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STASWSS

St. Thomas Area Secondary Water Supply System

Ontario Regulation 170/03

Summary Report

For the Period
January 1, 2025 – December 31, 2025

License Number: 190-101

Permit Number: 190-201



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1 Summary Report Requirements

1.1 Introduction

The 2025 Summary Report for the St. Thomas Area Secondary Water Supply System (STASWSS) has been prepared to satisfy the requirements of Schedule 22 of Ontario Regulation 170/03, to prepare and distribute a summary report of water system operations. The report is to outline any regulatory non-compliance with respect to water quality and water system management and administration and evaluate the water system infrastructures adequacy, with respect to its ability to continue to meet the water demands of the serviced community.

Specifically, Regulation 170/03, states that the summary report must:

- 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; and
- b. For each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

- 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.
- A comparison of the summary to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement, to the flow rates specified in the written agreement.

The information provided within this report is for the purpose of providing the STASWSS Board of Management, as the owner of the system, the information to assess the capacity of the system and its on-going suitability. This Summary Report covers the reporting period from January 1, 2025 to December 31, 2025.

1.2 System Description

The STASWSS is supplied water from the Elgin Middlesex Pumping Station (EMPS) and Reservoir. The EMPS reservoir is filled by the Elgin Area Primary Water Supply System (EAPWSS) which obtains its water from Lake Erie and provides water treatment at the Elgin Area Primary Water Treatment Plant, located on Dexter Line, East of Port Stanley Ontario.

Operation and Maintenance of the STASWSS section of the EMPS is under contract with the Ontario Clean Water Agency (OCWA). The operation and maintenance of the associated transmission main and distribution system of the STASWSS is conducted by the City of St. Thomas – Environmental Services Department.

The STASWSS is considered a distribution-only system, providing water directly to the City of St. Thomas and sections of the Southwold and Central Elgin Water Distribution Systems.

1.3 System Approvals and Regulatory Requirements

Operation and Maintenance of the STASWSS is governed by the *Safe Drinking Water Act, 2002*, and the regulations established under this Act. In accordance with the *Safe Drinking Water Act*, The Joint Board of Management of the St. Thomas Area Secondary Water Supply System, as owner of the system, holds a Municipal Drinking Water Licence and Drinking Water Works Permit, which provide approval for the establishment of the systems drinking water infrastructure and provides the Board of Management, as owner of the system, the authority to operate and maintain said water system.

During the reporting period, The St. Thomas Area Secondary Water Supply System was operated pursuant to the approvals, licences and permits listed below:

- MDWL No. 190-101, issue 5
- DWWP No. 190-201, issue 3

Ontario Regulation 170/03 – Drinking Water Systems, governs the operation, maintenance and water quality monitoring requirements for municipal drinking water systems in Ontario. *Ontario Regulation 128/04 – Certification of Drinking Water System Operators and Water Quality Analysts* sets out the requirements for persons performing operational or maintenance activities on the STASWSS system. The *Safe Drinking Water Act, 2002* and the associated regulations are enforced by the Ministry of Environment, Conservation and Parks (MECP) and monitored through annual inspections by Ministry personnel. Any non-compliant conditions identified over the course of the annual inspection are listed in the Inspection Report issued at the conclusion of the inspection period. Any inspection reports received within the reporting period are summarized in Section 4.1 of this report.

Ontario Regulation 169/03 – Ontario Drinking Water Quality Standards sets the limits for parameters of concern in drinking water. Drinking water quality is monitored by the systems two Operating Authorities, and any exceedance of the Drinking Water Quality Standards must be reported to the MECP and Public Health Unit, verbally and in written form using a Notice of Adverse Test Results and Issue Resolution Form. Any non-compliant conditions identified through water quality monitoring exercises over the reporting period have been documented on a Notice of Adverse Test Results and Issue Resolution Form and are summarized in section 4.2 of this report.

2 Evaluation of Water Quantities and Flow Rates

The EMPS is situated on a site owned by the Elgin Area Primary Water Supply System and includes the original St. Thomas pump station, constructed in 1966 that services St. Thomas, and sections of the Municipality of Central Elgin and Township of Southwold. Two additional pump stations were completed in 1994 and service the City of London, as well as the Municipality of Malahide, Town of Aylmer, and areas of the Municipality of Central Elgin.

The St. Thomas pump station is comprised of three high-lift pumps that deliver water through a transmission main that services the St. Thomas Area Secondary Water Supply System. A gas re-chlorination system provides re-chlorination for water being directed to the St. Thomas Area Secondary Water Supply System.

The Ontario Clean Water Agency (OCWA) is currently the Operating Authority for all 3 pump stations located within the EMPS and ultimately control the pumps directing water into the STASWSS. OCWA has prepared a Summary Report for their operations at the EMPS for the reporting period,

which evaluates the volumes of water delivered to the STASWSS. The OCWA Report is attached as Appendix A.

3 Water Quality Summary

3.1 OCWA Operations - Water Quality Testing Summary

A summary of water quality testing completed by OCWA over the course of the reporting period is available in the Annual Report included as an appendix to the Summary Report (Appendix A to this report).

3.2 St. Thomas Environmental Services Operations - Water Quality Testing Summary

A summary of water quality testing completed by the City of St. Thomas – Environmental Services Dept. over the course of the reporting period is available in the Annual Report, attached as Appendix B.

4 Summary of Non-Compliant Conditions

4.1 Ministry of the Environment, Conservation and Parks Inspection

The Ontario Ministry of the Environment, Conservation and Parks (MECP) conducts an inspection of the St. Thomas portion of the Elgin-Middlesex Pumping Station, operated by OCWA, annually along with the St Thomas Area Secondary Water System, operated by the City of St Thomas.

An MECP inspection was completed in November 2025. There were three (3) non-compliances identified in the report. The resulting system inspection risk rating was identified as 15.03% and an overall final inspection rating of 84.97%.

MECP Inspection Finding	O.A.	Action Taken
Changes to the system registration information were not provided within ten (10) days of the change. Changes to contact information for the drinking water system were not provided to the ministry within ten days of the change. The 'Operating Authority Alternate Contact' information was incorrect and out-of-date at the time of the inspection. It should be noted that prior to the issuance of this report the owner/operating authority submitted a DWIS profile update form to update the 'Operating Authority Alternate Contact' information. No further actions are required at this time.	STT	As noted in the inspection finding itself, an updated DWIS form was submitted to the Ministry before the inspection period was completed.
All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. The ministry's Watermain Disinfection Procedure details disinfection procedures for planned and emergency work on watermain and specifies the operating authority shall maintain records of the information listed as a minimum. As part of this inspection the owner/operating authority provided disinfection documents associated with new watermain installation work and watermain repair records. Upon review it was found that one of these documents contained incorrect information that is required to be documented in accordance with the	STT	As noted in the inspection finding itself, a third-party training provider was brought in to provide a session on Water System Record-Keeping, to help reiterate the importance of accurate record-keeping. Additionally, a review of the document used to collect the information was undertaken

ministry's Watermain Disinfection Procedure and Ontario Regulation 128/04, Section 27 regarding record keeping requirements. From herein the owner/operating authority shall ensure that the required information as a minimum will be documented in accordance with the ministry's Watermain Disinfection Procedure and O. Reg 128/04 Section 27. Compliance shall be assessed during next the inspection period. It should be noted that prior to the issuance of this report the owner/operating authority obtained a third-party trainer to deliver a record keeping course to the operators.		and revisions were made to help reduce common record-keeping errors that were identified.
Secondary disinfectant residual was not tested as required for the large municipal residential distribution system. Ontario Regulation 170/03, Schedule 7-2 requires the owner/operating authority of a large municipal residential system that provides secondary disinfection to ensure that at least seven distribution samples are taken each week and tested immediately for free chlorine residual. At least four of the samples must be taken on one day of the week, and at least three samples must be taken on a second day of the week, at least 48 hours after the samples taken on the first day. Secondary disinfection is measured in the distribution system by operators who collect manual samples in accordance with the regulated schedule above. Grab samples are collected during different days of the week and tested for free chlorine from different locations within the distribution system with measured results being over 0.05mg/L for free chlorine residual for this inspection period. The system also uses process chlorine analyzers located at the East Chamber, West Chamber, Southwold Meter Chamber and the Ford Meter Chamber to continuously monitor the free chlorine residual within the distribution system. These continuous chlorine analyzers have alarm set points to ensure the free chlorine residual is maintained above 0.05mg/L. Upon review of the chlorine residual sample summary documents provided by the operating authority it was determined that a total of one (1) chlorine residual sample was missed during this inspection period. This sample was missed the week of December 30, 2025. From herein, the owner/operating authority shall ensure the secondary disinfection residual is measured as required by O.Reg.170/03, 7-2(3).	STT	The Residual check schedule was adjusted to collect 4 samples per day of the week, such that any recording errors made can be adequately covered by the extra checks. In addition, a Work Order has been created for the ORO to review each years Christmas Break schedule and ensure that the sampling plan will adequately cover the water systems check and sampling requirements.

4.2 Adverse Test Results and Issue Resolution

Any non-compliant conditions identified through water quality monitoring exercises undertaken by St. Thomas Environmental Services over the reporting period, and actions taken are summarized in the table below.

Adverse Test Result (Date / Location)	O.A. Responsible	Action Taken
N/A	N/A	N/A

5 List of Appendices

Appendix A – OCWA EMPS – St. Thomas Secondary Water Supply System – 2025 Summary and Annual Report

Appendix B - St. Thomas Secondary Water Supply System – 2025 Annual Report

Appendix C – 2025 MECP Inspection Report

APPENDIX A

STAWSS – OCWA - EMPS Operations - 2025 Summary and Annual Report

ELGIN-MIDDLESEX PUMPING STATION
ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM
2025 COMPLIANCE REPORT
(Schedule 22 Summary Report)

Facility Name: Elgin-Middlesex Pumping Station -
St. Thomas Area Secondary Water Supply System

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



Max. Daily Flow	13,331 m ³ /day
Daily Flow	7,708 m ³ /day
Source Water	Elgin Area Primary Water Supply System

CONTACT INFO:

Contract Administration: City of St. Thomas,
City Hall Environmental Services
545 Talbot Street, St. Thomas, ON N5P3V7
Contact: Mr. Kevin De LeeBeeck
Director of Environmental Services
and City Engineer

Operating Authority:
Ontario Clean Water Agency.
P.O. Box 220, Port Stanley, Ontario N5L 1J4
Contact: Nick Wilson - Senior Operations Manager
(226) 545-0849

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System Approvals:

The St. Thomas Area Secondary Water Supply System (STASWSS) 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 St. Thomas Area Secondary Water Supply System EMPS portion was operated in accordance with the approvals, licences and permits listed below.

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

- MDWL No. 190-101, issue 5, on September 30, 2021
- DWWP No. 190-201, issue 3, on September 30, 2021

The DWWP and MDWL are issued under the Safe Drinking Water Act (SDWA), 2002.

Regulatory Requirements:

The drinking water system was operated in accordance with the Drinking Water Systems Regulation (O. Reg.170/03), Certification of Drinking Water System Operators and Water Quality Analysts (O. Reg. 128/04) and the Ontario Drinking Water Quality Standards (O. Reg.169/03) under the Safe Drinking Water Act, 2002.

Staff Complement and Training:

In 2025, the St. Thomas facility at the EMPS was operated and maintained under the operating authority, Ontario Clean Water Agency. The operational and maintenance staff responsible for the system are managed from the EAPWSS.

In 2025, all certified operators received Director Approved and practical on-the-job training to meet the Ministry of the Environment, Conservation and Parks (MECP) training requirements.

History of Facility:

The EMPS is an integrated booster station occupied by three 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 station was constructed in 1966 and serviced the areas of St. Thomas, sections of the Municipalities of Central Elgin and Southwold. In 1994 upgrades occurred to service the Town of Aylmer, Township of Malahide, and the City of London.

Today, the STASWSS portion of the EMPS is comprised of three high-lift pumps that deliver water through a transmission main that services the STASWSS. A gas chlorination system maintains secondary disinfection for water being directed to the STASWSS. This gas chlorination system is a shared resource with the Aylmer Area

Secondary Water Supply System (AASWSS).

In the event of a power failure, an on-site generator provides sufficient standby power to provide uninterrupted service to the STASWSS.

Remote monitoring and control of the EMPS is performed by the onsite SCADA system. Certified Operators at the EAPWSS monitor the SCADA and deploy the appropriate response should alarm conditions exist.

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 Elgin terminal reservoir 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 STASWSS.

Post-Treatment:

The AASWSS and STASWSS utilize a shared 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 Pump Station:

The three high lift pumps provide redundant pumping capacity into the STASWSS. The St. Thomas pumps are equipped with variable frequency drives (VFD) with each pump having a rated capacity of 263 L/s.



Maintenance:

Site maintenance was carried out by Ontario Clean Water Agency (OCWA) maintenance operators 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 2025. A summary of non-routine maintenance is available in Appendix D, the 2025 Annual Report.

Sampling Procedures:

All samples collected by certified operators are submitted to Canadian Association for Laboratory Accreditation (CALA) accredited laboratories for bacteriological and chemical analysis.

The distribution water entering the STASWSS is sampled weekly and submitted to an external laboratory for bacteriological analysis. Free chlorine residuals for the water entering the STASWSS are monitored continuously by onsite analyzers and the SCADA system.

On a quarterly basis, the water entering the STASWSS is sampled and submitted to an accredited laboratory for testing of disinfection by-products - total trihalomethanes (THM) and haloacetic acids (HAA).

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 is verified by certified operators. See Appendix A for a summary of 2025 water quality data. Flow leaving the EMPS directed to the STASWSS is measured utilizing a magnetic flow measuring device. See Appendix B for 2025 total daily flow values and Appendix C for 2025 daily instantaneous peak flow rates.

Statement of Comparison:

The Municipal Drinking Water License for the STASWSS does not identify a rated capacity for the system. Each of the three pumps have a rated capacity of 263L/s.

The maximum total daily flow in 2025 was 13,331 m³/day. The maximum instantaneous peak flow in 2025 was 350 L/s. The average total daily flow in 2025 was 7,708 m³/day, an increase of 21.8% from the previous year.

Ministry of the Environment Conservation and Parks Inspections:

The MECP conducts an inspection of the St. Thomas portion of the EMPS annually along with the STASWSS operated by the City of St Thomas. A MECP inspection took place October 20, 2025 and the final inspection report was issued on December 18, 2025. There were no non-compliances identified in the inspection report for the EMPS St. Thomas portion.

Benefiting Municipalities:

Following the adoption of the Municipal Water and Sewer Transfer Act in 1997, the Ontario Ministry of the Environment 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 STASWSS 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 STASWSS at the EMPS is provided in Appendix D.

The Ontario Clean Water Agency operates and maintains the EMPS, under contracts with the AASWSS Joint Board of Management, The Corporation of the City of London and the STASWSS Joint Board of Management.

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

**APPENDIX A – EMPS ST. THOMAS
WATER QUALITY SUMMARY 2025**

MONTH	POST TREATMENT
	Free Cl ₂ mg/L
January	
Minimum	0.90
Maximum	1.71
Average	1.44
February	
Minimum	0.91
Maximum	1.94
Average	1.48
March	
Minimum	0.85
Maximum	1.78
Average	1.51
April	
Minimum	0.85
Maximum	1.82
Average	1.60
May	
Minimum	0.95
Maximum	1.98
Average	1.69
June	
Minimum	0.79
Maximum	1.93
Average	1.51
July	
Minimum	0.76
Maximum	1.72
Average	1.46
August	
Minimum	0.72
Maximum	1.81
Average	1.53
September	
Minimum	0.85
Maximum	2.46
Average	1.49
October	
Minimum	0.77
Maximum	1.79
Average	1.61
November	
Minimum	0.85
Maximum	1.79
Average	1.64
December	
Minimum	0.94
Maximum	1.79
Average	1.59
Yearly Minimum	0.72
Yearly Maximum	2.46
Yearly Average	1.55

Note: Chlorine residuals obtained from
SCADA.

APPENDIX B
ST. THOMAS TOTAL DAILY FLOW - 2025

Date	January m³	February m³	March m³	April m³	May m³	June m³	July m³	August m³	September m³	October m³	November m³	December m³	
1	7,228	7,047	6,827	7,097	6,133	7,863	7,344	6,519	7,960	12,083	10,664	3,695	
2	7,386	7,204	7,705	6,653	6,152	7,926	7,701	6,389	9,293	12,264	11,142	3,208	
3	7,002	6,727	6,531	6,907	6,489	8,011	7,217	6,124	7,182	11,587	10,895	3,712	
4	8,265	5,985	7,676	5,768	6,243	9,504	7,864	7,404	6,744	11,998	10,430	4,280	
5	8,285	6,683	6,785	6,765	6,312	7,117	8,451	7,825	5,623	11,578	9,821	3,627	
6	7,515	6,032	7,166	6,444	5,671	6,718	11,505	7,376	8,781	12,676	9,621	4,101	
7	7,516	6,083	6,951	5,491	6,658	8,198	7,732	8,214	7,914	11,495	9,038	4,119	
8	7,376	6,533	8,205	5,530	6,487	7,951	7,450	8,359	7,914	11,377	9,536	3,987	
9	7,501	6,979	7,247	7,738	6,159	7,065	6,461	8,181	6,764	10,820	9,824	4,299	
10	7,508	6,685	8,107	7,595	7,165	7,499	7,261	8,015	8,312	10,680	9,483	4,343	
11	8,052	6,986	7,746	6,206	7,115	8,263	7,690	7,765	8,773	10,622	9,143	7,063	
12	8,085	7,248	7,850	6,596	8,877	8,161	7,156	9,047	9,047	10,066	8,826	8,158	
13	7,512	7,277	6,970	6,769	6,775	7,166	7,274	6,748	6,748	11,591	10,041	7,781	
14	6,481	7,670	6,532	7,727	6,468	8,240	7,796	7,306	7,306	11,769	8,521	8,561	
15	6,428	7,292	7,182	8,348	7,384	8,468	7,903	9,166	10,006	10,962	9,884	8,981	
16	7,499	6,930	6,895	6,183	7,905	8,963	7,456	7,651	8,179	10,034	9,393	7,932	
17	6,365	8,021	6,306	5,708	6,325	11,694	7,077	6,264	9,160	10,026	9,678	8,368	
18	7,028	6,999	6,254	6,347	5,844	8,757	6,820	7,155	9,706	10,585	7,032	8,793	
19	7,265	10,589	7,868	5,793	7,064	7,861	6,744	6,430	8,909	11,953	4,536	7,584	
20	5,240	7,314	6,195	8,325	8,288	6,553	7,096	6,561	7,530	10,680	4,302	7,577	
21	6,188	7,535	6,729	6,463	5,414	6,118	7,823	6,277	7,529	10,009	13,331	7,387	
22	6,788	7,375	7,795	6,402	6,220	8,542	7,832	7,903	7,077	10,407	13,075	7,048	
23	6,787	7,400	7,322	6,409	5,621	9,393	8,469	6,254	7,128	10,548	9,449	7,087	
24	6,845	8,180	7,467	6,594	5,954	10,308	8,123	6,666	7,666	10,579	7,996	7,283	
25	7,034	8,027	6,978	8,282	7,023	8,971	6,481	7,152	9,627	10,662	4,609	6,476	
26	7,777	6,906	6,165	6,404	6,841	9,031	5,737	8,151	12,602	11,373	3,710	7,301	
27	6,056	7,938	6,242	7,543	7,466	9,535	7,827	8,491	12,470	10,659	3,696	7,287	
28	6,669	6,708	5,690	7,135	6,067	9,339	7,330	8,457	12,808	10,478	4,096	7,214	
29	7,798		6,132	6,535	6,736	8,225	8,089	7,474	12,990	10,160	3,653	7,007	
30	6,863		7,465	5,855	6,451	7,002	7,582	7,028	12,572	10,405	3,632	6,912	
31	6,161		8,079		6,497		7,558	6,861		10,152		6,938	
Total	220,501	202,353	219,061	201,613	205,804	248,442	234,850	229,213	264,321	340,276	249,057	198,112	2,813,603
Minimum	5,240	5,985	5,690	5,491	5,414	6,118	5,737	6,124	5,623	10,009	3,632	3,208	3,208
Maximum	8,285	10,589	8,205	8,348	8,877	11,694	11,505	9,166	12,990	12,676	13,331	8,981	13,331
Average	7,113	7,227	7,066	6,720	6,639	8,281	7,576	7,394	8,811	10,977	8,302	6,391	7,708

APPENDIX C
ST. THOMAS DAILY INSTANTANEOUS PEAK FLOW - 2025

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	277	285	282	280	283	290	285	281	285	289	290	286	
2	282	285	283	288	282	296	283	281	280	288	290	286	
3	277	289	282	285	281	288	285	283	282	286	286	282	
4	279	290	281	287	281	282	280	282	286	285	291	288	
5	283	286	292	286	282	289	287	281	285	285	286	293	
6	285	284	287	289	284	279	283	281	282	289	284	283	
7	276	283	286	286	284	283	279	283	284	286	286	284	
8	277	280	287	287	283	285	283	285	284	285	284	283	
9	283	282	289	289	286	288	285	286	284	288	286	283	
10	282	290	288	289	283	287	284	284	284	289	284	285	
11	282	299	287	290	290	288	285	283	284	289	285	290	
12	282	291	286	286	290	289	283	281	280	290	291	289	
13	282	287	282	288	284	290	282	278	288	289	295	288	
14	282	286	277	290	286	283	287	277	283	287	298	289	
15	279	288	284	290	282	293	285	277	288	290	291	287	
16	278	289	279	287	288	292	284	278	286	285	295	289	
17	278	288	282	285	291	291	280	280	284	285	298	282	
18	276	287	281	292	283	294	281	282	284	282	290	280	
19	278	315	292	290	294	290	281	280	285	286	286	280	
20	291	289	287	290	291	287	281	280	284	284	291	282	
21	282	286	289	288	279	282	283	280	286	282	293	280	
22	284	290	290	291	278	291	283	279	296	284	289	283	
23	289	288	288	286	285	282	286	276	350	284	291	282	
24	286	288	289	286	281	286	283	277	276	287	286	286	
25	290	291	290	289	281	288	281	284	282	284	284	285	
26	289	280	285	291	285	290	279	283	282	285	291	289	
27	289	280	286	289	290	289	279	282	278	282	291	287	
28	287	282	280	287	288	292	280	281	280	285	289	285	
29	288		284	293	290	288	284	281	282	338	287	284	
30	291		282	290	287	292	282	285	282	287	285	287	
31	288		286		291		282	287		290		282	
Minimum	276	280	277	280	278	279	279	276	276	282	284	280	276
Maximum	291	315	292	293	294	296	287	287	350	338	298	293	350
Average	283	288	285	288	285	288	283	281	286	288	289	285	286

Appendix D: 2025 Annual Report

Drinking-Water System Number:	260078897
Drinking-Water System Name:	Elgin Middlesex Pumping Station - St. Thomas Area Secondary Water Supply System
Drinking-Water System Owner:	St. Thomas Area Secondary Water Supply System Joint Board of Management
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2025 through December 31, 2025

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes ☒ No ☐

Is your annual report available to the public at no charge on a web site on the Internet?
Yes ☒ No ☐

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

City of St. Thomas, City Hall
Environmental Services
545 Talbot Street
St Thomas, ON.
N5P 3V7
www.city.st-thomas.on.ca

Elgin Area Primary Water Supply System
Treatment Plant
43665 Dexter Line, Union, ON
N0L 2L0

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?

Yes ☐ No ☐

Number of Interested Authorities you report to:

N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?

Yes ☐ No ☐

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 St. Thomas EMPS:

Drinking Water System Name	Drinking Water System Number
St. Thomas Area Secondary Water Supply System	260078897
St. Thomas Distribution System	260002187

Systems that receive their drinking water indirectly from the St. Thomas EMPS:

Drinking Water System Name	Drinking Water System Number
Dutton/Dunwich Distribution System	220002967
Municipality of Central Elgin	260004761
Southwold Distribution Supply	210001362

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 two reservoirs is 54,600m³. Through various secondary water supply systems, the EMPS serves London, St. Thomas, Town of Aylmer, Central Elgin, Malahide, Dutton-Dunwich 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 Area 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 Water Supply Systems. The facility also houses a 600kW standby diesel generator that provides emergency power to ensure uninterrupted service to St. Thomas and Aylmer systems during a power interruption.

Three pipelines exit the EMPS: one exits to the south of the EMPS property and extends west to service the St. Thomas Secondary Water Supply System; the second services the City of London distribution system; the third services the municipalities on the Aylmer Area Secondary Water Supply System.

List all water treatment chemicals used over this reporting period

Chlorine Gas at 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

- | |
|--|
| <ul style="list-style-type: none"> • Diesel fuel and fuel polishing • Chlorine cylinders • Chlorination system maintenance • DWQMS Reaccreditation Audit |
|--|

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

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 #)
Distribution	52	(0)-(0)	(0)-(0)	52	(<10)-(380)

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

Parameter	Number of Grab Samples (Continuous Monitoring)	Min	Max	Avg
Free Chlorine Residual (mg/L)	8760	0.72	2.46	1.49

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

Parameter	Sample Date	Result Value	Unit of Measure	MAC	Exceedances	
					MAC	½ MAC
THM	January 7, 2025	14	µg/L	—	—	—
	April 1, 2025	12				
	July 2, 2025	21				
	October 7, 2025	24				
THM Running Annual Average (RAA)	2025	18	µg/L	100	No	No
HAA	January 7, 2025	ND	µg/L	—	—	—
	April 1, 2025	ND				
	July 2, 2025	6.3				
	October 7, 2025	8.0				
HAA Running Annual Average (RAA)	2025	<6.2	µg/L	80	No	No

ND= Non-detect

APPENDIX E	
EMPS Chemical Consumption - 2025	
Month	Total Chlorine Gas Usage - Kg
January	224
February	185
March	227
April	174
May	186
June	231
July	237
August	246
September	279
October	347
November	265
December	194
Annual Total	2795

Please note: Aylmer and St.Thomas combined cl2 usage

APPENDIX B

STASWSS - St. Thomas – 2025 Annual Report



Drinking-Water System Number:	260078897
Drinking-Water System Name:	St. Thomas Area Secondary Water Supply System (Transmission Main)
Drinking-Water System Owner:	Joint Board of Management of the St. Thomas Area Secondary Water Supply System
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2025 through December 31, 2025

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

City of St. Thomas, City Hall
Environmental Services
545 Talbot Street
St Thomas, Ontario N5P 3V7

Complete for all other Categories.

Number of Designated Facilities served:

NA

Did you provide a copy of your annual report to all Designated Facilities you serve?

Yes [] No []

Number of Interested Authorities you report to:

NA

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?

Yes [] No []

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

Drinking Water System Name	Drinking Water System Number
City of St. Thomas Water Distribution System	260002187
Municipality of Central Elgin	260004761
Township of Southwold	210001362

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 [X] No []

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

[x] Public access/notice via the web

City of St. Thomas Website – www.st.thomas.ca

[x] Public access/notice via Government Office

[] Public access/notice via a newspaper

[x] 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 St. Thomas Area Secondary Water Supply System (STASWSS) consists of a Pumping Station within the Elgin Middlesex Pumping Station (EMPS), a 0.76 ML elevated water tower, several meter chambers, and transmission watermain of 500 mm and 750 mm diameter.

The STASWSS receives water from the Elgin Middlesex Pumping Station (EMPS) and Reservoir. The EMPS reservoir is filled by the Elgin Area Primary Water Supply System (EAPWSS) which obtains its water from Lake Erie and provides water treatment at the Elgin Area Primary Water Treatment Plant, located on Dexter Line, East of Port Stanley, Ontario.

Operation and Maintenance of the EMPS- St. Thomas section is currently under contract with the Ontario Clean Water Agency (OCWA). The operation and maintenance of the associated transmission main of the STASWSS is currently conducted by the City of St. Thomas – Environmental Services Department.

List all water treatment chemicals used over this reporting period

12% Sodium Hypochlorite

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

Clinton Line Chamber - meter replacement	\$ 14,582.23
--	--------------

Provide details on the 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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
NA	NA	NA	NA	NA	NA

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

	Number of Samples	Range of E.Coli Or Fecal Results (min)-(max)	Range of Total Coliform Results (min)-(max)	Number of HPC Samples	Range of HPC Results (min)-(max)
Raw	NA	NA	NA	NA	NA
Treated	NA	NA	NA	NA	NA
Distribution	106	(0)-(0)	(0)-(0)	106	(<10) - (1790)

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

	Number of Grab Samples	Range of Results (min)-(max)
Chlorine (Grab Samples)	411	(0.79) - (1.91)

NOTE: For continuous monitors use 8760 as the number of samples.



Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
NA	NA	NA	NA	NA

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
NA	NA	NA	NA	NA

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	NA	NA	NA
Distribution	NA	NA	NA

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
HAA5 (NOTE: show latest annual average)	Jan 14, 2025 Apr 15, 2025 July 15, 2025 Oct 16, 2025	6.2	ug/L	NO
THM (NOTE: show latest annual average)	Jan 14, 2025 Apr 15, 2025 July 15, 2025 Oct 16, 2025	28.3	ug/L	NO

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
NA	NA	NA	NA
NA	NA	NA	NA

APPENDIX C

STASWSS - 2025 MECP Inspection Report

**Ministry of the Environment,
Conservation and Parks**

Drinking Water and Environmental
Compliance Division

Southwest Region
733 Exeter Road
London, ON N6E 1L3
Phone: 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
Tél: 519-873-5000

January 6, 2026

The Corporation of the City of St Thomas
545 Talbot Street
St Thomas, ON N5P 3V7

Attention: Kevin De Leebeeck, Director of Environmental Services/City Engineer
Re: St. Thomas Area Secondary Water Supply System Final Inspection Report (#260078897)

Enclosed is the report on the 2025-26 inspection of the St. Thomas Area Secondary Water Supply System and the corresponding Inspection Rating Report (IRR) and Risk Methodology document.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of 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 Councils" on the Drinking Water Ontario website at <https://www.ontario.ca/environment-and-energy/taking-care-your-drinking-water-guide-members-municipal-councils>.

The IRR is a summarized quantitative measure of the drinking water system's annual inspection and is published in the Ministry's Chief Drinking Water Inspector's Annual Report. The Risk Methodology document describes the risk rating methodology which has been applied to the findings of the Ministry's municipal residential drinking water system inspection results.

If you have any questions or concerns regarding the rating, please contact Mark Smith, Water Compliance Supervisor, at 519-317-8116.

Sincerely,

M. Morgan

Meghan Morgan
Provincial Officer, Water Inspector
London District Office
Meghan.Morgan@ontario.ca

cc. Southwestern Public Health Unit
Kettle Creek Conservation Authority



ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM

Physical Address: 490 SOUTH EDGEWARE, ST.
THOMAS, ON

INSPECTION REPORT

System Number: 260078897

Entity: CORPORATION OF THE CITY
OF ST THOMAS
ST. THOMAS AREA
SECONDARY WATER SUPPLY
SYSTEM JOINT BOARD OF
MANAGEMENT

Inspection Start Date: October 20, 2025

Inspection End Date: December 18, 2025

Inspected By: Meghan Morgan

Badge #: 1315



(signature)

INTRODUCTION

Purpose

This announced, detailed inspection was conducted to confirm compliance with Ministry of the Environment, Conservation and Parks' (MECP) legislation and conformance with ministry drinking water policies and guidelines.

Scope

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 and the operation of the system.

The inspection of the drinking water system included both the physical inspection of the component parts of the system listed in section 4 "Systems Components" of the report and the review of data and documents associated with the operation of the drinking water system during the review period.

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.

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.

Facility Contacts and Dates

The drinking water system is owned by The Joint Board of Management of the St Thomas Area Secondary Water Supply System and operated by the City of St. Thomas - Environmental Services Operations Division and the Ontario Clean Water Agency.

The system conveys water to three large municipal residential systems continuously and one large municipal residential system intermittently and is categorized as a Large Municipal Residential System. Information reviewed for this inspection covered the time period of September 1, 2024 to September 30, 2025.

Systems/Components

The St. Thomas Area Secondary Water Supply System only maintains/provides 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.

Treated water is received from the Elgin Area Primary Water Supply System and the St. Thomas Area Secondary Water Supply System provides secondary disinfection boosting, water storage and pressure boosting for the drinking water system.

The Elgin Area Primary Water Supply System is inspected separately from this drinking water system.

Permissions/Approvals

This drinking water system was subject to specific conditions contained within the following permissions and/or approvals (please note this list is not exhaustive) at the time of the inspection in addition to the requirements of the SDWA and its regulations:

Municipal Drinking Water Licence Number: 190-101, Issue 5, dated Sept 30, 2021

Drinking Water Works Permit Number: 190-201, Issue 3, dated Sept 30, 2021

NON-COMPLIANCE

The following item(s) have been identified as non-compliance, based on a "No" response captured for a legislative question(s).

For additional information on each question see the Inspection Details section of the report.

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

Item	Question	Compliance Response/Corrective Action(s)
NC-1	Question ID: DWMR1113001 Were changes to the system registration information provided to the ministry within ten (10) days of the change?	Changes to the system registration information were not provided within ten (10) days of the change. Changes to contact information for the drinking water system were not provided to the ministry within ten days of the change. The 'Operating Authority Alternate Contact' information was incorrect and out-of-date at the time of the inspection. It should be noted that prior to the issuance of this report the owner/operating authority submitted a DWIS profile update form to update the 'Operating Authority Alternate Contact' information. No further actions are required at this time.
NC-2	Question ID: DWMR1025001 Were all parts of the drinking water system that came in contact with drinking water disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?	All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. The ministry's Watermain Disinfection Procedure details disinfection procedures for planned and emergency work on watermain and specifies the operating authority shall maintain records of the information listed as a minimum. As part of this inspection the owner/operating authority provided disinfection documents associated with new watermain installation work and watermain repair records. Upon review it was found that one of these documents contained incorrect information that is required to be documented in accordance

		with the ministry's Watermain Disinfection Procedure and Ontario Regulation 128/04, Section 27 regarding record keeping requirements. From herein the owner/operating authority shall ensure that the required information as a minimum will be documented in accordance with the ministry's Watermain Disinfection Procedure and O. Reg 128/04 Section 27. Compliance shall be assessed during next the inspection period. It should be noted that prior to the issuance of this report the owner/operating authority obtained a third party trainer to deliver a record keeping course to the operators.
NC-3	Question ID: DWMR1033001 Was secondary disinfectant residual tested as required for the large municipal residential distribution system?	Secondary disinfectant residual was not tested as required for the large municipal residential distribution system. Ontario Regulation 170/03, Schedule 7-2 requires the owner/operating authority of a large municipal residential system that provides secondary disinfection to ensure that at least seven distribution samples are taken each week and tested immediately for free chlorine residual. At least four of the samples must be taken on one day of the week, and at least three samples must be taken on a second day of the week, at least 48 hours after the samples taken on the first day. Secondary disinfection is measured in the distribution system by operators who collect manual samples in accordance with the regulated schedule above. Grab samples are collected during different days of the week and tested for free chlorine from different locations within the distribution system with measured results being over 0.05mg/L for free chlorine residual for this inspection period. The system also uses process chlorine analyzers located at the East Chamber, West Chamber, Southwold Meter Chamber and the Ford Meter Chamber to

continuously monitor the free chlorine residual within the distribution system. These continuous chlorine analyzers have alarm set points to ensure the free chlorine residual is maintained above 0.05mg/L.

Upon review of the chlorine residual sample summary documents provided by the operating authority it was determined that a total of one (1) chlorine residual sample was missed during this inspection period. This sample was missed the week of December 30, 2024. From herein, the owner/operating authority shall ensure the secondary disinfection residual is measured as required by O.Reg.170/03, 7-2(3).

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	DWMR1018001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Did the owner ensure that equipment was 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 ensured that equipment was installed as required.			

Question ID	DWMR1020001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Were Form 1 documents prepared as required?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Form 1 documents were prepared as required. The owner/operating authority completed one (1) "Form 1 – Record of Watermains Authorized as a Future Alteration" document for the replacement of existing 750mm watermain on South Edgeware.			

Question ID	DWMR1021001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Were Form 2 documents prepared as required?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Form 2 documents were prepared as required. The owner/operating authority completed four (4) "Form 2 - Record of Minor Modifications or Replacements to the Drinking Water System" documents during this inspection period. The minor modifications included two watermain connections installed on existing watermain,			

replacement of two chlorine gas regulators at the EMPS and replacement of one high lift pump flow control valve.

Question ID	DWMR1028001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Were up-to-date plans for the drinking water system made available in such a manner that they could be readily viewed by all persons responsible for all or part of the operation of the drinking water system, in accordance with the Drinking Water Works Permit and Municipal Drinking Water Licence?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Plans for the drinking water system were kept up-to-date and made available as required.			

Question ID	DWMR1025001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Were all parts of the drinking water system that came in contact with drinking water disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All parts of the drinking water system were not disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. The ministry's Watermain Disinfection Procedure details disinfection procedures for planned and emergency work on watermains and specifies the operating authority shall maintain records of the information listed as a minimum. As part of this inspection the owner/operating authority provided disinfection documents associated with new watermain installation work and watermain repair records. Upon review it was found that one of these documents contained incorrect information that is required to be documented in accordance with the ministry's Watermain Disinfection Procedure and Ontario Regulation 128/04, Section 27 regarding record keeping requirements. From herein the owner/operating authority shall ensure that the required information as a minimum will be documented in accordance with the ministry's Watermain Disinfection Procedure and O. Reg 128/04 Section 27. Compliance shall be assessed during next the inspection period. It should be noted that prior to the issuance of this report the owner/operating authority obtained a third party trainer to deliver a record keeping course to the operators.			

Question ID	DWMR1027001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Did the owner have evidence indicating that chemicals and materials that came in contact with water within the drinking water system met all applicable AWWA and ANSI standards in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had evidence indicating that chemicals and materials that came in contact with water within the drinking water system met the applicable standards.			

Question ID	DWMR1024001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2);			
Question: Did records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection was operated as required. Re-chlorination occurs at the St. Thomas Booster Station in the Elgin-Middlesex Pumping Station (EMPS) Building to ensure acceptable residuals throughout the distribution system. The re-chlorination system is a gas chlorination disinfection system with facilities shared between the Aylmer Secondary Water Supply System (ASWSS) and St. Thomas Area Secondary Water Supply System (STASWSS). The system consists of one dual weigh scale with space for two cylinders (one duty and one stand-by) with automatic switchover, two chlorinators and associated equipment (one dedicated to ASWSS and one dedicated to STASWSS) and one free chlorine residual analyzer. A review of the free chlorine residual logs that were submitted for the inspection review period indicated that free available chlorine was maintained at an acceptable level throughout the distribution system.			

Question ID	DWMR1033001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 7-2 (3); SDWA O. Reg. 170/03 7-2 (4);			
Question: Was secondary disinfectant residual tested as required for the large municipal residential distribution system?			

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

Secondary disinfectant residual was not tested as required for the large municipal residential distribution system.

Ontario Regulation 170/03, Schedule 7-2 requires the owner/operating authority of a large municipal residential system that provides secondary disinfection to ensure that at least seven distribution samples are taken each week and tested immediately for free chlorine residual. At least four of the samples must be taken on one day of the week, and at least three samples must be taken on a second day of the week, at least 48 hours after the samples taken on the first day.

Secondary disinfection is measured in the distribution system by operators who collect manual samples in accordance with the regulated schedule above. Grab samples are collected during different days of the week and tested for free chlorine from different locations within the distribution system with measured results being over 0.05mg/L for free chlorine residual for this inspection period. The system also uses process chlorine analyzers located at the East Chamber, West Chamber, Southwold Meter Chamber and the Ford Meter Chamber to continuously monitor the free chlorine residual within the distribution system. These continuous chlorine analyzers have alarm set points to ensure the free chlorine residual is maintained above 0.05mg/L.

Upon review of the chlorine residual sample summary documents provided by the operating authority it was determined that a total of one (1) chlorine residual sample was missed during this inspection period. This sample was missed the week of December 30, 2024. From herein, the owner/operating authority shall ensure the secondary disinfection residual is measured as required by O.Reg.170/03, 7-2(3).

Question ID	DWMR1049001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Did records confirm that disinfectant residuals were routinely checked at the extremities and dead ends of the distribution system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed that disinfectant residuals were routinely checked at the extremities and dead ends of the distribution system.			

Question ID	DWMR1036001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-7 (1);			

Question:

Where continuous monitoring equipment was not used for chlorine residual analysis, were samples tested using an acceptable portable device?

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

Samples for chlorine residual analysis were tested using an acceptable portable device.

Question ID	DWMR1099001	Question Type	Information
Legislative Requirement(s): Not Applicable			
Question: Do records show that water provided by the drinking water system met the Ontario Drinking Water Quality Standards?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records showed that all water sample results met the Ontario Drinking Water Quality Standards.			

Question ID	DWMR1081001	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: Were distribution microbiological sampling requirements prescribed by Schedule 10-2 of O. Reg. 170/03 for large municipal residential systems met?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Distribution microbiological sampling requirements were met. Ontario Regulation 170/03 – Schedule 10-2 stipulates that distribution water samples are required to be collected for testing every week within the frequency prescribed by the Regulation. Based on a service population of zero as no users draw water directly from this system the owner/operating authority is required to take a minimum of 8 distribution samples every month. Every distribution system sample must be analyzed for: E.coli; total coliforms; and 25% of the required samples must be tested for general bacteria population expressed as colony counts on a heterotrophic plate count with the prescribed frequency stipulated in Schedule 6-1.1(1) of O.Reg 170/03. A review of the records for the inspection period indicate the number of microbiological samples collected ranged from 12-15.			

Question ID	DWMR1096001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-3 (1);			
Question: Did records confirm that chlorine residual tests were conducted at the same time and location as microbiological samples?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed that chlorine residual tests were conducted as required.			

Question ID	DWMR1086001	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: Were haloacetic acid sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03 met?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Haloacetic acid sampling requirements were met. Haloacetic Acid samples are required to be collected and tested each calendar quarter from the distribution system in accordance with Schedule 13-6.1 of O.Reg. 170/03 with the frequency stipulated in Schedule 6-1.1(4), and shall be taken from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of haloacetic acids. A review of the records provided for the inspection review period indicate that this requirement has been met, and all sample results were below the standard.			

Question ID	DWMR1087001	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: Were trihalomethane sampling requirements prescribed by Schedule 13-6 of O. Reg. 170/03 met?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Trihalomethane sampling requirements were met. Trihalomethane samples are required to be collected and tested each calendar quarter from the distribution system in accordance with Schedule 13-6 of O.Reg. 170/03 with the			

frequency stipulated in Schedule 6-1.1(4), and shall be taken from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of trihalomethanes. A review of the records provided for the inspection review period indicate that this requirement has been met, and all sample results were below the standard.

Question ID	DWMR1092001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-2;			
Question: Were water samples taken at the prescribed location?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Water samples were taken at the prescribed location.			

Question ID	DWMR1110001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 11 (6);			
Question: Was the annual report prepared by February 28th of the following year and did it contain the required information?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The annual report requirements were met.			

Question ID	DWMR1057001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 11 (2.1);			
Question: Did the owner of this system provide an annual report to the owner(s) of all standalone distribution systems connected to this system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner provided an annual report to the standalone distribution system(s) connected to this system.			

Question ID	DWMR1056001	Question Type	Information
Legislative Requirement(s): Not Applicable			
Question: Did the donor provide an annual report to the owner of this receiver drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The donor provided an annual report to the owner of the receiver drinking water system.			

Question ID	DWMR1111001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 22-2 (1); SDWA O. Reg. 170/03 22-2 (2); SDWA O. Reg. 170/03 22-2 (3); SDWA O. Reg. 170/03 22-2 (4);			
Question: Did the summary report contain the required information and was it completed and distributed as required?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The summary report requirements were met.			

Question ID	DWMR1113001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 10.1 (3);			
Question: Were changes to the system registration information provided to the ministry within ten (10) days of the change?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Changes to the system registration information were not provided within ten (10) days of the change. Changes to contact information for the drinking water system were not provided to the ministry within ten days of the change. The 'Operating Authority Alternate Contact' information was incorrect and out-of-date at the time of the inspection. It should be noted that prior to the issuance of this report the owner/operating authority submitted a DWIS profile update form to update the 'Operating Authority Alternate Contact' information. No further actions are required at this time.			

Question ID	DWMR1114001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Did the owner have evidence that, when required, all legal owners associated with the drinking water system were notified of the requirements of the Municipal Drinking Water Licence and Drinking Water Works Permit?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had evidence that the required notifications were made. Requirements of the MDWL and the DWWP are provided to legal owners within the municipal office. The owner is reminded that these requirements also need to be shared with developers that own subdivisions that have not yet been transferred to the municipality.			

Question ID	DWMR1098001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 13 (1); SDWA O. Reg. 170/03 13 (2); SDWA O. Reg. 170/03 13 (3);			
Question: Were the required records kept for the periods prescribed by section 13 of O. Reg. 170/03?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The required records were kept for the prescribed periods.			

Question ID	DWMR1045001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			
Question: Did the owner update the document describing the distribution components within 12 months of completion of alterations to the system in accordance with the Drinking Water Works Permit?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had up-to-date documents describing the distribution components.			

Question ID	DWMR1046001	Question Type	BMP
Legislative Requirement(s): Not Applicable			

Question:

Was there a backflow prevention program, policy and/or bylaw in place that addressed cross connections and connections to high hazard facilities?

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

There was a backflow prevention program, policy and/or bylaw in place.

Backflow prevention program is enforced through the City of St. Thomas "ByLaw 44-2000 Regulation of Water Supply". This bylaw states no person shall connect, cause to be connected or allow to remain connected to the waterworks distribution system any piping, fixture, fitting, container or appliance, in a manner which under any circumstances, may allow water, waste water, non-potable water, or any other liquid, chemical or substance to enter the water works distribution system.

Question ID	DWMR1053001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Was the owner able to maintain proper pressures in the distribution system and was pressure monitored to alert the operator of conditions of loss of pressure below the value under which the system was designed to operate?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner was able to maintain proper pressures in the distribution system and pressure was monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate.			

Question ID	DWMR1047001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Did the owner have a program or maintain a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had a program or maintained a schedule for routine cleanout, inspection and maintenance of reservoirs and elevated storage tanks within the distribution system. The owner maintains a 5 year inspection cycle for the elevated storage tank. The inspection is performed by a third party contractor. The most recent inspection occurred June 30, 2023. The resulting report was provided to the undersigned officer for review.			

Question ID	DWMR1048001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Had the owner implemented a program for the flushing of watermain as per industry standards?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had implemented a program for the flushing of watermain. According to documentation submitted and discussions with the owner/operating authority flushing typically occurs annually in the fall during the overnight hours. The standard operating procedures are outlined in a document entitled "MUN-DW-SOP-410 Preventative Maintenance – Watermain Flushing".			

Question ID	DWMR1050001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Was there a program in place for inspecting and exercising valves?			
Compliance Response(s)/Corrective Action(s)/Observation(s): There was a program in place for inspecting and exercising valves. The standard operating procedures are outlined in a document entitled "MUN-DW-SOP-420 Preventative Maintenance – Valve Exercising Program".			

Question ID	DWMR1051001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Was there a program in place for inspecting and operating hydrants?			
Compliance Response(s)/Corrective Action(s)/Observation(s): There was a program in place for inspecting and operating hydrants. The standard operating procedures are outlined in a document entitled "MUN-DW-SOP-210 Inspections - Hydrants". The hydrants are inspected annually in warm weather typically in conjunction with the watermain flushing program.			

Question ID	DWMR1052001	Question Type	BMP
Legislative Requirement(s): Not Applicable			

Question:

Was there a bylaw or policy in place limiting access to hydrants?

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

There was a bylaw or policy in place limiting access to hydrants.

The City of St. Thomas "ByLaw 44-2000 Regulation of Water Supply" states no person other than a person authorized by the Engineer for that purpose shall be permitted to open or otherwise interfere or take water from any fire hydrant.

Question ID	DWMR1058001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 28;			
Question: Did operators and maintenance personnel have ready access to operations and maintenance manuals?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Operators and maintenance personnel had ready access to operations and maintenance manuals.			

Question ID	DWMR1059001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 28;			
Question: Did 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. Two Operations and Maintenance Manuals were provided for the inspection period. One manual was provided by the City of St. Thomas for the portion of the Secondary system to which they are the Operating Authority and the Ontario Clean Water agency provided one manual for the Elgin Middlesex Reservoir and Pumping Station which houses the St. Thomas Booster Station. A review of both manuals indicated that they contain the required information in accordance with Ontario Regulation 128/04, Section 28.			

Question ID	DWMR1060001	Question Type	Legislative
Legislative Requirement(s): SDWA 31 (1);			

Question:

Did the operations and maintenance manual(s) meet the requirements of the Municipal Drinking Water Licence?

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

The operations and maintenance manual(s) met the requirements of the Municipal Drinking Water Licence.

Municipal Drinking Water Licence #190-101, Issue #5, Section 16 of Schedule B outline the minimum requirements for the Operation and Maintenance Manuals. A review of each of the manuals that were submitted by both operating authorities indicate they contain the requirements as stated in the MDWL including but not limited to; contingency plans, procedures to deal with emergencies and procedures for dealing with complaints associated with the drinking water system.

Question ID	DWMR1064001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 26 (2);			
Question: Did an operator-in-charge ensure that records were maintained of all adjustments to the processes within their responsibility?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The operator-in-charge ensured that records were maintained of all adjustments to the processes within their responsibility.			

Question ID	DWMR1062001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 7-5;			
Question: Did records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment was done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03?			
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 done by a certified operator, water quality analyst, or person who met the requirements of Schedule 7-5 of O. Reg. 170/03. Documentation submitted for review indicated that only certified operators performed the operational testing.			

Question ID	DWMR1063001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 6-10 (1);			
Question: For every required operational test and sample, was a record made of the date, time, location, results, and name of the person conducting the test?			
Compliance Response(s)/Corrective Action(s)/Observation(s): For every required operational test and sample, a record was made as required.			

Question ID	DWMR1061001	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: Were logbooks properly maintained and did they contain the required information?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Logbooks were properly maintained and contained the required information.			

Question ID	DWMR1065001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 27 (6);			
Question: Were logs and other record keeping mechanisms available for at least five (5) years?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Logs or other record keeping mechanisms were available for at least five (5) years.			

Question ID	DWMR1066001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Was spill containment provided for process chemicals and standby power generator fuel?			

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

Spill containment was provided for process chemicals and/or standby power generator fuel.

At the time of the inspection one standby diesel generator was observed for this system. One 600 kW standby diesel generator was observed within the EMPS. The room also houses two fuel transfer pumps and an auxiliary tank which are located within a containment unit. A double walled diesel storage tank is located outside the building and is equipped with a vacuum monitoring alarm in the event of a rupture.

Question ID	DWMR1067001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Were equipment and materials in place for the clean up of spills?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Equipment and materials were in place for the clean up of spills.			

Question ID	DWMR1068001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: If available, were standby power generators tested under normal load conditions?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Standby power generators were tested under normal load conditions.			

Question ID	DWMR1069001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Were all storage facilities completely covered and secure?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Storage facilities were completely covered and secure. At the time of the site inspection the Ford Water Tower was leaking potable water from the storage facility into the natural environment. The leak is allowing chlorinated water to constantly flow out of the overflow pipe and into a watercourse. This has been an ongoing issue documented in previous inspection reports. The owner/operating authority is currently			

dechlorinating the discharge of potable water and should continue to do so until the issue has been corrected. The owner/operating authority advised that the board has approved a new water tower to be built.

Question ID	DWMR1070001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Were air vents and overflows associated with reservoirs and elevated storage structures equipped with screens?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Air vents and overflows associated with reservoirs and elevated storage structures were equipped with screens.			

Question ID	DWMR1071001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Did the owner provide security measures to protect components of the drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): The owner provided security measures to protect components of the drinking water system. The Elgin Middlesex Pumping Station is equipped with door alarms and motion detectors which are transmitted through SCADA to the Elgin Area Primary Water Supply which is monitored 24 hours a day by the Ontario Clean Water Agency (OCWA). The Elgin Middlesex Pumping Station is also enclosed with security fencing and visited regularly by operators from OCWA. The East Chamber is located on the property of the Elgin Middlesex Pumping Station and therefore also enclosed by security fencing. The West Chamber, Southwold Meter Chamber and the Ford Meter Chamber are all kept locked and are equipped with intrusion alarms.			

Question ID	DWMR1072001	Question Type	BMP
Legislative Requirement(s): Not Applicable			
Question: Had the owner and/or operating authority undertaken efforts to promote water conservation and reduce water losses in the drinking water system?			

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

The owner and/or operating authority undertook efforts to promote water conservation and reduce water losses in their system.

The City of St. Thomas website contains a page of information promoting water conservation and includes tips for residents to prevent water loss.

Question ID	DWMR1073001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 23 (1);			
Question: Was an overall responsible operator designated for all subsystems which comprise the drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): An overall responsible operator was designated for all subsystem.			

Question ID	DWMR1074001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 25 (1);			
Question: Were operators-in-charge designated for all subsystems which comprise the drinking water system?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Operators-in-charge were designated for all subsystems.			

Question ID	DWMR1075001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 128/04 22;			
Question: Were all operators certified as required?			
Compliance Response(s)/Corrective Action(s)/Observation(s): All operators were certified as required.			

Question ID	DWMR1076001	Question Type	Legislative
Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2);			
Question: Were adjustments to the treatment equipment only made by certified operators?			
Compliance Response(s)/Corrective Action(s)/Observation(s): Adjustments to the treatment equipment were only made by certified operators.			



Stakeholder References

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 in the table 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/drinkingwater



PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking Water in Ontario	Website
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	Website
Filtration Processes Technical Bulletin	Website
Ultraviolet Disinfection Technical Bulletin	Website
Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments	Website
Certification Guide for Operators and Water Quality Analysts	Website
Guide to Drinking Water Operator Training Requirements	9802E
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	Website
Drinking Water System Contact List	7128E01
Ontario's Drinking Water Quality Management Standard - Pocket Guide	Website
Watermain Disinfection Procedure	Website
List of Licensed Laboratories	Website

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable	012-2149F
Avis de demande de services de laboratoire	012-2148F
Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	012-4444F
Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux	Site Web
Marche à suivre pour désinfecter l'eau potable en Ontario	Site Web
Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection	Site Web
Filtration Processes Technical Bulletin (en anglais seulement)	Site Web
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	Site Web
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable	Site Web
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	Site Web
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802F
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	Site Web
Liste des personnes-ressources du réseau d'eau potable	Site Web
L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche	Site Web
Procédure de désinfection des conduites principales	Site Web
Laboratoires autorisés	Site Web



Ministry of the Environment, Conservation and Parks
Drinking Water System Inspection Report Appendix B

Inspection Rating Record and Inspection Risk Methodology

APPLICATION OF THE RISK METHODOLOGY USED FOR MEASURING MUNICIPAL RESIDENTIAL DRINKING WATER SYSTEM INSPECTION RESULTS



The Ministry of the Environment (MOE) has a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS). Its objective is to determine the compliance of MRDWS with requirements under the Safe Drinking Water Act and associated regulations. It is the responsibility of the municipal residential drinking water system owner to ensure their drinking water systems are in compliance with all applicable legal requirements.

This document describes the risk rating methodology, which has been applied to the findings of the Ministry's MRDWS inspection results since fiscal

year 2008-09. The primary goals of this assessment are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

MOE reviews the risk rating methodology every three years.

The Ministry's Municipal Residential Drinking Water Inspection Protocol contains up to 14 inspection modules and consists of approximately 120 regulatory questions. Those protocol questions are also linked to definitive guidance that ministry inspectors use when conducting MRDWS inspections.

ontario.ca/drinkingwater

The questions address a wide range of regulatory issues, from administrative procedures to drinking water quality monitoring. The inspection protocol also contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry assessed each of the inspection protocol regulatory questions to determine the risk (not complying with the regulation) to the delivery of safe drinking water. This assessment was based on established provincial risk assessment principles, with each question receiving a risk rating referred to as the Question Risk Rating. Based on the number of areas where a system is deemed to be non-compliant during the inspection, and the significance of these areas to administrative, environmental, and health consequences, a risk-based inspection rating is calculated by the ministry for each drinking water system.

It is important to be aware that an inspection rating less than 100 per cent does not mean the drinking water from the system is unsafe. It shows areas where a system’s operation can improve. The ministry works with owners and operators of systems to make sure they know what they need to do to achieve full compliance.

The inspection rating reflects the inspection results of the specific drinking water system for the reporting year. Since the methodology is applied consistently over a period of years, it serves as a comparative measure both provincially and in relation to the individual system. Both the drinking water system and the public are able to track the performance over time, which encourages continuous improvement and allows systems to identify specific areas requiring attention.

The ministry’s annual inspection program is an important aspect of our drinking water safety net. The ministry and its partners share a common commitment to excellence and we continue to work toward the goal of 100 per cent regulatory compliance.

Determining Potential to Compromise the Delivery of Safe Water

The risk management approach used for MRDWS is aligned with the Government of Ontario’s Risk Management Framework. Risk management is a systematic approach to identifying potential hazards, understanding the likelihood and consequences of the hazards, and taking steps to reduce their risk if necessary and as appropriate.

The Risk Management Framework provides a formula to be used in the determination of risk:

RISK = LIKELIHOOD × CONSEQUENCE
(of the consequence)

Every regulatory question in the inspection protocol possesses a likelihood value (L) for an assigned consequence value (C) as described in **Table 1** and **Table 2**.

TABLE 1:	
Likelihood of Consequence Occurring	Likelihood Value
0% - 0.99% (Possible but Highly Unlikely)	L = 0
1 – 10% (Unlikely)	L = 1
11 – 49% (Possible)	L = 2
50 – 89% (Likely)	L = 3
90 – 100% (Almost Certain)	L = 4

TABLE 2:	
Consequence	Consequence Value
Medium Administrative Consequence	C = 1
Major Administrative Consequence	C = 2
Minor Environmental Consequence	C = 3
Minor Health Consequence	C = 4
Medium Environmental Consequence	C = 5
Major Environmental Consequence	C = 6
Medium Health Consequence	C = 7
Major Health Consequence	C = 8

The consequence values (0 through 8) are selected to align with other risk-based programs and projects currently under development or in use within the ministry as outlined in **Table 2**.

The Question Risk Rating for each regulatory inspection question is derived from an evaluation of every identified consequence and its corresponding likelihood of occurrence:

- All levels of consequence are evaluated for their potential to occur
- Greatest of all the combinations is selected.

The Question Risk Rating quantifies the risk of non-compliance of each question relative to the others. Questions with higher values are those with a potentially more significant impact on drinking water safety and a higher likelihood of occurrence. The highest possible value would be 32 (4×8) and the lowest would be 0 (0×1).

Table 3 presents a sample question showing the risk rating determination process.

TABLE 3:							
Does the Operator in Charge ensure that the equipment and processes are monitored, inspected and evaluated?							
Risk = Likelihood × Consequence							
C=1	C=2	C=3	C=4	C=5	C=6	C=7	C=8
Medium Administrative Consequence	Major Administrative Consequence	Minor Environmental Consequence	Minor Health Consequence	Medium Environmental Consequence	Major Environmental Consequence	Medium Health Consequence	Major Health Consequence
L=4 (Almost Certain)	L=1 (Unlikely)	L=2 (Possible)	L=3 (Likely)	L=3 (Likely)	L=1 (Unlikely)	L=3 (Likely)	L=2 (Possible)
R=4	R=2	R=6	R=12	R=15	R=6	R=21	R=16

Application of the Methodology to Inspection Results

Based on the results of a MRDWS inspection, an overall inspection risk rating is calculated. During an inspection, inspectors answer the questions related to regulatory compliance and input their “yes”, “no” or “not applicable” responses into the Ministry’s Laboratory and Waterworks Inspection System (LWIS) database. A “no” response indicates non-compliance. The maximum number of regulatory questions asked by an inspector varies by: system (i.e., distribution, stand-alone); type of inspection (i.e., focused, detailed); and source type (i.e., groundwater, surface water).

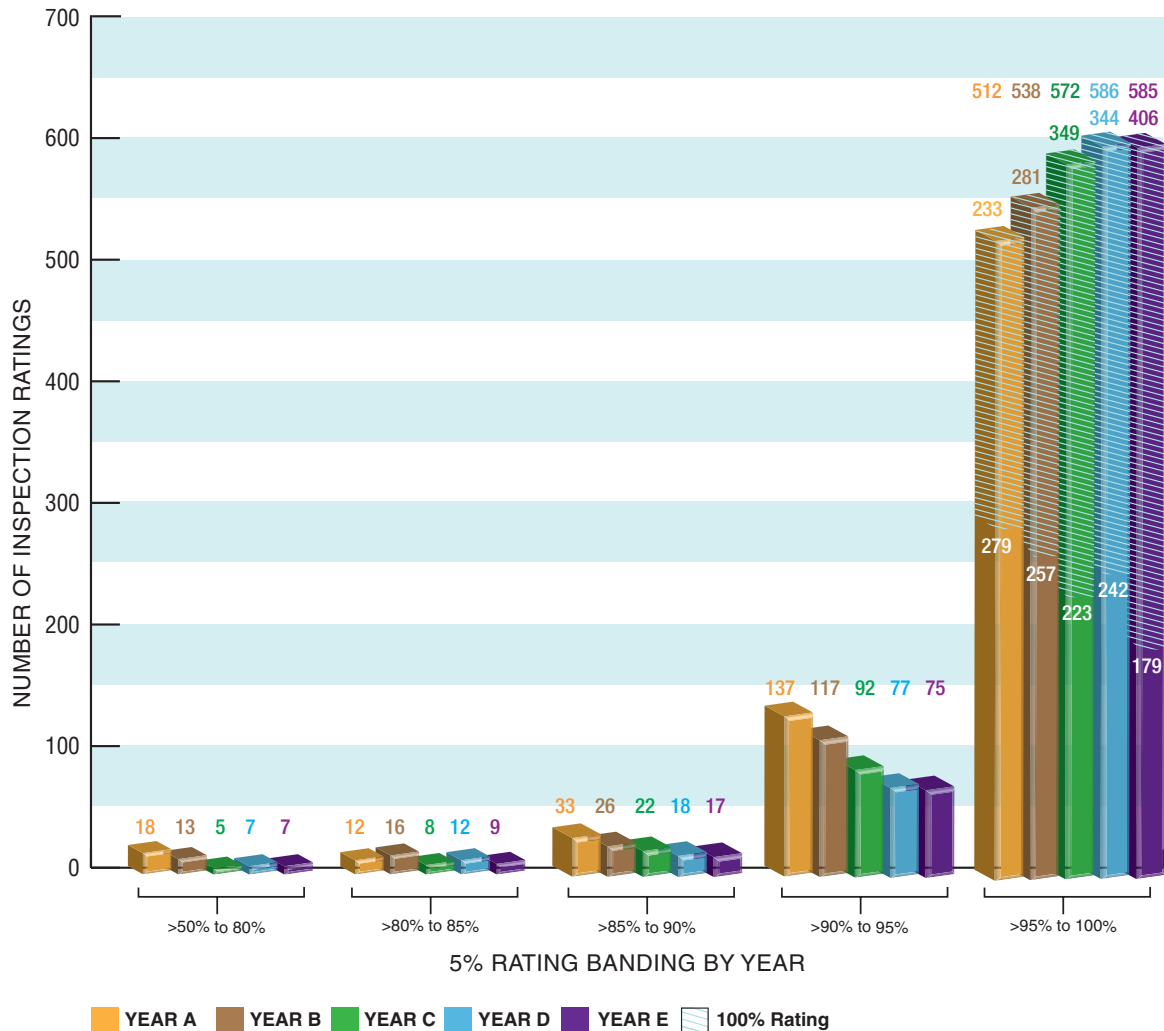
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

Application of the Methodology for Public Reporting

The individual MRDWS Total Inspection Ratings are published with the ministry’s Chief Drinking Water Inspector’s Annual Report.

Figure 1 presents the distribution of MRDWS ratings for a sample of annual inspections. Individual drinking water systems can compare against all the other inspected facilities over a period of inspection years.

Figure 1: Year Over Year Distribution of MRDWS Ratings



Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 14 possible modules of the inspection protocol,

which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

- | | | | |
|-------------------------|------------------------|---------------------------------------|--|
| 1. Source | 5. Process Wastewater | 9. Contingency and Emergency Planning | 12. Water Quality Monitoring |
| 2. Permit to Take Water | 6. Distribution System | 10. Consumer Relations | 13. Reporting, Notification and Corrective Actions |
| 3. Capacity Assessment | 7. Operations Manuals | 11. Certification and Training | 14. Other Inspection Findings |
| 4. Treatment Processes | 8. Logbooks | | |

For further information, please visit www.ontario.ca/drinkingwater

DWS Name:	ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM
DWS Number:	260078897
DWS Owner:	CORPORATION OF THE CITY OF ST THOMAS
Municipal Location:	ST. THOMAS
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Detailed
Compliance Assessment Start Date:	Oct-20-2025
Ministry Office:	London District Office

Maximum Risk Rating: 306

Inspection Module	Non Compliance Risk (X out of Y)
Certification and Training	0/42
Distribution System	0/8
Logbooks	0/30
Operations Manuals	0/42
Reporting & Corrective Actions	4/16
Treatment Processes	42/105
Water Quality Monitoring	0/63
Overall - Calculated	46/306

Inspection Risk Rating:	15.03%
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Final Inspection Rating:	84.97%
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Ministry of the Environment, Conservation and Parks - Detailed Inspection Rating Record (Reporting Year - 2025-26)

DWS Name:	ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM
DWS Number:	260078897
DWS Owner Name:	CORPORATION OF THE CITY OF ST THOMAS
Municipal Location:	ST. THOMAS
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Detailed
Compliance Assessment Start Date:	Oct-20-2025
Ministry Office:	London District Office

Non-Compliance Question(s)	Non Compliance Risk
Reporting & Corrective Actions	
Were changes to the system registration information provided to the ministry within ten (10) days of the change?	4
Treatment Processes	
Were all parts of the drinking water system that came in contact with drinking water disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?	21
Was secondary disinfectant residual tested as required for the large municipal residential distribution system?	21
Overall - Total	46

Maximum Question Rating: 306

Inspection Risk Rating:	15.03%
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FINAL INSPECTION RATING:	84.97%
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