Tri-County Water Board of Management Agenda

April 15, 2025, 7:00 p.m.
Council Chambers
160 Main Street
West Lorne

Pages

1. Call to Order

2. Adoption of Agenda

   Recommendation:
   That Tri-County Water Board hereby adopts the Agenda for April 15, 2025, as presented.

3. Disclosure of Pecuniary Interest

4. Minutes 1

   Recommendation:
   That the Tri-County Water Board hereby adopts the minutes of January 28 and March 11, 2025, as presented.

5. Business Arising from Minutes

6. Staff Reports

   6.1 Tri-County Water Board Annual Report 8

   Emailed to TCWB members March 5, 2025 (O. Reg 170/03)

   Recommendation:
   That Tri-County Water Board hereby receive the Tri-County Water Board Annual Report, previously received by email March 5, 2025, pursuant to Ontario Regulation 170/03, provided by Matthew Belding, Process and Compliance Technician, Ontario Clean Water Agency.

7.1 Letter Dated March 27, 2025 Re: Southwold Water Distribution System

7.2 Verbal Correspondence, R Greenall Re: Delaware First Nations

8. Adjournment

Recommendation:
That the Tri-County Water Board hereby adjourn at _____ pm, to meet again at 7:00pm, on Tuesday, July 15, 2025, or at the Call of the Chair.

Tri-County Water Board of Management

Minutes

Date: January 28, 2025, 7:00 p.m.
Location: Council Chambers
160 Main Street
West Lorne

Present:	**Allan Mayhew, Southwest Middlesex** **Taraesa Tellier, West Elgin** **Mike Hentz, Dutton Dunwich** **Amarilis Drouillard, Dutton Dunwich** **Bill Denning, West Elgin** **Corey Pemberton, Dutton Dunwich** **Don McCallum, Southwest Middlesex** **Ryan Statham, West Elgin** **Darren Galbraith, Chatham-Kent** **Heather Dougherty, West Elgn**
Regrets:	**Kevin Derbyshire, Newbury** **Mike Sholdice, Southwest Middlesex** **Richard Leatham, West Elgin**
Staff Present:	**Robin Trepanier, OCWA** **Sam Smith, OCWA** **Terri Towstiuc, Recording Secretary/Clerk, West Elgin** **Sam Sianas, OCWA** **Robin Greenall, Chief Administrative Officer** **Amanda Gubbels, CAO, Southwest Middlesex**
Regrets:	**Cathy Case, Clerk/Treasurer, Newbury** **Maegan Garber, OCWA** **Tracey Johnson, CAO/Treasurer, Dutton Dunwich** **Magda Badura, Manager of Corporate Services/Treasurer**

This meeting was held in a Hybrid format

1. Call to Order

Secretary T. Towstiuc called the meeting to order at 7:00 pm.

2. Appoint Chair and Vice-Chair for 2025

TCWB 2025- 01

Moved: Corey Pemberton, Dutton Dunwich
Seconded: Amarilis Drouillard, Dutton Dunwich

That Tri County Water Board hereby appoint West Elgin Councillor Bill Denning as Chair, and Southwest Middlesex Mayor Allan Mayhew as Vice-Chair, for 2025.

Disposition: Carried

3. Adoption of Agenda

TCWB 2025- 02

Moved: Ryan Statham, West Elgin
Seconded: Allan Mayhew, Southwest Middlesex

That Tri-County Water Board hereby adopts the Agenda for January 28, 2025 as presented.

Disposition: Carried

4. Disclosure of Pecuniary Interest

No disclosures

5. Minutes

TCWB 2025- 03

Moved: Ryan Statham, West Elgin
Seconded: Mike Hentz, Dutton Dunwich

That the Tri-County Water Board hereby adopts the minutes of December 17, 2024, as presented.

Disposition: Carried

6. Business Arising from Minutes

None.

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7. Staff Reports

7.1 Sam Smith, OCWA, Operations Report, Fourth Quarter 2024

Sam Smith, Senior Operations Manager, OCWA, provided the committee with a summary of the Tri-County operations for 2024 fourth quarter and year end. Mr. Smith reviewed compliances, review of standard operating procedures (SOPs), on-site audit results, performance efficiencies and rated capacity. Mr. Smith also advised the committee that a minor incident happened while an operator was shutting down a chlorine gas tank, resulting in medical attention as a precaution, and no adverse or long-term medical issues. The incident was isolated and allowed for a review of SOPs. Mr. Smith provided an update on capital projects at the treatment plant, upgrades to the Scada system roadmap, while all came in under the 2024 capital spending and budget.

TCWB 2025- 04

Moved: Darren Galbraith, Chatham-Kent
Seconded: Ryan Statham, West Elgin

That the Tri-County Water Board hereby accept the Tri-County Drinking Water System Operations Report, Fourth Quarter, 2024, from Sam Smith, Senior Operations Manager, Ontario Clean Water Agency, for information purposes.

Disposition: Carried

8. Other Items of Discussion

8.1 Municipal Service Board

Allan Mayhew, Mayor, Southwest Middlesex inquired about re-examining the potential to incorporate the board, allowing for grant applications, lending, reduction in municipal liability and debt load. The board received a letter of opinion regarding this approximately 2.5 years prior and requested West Elgin Clerk to provide that to CAO's A. Gubbels and R. Greenall.

It was agreed that the group would like to see more details regarding incorporating, with SWM CAO and West Elgin CAO taking lead. Understanding that today's requirements will likely be different from previous, a new letter of opinion should be obtained.

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CAO Greenall advised there is a LAS article recently published regarding the pros/cons of creating Municipal Service Boards and will send to the committee to use as a primer to prepare for future discussions.

9. Adjournment

Moved: Ryan Statham, West Elgin
Seconded: Heather Dougherty, West Elgin

That the Tri-County Water Board hereby adjourn at 7:38pm, to meet again at 7:00pm, on Tuesday, April 15, 2025, or at the Call of the Chair.

Disposition: Carried

Bill Denning, Chair	Terri Towstiuc, Recording Secretary

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Tri-County Water Board of Management

Minutes

Date: March 11, 2025, 7:00 p.m.
Location: Electronic Participation Meeting via Zoom

Present:	**Allan Mayhew, Southwest Middlesex** **Taraesa Tellier, West Elgin** **Mike Hentz, Dutton Dunwich** **Amarilis Drouillard, Dutton Dunwich** **Bill Denning, West Elgin** **Corey Pemberton, Dutton Dunwich** **Don McCallum, Southwest Middlesex** **Kevin Derbyshire, Newbury** **Mike Sholdice, Southwest Middlesex** **Ryan Statham, West Elgin** **Heather Dougherty, West Elgn**
Regrets:	**Darren Galbraith, Chatham-Kent** **Richard Leatham, West Elgin**
Staff Present:	**Robin Trepanier, OCWA** **Sam Smith, OCWA** **Terri Towstiuc, Recording Secretary/Clerk, West Elgin** **Sam Sianas, OCWA** **Robin Greenall, Chief Administrative Officer** **Don Macleod, Chief Administrative Officer, Dutton Dunwich**
Regrets:	**Cathy Case, Clerk/Treasurer, Newbury** **Maegan Garber, OCWA** **Magda Badura, Manager of Corporate Services/Treasurer** **Amanda Gubbels, CAO, Southwest Middlesex**
Also Present:	**Kerry Tuyen, Director - Innovation, Technology, and Alternate Delivery, OCWA** **Mohammad Khan, OCWA**

This meeting was held in a Hybrid format.

1. Call to Order

Chair Bill Denning called the meeting to order at 7:00 pm.

2. Adoption of Agenda

Moved: Corey Pemberton, Dutton Dunwich
Seconded: Mike Hentz, Dutton Dunwich

That Tri-County Water Board hereby adopts the Agenda for March 11, 2025 as presented.

Disposition: Carried

3. Disclosure of Pecuniary Interest

No disclosures

4. R Greenall, CAO, Municipality of West Elgin - Energy Rebate Proposal

Kerry Tuyen, Director of Innovation, Technology and Alternative Deliver, Ontario Clean Water Agency, presented the Tri-County Water Board with the opportunity to be a participant in Energy Aggregator Partnership. This program would assist with operational efficiencies with the treatment plant and create a revenue stream for the Tri-County Water Board. OCWA has been successfully participating with other locations, as no cost and no risk to the facilities. The program will operate within compliance standards and assist with increased diesel requirements and provide revenue stream. OCWA will continue to look for alternative solutions for infrastructure upgrades, will the program is in place.

Moved: Amarilis Drouillard, Dutton Dunwich
Seconded: Mike Hentz, Dutton Dunwich

That Tri County Water Board hereby receives the report regarding an Energy Demand Rebate Program from Robin Greenall, CAO West Elgin;

And that the Board approve the Acknowledgement Agreement between OCWA and the Tri County Water Board:

And that the Board requests OCWA to provide quarterly reporting detailing the planned and unplanned use of the generator and diesel consumption for the purpose of anticipating diesel costs.

Disposition: Carried

5. Adjournment

Moved: Ryan Statham, West Elgin
Seconded: Corey Pemberton, Dutton Dunwich

That the Tri-County Water Board hereby adjourn at 7:47pm, to meet again at 7:00pm, on April 15, 2025, or at the Call of the Chair.

Disposition: Carried

Bill Denning, Chair

Terri Towstiuc, Recording Secretary

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

February 21st, 2025

Tri-County Water Board

C/O Robin Greenall
22413 Hoskins Line
Rodney ON, N0L 2C0

Re: Requirement Under the Safe Drinking Water Act for a Summary Report

Dear Mrs. Greenall,

Attached is the 2024 Summary Report for the Tri-County Drinking Water System for January 1st to December 31st, 2024. This report is completed in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act.

This Summary Report is to be provided to the members of the Tri-County Water Board. Please ensure this distribution by March 31, 2025.

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

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

Sincerely,

Matthew Belding
Process and Compliance Technician

c.c. Terri Towstiuc, Municipality of West Elgin, Clerk
Sam Sianas, OCWA's Regional Hub Manager
Sam Smith, OCWA's Senior Operations Manager
Maegan Garber, Safety, Process and Compliance Manager

Tri-County Drinking Water System

Waterworks # 260091117
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The Tri-County Water Board

Reporting Period of January 1st – December 31st 2024

Issued: February 21st, 2025

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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

Table of Contents

Revision History

Date	Revision #	Revision Notes
02/21/2025	0	Report Issued

Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the West Elgin Municipal Office. Notification will be at the Municipal Office and copies provided free of charge, if requested. The West Elgin Municipal Office is located at, 22413 Hoskins Line in the Town of Rodney. The Table below lists the Drinking Water Systems, which receive all their drinking water from the Tri-County Drinking Water System:

Drinking Water System Name	Drinking Water System Number	Copy provided
West Elgin Distribution System	260094627	Yes

Compliance Report Card

Compliance Event	Date	# of Events
Ministry of Environment Inspections	January 24th, 2024*	1
Ministry of Labour Inspections	N/A	0
QEMS External Audit	September 6th, 2024 November 7th, 2024	2
AWQI's/BWA	N/A	0
Non-Compliance	N/A	0
Community Complaints	N/A	0
Spills	N/A	0
Watermain Breaks	N/A	0

***The 2024/2025 inspection has not yet been completed.**

System Process Description

Raw Source

The Tri-County Drinking Water System consists of the Tri-County Water Treatment Plant (WTP) and the Tri-County Transmission Main. The Tri-County WTP is a membrane filtration surface water treatment facility with a total design capacity of 12,160m^3/day, located at 9210 Graham Road in the Municipality of West Elgin. The low lift pumping station is located south of the WTP at 8662 Graham Road, on the shores of Lake Erie.

The water treatment facility consists of an intake system, a low lift pumping station, a treatment system and distribution pumping system. The Tri-County Drinking Water System serves the following systems: Southwest Middlesex, West Elgin, Dutton-Dunwich, Newbury and Bothwell Distribution Systems. The Southwest Middlesex and West Elgin Distribution Systems receive all their water directly from the Tri-County Drinking Water System. Dutton-Dunwich receives a portion of their water supply from the Tri-County Drinking Water System with the remainder coming from the Southwold Distribution System. Newbury and Bothwell Distribution Systems receive water indirectly from the Tri-County Drinking Water System via the Southwest Middlesex Distribution System.

Intake:

The intake consists of one 700mm diameter polyethylene pipe extending approximately 610m into Lake Erie at a depth of 5.7m. A zebra mussel chemical control system is used seasonally. There is a second intake located at the shoreline, this is used only as a backup if required due to water quality or a blockage. The raw water is screened by two coarse screens.

Low Lift Pumping Station:

Raw water is pumped from the low lift wet wells by four low lift pumps to the Water Treatment Plant. The WTP has experience short term episodes where the discoloured water is released to the distribution system causing aesthetic issues. The WTP continuously monitors for dissolved oxygen as an early detection that a problem may be experienced. As well, increased sampling of manganese is conducted during possible episodes. Operations can switch to the standby intake if the dissolved oxygen levels are greater there. A sodium permanganate dosing system is now available to covert dissolved manganese in the raw water to particulate form, which can then be removed by the membrane filtration system.

Treatment

Filtration:

At the water treatment plant the water is pre-filtered by four automatic strainers to protect the filter membranes from coarser particles and algae in the raw water. The raw water pH is lowered if required by the use of carbon dioxide.

After the water has been strained it enters the membrane filtration system which removes fine particles, sediment, algae, protozoa and bacteria. Filtered water can be directed through the UV advanced oxidation process (AOP) unit to the treated water storage tanks.

Disinfection:

Disinfection is achieved by the use of sodium hypochlorite for primary disinfection. Note that UV is intended for use with hydrogen peroxide (AOP) for taste and odor control. The treated water is stored in treated water storage tanks where it is pumped into the distribution network by the high lift pumps. Post chlorination of the treated water is done at two points. The first dosing point is upstream of the treated water storage tanks and the second dosing point is downstream of the four high lift pumps before the distribution header.

Process Drain Water:

Waste water from the floor drains and online analyzers are directed to the process water handling facilities that include a settling basin and constructed wetlands. Flush water that cleans the pre-strainers and the membranes is also sent to the process water handling facilities.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Chlorine Gas	Zebra Mussel Treatment	Lavo
Sodium Hypochlorite 12%	Primary Disinfection	Lavo
Hydrogen Peroxide 50%	Advanced Oxidation	FloChem
Citric Acid 50%*	Cleaning of Membranes	FloChem
Caustic Soda 50%*	Cleaning of Membranes	FloChem
Calcium Thiosulfate (Captor) 30%*	Cleaning of Membranes	FloChem
Carbon Dioxide	pH Control/Adjustment	Air Liquide
Sodium Permanganate	Iron and Manganese control	Brenntag

*chemicals used in the cleaning process of membranes

Distribution

The Tri-County Drinking Water System consists of the Tri-County Water Treatment Plant (WTP) and the Tri-County Transmission Main. The Tri-County Drinking Water System serves the following systems: Southwest Middlesex, West Elgin, Dutton-Dunwich, Newbury and Bothwell Distribution Systems. The Southwest Middlesex and West Elgin Distribution Systems receive all their water directly from the Tri-County Drinking Water System. Dutton-Dunwich receives a portion of their water supply from the Tri-County Drinking Water System with the remainder coming from the Southwold Distribution System. Newbury and Bothwell Distribution Systems receive water indirectly from the Tri-County Drinking Water System via the Southwest Middlesex Distribution System.

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There were no adverse water quality incidents reported during the reporting period.						

Non-Compliance

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

Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There were no non-compliances identified during this period.				

The Tri-County Drinking Water System was inspected on January 24th, 2024 by Provincial Officer, Meghan Morgan of the Ministry of Environment, Conservation and Parks (MECP).

The routine MECP inspections have an Inspection Rating Record, which evaluates the system to provide information for the owner/operator on areas that need to be improved. The particular areas that were evaluated for the Tri-county Drinking Water System were: Source,Capacity Assessment, Treatment Process, Operations Manuals, Logbooks, Certification and Training, Water Quality Monitoring, and Reporting and Corrective Actions. The 2024 inspection report identified no non-compliances and thus received an Inspection Rating Record of 100%.

Flows

The Tri-County Drinking Water System is classified as a Large Municipal Residential System that operates under Municipal Drinking Water License #043-101, Issue 7, Drinking Water Works Permit #043-201, Issue 8, and Permit to Take Water #5062-C4UG4R. The Permit to Take Water (PTTW) specifies flow rates and total water takings permitted from Lake Erie. For the Tri-County DWS, the maximum flow rate limit is 9,400L/min. The total daily water taking is 13,500m^3/day. The rated capacity of the plant, as specified in the MDWL, is 12,160m^3/day of treated water.

Raw Water Flows

The raw water flows are regulated under Permit to Take Water #5062-C4UG4R. The 2024 raw flow data was submitted to the Ministry of Environment, Conservation and Parks electronically. The confirmation and a copy of the data that was submitted are attached in Appendix B.

The following table is a summary of the raw flows including total, average, maximum daily flows, and

peak flow rates for the reporting period. As well, a comparison of flows to the Permit to Take Water limits. The overall daily taking of water was not exceeded during the reporting period. The Tri-County DWS is at 30.7% capacity for the average daily water-taking limit, which is down by 3.2% from last year.

Month	Total Flow (m^3)	Average Day Flow (m^3/day)	% of PTTW Limit	Max Day Flow (m^3/day)	% of PTTW Limit	Max Day Flow Rates (L/s)	% of PTTW Limit
January	116,239.30	3,749.65	27.8	5,504.80	40.8	131.67	84.0
February	107,040.00	3,691.03	27.3	4,402.20	32.6	121.23	77.4
March	109,571.40	3,534.56	26.2	5,086.90	37.7	121.07	77.3
April	117,496.90	3,916.56	29.0	5,251.70	38.9	122.21	78.0
May	144,198.20	4,651.55	34.5	5,282.30	39.1	143.21	91.4
June	151,759.40	5,058.65	37.5	7,238.60	53.6	130.06	83.0
July	146,501.20	4,725.85	35.0	5,718.50	42.4	119.53	76.3
August	146,989.40	4,741.59	35.1	6,166.90	45.7	132.66	84.7
September	138,129.70	4,604.32	34.1	5,502.90	40.8	133.22	85.0
October	130,817.20	4,219.91	31.3	5,355.50	39.7	131.48	83.9
November	103,576.40	3,452.55	25.6	4,164.60	30.8	125.67	80.2
December	104,766.40	3,379.56	25.0	4,419.60	32.7	132.92	84.8
Total	1,517,085.50	-	-	-	-	-	-
Average	-	4,143.82	30.7	-	-	-	-
Maximum	-	-	-	7,238.60	53.6	143.21	91.4

Treated Water Flows

The treated water flows are regulated under the Municipal Drinking Water Licence. The design capacity specified in the MDWL is 12, 160 m^3/day.

The following table is a summary of treated water flows including total, average, and maximum daily flows for the reporting period. As well, a comparison of flows to the Municipal Drinking Water Licence (MDWL) rated capacities is provided. The daily average flow for 2024 was 4,030.72m^3/day, which is a3.0% decrease when compared to 2023 average daily flows. The maximum daily flow for the reporting period was 6,087.60m^3/day. The plant is operating at 32.1% of its rated capacity. The Tri-County DWS is capable of meeting its current uses for the system. It is operating at well below the limits set out in the Permit to Take Water and the design capacity for the plant, as specified in the MDWL.

Month	Total Flow (m^3)	Average Day Flow (m^3/day)	% of Rated Capacity	Max Day Flow (m^3/day)	% of Rated Capacity
January	105,034.80	3,388.22	27.9	4,053.10	33.3
February	100,769.30	3,474.80	28.6	4,183.30	34.4
March	103,498.60	3,338.66	27.5	4,660.10	38.3
April	109,719.10	3,657.30	30.1	4,788.30	39.4
May	139,563.70	4,502.05	37.0	5,252.70	43.2
June	138,762.80	4,625.43	38.0	6,087.60	50.1
July	140,069.70	4,518.38	37.2	5,531.00	45.5
August	138,341.70	4,462.64	36.7	5,642.70	46.4
September	130,902.90	4,363.43	35.9	5,473.70	45.0
October	125,820.30	4,058.72	33.4	5,383.90	44.3
November	98,436.60	3,281.22	27.0	3,923.50	32.3
December	100,244.90	3,233.71	26.6	4,010.60	33.0
Total	1,431,164.40	-	-	-	-
Average	-	3,908.71	32.1	-	-
Maximum	-	-	-	6,087.60	50.1

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Water	53	2	<240	2	<13600		
Treated Water	54	0	0	0	0	<10	<10
Distribution Water	109	0	0	0	0	<10	<30

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity (Rack 1)	8760	0.00	9.99
Turbidity (Rack 2)	8760	0.00	9.99
Turbidity (Rack 3)	8760	0.00	10.00
Turbidity (Rack 4)	8760	0.00	9.99
Free Chlorine (Primary Disinfection)	8760	0.86	2.71
Free Chlorine (Secondary Disinfection)	8760	0.78	1.96

Free Chlorine (Distribution—Grab)	420	0.78	2.06

NOTE: spikes recorded by on-line instrumentation were the result of air bubbles and/or various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03.

Inorganic Parameters

These parameters are tested as a requirement under O.Reg. 170/03. Sodium and Fluoride are required to be tested every 60 months. Nitrate and Nitrite's are tested quarterly and the metals are tested annually as required under O.Reg. 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- MDL =Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2024/01/22	<MDL 0.6	6.0	0	0
Arsenic: As (ug/L) - TW	2024/01/22	0.7	10.0	0	0
Barium: Ba (ug/L) - TW	2024/01/22	23.1	1000.0	0	0
Boron: B (ug/L) - TW	2024/01/22	20	5000.0	0	0
Cadmium: Cd (ug/L) - TW	2024/01/22	0.006	5.0	0	0
Chromium: Cr (ug/L) - TW	2024/01/22	<MDL 0.08	50.0	0	0
Mercury: Hg (ug/L) - TW	2024/01/22	<MDL 0.01	1.0	0	0
Selenium: Se (ug/L) - TW	2024/01/22	0.12	50.0	0	0
Uranium: U (ug/L) - TW	2024/01/22	0.403	20.0	0	0
Additional Inorganics					
Fluoride (mg/L) - TW	2024/05/21	0.09	1.5	0	0
Nitrite (mg/L) - TW	2024/01/02	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2024/04/02	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2024/07/02	<MDL 0.003	1.0	0	0
Nitrite (mg/L) - TW	2024/10/01	<MDL 0.003	1.0	0	0
Nitrate (mg/L) - TW	2024/01/02	0.293	10.0	0	0
Nitrate (mg/L) - TW	2024/04/02	0.212	10.0	0	0
Nitrate (mg/L) - TW	2024/07/02	0.146	10.0	0	0
Nitrate (mg/L) - TW	2024/10/01	0.066	10.0	0	0
Sodium: Na (mg/L) - TW	2024/05/21	9.98	20*	0	0

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L.

Schedule 15.1 Sampling:

Schedule 15.1 sampling is required under O.Reg 170/03. The Tri-County Drinking Water system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	4	8	96	109	N/A	N/A
pH	4	8	6.97	7.62	N/A	N/A
Lead (ug/l)	2	4	0.02	0.03	10	0

Organic Parameters

These parameters are tested annually as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2024/01/22	<MDL 0.02	5.0	0	0
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/01/22	0.08	5.0	0	0
Azinphos-methyl (ug/L) - TW	2024/01/22	<MDL 0.05	20.0	0	0
Benzene (ug/L) - TW	2024/01/22	<MDL 0.32	1.0	0	0
Benzo(a)pyrene (ug/L) - TW	2024/01/22	<MDL 0.004	0.01	0	0
Bromoxynil (ug/L) - TW	2024/01/22	<MDL 0.33	5.0	0	0
Carbaryl (ug/L) - TW	2024/01/22	<MDL 0.05	90.0	0	0
Carbofuran (ug/L) - TW	2024/01/22	<MDL 0.01	90.0	0	0
Carbon Tetrachloride (ug/L) - TW	2024/01/22	<MDL 0.17	2.0	0	0
Chlorpyrifos (ug/L) - TW	2024/01/22	<MDL 0.02	90.0	0	0
Diazinon (ug/L) - TW	2024/01/22	<MDL 0.02	20.0	0	0
Dicamba (ug/L) - TW	2024/01/22	<MDL 0.2	120.0	0	0
1,2-Dichlorobenzene (ug/L) - TW	2024/01/22	<MDL 0.41	200.0	0	0
1,4-Dichlorobenzene (ug/L) - TW	2024/01/22	<MDL 0.36	5.0	0	0
1,2-Dichloroethane (ug/L) - TW	2024/01/22	<MDL 0.35	5.0	0	0
1,1-Dichloroethylene (ug/L) - TW	2024/01/22	<MDL 0.33	14.0	0	0
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/01/22	<MDL 0.35	50.0	0	0
2,4-Dichlorophenol (ug/L) - TW	2024/01/22	<MDL 0.15	900.0	0	0
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/01/22	<MDL 0.19	100.0	0	0
Diclofop-methyl (ug/L) - TW	2024/01/22	<MDL 0.4	9.0	0	0
Dimethoate (ug/L) - TW	2024/01/22	<MDL 0.06	20.0	0	0
Diquat (ug/L) - TW	2024/01/22	<MDL 1.0	70.0	0	0
Diuron (ug/L) - TW	2024/01/22	<MDL 0.03	150.0	0	0
Glyphosate (ug/L) - TW	2024/01/22	<MDL 1.0	280.0	0	0
Malathion (ug/L) - TW	2024/01/22	<MDL 0.02	190.0	0	0
2-Methyl-4chlorophenoxyacetic Acid (MCPA) (ug/L)	2024/01/22	<MDL 0.12	100.0	0	0
Metolachlor (ug/L) - TW	2024/01/22	0.02	50.0	0	0
Metribuzin (ug/L) - TW	2024/01/22	<MDL 0.02	80.0	0	0
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/01/22	<MDL 0.3	80.0	0	0
Paraquat (ug/L) - TW	2024/01/22	<MDL 1.0	10.0	0	0
PCB (ug/L) - TW	2024/01/22	<MDL 0.04	60.0	0	0
Pentachlorophenol (ug/L) - TW	2024/01/22	<MDL 0.15	3.0	0	0
Phorate (ug/L) - TW	2024/01/22	<MDL 0.01	2.0	0	0

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Picloram (ug/L) - TW	2024/01/22	<MDL 1.0	190.0	0	0
Prometryne (ug/L) - TW	2024/01/22	<MDL 0.03	1.0	0	0
Simazine (ug/L) - TW	2024/01/22	<MDL 0.01	10.0	0	0
Terbufos (ug/L) - TW	2024/01/22	<MDL 0.01	1.0	0	0
Tetrachloroethylene (ug/L) - TW	2024/01/22	<MDL 0.35	10.0	0	0
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/01/22	<MDL 0.20	100.0	0	0
Triallate (ug/L) - TW	2024/01/22	<MDL 0.01	230.0	0	0
Trichloroethylene (ug/L) - TW	2024/01/22	<MDL 0.44	5.0	0	0
2,4,6-Trichlorophenol (ug/L) - TW	2024/01/22	<MDL 0.25	5.0	0	0
Trifluralin (ug/L) - TW	2024/01/22	<MDL 0.02	45.0	0	0
Vinyl Chloride (ug/L) - TW	2024/01/22	<MDL 0.17	1.0	0	0
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2024	49.00	100	0	0
HAA Total (ug/L) Annual Average - DW	2024	28.48	80	0	0

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

Additional Legislated Samples

Date of legal instrument issued	Parameter	Date Sampled	Result	Maximum Annual Average	Unit of Measure
2024-06-13	Suspended Solids	2024-01-02 2024-02-05 2024-03-04 2024-04-02 2024-05-06 2024-06-03 2024-07-02 2024-08-06 2024-09-03 2024-10-01 2024-11-04 2024-12-02	9 16 17 11 5 4 3 3 6 14 5 3 Avg.: 8.00	25	mg/L

Major Maintenance Summary

Details
-SCADA/PLC Upgrades-Based off of 2021 Report -Chlorine Analyzer Replacement -Chlorine Gas Dosing System -UV System upgrades -Storage Tank Inspections -Naturlized Settling Ponds-Phragmites Control -Replacement of PALL Membranes – Rack#2 -Raw wetwell maintenance/repairs -Lowlift and Associated Building Repairs Fund (IRC BCA Recommendations) -WTP Building Fund (IRC BCA Recommendations) -Discharge Header: Repair/Replace failing stainless steel piping -West Lorne Standpipe Refurbishment/Repainting Reserve Contribution -Remote Chamber Refurbishment -West Lorne Standpipe Inspection -UPS Replacement -Strainers:Purchase of Critical Spare Parts -Pheumatic Actuators -In-plant Process Motors/Pumps replacements - Generator repairs/maintenance - Compressor servicing/maintenance - Replaced storage tank drain valve - Replaced actuator valves on flow control valves - New heaters in low lift and chlorine building - Graffiti removal from standpipe - Replaced PLC and fixed programming with high lift pumps - Fence installation - Repair leak on standpipe altitude valve - High lift header replacement - Replaced PLC card to fix UV MCP/UV inlet & outlet valves - New CL17 analyzer installed/ SCADA upgrades - ROV inspections of storage tanks - Replaced relay on UV1 - Replaced low lift exhaust fan

Appendix A

WTRS Data and Submission Confirmation

Ontario

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 5062-C4UG4R
Permit Holder: TRI COUNTY WATER BOARD.
Received on:Jan 29, 2025 2:40 PM

This confirmation indicates that your data has been received by the Ministry,but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

Return to Main Page

MUNICIPALITY OF WEST ELGIN | 2025/01/29
version: v4.5.0.21 (build#: 22)
Last modified: 2018/09/18

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Tri County Drinking Water System
Operations Report
First Quarter 2025

Ontario Clean Water Agency, Southwest Region
Sam Smith, Sr. Operations Manager
Date: April 9, 2025

Facility Description

Facility Name:	Tri-County Drinking Water System
Regional Manager:	Sam Sianas (519) 319-2233
Sr. Operations Manager:	Sam Smith (226) 377-1540
Business Development Manager:	Robin Trepanier (519) 791-2922
Facility Type:	Municipal
Classification:	Class 2 Water Distribution, Class 2 Water Treatment
Title Holder:	Municipality

Service Information

Area(s) Serviced:	West Elgin, Dutton/Dunwich, Southwest Middlesex, Newbury and Bothwell
Population Serviced:	9,985
No. of Connections:	
Water Meters:	Commercial / Residential
In Service Date:	2009

Capacity Information

Total Design Capacity:	12.160 (1000 m^3/day)
Total Annual Flow:	1,381 (1000 m^3/year)
Average Day Flow:	3.770 (1000 m^3/day)
Maximum Day Flow:	5.380 (1000 m^3/day)

Operational Description

Water treatment with intake in Lake Erie, 4 low lift pumps, lifting up to the treatment plant. Membrane filtration followed by injection with Sodium Hypochlorite for primary disinfection and into the 2 Storage Tanks. Pumping to tower & distribution system with 4 high lift pumps.

SECTION 1: COMPLIANCE SUMMARY

FIRST QUARTER:

There were no compliance issues to report during the first quarter.

SECTION 2: INSPECTIONS

FIRST QUARTER:

On February 20th, a routine MECP inspection was conducted at the Tri-County Drinking Water System by Provincial Officer, Meghan Morgan. The draft report was received for comment and had no non-compliances or best management practices identified.

SECTION 3: QEMS UPDATE

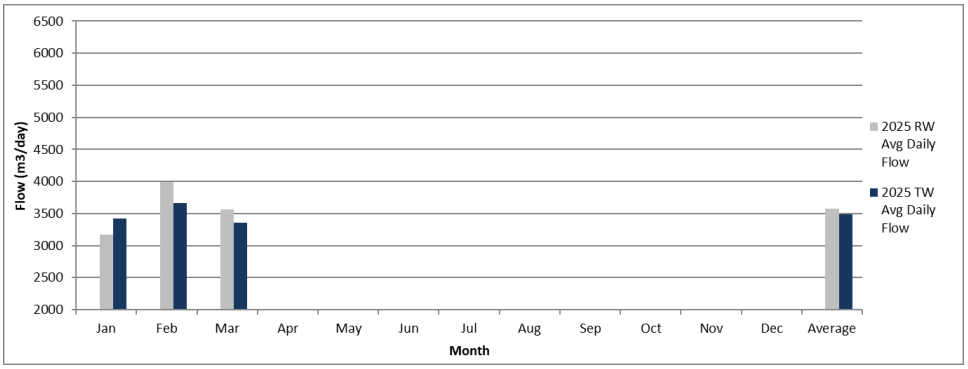
FIRST QUARTER:

On February 11th , the Essential/Emergency Service and Supply Contact List was updated to include changes to OCWA staff contacts as well as client contacts. The contact list is currently in its 38th revision and is reviewed annually.

SECTION 4: PERFORMANCE ASSESSMENT REPORT

The Tri-County Drinking Water System is currently operating at 97.37% efficiency with the water taken from Lake Erie that is treated and sent to the distribution systems. Chart 1 below shows the raw water takings compared to the treated water distributed to the distribution system so far in 2025.

Chart 1: Average daily water takings compared to treated water distributed to the distribution system



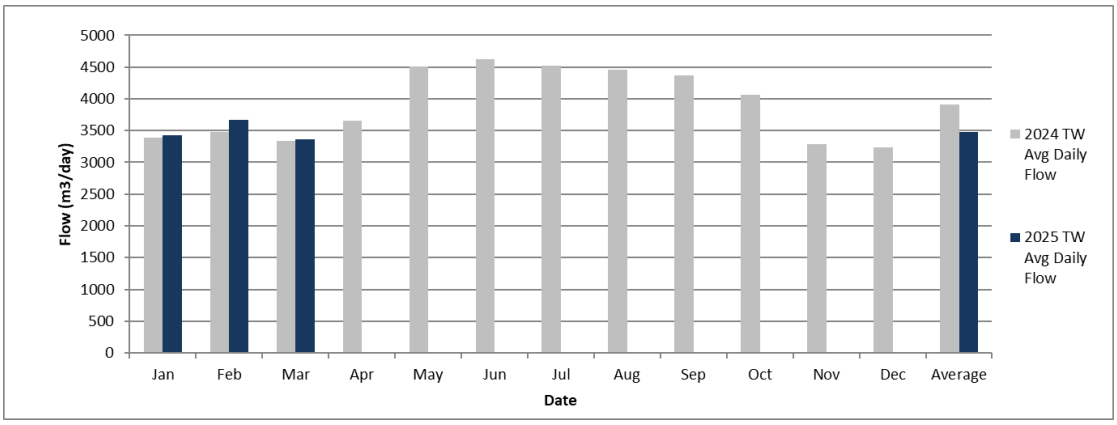
Raw water is sampled on a weekly basis and tested for E. coli and Total coliforms as per regulatory requirements. There are no limits identified in the regulations for E. coli and total coliform found in the raw water source. Table 1 below identifies the sample results for the first quarter.

Table 1: Raw water sample results 2025

	# Samples	E. Coli Range (cfu/100mL)	Total Coliform Range (cfu/100mL)
January	4	2 - 50	6 - 700
February	4	<2 – <10	4 - 50
March	4	<10 - <100	210 - 2400

The raw water is treated through membrane filtration and chlorine disinfection. The treated water is distributed to the systems it serves through the high lift pumps. The average daily treated water sent to the distribution in 2025 so far is 3,481.9 m^3/d. The average treated water flow in the first quarter of 2025 is up 2.4% when compared against the average daily flow in the first quarter of 2024. The Tri-County Drinking Water System is currently at 28.6% of its rated capacity. Chart 2 below depicts the treated water flow for 2025 compared to 2024 average daily flows.

Chart 2: Treated water average daily flow in 2025 compared to 2024



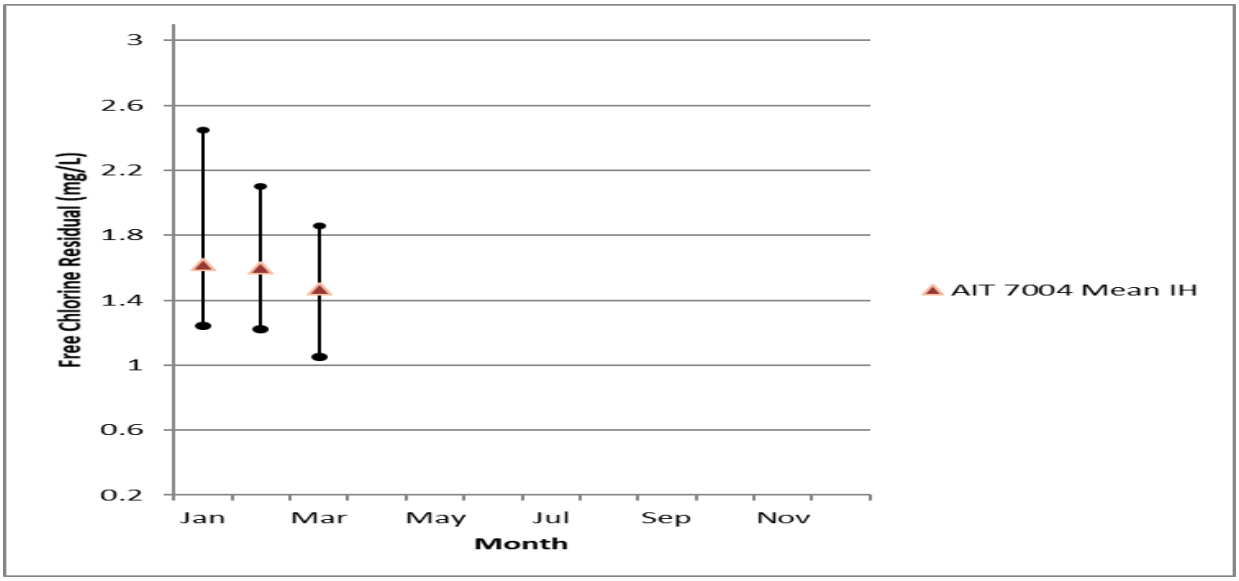
To ensure inactivation of viruses, bacteria and microorganisms the membrane filtration system is required to meet performance criteria for filtered water turbidity of less than or equal to 0.1 NTU in 99% of the measurements each month. The Tri-County Water Treatment Plant has met all regulatory requirements for inactivation in 2024. Table 2 below shows the performance of each filter rack and the overall filter rack performance.

Table 2: Filter Rack Performance in 2025

	Rack 1 % Readings <0.1ntu	Rack 2 % Readings <0.1ntu	Rack 3 % Readings <0.1ntu	Rack 4 % Readings <0.1ntu	Overall Filter Performance (% readings <0.1ntu)
January	100.00	100.00	100.00	99.90	99.98
February	100.00	100.00	100.00	99.80	99.95
March	100.00	100.00	100.00	99.90	99.98

Along with turbidity, chlorine residuals are monitored throughout the treatment process by continuous online free chlorine analyzers. Residuals are maintained in order to provide adequate primary disinfection to meet inactivation of viruses, bacteria and microorganisms. The chlorine also provides adequate residuals in the distribution systems the treatment plant serves (secondary disinfection). Chart 3 below provides the online minimum, maximum and average readings of free chlorine provided to the distribution systems. All results have met regulatory requirements.

Chart 3: Distribution System Free Chlorine Residuals



On a weekly basis the treated water is tested for E. coli, Total Coliforms and heterotrophic plate count (HPC). The limit for Total Coliform and E. coli is zero. There is no limit specified for heterotrophic plate count (HPC) as this is an operational guide to initiate an action plan if HPC results are continuously high. Table 3 below shows the number of samples taken each month along with the range of results. All samples have met regulatory requirements.

Table 3: Treated water sample results for 2025

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	4	0 - 0	0 - 0	<10 – <10
February	6	0 - 0	0 - 0	<10 – 10
March	4	0 - 0	0 - 0	<10 – <10

The transmission main (distribution system) is sampled on a weekly basis at two locations for E. coli, Total Coliforms and heterotrophic plate count (HPC) to meet regulatory requirements. As with the treated water the limit for Total Coliform and E. coli is zero, heterotrophic plate count (HPC) doesn't have a limit. This is an operational guide to initiate an action plan if HPC results are continuously high. Table 4 below shows the number of samples taken each month along with the range of results.

Table 4: Distribution system sample results for 2025

	# Samples	Total Coliform Range (cfu/100mL)	E. coli Range (cfu/100mL)	HPC (cfu/100mL)
January	8	0 - 0	0 - 0	<10 – <10
February	8	0 - 0	0 - 0	<10 – 10
March	10	0 - 0	0 - 0	<10 – <10

On a quarterly basis trihalomethanes are tested at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the THMs are forming in the system with retention time. There is an issue with elevated THMs in the distribution systems that the Tri-

County Drinking Water System provides water to. Table 5 below provides the running average quarterly results; the running average limit for THMs is 100µg/L. All results are within regulatory requirements. However, THMs increase with increased retention time therefore THMs in the distribution system the WTP serves can be much higher, even reaching the regulatory limit.

Table 5: Trihalomethane sampling results

	Limit (µg/L)	Treated Water THM Result (µg/L)	West Lorne Standpipe THM Result (µg/L)
April 2024		14	28
July 2024		26	46
October 2024		52	90
January 2025		16	20
Running Average	**100**	**27.00**	**46.00**

On a quarterly basis Haloacetic Acids (HAAs) are tested as per regulatory requirements. They are sampled at two locations in the system. The first location is at the treatment plant prior to the water leaving the facility. The second location is at the end of the system, at the West Lorne Standpipe. Sampling from both locations provides information on how the HAAs are forming in the system with retention time. Table 6 below provides the current running average quarterly results; the running average limit for HAAs is 80µg/L. All results are within regulatory requirements.

Table 6: Haloacetic Acid sampling results

	Limit (µg/L)	Treated Water HAA Result (µg/L)	West Lorne Standpipe HAA Result (µg/L)
April 2024		5.3	15.1
July 2024		8	25
October 2024		28	55.2
January 2025		5.3	5.3
Running Average	**80**	**11.65**	**25.15**

SECTION 5: OCCUPATIONAL HEALTH & SAFETY

FIRST QUARTER:

On March 3rd the annual occupational health and safety inspection was completed. There were no issues identified. There were no additional Health & Safety issues identified in the first quarter.

SECTION 6: GENERAL MAINTENANCE

FIRST QUARTER:

JANUARY:

8: Greatario repaired small leak on south storage tank T- 6020.

16: Gerber electric Fixed the caustic heater, eagle west panel heater, confirmed silver clay chamber and pioneer line chamber will need new heaters. Installed new limit switch in eagle east chamber.

27: Syntec onsite to investigate PRVs and demonstration on proper maintenance.

31: Southwest mechanical on site to replace PHC 4736 air regulator.

FEBRUARY:

5: Nevtro onsite to repair pin hole leaks on high lift line and RFR line.

10: Plasco Welding & Fabrication onsite to look at Caustic tank.

19: Martins lift truck service on site and completed service on forklift, WO #4353632 Vehicle Lift Truck Clar Insp/Service.

MARCH:

4: Flowmetrix onsite for annual meter reads.

13: Plasco on site to perform repair on Caustic Tank.

18: Levitt safety onsite for air pack inspection and fit testing.

18: Eramosa on site to Fix PDP pump.

19: Ontario Compressor on site to inspect compressors.

21: Southwest Mechanical onsite to see if they can get the low lift sample pumps pulling water again.

25: Gerber's onsite to look at faulting PDP-9010.

25: Waddick onsite for diesel delivery.

SECTION 7: ALARM SUMMARY

FIRST QUARTER:

JANUARY :

3: Received call for main generator running inlet valve fault now normal. Found all low lift pumps faulted and MV7041 stuck blower A is faulted. Put MV7041 in manual and now normal. Arrived at the low lift building and reset all 4 pumps. LLP 1010 and 1020 turned on due duty two request. Plant switched back to hydro power, Compressor A still faulted.

4: Faulted low lift pumps have been reset, LLP 1010 and 1030 are both running. Plant running on compressor B and running well.

16: Received alarm for HI-HI turbidity on AIT- 7003 most likely caused from opening cooling lines on UV and stirring up sediment in those lines.

21: received call from spectrums for storage tank fault now normal.

23: Received text from spectrums "FILTRATE STORAGE TANK FULL" logged on remotely to find tanks were filling and level at 7.24m. After reviewing trending at 11:13 the tank hit 3.09m and at 11:20 the tank was back up 7.21m most likely caused by ice forming in tank and falling into water causing ripples in the water affecting the transducer.

23: Received call from spectrums for storage tank fault. logged on remotely and level was normal at 8.00m. After reviewing trending at 1935 the tank hit 4.78m and at 19:41 the tank was back up 7.96m. most likely caused from ice forming in tank and falling into water causing ripples in the water affecting the transducer.

24: Received call from spectrums for Wallacetown tower fault. Logged onsite and found Wallacetown tower at 8.14m. Placed PRV-7051 into manual and changed manual set point. Flow now at 46 l/s. Wallacetown tower

now at 8.30m placed PRV-7051 back into auto and flow is now at 40 l/s, level now at 9.79m PRV-7051 still running normally with flow at FIT-7052 at 40 l/s. Syntec coming Monday to look at both PRVs.

25: Received call from spectrums for storage tank fault. Arrived onsite alarm most likely caused from freezing on the transducer, lo and lo lo alarms on LIT-6010 as tank 6020 and LIT-6021 are now in duty. Started plant back up and everything looks normal.

27: Received call from Spectrums for Rodney tower general alarm. found Rodney tower LIT2 HIHI Alarm; stop setpoint 9m but tank filled to 9.75m and holding. Received call for Wallacetown critical alarm, tower level at 8.09. Spoke with OIC, close the bypass valve on Wallacetown line. Rodney tower current level 9.66m and out of HIHI alarm. Level will continue to drop with consumption. Leaving site.

28: Received call from Spectrum for Rodney tower general alarm. Rodney tower appears to have filled after West Lorne and reached level greater than 9.60m. Tower back to 9.48m and alarm call now normal.

31: Received call from Spectrums for chemical containment high level or low temp for caustic tank. high level float tripped from ongoing leak. Will discuss with OIC/ORO.

FEBRUARY:

1: Received alarm for caustic tank hi level or low temp. Arrived on site; containment float tripped due to high level. Spoke with OIC CR, was instructed to disable the alarm for the weekend due to the ongoing issue. Alarm now disabled.

1: Received call from Spectrums for caustic high temp. Arrived onsite, caustic tank temp 35.0 degrees and within setpoint range. Heater is disabled.

2: Received call for Rodney tower. Arrived on site, PRV7061 faulted several times. Stopped high lifts, put PRV 7061 into manual then back to auto. High lifts and low lifts are currently off. Rodney tower is now down to 9.68m and out of HIHI alarm. Rodney tower Isolation valve ISV301 failed to close and in HI alarm again. Switched to manual and closed valve. Spoke with ORO SS, changed West Lorne tower setpoints to start at 33m from 34m, and stop at 35m from 36m.

12: Received alarm call for storage fault, alarm was for storage tank LO level, tanks currently at 6.50 and 6.39, two high lifts currently running, shut one down to reduce flow leaving plant, storage tanks came out of LO level.

17: Received call for generator running and all low lift pumps are faulted. Reset progress drain pump, reset all four low lift pumps, plant now making water. Hydro is still out at WP and low lift, repaired at approx. 6pm. Utility power is now back to both buildings, generators are off, reset low lift pump faults and brought PALL system back online.

22: Received call from spectrums for high distribution turbidity. Arrived onsite and restarted high lifts turbidity now at 0.23. Collected sample from north tank overflow. isolating tank until we have lab results back.

25: Received alarm call for PALL system critical failure and remotely saw alarm was for too few racks, plant is still currently making water, rack 2 was in idle state, no alarms as to why rack is shut down, placing into forward flow and now making water.

25: Received alarm call for turbidity analyzer fault, logged in remotely, distribution turbidity is bouncing around 0.65/0.70, increased Hi-Hi alarm to 0.85.

MARCH:

8: Received alarm for Rodney tower general alarm PUC. Rodney tower in HIHI at 9.78, west Lorne standpipe at 36.45, HL still sending water. Changed HL set point from 36.5 to 36 as directed by ORO.

8: Received alarm for Rodney tower general alarm. Rodney tower in HI level, called out and began coming down, west Lorne tower is currently at 35.96. High lifts have stopped sending water, Rodney level coming down out of HI currently at 9.68, West Lorne standpipe at 35.50.

10: Received alarm for filtrate storage tank fault, found both storage tanks in LO alarm at 6.36m and 6.46m. Hit all 3 low lift page reset buttons. Low lifts duty 1 and 2 started and out of LO alarm.

13: Received alarm for less than 3 HighLift pumps available, seems there was a CP2000 power loss and high lift pump 2 and low lift pump 2 are faulted. Arrived onsite, reset HighLift pump 7020 and closed MV-7041 as it was stuck open. Reset low lift Pumps.

14: Received alarm call for filtrate storage, noticed alarms other than storage tanks LO, Communication failure alarm CP1000 – CP2000 Low lift PLC to PALL comms failure. storage tanks are at 6.31 and 6.41 with west Lorne train taking water. Hit all 3 low lift resets, cleared pall alarms, toggled low lift pumps in and out of auto, reset individual low lift pump alarm page. Two low lifts are now running and the storage tank out of LO alarm.

15: Received alarm for generator running, high lift 7010 fault, MV- 2002 faults, and CP2000 power fail most likely due to storm. All alarms are normal when logging on, all the PALL equipment is faulted and plant is not making water, plant is switching back to Utility power. Reset PALL equipment, hit low lift and HighLift resets, and put the racks into auto filter, now the plant is making water and turn off the generator power.

SECTION 8: COMMUNITY COMPLAINTS & CONCERNS

FIRST QUARTER:

There were no complaints or concerns reported during the first quarter.

MUNICIPALITY OF
West Elgin

Staff Report

Report To:	**Tri-County Water Board**
From:	**Robin Greenall, Chief Administrative Officer**
Date:	2025-04-14
Subject:	Tri-County Water System – Multi-Faceted Review Toward Long-Term Sustainability

Recommendation:

That the Tri-County Water Board hereby receives the report from Robin Greenall, CAO West Elgin and Amanda Gubbels, CAO Southwest Middlesex

And endorse the initiation of a strategic review process to evaluate the governance, capacity, and sustainability of the Tri-County Water System;

And direct staff to obtain pricing for a business case study, including a review of Municipal Services Corporation (MSC) options, and include evaluation of board structures that retain municipal representation while incorporating technical expertise, and report back to the Board;

And direct staff to obtain pricing for an overall system capacity and servicing model of the Tri-County Water System, to understand current excess capacity and inform future discussions on potential expansion;

And direct staff to initiate outreach to neighbouring municipalities to review long-term servicing needs for growth, both within existing users and with adjacent municipalities who may be interested in receiving services.

Executive Summary

The Tri- County Waterboard at its January 28, 2025, meeting directed staff to examine governance options for the Tri-County Water System. Discussions have since evolved more broadly to include a wider conversation about the future of the organization and its long-term sustainability. Considering these discussions, the CAOs of West Elgin and Southwest Middlesex have prepared this joint, multi-faceted report for the Board's consideration.

The report presents a high-level overview of several interconnected opportunities and challenges, including system governance, financial capacity, infrastructure investment, and growth. The intention is to provide the Board with a roadmap for a strategic and informed review of how the Tri-County Water System can continue to deliver high-quality water service for the long term.

Delaying a strategic review of the Tri-County Water System could result in missed funding opportunities, escalating infrastructure costs, and reduced long-term sustainability. As other municipal systems evolve to meet modern standards, it is essential that Tri-County proactively plans for its future.

This report does not propose privatization, outsourcing, or immediate structural changes. It recommends responsible due diligence to explore options in a way that maintains municipal ownership and oversight.

Key themes explored in the report include:

- The potential benefits of restructuring governance through a Municipal Services Corporation (MSC);
- The importance of balancing municipal control while improving decision-making through a balanced governance model;
- Ongoing financial pressures, including ongoing underinvestment in infrastructure;
- The opportunity to leverage excess system capacity for regional service expansion;
- The value of collaboration with neighbouring municipalities through exploring shared servicing opportunities.

This report outlines a series of recommended next steps to help the Board assess all aspects of the system's future in an integrated way. The overall goal is to support proactive planning, responsible governance, and sustainable growth.

Background:

Following the initial direction from the Board to examine the governance structure of the Tri-County Water Board, through consultations and discussions, the CAOs of West Elgin and Southwest Middlesex recommend a broader, more strategic approach that evaluates the full Tri-County Water System and its future. This includes, but is not limited to, governance reform. The recommendation arises from a recognition that addressing only the governance model would fall short of resolving long-term operational, financial, and service delivery challenges.

The Tri-County Water Board has expressed ongoing interest in reviewing its governance and operational model, with initial direction in January 2022. In 2024 and 2025, these discussions evolved to include the potential for incorporation as a Municipal Services Corporation (MSC), with a broader emphasis on long-term sustainability.

While the current system structure, as a Joint Municipal Board, has provided stable service delivery, it faces increasing financial and operational pressures, including limited access to funding, underinvestment in infrastructure, and the need to plan for growth. The potential for expanded servicing opportunities must be considered alongside governance and funding reform.

The 2024 Asset Management Plan identifies $4.6 million in required infrastructure investment over five years, which currently is not fully funded. The system also operates with excess capacity, offering opportunities to share resources and offset costs if growth and servicing strategies and funding can be aligned.

Discussion:

Why is a Multi-Faceted Approach Needed?

A sustainable future for the Tri-County Water System cannot be achieved through governance change alone. Instead, a coordinated effort across five key areas is recommended:

- Governance Reform: Exploring the transition to a Municipal Services Corporation that allows for independent operation, borrowing capacity, and grant eligibility.
- Board Structure: Ensuring any new governance model maintains municipal control while integrating skills-based representation to enhance decision-making.
- System Capacity Modelling: Assessing plant capacity and constraints to identify growth opportunities. Future expansion may benefit from alternative financing models that reduce upfront costs and increase flexibility.
- Financial Planning: Addressing investment strategies for lifecycle renewal and long-term rate stability.
- Regional Partnerships: Proactively engage with both members and neighbouring municipalities to assess future service needs and potential collaboration opportunities.

Board Structure Considerations

One of the key advantages of transitioning the Tri-County Water System to a Municipal Services Corporation (MSC) lies in the financial flexibility it offers. An MSC operates independently from municipal financial statements, meaning any debt it incurs does not count against the Annual Repayment Limit (ARL) of participating municipalities. This structure can unlock additional borrowing capacity for significant capital investments, enable more competitive access to financing, and importantly, allow the entity to apply directly for infrastructure-related grants that are currently inaccessible under the Joint Municipal Service Board model.

While financial advantages are central to this review, governance structure remains an important component. The current Tri-County Water Board is composed solely of elected municipal officials. Understandably, there may be concerns about losing municipal oversight if a new MSC board were made up entirely of skills-based or non-elected members. However, consultation with legal services will confirm if a hybrid board model, blending elected officials with technical experts, is permissible under the Municipal Act. This offers an opportunity to preserve municipal accountability while bringing in external expertise to support strategic and operational decisions.

As part of the next steps, the recommended business case study will:

- Evaluate the risks and benefits of different board composition models;
- Propose a structure that preserves municipal ownership and accountability;
- Explore how to balance good governance, transparency, and operational efficiency.

For additional context and a broader comparison of governance options, an excerpt titled Comparison of Governance Models Summary from the LAS Water and Wastewater Expert Panel Report is attached to this report. It outlines the relative benefits and constraints of Joint Municipal Service Boards versus Municipal Services

Next Steps

1. Obtain pricing for a business case study including MSC options and recommended board governance;
2. Obtain pricing for a full Tri-County Water System capacity and servicing model;
3. Engage both existing members and neighbouring municipalities in service needs conversations;
4. Report back to the Board with detailed findings and recommendations

Conclusion:

A sustainable Tri-County Water System requires more than structural change. Through proactive management, growth planning, and modern governance, the Board can position the system to serve current and future residents reliably and affordably.

This report recommends a multi-faceted approach to assess the system's governance, infrastructure, and growth potential, with the aim of preserving its value as a municipally led public utility for the long term.

We respectfully submit this report for the Board's direction and look forward to advancing this important work collaboratively.

Financial Implications:

The overall financial implications of the recommended actions are currently unknown. However, with approval of the recommendations outlined in this report, staff will begin the necessary work to obtain pricing for each component and present a summary of estimated costs, along with a proposed funding strategy, to the Board for consideration. This process will ensure informed decision-making and appropriate financial planning.

These actions should be viewed as a strategic investment in the long-term sustainability of the Tri-County Water System. The benefits of early planning, potential expansion, and financial flexibility

are significant when balanced against the costs of maintaining the status quo in an environment of rising infrastructure demands.

As future growth opportunities are better defined, the Board may also wish to examine alternative financing models—such as public-private partnerships—for major capital projects exceeding $20 million. These options, while not being considered at this stage, could be revisited once total investment requirements are better understood.

Respectfully submitted by,

Amanda Gubbels – CAO Southwest Middlesex
Robin Greenall – CAO West Elgin

Appendix IV: Comparison of two potential structures

Pros	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
Establishment process	Can be created through section 203 of the *Municipal Act*.	Can be created through section 195 of the *Municipal Act*.
	Province may use regulation to streamline process (e.g., no business case requirement).	There is no legislative or regulatory requirement for a business case, it is best practice.
Corporate governance model	Recognized business model.	Widely used in the municipal sector for a variety of purposes.
	Flexible and expansive borrowing capabilities.	Could rely on a member municipality to borrow using the municipality's credit rating.
	Efficient corporate governance processes.	Efficient governance process is possible.
	Skills-based boards.	Skills-based JMSBs can be established.
	Nimble procedural processes.	Nimble procedural processes.
	Municipal shareholders can appoint directors.	Member municipalities would initially appoint board members and could then delegate the future appointment of board members to the JMSB.
	Municipal shareholders can ensure basic protection through shareholder direction.	The JMSB is a local board subject to the *Municipal Act* including the requirement for open meetings.
	Can emphasize transparency.	Open meetings are required.
	Boards of MSCs can be populated with industry experts and other required experts.	Boards of JMSBs can include industry experts and other required experts.

Continued...

Pros	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
Jointly owned entity	Economies of scale, efficiencies and economic power.	Economies of scale, efficiencies and economic power are possible.
	Properly drafted founding documents can mitigate cons/ concerns.	Founding documents can mitigate cons/concerns.
Potential regulatory rate setting model	Setting rates by independent JMSC reduces political pressure on municipalities.	Setting rates by the JMSB could also reduce political pressure on municipalities.
Corporate borrowing powers	Financial assistance available from member municipalities.	Member municipalities provide financing under the *Municipal Act*.
	Can issue long-term debt in its own name and is not subject to financing restrictions contained in the *Municipal Act*.	Cannot issue long-term debt. Would need a member municipality willing to issue long-term debt on behalf of the JMSB.
	If MSC is properly structured, debt would not be included in the member municipalities' consolidated financial statements.	Debt would be included in the member municipalities' consolidated financial statements.
	If MSC is properly structured, member municipalities' annual repayment limits (ARLs) would not be adversely affected.	Member municipalities' ARLs would be impacted by debt issued by a member municipality on behalf of the JMSB.
Establishment process	Complex issues, costly and time-consuming process.	A complex issue that would require time and resources to establish.
	High degree of public and stakeholder engagement mandated.	High degree of public and stakeholder engagement possible but voluntary.
	Subject to compliance with several statutory and regulatory requirements.	Also subject to compliance with statutory and regulatory requirements.

Continued...

Pros	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
Corporate governance model	Directors have a fiduciary duty to the JMSC.	Directors have a fiduciary duty to the JMSB.
	Potential conflicts between interest of the JMSC and member municipalities.	Potential conflicts between interest of the JMSB and member municipalities.
	Progressively increasing difference between public policy focus of the member municipalities and the business orientation of the JMSC.	Public policy objectives would remain the focus.
	Potential jurisdictional battles and duplication between the member municipalities and the JMSC.	Less likelihood of jurisdictional conflicts and duplication.
	Progressive limitation and reduction of the member municipalities' control of the JMSC.	The JMSB is a local board of each member municipality and there is little likelihood of limitation or reduction of municipal control, although disputes could arise among the member municipalities.
	Debt borrowing in the capital markets is subject to securities legislation and higher financing costs.	Member municpalities are exempt from securities legislation and participation in a JMSB should not affect the cost of financing of member municipalities.
	Potential private sector involvement through purchase of shares in the future if there is a regulatory change.	No private ownership is possible as the assets remain in municipal hands.
	Federal insolvency legislation would apply in the event of an insolvency.	In the event of an insolvency, special provincial legislation would apply.

Continued...

Pros	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
Jointly owned entity	How to balance competing interests/objectives of member municipalities.	How to balance competing interests is also a challenge for a JMSB.
	Valuation principles — how are respective proportionate interests in JMSC's assets fairly apportioned.	Member municipalities would retain ownership of assets, but there could be similar valuation issues in respect of each member municipalities' assets.
	Each new member municipality dilutes the shareholding interests of existing member municipalities.	How to balance the interests of existing member municipalities would also be an issue for a JMSB. There are no shareholdings in a JMSB but the control and influence of existing member municipalities could be diluted.
	How to protect minority shareholders from majority shareholders.	Also potentially an issue for a JMSB. There are no shareholdings in a JMSB but a similar issue can arise in respect of the power of member municipalities to control or influence decisions of the JMSB.

Cons	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
	Splintering of share ownership increases the power of the JMSC and its board and can dilute the power of the member municipalities.	There are no shareholdings in a JMSB but a similar issue can arise in respect of the power of member municipalities to control or influence decisions of the JMSB.

Continued...

Cons	Joint municipal services corporation (JMSC)	Joint municipal service board (JMSB)
Potential regulatory rate setting model	How can a change in revenues from providing water and wastewater services be fair and appropriate and not worsen the financial situation of member municipalities.	Also potentially an issue for a JMSB.
	Public policy objectives of a third-party regulator and municipalities may be different.	Also potentially an issue for a JMSB.
	Councillors are still seen by the public as responsible for rates and service levels.	Also potentially an issue for a JMSB.
Corporate borrowing powers	Transfer of water and wastewater assets of member municipalities to the JMSC could have an adverse impact on municipal credit ratings.	No transfer of assets occurs. Member municipalities retain their assets and there should be no adverse impact on municipal credit ratings.
	Cost of borrowing likely higher than that of member municipalities.	Member municipalities can borrow through the member municipality that has the highest credit rating/ lowest cost of borrowing but the cost of borrowing could be adversely affected by the inclusion of member municipalities with no credit ratings and/or high borrowing costs.
	Not maintaining Government Business Enterprise status would jeopardize pros.	Not applicable, as the JMSB is a local board of each member municipality.

Visual Summary: Strategic Review Pathway

Area of Focus	Current Challenge	Proposed Action	Outcome
Governance	Limited flexibility + access to funding	Explore MSC option through business case	Enhanced autonomy + grant access
Board Structure	All elected officials; limited technical expertise	Recommend balanced model with municipal and skills-based reps	Strong oversight + technical input
Infrastructure Investment	$4.6M gap (2023–2028)	Plan for long-term capital strategy	Sustainable asset management
System Capacity	Excess capacity not optimized	Commission servicing model and growth review	Informed decisions on expansion
Regional Partnerships	Limited outreach to neighbours	Engage adjacent municipalities	Shared service efficiencies

Ontario

TRI-COUNTY DRINKING WATER SYSTEM
Physical Address: 9210 GRAHAM RD, , WEST ELGIN, ON

INSPECTION REPORT

System Number: 260091117
Entity: ONTARIO CLEAN WATER AGENCY
TRI-COUNTY WATER BOARD
Inspection Start Date: February 18, 2025
Inspection End Date:
Inspected By: Meghan Morgan
Badge #: 1315

M. Morgan

_____
(signature)

INTRODUCTION

Purpose

This announced, focused 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 TriCounty Water Board and operated by the Ontario Clean Water Agency. The system serves an estimated population of 265 and is categorized as a Large Municipal Residential System. Information reviewed for this inspection covered the time period of January 1, 2024 to December 31, 2024.

The TriCounty DWS supplies water to the West Elgin Distribution System, the Southwest Middlesex Distribution System and the Dutton-Dunwich Distribution System, as well as the Village of Newbury and the community of Bothwell. These distribution systems are connected but each municipality operates their own distribution system. All of these municipal water systems are inspected separately from this drinking water system.

Systems/Components

All locations associated with primary disinfection were visited as part of this inspection. The following sites were visited as part of the inspection of the drinking water system: the Low Lift Pump Station, the TriCounty Water Treatment Plant and the West Lorne Standpipe.

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 #043-101, Issue 8
Drinking Water Works Permit #043-201, Issue 10

NON-COMPLIANCE

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

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

RECOMMENDATIONS

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

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

INSPECTION DETAILS

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

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

Question ID	DWMR1012001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Did the owner have a harmful algal bloom monitoring plan in place that met the requirements of the Municipal Drinking Water Licence?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner had a harmful algal bloom monitoring plan in place which met the requirements.

Municipal Drinking Water Licence #043-101 – Issue #8, Schedule C, Section 7 requires the owner to develop and keep an up to date Harmful Algal Bloom monitoring, reporting, and sampling plan. A review of documentation submitted indicated that the owner/operating authority developed a Standard Operating Procedure entitled "Harmful Algal Bloom, Monitoring, Reporting and Sampling Plan" dated August 16, 2019. The plan includes all information required by the MDWL.

Question ID	DWMR1014001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Was flow monitoring performed as required by the Municipal Drinking Water Licence or Drinking Water Works Permit?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Flow monitoring was performed as required.

Municipal Drinking Water Licence #043-101 - Issue #8, Section 2 of Schedule C requires continuous flow measurement and recording to be undertaken for the flow rate (L/s) and daily volume (m3/day) of treated water that flows from the treatment subsystem to the distribution system and water that flows into the treatment subsystem. At the time of the inspection, it was observed that flow meters were installed on each of the two (2) raw water discharge headers to measure the raw water flow from Lake Erie to the treatment plant. Individual flow meters were also observed on each of the two (2) treated water discharge headers which were located downstream of the highlift pumps but prior to treated water entering the distribution system. In addition to these required flow meters, additional process flow meters were installed throughout the system.

Question ID	DWMR1016001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Was the owner in compliance with the conditions associated with maximum flow rate or the rated/operational capacity in the Municipal Drinking Water Licence?

Compliance Response(s)/Corrective Action(s)/Observation(s):
The owner was in compliance with the conditions associated with maximum flow rate and/or the rated/operational capacity conditions.

Municipal Drinking Water Licence #043-101– Issue #8, Section 1 of Schedule C stipulates that the treated water from the treatment facility to the distribution system must not exceed the rated capacity of 12,160 m3/day for the Tri-County Drinking Water System. Despite the above conditions, the system may be operated above the maximum flow rate for firefighting purposes or for maintenance on the system. Records submitted for review indicate that the rated capacity was not exceeded for the inspection period.

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	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 provided one (1) Form 2 document pertaining to the following minor modification for the Tri-County Drinking Water System: - Replacement of existing discharge header from the valve located in the middle of the high lift pumps to the valves before the PRVs.

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 disinfected as required.

Question ID	DWMR1023001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 1-2 | (2);

Question:
Did records indicate that the treatment equipment was operated in a manner that achieved the design capabilities prescribed by O. Reg. 170/03, Drinking Water Works Permit and/or Municipal Drinking Water Licence at all times that water was being supplied to consumers?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities prescribed.

The Procedure for Disinfection of Drinking Water in Ontario states that a raw water source that is surface water shall ensure at least a 2-log (99%) removal or inactivation of Cryptosporidium, 3-log (99.9%) removal or inactivation of Giardia Cysts and a 4-log removal (99.99%) removal or inactivation of Viruses by the time the water enters the distribution system. At least 0.5-log removal or inactivation of Giardia cysts and 2-log removal or inactivation of viruses must be provided through the disinfection portion of the overall water treatment process.

The Tri-County Drinking Water System utilizes four (4) racks of the Pall Microza microfiltration membrane modules. The system has been validated to provide greater than 2-log (99%) removal of Cryptosporidium, greater than 3-log removal of Giardia and 0.5-log (99.99%) removal of viruses with a filtered water turbidity of less than or equal to 0.1 NTU, 99% of the time. Primary disinfection at the plant is achieved through the use of Sodium Hypochlorite, which is injected downstream of the filter racks and the UV units. The UV units have the capability to be used for primary disinfection in the event of a membrane failure, but they are generally used for taste and odour control within the Advanced Oxidation Process. During the warmer months, chlorine gas is added to the raw water intake for zebra mussel control and therefore additional CT credits can be applied during these months. Under normal conditions, contact time is achieved by maintaining a minimum water level in the two (2) treated water

storage tanks. The calculations are as follows:

Operation with both Storage Tanks online
Maximum Design Flow Rate = 12,160 m3/day
Total Volume of Storage Tanks = 4551.28 m3
Free Chlorine Residual = 1.00 mg/L
CT for Giardia = 61 mg/L*min
CT for Viruses = 12 mg/L*min
Therefore, based on the aforementioned, the minimum storage tank levels should be no less than 3.75 m.

Operation with only one Storage Tank online
Maximum Design Flow Rate = 12,160 m3/day
Total Volume of one Storage tank = 2275.64 m3
Free Chlorine Residual = 1.00 mg/L
CT for Giardia = 61 mg/L*min
CT for Viruses = 12 mg/L*min
Therefore, based on the aforementioned, the minimum storage tank level should be no less than 7.52 m.

Documentation submitted for review indicated that the concentration of free chlorine for the treated water was consistently greater than the minimum requirements. Reservoir levels were maintained at a level greater than the minimum level as well as flow rates were consistently lower than the maximum flow rate indicated.

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.

Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.

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 tested as required.

Ontario Regulation 170/03, Schedule 7-2 (3) 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.

Operators typically collect free chlorine grab samples from different locations in the system on two separate days during the week, at least 48 hours apart. Four samples are collected on the first day of the week followed by at least three samples taken around four days later. A review of the log sheets submitted for free chlorine residual grab samples collected during this inspection period determined that secondary disinfectant monitoring requirements were met with the exception of one week (the week of July 4, 2024) where the chlorine residuals were taken less than 48hrs apart from the first samples taken.

Question ID	DWMR1030001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-2 | (1); SDWA | O. Reg. 170/03 | 7-2 | (2);

Question:
Was primary disinfection chlorine monitoring being conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit or at/near a location where the intended CT had just been achieved?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Primary disinfection chlorine monitoring was conducted as required.

Question ID	DWMR1032001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 7-3 | (2);

Question:
If the drinking water system obtained water from a surface water source and provided filtration, was continuous monitoring of each filter effluent line performed for turbidity?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Continuous monitoring of each filter effluent line was performed for turbidity.

Question ID	DWMR1035001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

Question:
Were operators examining continuous monitoring test results and did they examine the results within 72 hours of the test?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Operators were examining continuous monitoring test results as required.

The operators document these checks in the log book.

Question ID	DWMR1038001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4;

Question:
Was continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency and recording data with the prescribed format?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency and recording data with the prescribed format.

Online data that was submitted for review for the inspection period was found to be within the frequencies specified in the table in Schedule 6 of O.Reg 170/03, including the maximum, minimum and average concentration of free chlorine in addition to other operating parameters.

Question ID	DWMR1037001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Were all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, equipped with alarms or shut-off mechanisms that satisfied the standards described in Schedule 6?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All required continuous monitoring equipment utilized for sampling and testing were equipped with alarms or shut-off mechanisms that satisfied the standards

All alarms associated with the drinking water system are transmitted from the PLC to an auto dialer to notify an on-call operator should a parameter output reading fluctuate above or below the alarm set points. Lowlift and highlift pumps have shut down capabilities in the event of a critical alarm to prevent the discharge of improperly treated water to the next stage of the treatment train, distribution system or to protect equipment. Minor adjustments to the alarm set points may occur based on operating conditions at the operator's discretion. Additional alarms include but are not limited to equipment failures, loss of power and illegal entry.

Question ID	DWMR1040001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)1-4; SDWA | O. Reg. 170/03 | 6-5 | (1)5-10;

Question:
Were all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?

Compliance Response(s)/Corrective Action(s)/Observation(s):
All continuous analysers were calibrated, maintained, and operated as required.

The current minimum regulatory requirements under O. Reg 170/03 Schedule 6-5 stipulate that continuous monitoring equipment calibrations are to be conducted as often as necessary to ensure that test results are within the appropriate margin of error. Documents submitted for review indicated that the owner/operating authority conducts in-house calibrations on the chlorine analyzers frequently. In addition to regular calibrations, the operating authority frequently performs verification checks on the equipment and adjusts them accordingly to ensure accuracy. All adjustments are documented in the logbook. Handheld equipment is also verified on a monthly basis. Documentation was also provided for calibration of flow meters, level transmitters and temperature transmitter.

Question ID	DWMR1108001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 6-5 | (1)5-10; SDWA | O. Reg. 170/03 | 6-5 | (1.1);

Question:
Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, Municipal Drinking Water Licence, Drinking Water Works Permit, or order triggered an alarm or an automatic shut-off, did a qualified person respond as required and take appropriate actions?

Compliance Response(s)/Corrective Action(s)/Observation(s):
A qualified person responded as required and took appropriate actions.

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	DWMR1083001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 10-3;

Question:
Were treated microbiological sampling requirements prescribed by Schedule 10-3 of O. Reg. 170/03 for large municipal residential systems met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Treated microbiological sampling requirements were met.

In accordance with Ontario Regulation 170/03, Section 10-3, the owner of the Tri-County Drinking Water System shall ensure that a treated sample is taken at least once every week and tested for, (a) Escherichia coli; (b) total coliforms; and (c) HPC. According to a review of the laboratory data and logs provided by the owner/operator, over the course of this inspection period, the operating authority collected weekly treated water microbiological samples from the Tri-County Water Treatment Facility in accordance with legislative requirements.

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.

In accordance with Ontario Regulation 170/03, Section 10-2, the owner of the TriCounty DWS shall ensure that at least eight (8) distribution samples are taken every month with at least one of the samples being taken in each week and tested for: (a) E.coli, (b) Total Coliforms

and (c) HPC. According to a review of the laboratory data and logs provided by the owner/operator, over the course of this inspection period the operating authority typically collected 8-10 microbiological samples per month for testing in accordance with the legislative requirements.

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	DWMR1084001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-2;

Question:
Were inorganic parameter sampling requirements prescribed by Schedule 13-2 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Inorganic parameter sampling requirements were met.

In accordance with Ontario Regulation 170/03, Schedule 13-2, the owner of the Tri-County DWS shall ensure that a sample is taken and tested for every parameter listed in Schedule 23 of the regulation at least every 12 months.

The most recent samples were taken in accordance with this section of the regulation on the following dates with all sample results being below the standard:
1) January 16, 2023
2) January 22, 2024

Question ID	DWMR1085001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-4 | (1); SDWA | O. Reg. 170/03 | 13-4 | (2); SDWA | O. Reg. 170/03 | 13-4 | (3);

Question:
Were organic parameter sampling requirements prescribed by Schedule 13-4 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Organic parameter sampling requirements were met.

In accordance with Ontario Regulation 170/03, Schedule 13-4, the owner of the Tri-County DWS shall ensure that a sample is taken and tested for every parameter listed in Schedule 24 of the regulation at least every 12 months.

The most recent samples were taken in accordance with this section of the regulation on the following dates with all sample results being below the standard:
1) January 16, 2023
2) January 22, 2024

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.

In accordance with Ontario Regulation 170/03, Schedule 13-6.1, the owner of the TriCounty DWS shall ensure that at least one distribution sample is taken in each calendar quarter and tested for haloacetic acids.

Sampling in accordance with this section was conducted on:
1) October 3, 2023
2) January 2, 2024
3) April 2, 2024
4) July 2, 2024
5) October 1, 2024
The standard is expressed as a Running Annual Average (RAA), where the RAA is defined as the average for quarterly HAA results for a drinking water system. The quarterly results for this inspection period are below the standard of 80mg/L.

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.

In accordance with Ontario Regulation 170/03, Schedule 13-6, the owner of the TriCounty DWS shall ensure that at least one distribution sample is taken in each calendar quarter and tested for trihalomethanes.

Sampling in accordance with this section was conducted on:
1) October 3, 2023
2) January 2, 2024
3) April 2, 2024
4) July 2, 2024
5) October 1, 2024
The standard for trihalomethanes is expressed as a Running Annual Average (RAA), where the RAA is defined as the average for quarterly THM results for a drinking water system. The quarterly results for this inspection period are below the standard of 100mg/L.

Question ID	DWMR1088001	**Question Type**	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-7;

Question:
Were nitrate/nitrite sampling requirements prescribed by Schedule 13-7 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Nitrate/nitrite sampling requirements were met.

In accordance with Ontario Regulation 170/03, Schedule 13-7, the owner of the Tri-County DWS shall ensure that at least one water sample is collected every three months and tested for nitrate and nitrite.

Sampling in accordance with this section was completed on the following dates and all results were below the standard:
1) October 3, 2023
2) January 2, 2024
3) April 2, 2024
4) July 2, 2024
5) October 1, 2024

Question ID	DWMR1089001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-8;

Question:
Were sodium sampling requirements prescribed by Schedule 13-8 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Sodium sampling requirements were met.

In accordance with Ontario Regulation 170/03, Schedule 13-8, the owner of the Tri-County DWS shall ensure that at least one water sample is collected every 60 months and tested for sodium.

Sampling in accordance with this section was most recently completed May 21, 2024 with the sample result being below the standard.

Question ID	DWMR1090001	Question Type	Legislative

Legislative Requirement(s):
SDWA | O. Reg. 170/03 | 13-9;

Question:
Where fluoridation is not practiced, were fluoride sampling requirements prescribed by Schedule 13-9 of O. Reg. 170/03 met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Fluoride sampling requirements were met.

In accordance with Ontario Regulation 170/03, Schedule 13-9, the owner of the Tri-County DWS shall ensure that at least one water sample is collected every 60 months and tested for fluoride.

Sampling in accordance with this section was most recently completed May 21, 2024 with the sample result being below the standard.

Question ID	DWMR1094001	Question Type	Legislative

Legislative Requirement(s):
SDWA | 31 | (1);

Question:
Were water quality sampling requirements imposed by the Municipal Drinking Water Licence and Drinking Water Works Permit met?

Compliance Response(s)/Corrective Action(s)/Observation(s):
Water quality sampling requirements were met.

The Municipal Drinking Water Licence, Schedule C, Section 1.5 requires the owner to sample

and test for suspended solids each from the point of discharge from the settling lagoons (outlet weir). The licence requires the sample to be taken monthly, and the sample must be a composite grab sample (3 samples, each taken 2hrs apart). Documentation provided by the operating authority indicate that suspended solids water quality monitoring requirements have been met during this inspection period.

The Municipal Drinking Water Licence also requires microcystin sampling in accordance with the Harmful Algal Bloom plan required under Schedule C, Section 7.0. Documentation provided by the operating authority indicate this requirement has been 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 provided as required.

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 # 043-101 - Issue #8, Section 16 of Schedule B outlines the requirements for the Operations and Maintenance Manual. The Tri-County Drinking Water System's Operations and Maintenance Manual provides chlorine contact time calculations that are used as the basis for primary disinfection under worst case operating conditions along with contingency plans, emergency procedures as well as procedures to deal with complaints. The manual also includes other information pertinent to the operations of the drinking water system.

It should be noted that the UV equipment has the capability to be utilized for primary disinfection in the event of a membrane filter failure. The UV is currently used for the Advanced Oxidation Process for taste and odour control. In the event that UV is to be used as primary disinfection, the validated operating conditions for the UV disinfection equipment

including a copy of the validation certificate is required to be included in the Operations and Maintenance manual.

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.

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 Tri-County Water Treatment Plant remains locked at all times and is equipped with a security system which includes intrusion alarms, motion detectors and security cameras. The intrusion and motion alarms are connected to an auto-dialer to alert the owner/operating authority of any unauthorized entry. Visitors to the facility are required to sign in and out of the facility. The Lowlift pumping station and the West Lorne Elevated Water Tower also remains locked at all times and are also equipped with intrusion alarms to alert the owner/operating authority of an unauthorized entry. The Lowlift Pumping Station is also equipped with security cameras. In addition to the aforementioned, all facilities are enclosed with security fencing with lockable gates and are visited regularly by operators.

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.

TOWNSHIP OF
Southwold

southwold.ca

March 27, 2025

Tri-County Water Board
C/O Bill Denning, Chair

Via email

Southwold Water Distribution System

Dear Mr. Denning:

Please be advised that Council, at its Regular Meeting on Monday March 24, 2025, passed the following resolution:

IDS 2025-15 Watermain Break Summary Report

2025-92 Councillor Emons – Deputy Mayor Pennings

THAT Report IDS 2025-15 relating to the February 19th, 2025, watermain break, be received for information and,

THAT Council send formal correspondence to the Tri-County Waterboard requesting the board engage in a feasibility study and modelling analysis for the permanent supply of drink water to the Southwold Water Distribution System; and,

THAT Council authorize Township Staff to enter discussions with Tri-County Waterboard staff, negotiate cost sharing if required, and participate in the feasibility study.

CARRIED

Staff anticipate further discussions on improving the interconnection of our water systems to enhance redundancy in supply and increase revenues for the board. If you have any questions or need additional information, please feel free to contact me.

Yours truly,

Aaron Van Oorspronk
Director of Infrastructure and Development Services

cc: Robin Greenall, CAO, Municipality of West Elgin, via email.