5,223	4,900	4,375	4985	4,568	5,083	
24	4,817	4,407	4,801	4,439	5,372	5,114	5,405	5,066	4,247	4934	4,699	4,761	
25	4,702	4,531	4,554	4,552	4,781	5,345	5,817	5,483	4,809	5231	4,835	4,551	
26	4,928	4,451	3,930	4,172	5,632	5,004	5,340	4,921	4,855	5242	4,588	4,944	
27	4,709	4,215	4,489	4,768	5,670	5,276	4,903	5,098	5,464	5192	4,995	4,614	
28	4,556	4,586	4,463	4,253	5,695	5,411	5,557	5,182	4,998	5164	4,546	4,472	
29	4,463		4,314	4,437	6,458	5,358	5,095	5,196	4,960	4342	4,720	5,127	
30	4,407		4,540	5,047	6,462	5,968	4,977	5,200	5,282	4811	5,176	4,710	
31	4,564		4,190		6,415		5,142	4,953		4889		4,675	
Total	141,635	124,922	144,183	127,936	161,677	169,182	161,778	161,996	142,982	154,652	146,092	150,135	1,787,170
Minimum	4,123	3,671	3,930	2,410	4,287	4,753	4,388	4,675	2,229	4,342	3,807	4,472	2,229
Maximum	4,928	4,768	7,344	5,118	6,462	6,687	5,817	5,822	6,237	5,653	5,367	5,438	7,344
Average	4,569	4,462	4,651	4,265	5,215	5,639	5,219	5,226	4,766	4,989	4,870	4,843	4,893

APPENDIX C

EMPS AYLMEYER DAILY INSTANTANEOUS PEAK FLOW - 2023

Date	January L/s	February L/s	March L/s	April L/s	May L/s	June L/s	July L/s	August L/s	September L/s	October L/s	November L/s	December L/s	
1	123	130	128	123	163	125	131	124	124	124	130	122	
2	123	130	123	124	125	125	131	131	125	136	123	122	
3	124	130	123	123	142	125	131	131	125	127	129	122	
4	122	128	122	123	141	125	131	131	126	124	124	146	
5	123	128	122	129	133	132	129	134	126	132	123	122	
6	128	130	122	131	124	131	126	140	125	132	131	131	
7	130	130	124	129	123	129	125	132	132	132	124	131	
8	129	128	130	129	124	125	125	132	132	132	131	131	
9	130	123	129	129	125	125	124	131	131	132	131	130	
10	129	123	129	130	130	125	125	125	132	130	131	130	
11	130	123	130	130	152	125	126	124	134	129	130	130	
12	123	123	130	129	130	124	131	124	132	124	130	130	
13	123	123	128	125	131	128	131	125	130	124	130	129	
14	124	124	130	123	129	130	132	124	125	130	131	123	
15	124	130	128	123	149	132	131	126	125	124	130	122	
16	124	129	125	123	130	131	131	123	124	124	123	123	
17	124	130	125	123	129	129	142	125	124	125	123	122	
18	123	129	124	123	124	131	131	125	124	124	123	122	
19	130	129	123	142	123	130	129	125	124	125	123	122	
20	129	129	164	130	125	131	129	124	131	140	122	130	
21	129	129	167	132	124	130	131	124	132	123	122	130	
22	129	129	124	130	125	125	135	126	132	123	131	130	
23	130	128	124	130	125	125	132	131	132	124	130	129	
24	130	129	123	130	131	125	130	132	132	124	130	129	
25	127	130	123	130	134	125	131	132	131	132	131	129	
26	124	130	123	129	137	125	132	132	132	132	130	130	
27	124	129	124	124	130	126	130	132	131	136	131	130	
28	124	129	123	124	131	132	125	132	131	136	131	123	
29	124		129	124	136	132	124	131	125	136	132	123	
30	124		129	123	130	130	124	128	125	130	129	122	
31	124		127		128		125	124		132		123	
Minimum	122	123	122	123	123	124	124	123	124	123	122	122	122
Maximum	130	130	167	142	163	132	142	140	134	140	132	146	167
Average	126	128	128	127	132	128	129	128	128	129	128	127	128

APPENDIX E	
EMPS Chemical Consumption - 2023	
Month	Total Chlorine Gas Usage - Kg
January	159
February	136
March	143
April	153
May	173
June	184
July	163
August	167
September	181
October	181
November	177
December	142
Yearly Total	1959

Please note: Aylmer and St.Thomas combined cl2 usage



Drinking-Water Systems Regulation O. Reg. 170/03

Drinking-Water System Number:	260004722
Drinking-Water System Name:	Elgin Middlesex Pumping Station – Aylmer Area Secondary Water Supply System
Drinking-Water System Owner:	Aylmer Area Secondary Water Supply System Joint Board of Management c/o Township of Malahide
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 through December 31, 2023

<u><i>Complete if your Category is Large Municipal Residential or Small Municipal Residential</i></u>	<u><i>Complete for all other Categories.</i></u>		
<p>Does your Drinking-Water System serve more than 10,000 people? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <table border="1"> <tr> <td> Township of Malahide Office 87 John Street South Aylmer, ON N5H 2C3 www.malahide.ca </td> </tr> <tr> <td> Elgin Area Primary Water Supply System Treatment Plant 43665 Dexter Line, Union, ON </td> </tr> </table>	Township of Malahide Office 87 John Street South Aylmer, ON N5H 2C3 www.malahide.ca	Elgin Area Primary Water Supply System Treatment Plant 43665 Dexter Line, Union, ON	<p>Number of Designated Facilities served:</p> <p><input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Number of Interested Authorities you report to: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes <input type="checkbox"/> No <input type="checkbox"/></p>
Township of Malahide Office 87 John Street South Aylmer, ON N5H 2C3 www.malahide.ca			
Elgin Area Primary Water Supply System Treatment Plant 43665 Dexter Line, Union, ON			

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water directly from the Aylmer EMPS:

Drinking Water System Name	Drinking Water System Number
Aylmer Area Secondary Water Supply System	260004722

Systems that receive their drinking water indirectly from the Aylmer EMPS:

Drinking Water System Name	Drinking Water System Number
Municipality of Central Elgin	260004761
Malahide Distribution System	260004774
Aylmer Distribution System	260002136

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes No

Indicate how you notified system users that your annual report is available, and is free of charge.

Public access/notice via the web

Public access/notice via Government Office

Public access/notice via a newspaper

Public access/notice via Public Request

Public access/notice via a Public Library

Public access/notice via other method _____

Describe your Drinking-Water System

The Elgin Middlesex Pumping Station (EMPS) receives water from the Elgin Area Primary Water Supply System (EAPWSS), which is located to the east of Port Stanley. Water from the EAPWSS is pumped into the EAPWSS site reservoirs located at the EMPS. The total capacity of the 2 reservoirs is 54,600m³. Through various secondary water supply systems, the EMPS serves the Cities of London, St. Thomas, Town of Aylmer, and Municipalities of Central Elgin, Malahide and Southwold.

The EMPS is a shared facility. Booster pumps are dedicated to directing water to the City of London, St. Thomas Secondary and/or Aylmer Secondary Water Supply Systems. A gas chlorine system is utilized to provide re-chlorination for water being directed to the St. Thomas and Aylmer Area Secondary Supply Systems. The facility also houses a 600kW standby diesel generator that provides emergency power to pump water into the St. Thomas and Aylmer systems during a power interruption.

Three pipelines exit the EMPS: one pipeline exits to the South, to Highway 3 and then runs in an Easterly direction to service the municipalities on the Aylmer Area Secondary System; the second pipeline exits to the south of the EMPS property and extends west to service the St. Thomas Area Secondary System; the third pipeline runs North along Highbury Avenue, servicing the City of London distribution system.

List all water treatment chemicals used over this reporting period

Gas Chlorine at the EMPS

Were any significant expenses incurred to?

Install required equipment

Repair required equipment

Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

EMPS

- Chlorine System Repairs
- Chlorine Booster Pump Replacement
- Elgin Middlesex Pumping Station Process Flow Diagram Consolidation
- Uninterruptable Power Supply Replacement
- Generator Full Load Test and Engine & Transfer Switch Condition Assessment

Distribution

- Chamber 13 and 16 PLC replacement
- Flowmeter adjustment at chamber 13
- Painted all sample stations and hydrants
- SCADA maintenance

Notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre Distribution System

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Number of Heterotrophic Plate Count (HPC) Samples	Range of HPC Results (CFU/1 mL) (min #)-(max #)
EMPS Aylmer	52	(0) – (0)	(0) – (0)	52	(<10) - (10)
Distribution	160	(0) – (0)	(0) – (0)	56	(<10) – (<60)

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

EMPS Aylmer

Parameter	Number of Grab Samples (Continuous Monitoring)	Min	Max	Avg
Free Chlorine Residual (mg/L)	8760	0.66	1.85	1.08

Note: The free chlorine residual spiked on occasion during 2023. Each spike corresponded with a pump start-up. None of the spikes lasted longer than 5 minutes after pump start-up.

Distribution System

Parameter	No. of Samples Collected for period being reported	Range of Results	
		Minimum	Maximum
Free Chlorine Residual (mg/L)	364	0.63	2.60

Summary of Organic parameters sampled during this reporting period or the most recent sample results

EMPS Aylmer

Parameter	Sample Date	Result Value	Unit of Measure	MAC	Exceedances	
					MAC	$\frac{1}{2}$ MAC
THM (NOTE: result value is based on one sample)	January 4, 2023	13	µg/L	-	-	-
	April 4, 2023	15	µg/L			
	July 4, 2023	25	µg/L			
	October 3, 2023	29	µg/L			
THM Running Annual Average (RAA)	2023	21	µg/L	100	No	No
HAA (NOTE: result value is based on one sample)	January 4, 2023	ND	µg/L	-	-	-
	April 4, 2023	ND	µg/L			
	July 4, 2023	7	µg/L			
	October 3, 2023	6.6	µg/L			

HAA Running Annual Average (RAA)	2023	6.8	µg/L	80	No	No
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ND = Non-detect

Distribution System

Parameter	Sample Date	Sample Results	Unit of Measure	MAC	Exceedances	
					MAC	1/2 MAC
Trihalomethane : Total (ug/L)	January 3, 2023	15	µg/L	-	-	-
	April 3, 2023	16				
	July 5, 2023	28				
	October 3, 2023	31				
THM Running Annual Average (RAA)	2023	22.5	µg/L	100.00	No	No
Haloacetic Acid: Total (ug/L)	January 3 2023	5.3	µg/L	-	-	-
	April 3, 2023	5.5				
	July 5, 2023	9.2				
	October 3, 2023	6.1				
HAA Running Annual Average	2023	6.53	µg/L	80.00	No	No



Drinking-Water System Number:	260004722
Drinking-Water System Name:	Elgin Middlesex Pumping Station – Aylmer Area Secondary Water Supply System
Drinking-Water System Owner:	Aylmer Area Secondary Water Supply System Joint Board of Management c/o Township of Malahide
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 through December 31, 2023

<u><i>Complete if your Category is Large Municipal Residential or Small Municipal Residential</i></u>	<u><i>Complete for all other Categories.</i></u>
<p>Does your Drinking-Water System serve more than 10,000 people? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Township of Malahide Office 87 John Street South Aylmer, ON N5H 2C3 www.malahide.ca</p> <p>Elgin Area Primary Water Supply System Treatment Plant 43665 Dexter Line, Union, ON</p> </div>	<p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes <input type="checkbox"/> No <input type="checkbox"/></p>

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Distribution System

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Summary of Organic parameters sampled during this reporting period or the most recent sample results

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Parameter	Sample Date	Result Value	Unit of Measure	MAC	Exceedances	
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	July 4, 2023	25	µg/L			
	October 3, 2023	29	µg/L			
THM Running Annual Average (RAA)	2023	21	µg/L	100	No	No
HAA (NOTE: result value is based on one sample)	January 4, 2023	ND	µg/L	-	-	-
	April 4, 2023	ND	µg/L			
	July 4, 2023	7	µg/L			
	October 3, 2023	6.6	µg/L			

HAA Running Annual Average (RAA)	2023	6.8	µg/L	80	No	No
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ND = Non-detect

Distribution System

Parameter	Sample Date	Sample Results	Unit of Measure	MAC	Exceedances	
					MAC	1/2 MAC
Trihalomethane : Total (ug/L)	January 3, 2023	15	µg/L	-	-	-
	April 3, 2023	16				
	July 5, 2023	28				
	October 3, 2023	31				
THM Running Annual Average (RAA)	2023	22.5	µg/L	100.00	No	No
Haloacetic Acid: Total (ug/L)	January 3 2023	5.3	µg/L	-	-	-
	April 3, 2023	5.5				
	July 5, 2023	9.2				
	October 3, 2023	6.1				
HAA Running Annual Average	2023	6.53	µg/L	80.00	No	No

87 John Street South
Aylmer ON N5H 2C3
Phone: 519-773-5344
Fax: 519-773-5334
Website: www.malahide.ca



Henry Huotari
Associate, Senior Project Manager
R.V. Anderson Associates Limited

Patrick Anckaert
Senior Project Manager
City of St. Thomas

Sent via email: **hhuotari@rvanderson.com**
 panckaert@stthomas.ca

RE: Highbury Avenue Widening Class Environmental Assessment (EA)

Dear Henry and Patrick,

We have received the Notice of Completion for the Highbury Avenue Widening Class Environmental Assessment.

As noted in previous correspondence, the Aylmer Area Secondary Water Supply System (AASWSS) transmission watermain is located in proximity to the subject lands for the proposed Highbury Avenue Widening project being undertaken by the City of St. Thomas. The transmission main provides potable water and fire protection to residents within the Municipality of Central Elgin, Malahide Township and the Town of Aylmer. The 3 municipalities jointly own the system which is administered to through AASWSS Joint Board of Management. The Township of Malahide is the administering Municipality for the Joint Board of Management.

Accordingly, as the administering municipality acting on behalf of the AASWSS, we are requesting continued consultation throughout the engineering and design phase for the proposed Highbury Avenue Widening project. The AASWSS will have interests with the potential impacts of the proposed work in proximity to the existing transmission water main. These concerns include but are not limited to potential disruption or damages to the existing watermain, access for future maintenance and potential economic burden to the users of the water system relating to these items.

Sincerely,

Jason Godby
Director of Public Works

Cc: AASWSS Joint Board of Management Members
 Nathan Dias, CAO, Township of Malahide
 Allison Adams, Manager of Legislative Services/Clerk, Township of Malahide
 Sam Gustavson, Water/Wastewater Operations Manager, Township of Malahide