



JOINT BOARD OF MANAGEMENT

Wednesday, February 16, 2022

9:00 AM

Virtually in Zoom

AGENDA

A. Call to Order:

B. Disclosures of Pecuniary Interest:

C. Approval of Minutes:

Minutes of the meeting of the Union Water Supply System Joint Board of Management Meeting held Wednesday, January 19, 2022
Pages 2 - 6

D. Business Arising Out of the Minutes

E. Items for Consideration:

1. UW/03/22 dated February 11, 2022 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 11, 2022
Pages 7 - 26
2. UW/04/22 dated February 11, 2022 re: 2021 Annual Report under the Safe Drinking Water Act and Ontario Regulation 170/03
Pages 27 - 35
3. UW/05/22 dated February 11, 2022 re: 2021 Summary Report for Municipalities under Regulation 170/03 made under the Safe Drinking Water Act.
Pages 36 - 44

F. New Business

G. Adjournment:

H. Date of Next Meeting: March 16, 2022 to be determined

/kmj



Page 2 of 44
**JOINT BOARD OF
MANAGEMENT**

Wednesday, January 19, 2022
9:00 AM
Virtually in Zoom

MINUTES

Members Present Mayor MacDonald (Vice-chair); Deputy Mayor Verbeke, Councillors Dunn, Hammond, Jones, Tiessen - Leamington
Mayor Santos (Chair), Deputy Mayor Queen, Councillor DeYong, Patterson - Kingsville
Councillor VanderDoelen - Essex

Members Absent Councillor Walstedt - Lakeshore

Also in Attendance: Rodney Bouchard, Union Water Supply System Manager
Khristine Johnson, Recording Secretary

Municipal Staff Present: Kevin Girard, Andy Graf - Town of Essex
Andrew Plancke, Shaun Martinho - Town of Kingsville
Albert Dionne, Krystal Kalbol - Municipality of Lakeshore
Laura Rauch, Shannon Belleau - Municipality of Leamington

OCWA Staff Present: Dale Dillen
Robin Trepanier, Dave Jubenville

Call to Order: 9:02 am

Election of Chair for the Union Water Supply System Joint Board of Management

The Manager calls the meeting to order and calls for nominations for the position of Chair. Mayor MacDonald nominates Mayor Santos for the position of Chair. Councillor Hammond seconds the nomination. Mayor Santos accepts the nomination. The Manager calls for further nominations two (2) more times. Seeing no further nominations the call for the position is closed.

Mayor Santos is acclaimed as Chair for the Union Water Supply System Joint Board of Management for a term ending December 31, 2021.

No. UW-01-22

Moved by: Mayor MacDonald

Seconded by: Councillor Hammond

That Mayor Santos is acclaimed as Chair of the Union Water Supply System Joint Board of Management for the year 2022, with the term ending on December 31, 2022.

Mayor Santos takes over the meeting

Election of Vice-Chair for the Union Water Supply System Joint Board of Management

The Chair calls for nominations for the position of Vice-Chair for the UWSS Joint Board of Management.

Councillor Patterson nominates Mayor MacDonald for the position of Vice Chair.
Councillor Hammond seconds the nomination.

Mayor MacDonald accepts the nomination and is acclaimed to the position of Vice-Chair. The Chair calls for nominations two (2) more times and seeing none he closes the nomination process. Mayor MacDonald is acclaimed as Vice Chair.

No. UW-02-22

Moved by; Councillor Patterson

Seconded by: Councillor Hammond

That Mayor MacDonald is acclaimed as Vice-Chair for the UWSS Joint Board of Management for the year 2022, with the term ending on December 31, 2022.

Disclosure of Pecuniary Interest: none

Adoption of Board Minutes:

No. UW-03-22

Moved by: Deputy Mayor Queen

Seconded by: Councillor VanderDoelen

That the Minutes of the UWSS Joint Board of Management meeting of Wednesday, December 15, 2022 is received as amended.

Carried

Business Arising out of Minutes:

There was none

Report UW/02/21 dated January 14, 2022 re: Status Update of the UWSS Operations and Maintenance Activities and Capital Works to January 14, 2022

The Manager reports on updates from the water treatment plant and other aspects of the Union Water Supply System. He notes that a lot of staff was off over the holidays, but everyone is back at work.

High Lift Pump #9 is scheduled for removal this week and will be sent to Phasor Industrial for repair of leaking oil.

On January 11, 2022 the operator noted that the air wash cycle for Filter #6 was not working, and the valve actuator had failed. Staff installed a spare and Filter #6 was returned to service. Staff have ordered another actuator to have as a spare in case another event occurs.

The Manager explains that maintenance staff have replaced four (4) coagulant pumps with newer more efficient and durable ones. They old pumps were nearing the end of their lifecycle.

Some of the smart hydrant pressure monitoring devices installed over the last year have failed. These devices are capable of sending data in real time and assist in monitoring temperature and other factors. The supplier indicates that there is a hardware issue involving other municipalities as well. Therefore the manufacturer will be covering the costs to correct the issue.

The 4 inch intake submersible pump for the Low Lift wet well has been ordered to replace the older pump. The Manager notes that the Low Lift cleaning is scheduled for February.

The Manager updates the board of the DAF Phase 1 project noting that there was no staff present during the holidays, however, staff is now back on site and working on several aspects of the project. He reminds members he has attached the latest report from the Engineering manager on site to this agenda for their review. This report provides pictures and a clearer understanding of the movement of the project.

He also notes that the floor slab work is nearing completion, pipe work is complete, while wiring upgrades are ongoing. Several new valves have been ordered, while not part of the project, the Manager and OCWA staff feel it is a good time to install these as there is an access point.

Over the next four (4) weeks the influent and effluent pipe work will continue moving forward, waterproofing and insulation of poured walls for the auxiliary building will continue. The Manager also notes that DAF equipment should be arriving at the end of this week or early next week. The schedule still remains relatively intact with start-up scheduled for the end of April or the beginning of May.

The Manager notes that the Low Lift pump rehabilitation is ongoing by OCWA staff, with the anticipated re-installation date of later in February.

The Manager reminds the board that the new laboratory is complete. He notes that the old lab has been dismantled and all old equipment and cupboards have been removed. He is in the process of obtaining quotes to rehab the area into new washroom facilities.

The Manager notes that it is too early in the year to make any determination on the flows, but with only 13 days in they seem to be on track of 2021's.

Councillor Hammond asks if the smart hydrants allowed the operational staff to notice any interesting trends regarding pressure. The Manager explains that the area along Albuna has lower pressure than he anticipated, however this has not caused any issues that he is aware of. He also notes that hopefully capital upgrades to the AWT will assist with increasing the pressure in that area.

Councillor Patterson acknowledges that the operators were observant enough to investigate the air wash cycle filter was not working properly and have it repaired in a timely manner. The Manager also acknowledges that the new SCADA is also part of the notification system to alert team members to issues that can occur.

No. UW-04-22

Moved by: Councillor Jones

Seconded by: Councillor Dunn

That report UW/02/22 dated January 14, 2022 re: Status Update of UWSS Operations & Maintenance Activities and Capital Works to January 14, 2022 is received.

Carried (UW/02/22)

New Business:

The Manager explains to the Board that normally the payments report would be included each month with the agenda, but notes that he is working to generate a new report that should be ready by the next meeting.

Councillor Verbeke asks why Susan Budden is no longer the Business Manager for OCWA. Robin Trepanier introduces herself. She notes that Susan Budden has taken over an area closer to her home. Robin further explains that she grew up locally and worked for the local Leamington newspapers and has been part of OCWA for the last ten years. The Chair welcomes her to UWSS Board.

Adjournment:

No. UW-05-22

Moved by: Councillor Jones

Seconded by: Mayor MacDonald

Time: 9:22 am

Date of Next Meeting: February 16, 2022 at 9 am via Zoom

/kmj

To: Chair and Members of the Union Water Supply
System Joint Board of Management

From: Rodney Bouchard, UWSS General Manager

Date: February 11, 2022

Re: Status Update of UWSS Operations & Maintenance Activities and Capital
Works to February 11, 2022



Aim:

To inform the UWSS Board about operational and maintenance activities and capital works projects for the Union Water Supply System since the last Board meeting on December 15, 2021.

Discussion:

The UWSS General Manager conducts regular meeting with OCWA Operations staff in regards to on-going operations and maintenance programs for the UWSS facilities. The following provides an update on UWSS operations, regular maintenance and major maintenance and Capital Works at UWSS facilities:

1. Clarifier #1 was put back into operation on Feb. 4th, 2022. It is anticipated that the necessary chemical blanket will be in place by Feb. 14, 2022 and the clarifier will be put in service at that time.
2. A new blind flange and new valve were installed on the piping in the valve room during the week ending February 4th. This allowed the inflow pipes between Clarifier #1 and Filters 1-4 to be put back into service.
3. Annual filter maintenance has been completed on Filters #1-#4. These filters will be disinfected and put back into service by the end of February 2022.
4. New radar level transmitters were installed in Filters #1-4 and in influent channel #1, which feeds clarified water to Filters #1-4. These new level transmitters are more response to level changes and will improve the efficiency of the filters.
5. A few of UWSS' smart hydrant pressure monitoring devices have failed over the last two months due to hardware (processor/board) problems. The equipment supplier has completed the upgrades to the problematic hardware. This upgraded hardware will be reinstalled during the week of Feb 14th.
6. Work to convert the old laboratory area to a new washroom will start the week of February 21, 2022.
7. DAF Phase 1 Update: Removal of existing Clarifier #2 influent and effluent pipes are complete. Installation of new influent pipe is underway. Electrical wiring and upgrades for the DAF system is ongoing. Conduits to the new

Re: UW/02/22 - Status Update of UWSS Operations & Maintenance Activities and Capital Works to February 11, 2022

auxiliary building are being installed. The new water service line for the auxiliary building has been installed. Waterproofing for the auxiliary building and blow off chamber will be completed early in the week of February 14th. Masonry/brick work for the auxiliary building will begin at that time. The work for next 4 weeks will focus on installation of influent pipe for the DAF system; completion of masonry work for auxiliary building; and DAF tank equipment installation in auxiliary building. Completion of the DAF project is running a few weeks behind schedule due to equipment shipping and supplier delays. A copy of the weekly progress report for the week ending February 4th, 2022, prepared by UWSS' consultant (Associated Engineering) site inspector, is attached to this report.

8. Low Lift Pump #7 rehabilitation is on-going by OCWA maintenance staff. Anticipated reinstall date is end of February 2022.

The first chart shows comparative flows for 2018 through 2022 in Mega Litres (ML) and the second chart shows Millions of Imperial Gallons (MIG) for the period January 1st to February 11, 2022.

	2018	2019	2020	2021	2022
Flow to Date (ML)	1,217.81	1,231.45	1,279.89	1,519.50	1,529.25
Max Day (ML)	35.47	38.81	35.29	48.81	45.75
Min Day (ML)	23.56	20.13	25.44	26.74	27.58
Average Day (ML)	29.70	30.04	31.22	37.06	37.30
No of Days	41	41	41	41	41

	2018	2019	2020	2021	2022
Flow to Date (MG)	267.89	270.89	281.54	334.25	336.39
Max Day (MGD)	7.80	8.54	7.76	10.74	10.06
Min Day (MGD)	5.18	4.43	5.60	5.88	6.07
Average Day (MGD)	6.53	6.61	6.87	8.15	8.20
No of Days	41	41	41	41	41

The flows to date are up 9.75 ML (2.14 MIG) or 0.64% from last year. The 2022 flows to date are up 16.54% over the previous 4 year average

Recommendation:

That this report be received by the UWSS Board for information purposes.

Respectfully submitted,



Rodney Bouchard, General Manager
Union Water Supply System Joint Board of Management

/kmj Filename: t:\union wtr\reports to board\2022\uw03-22 uwss operations report for february 2022.docx

Prepared By:	Sommer Lee, SI/CA	Date:	2022-02-07	File:	2020-5461.05.05
		Report No.:	20	Proj. No.	2020-5461
		Report Period:	2022-01-31 to 2022-02-04		
		Client :	Union Water Supply System (UWSS)		
		Client Contact :	Rodney Bouchard		
		Project:	UWSS Ruthven WTP DAF Retrofit Project Phase 1		

PROGRESS REPORT

TOTAL DAYS ON SITE THIS WEEK	DAYS LOST TO WEATHER THIS WEEK	REMAINING DAYS TO CONTRACT COMPLETION
4	1	As of 2022-02-07 , 105 days to contract completion (Original Contract Completion 2022-05-17 + 6 days lost to weather → Revised Contract Completion of 2022-05-23)

KEY EQUIPMENT ON SITE

QTY.	NAME	USE	DAYS IN OPERATION
1	Crawler Loader	N/A	N/A
1	Crane	N/A	N/A
1	Skid Steer	N/A	N/A
1	Excavator	Material Stock Piling	2022-01-31 to 2022-02-02, and 2022-02-04
1	Plate Compactor	Perimeter Compaction - Auxiliary Building and Blowdown Chamber	2022-02-01 and 2022-02-03
1	Bulldozer	Material Stock Piling	2022-01-31 to 2022-02-01
1	Dump Truck	Material Stock Piling	2022-01-31 to 2022-02-01
1	Mini Excavator	Perimeter Backfill – Auxiliary Building and Blowdown Chamber and Frost Ripping	2022-01-31 to 2022-02-03
1	Telescopic Handler	Valve Room Piping Works and General Cleaning/set-up	2022-01-31 to 2022-02-03
	Miscellaneous Tools & Equipment		2022-01-31 to 2022-02-04

KEY DELIVERIES TO SITE

DATE	MATERIALS / EQUIPMENT DELIVERED	NOTES
2022-01-31	<ul style="list-style-type: none"> Granular B Type 2 	Auxiliary Building Perimeter Backfill (above subdrain) and Blowdown Chamber Perimeter Backfill
2022-01-31	<ul style="list-style-type: none"> Insulation (Styrofoam Highload 40 Extruded Polystyrene) 	Auxiliary Building and Blowdown Chamber insulation (50 mm thick)
2022-02-02	<ul style="list-style-type: none"> EPDM Sheet 	Gasket for Blind Flange on East T – Valve Room (free-issued by Owner)
2022-02-03	<ul style="list-style-type: none"> 750 mm 316SS Piping 	Valve Room – Repurposed as DAF No. 1 Influent Line

WORK COMPLETED

DATE & WEATHER	SUMMARY OF WORK	ASSOCIATED PHOTOS
2022-01-31 Sunny -2°C/-8°C	<ul style="list-style-type: none"> Maple taking site measurements in preparation for DAF system. Red Line Contracting on site to complete installation of protection board (Hydroduct 220) and commencing insulation (Styrofoam Highload 40 Extruded Polystyrene) installation on the Auxiliary Building. Installation of waterproofing system and protection board 	1 – 16

	<p>(Hydroduct 220) completed on the bottom half of the first level – Blowdown Chamber.</p> <ul style="list-style-type: none"> Brevon Concrete on site to core through the Blowdown Chamber Slab and Walls for the service water line (to Auxiliary Building hose). NJS on site to commence backfill & compact (below floor slab walls) for the Auxiliary Building above the foundation subdrain (protected with clearstone). 	
<p>2022-02-01 Sunny 6°C/-9°C</p>	<ul style="list-style-type: none"> Maple taking site measurements in preparation for DAF system. Maple working on installing insulation (Styrofoam Highload 40 Extruded Polystyrene) on the Auxiliary Building. NJS on site to complete backfill & compact (below floor slab walls) for the Auxiliary Building above the foundation subdrain (protected with clearstone). Opening left (>1 m left and right) surrounding process piping stubs for connection of in-ground process piping. Maple covered the Granular B Type 2 material and Auxiliary Building walls + compacted perimeter with tarp. OCWA completed welding two channels to the UWSS-free-issued 30" carbon steel blind flange. 	17 – 26
<p>2022-02-02 Moderate Rain Showers throughout Morning-Afternoon with Evening Snow Showers 4°C/-6°C</p>	<ul style="list-style-type: none"> NJS working on stock piling material in preparation for Blowdown Chamber backfill/compact. Maple Electrical are on site working within the WTP to set up conduit installation from the Plant Switchgear to the outside pull box installed on the north side of the WTP (next to the generator room door). Maple removed the West T (for Repurposed as DAF No. 1 Effluent Line) and chipped away the concrete support for the West T. 	27 – 38
<p>2022-02-03 Moderate to Heavy Snow Showers -6°C/-11°C</p>	<ul style="list-style-type: none"> Maple installed the blind flange and EPDM gasket on the East T (for Repurposed as DAF No. 1 Effluent line). OCWA installed the W-beam and wall support for the blind flange restraint. NJS removed snow from the Blowdown Chamber perimeter and filled/compacted in lifts with Granular B Type 2 material. Red Line Contracting working on installation of waterproofing system on the Blowdown Chamber walls. 	39 – 45
<p>2022-02-04 Mostly Cloudy -7°C/-16°C</p>	<ul style="list-style-type: none"> OCWA constructing the A frame for the east tee blind flange restraint. East Tee blind flange restraint completed. Small steady leaking present on the west line (Clarifier No. 1). NJS breaking up frozen ground with frost ripper in preparation for the water service line from the Blowdown Chamber to the Auxiliary Building. Ground covered with tarp. 	46 – 58

KEY CONTRACTORS AND SUBCONTRACTORS ON SITE

- Maple Reinders Constructors Ltd. (Maple), 2022-01-31 to 2022-02-04

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- NJS Excavation (NJS), 2022-01-31 to 2022-02-04
 - Velez Construction (Velez), N/A
 - Tarpon, N/A
 - Lakeshore / Lake Erie Concrete Supply, N/A
 - AGF, N/A
 - KT Crane, N/A
 - Moir Crane Service, N/A
 - Brevon Concrete Cutting and Coring, 2022-01-31
 - Red Line Contracting, 2022-01-31, 2022-02-03

VISITORS AND PURPOSE OF VISIT:

- None during this period.

REQUESTED REVISIONS OR INTERPRETATIONS, FIELD INSTRUCTIONS, CHANGE DIRECTIVES

- None to note during this period.

NONCONFORMING WORK REPORTED TO CONTRACTOR:

- None to note during this period.
- On Auxiliary Building: Waterproofing system liquid membrane or mastic top termination strip missing – subcontractor noted long lead time and that the liquid membrane will be applied to the top termination of the waterproofing system. In the interim: Backfill will not be applied to the top termination of the waterproofing system (2022-01-31).

ISSUES THAT MAY LEAD TO DELAYS IN PROJECT DELIVERY:

- None to note during this period.

ATTACHMENTS AND OTHER INSPECTION/OBSERVATION REPORTS:

- None to include during this period.

PHOTOS



1. Auxiliary Building – Waterproofing Membrane (Bituthene 3000) (2022-01-31)



2. Auxiliary Building – Waterproofing Primer (Bituthene Adhesive Primer) (2022-01-31)



3. Auxiliary Building – Waterproofing Membrane (Bituthene 3000) (2022-01-31)



4. Auxiliary Building – Waterproofing Membrane (Bituthene 3000) (2022-01-31)



5. Auxiliary Building – Waterproofing Membrane (Bituthene 3000) (2022-01-31)



6. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)



7. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)



8. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)

	
9. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)	10. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)
	
11. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)	12. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)

	
<p>13. Auxiliary Building – Hydroduct 220 Drainage Sheet Overlap (min 50 mm) (2022-01-31)</p>	<p>14. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)</p>
	
<p>15. Auxiliary Building – Hydroduct 220 Drainage Sheet (2022-01-31)</p>	<p>16. Blowdown Chamber – Tarped for Waterproofing System (2022-01-31)</p>



17. Auxiliary Building – Granular B-2 Compaction (2022-02-01)



18. Auxiliary Building – Granular B-2 Compaction (2022-02-01)



19. Auxiliary Building – Insulation Installation (Styrofoam Highload 40) (2022-02-01)



20. Auxiliary Building – Insulation (Styrofoam Highload 40) (2022-02-01)



21. Auxiliary Building – Insulation (Styrofoam Highload 40) (2022-02-01)



22. Auxiliary Building – Insulation Installation (Styrofoam Highload 40) (2022-02-01)



23. Auxiliary Building – Insulation Installation (Styrofoam Highload 40) (2022-02-01)



24. Auxiliary Building – Insulation Installation (Styrofoam Highload 40) (2022-02-01)



25. Auxiliary Building – Insulation Installation (Styrofoam Highload 40) (2022-02-01)



26. Blowdown Chamber – Waterproofing System Installation (2022-02-01)



27. Valve Room Removals (2022-02-02)



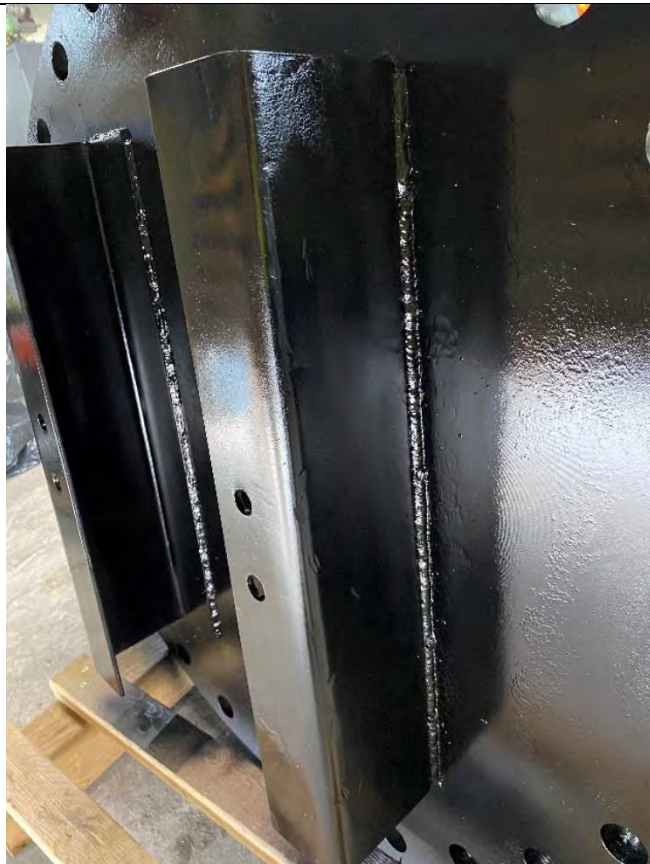
28. Blowdown Chamber – Pile of Granular B-2 (2022-02-02)



29. Fire Stop on Electrical Pull Box on North Side of WTP (2022-02-02)



30. Blind Flange for East Tee in Valve Room – Channels Welded and Painted (2022-02-02)



31. Blind Flange for East Tee in Valve Room – Channels Welded and Painted (2022-02-02)



32. Blind Flange for East Tee in Valve Room – Channels Welded and Painted (2022-02-02)



33. Auxiliary Building (2022-02-02)



34. Auxiliary Building (2022-02-02)



35. Auxiliary Building (2022-02-02)



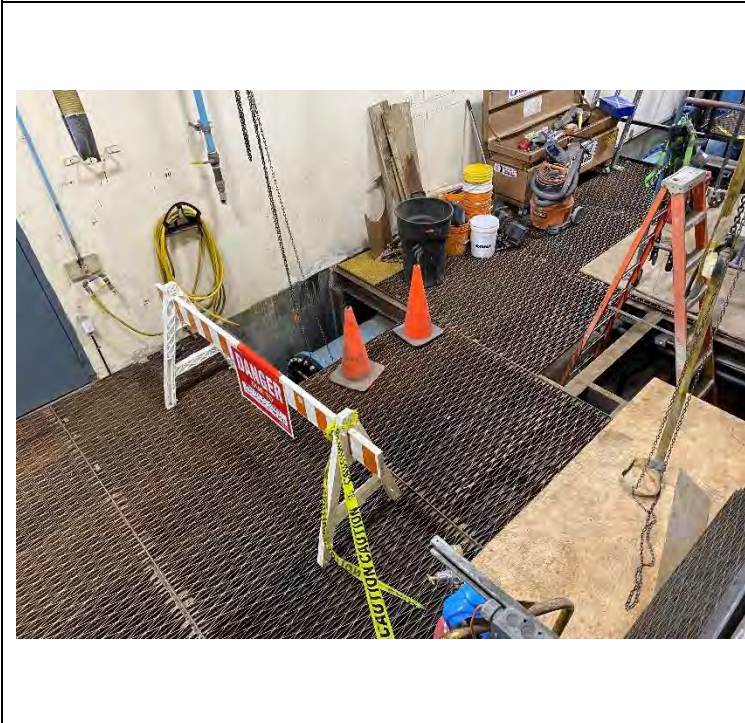
36. New Valves (2022-02-02)



37. New Cooling Unit for Auxiliary Building (2022-02-02)



38. Valve Room – West Tee Removed and Concrete Support Chipped Away (2022-02-02)



39. Valve Room – Blind Flange Installed (2022-02-03)



40. Valve Room – Blind Flange Installed (2022-02-03)



41. Blowdown Chamber (2022-02-03)



42. Blowdown Chamber (2022-02-03)



43. Valve Room East Tee Blind Flange – Restraint in Progress (2022-02-03)



44. Valve Room East Tee Blind Flange – Restraint in Progress (2022-02-03)



45. Valve Room East Tee Blind Flange – Restraint in Progress (2022-02-03)



46. Valve Room – Process Piping for DAF No. 1 Influent Line (2022-02-04)



47. Valve Room – Process Piping for DAF No. 1 Influent Line (2022-02-04)



48. Valve Room – Process Piping for DAF No. 1 Influent Line (2022-02-04)



49. Valve Room – Process Piping for DAF No. 1 Influent Line (2022-02-04)



50. Blowdown Chamber – Frost Ripper (2022-02-04)



51. Auxiliary Building (2022-02-04)



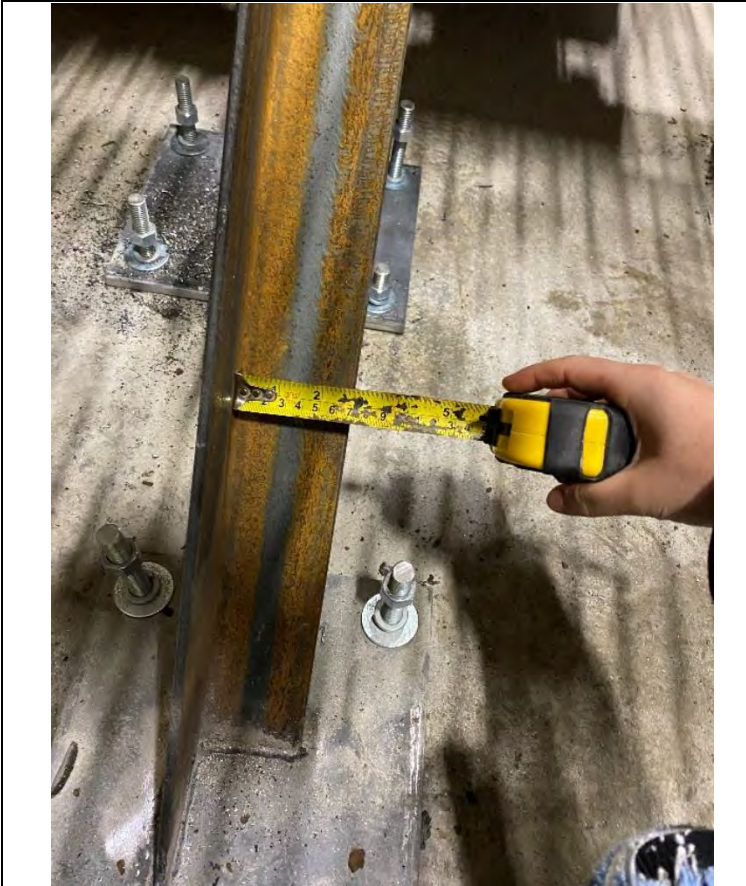
52. Frost Ripping South of Auxiliary Building for Water Service Line (2022-02-04)



53. Valve Room – Restrained East Tee in Progress (2022-02-04)



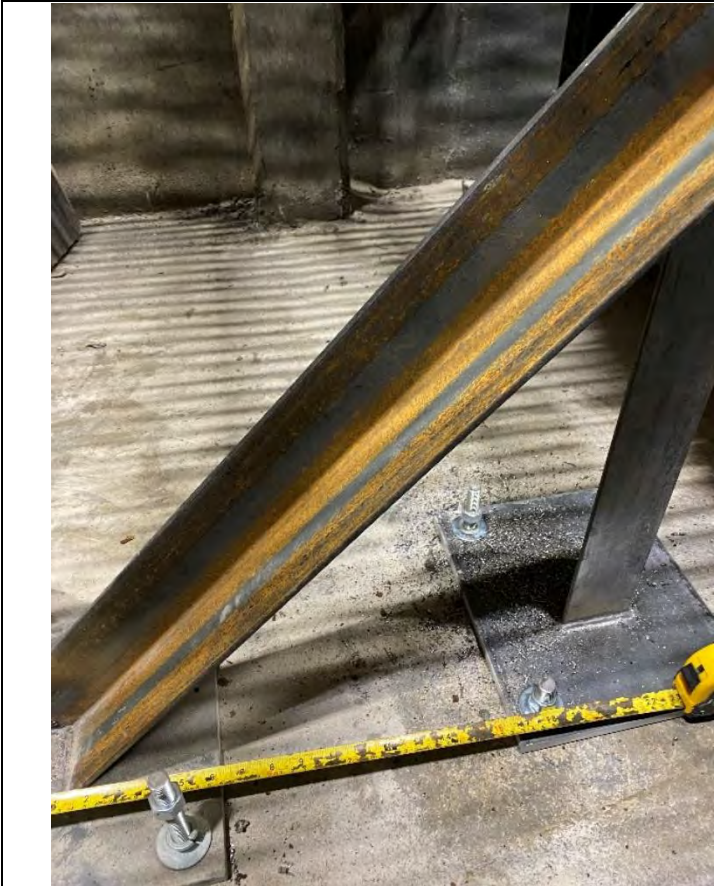
54. Valve Room – Restrained East Tee A Frame (2022-02-04)



55. Valve Room – Restrained East Tee A Frame (2022-02-04)



56. Valve Room – Restrained East Tee A Frame (2022-02-04)



57. Valve Room – Restrained East Tee A Frame (2022-02-04)



58. Valve Room – Restrained East Tee W Beam (2022-02-04)

UW/04/22

To: Chair and Members of the Union Water Supply
System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 11, 2022

Re: 2021 Annual Report under the Safe Drinking Water Act and Ontario
Regulation 170/03



Aim

To present to the Board the Annual Report for 2021 as required under Regulation 170/03 made under the Safe Drinking Water Act 2002.

Background

Section 11 of Regulation 170/03 made under the Safe Drinking Water Act 2002 requires that an Annual Report be prepared for a water system and submitted to any water systems that are supplied from that water system. This is required to be done before February 28 of the following year.

Discussion

The attached Annual Report has been prepared in accordance with O. Reg. 170/03. A copy has been provided to each of the four (4) participating municipalities therefore satisfying the requirement that it must be received before February 28, 2022.

There were no instances in 2021 when the Union Water Supply System was out of compliance with the requirements of the Safe Drinking Water Act 2002.

Recommendation:

That the Board receive the Annual Report for 2021 prepared under Section 11 of Regulation 170/03 made under the Safe Drinking Water Act 2002.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'R. Bouchard'.

Rodney Bouchard,
General Manager
Union Water Supply System Joint Board of Management

Rb/kmj

Filename: t:\union wtr\reports to board\2022\uw04-22 annual report for 2021 (board report).docx



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report

Union Water Supply System

Drinking Water System # 210000853

2021

Prepared for the Corporation of the Town of Kingsville, the Corporation of the Town of Essex, the Municipality of Lakeshore & the Municipality of Leamington

By the Ontario Clean Water Agency



Drinking Water Systems Regulation O. Reg. 170/03

ANNUAL REPORT

Drinking Water System Number:	210000853
Drinking Water System Name:	Union Water Supply System
Drinking Water System Owner:	Union Water Supply System Joint Board of Management (Municipality of Leamington, Town of Kingsville, Town of Essex, Municipality of Lakeshore)
Drinking Water System Category:	Large Municipal Residential
Period being reported:	01-January-2021 to 31-December-2021

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> Union Water Supply System P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0 </div>	<p><u>Complete for all other Categories</u></p> <p>Number of Designated Facilities served:</p> <div style="border: 1px solid black; padding: 2px; width: 50px; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <div style="border: 1px solid black; padding: 2px; width: 50px; margin: 0 auto;">N/A</div> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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Note: For the following tables below, additional rows or columns may be added, or an appendix may be attached to the report

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

Drinking Water System Name	Drinking Water System Number
Municipality of Leamington	220004992
Town of Kingsville	220003403
Town of Essex	220003680
Municipality of Lakeshore	260004995

Did you provide a copy of your annual report to all Drinking Water System owners that are connected to you and to whom you provide all drinking water?
 Yes [X] No []

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

- ☒ Public access/notice via the web
☐ Public access/notice via Government Office
☐ Public access/notice via a newspaper
☒ Public access/notice via Public Request
☐ Public access/notice via a Public Library
☒ Public access/notice via other method_____

Describe your Drinking Water System

The Union Water Supply System (UWSS) includes one water treatment plant, the Ruthven Water Treatment Plant (RWTP) that is located in the hamlet of Ruthven in the Town of Kingsville, Ontario. The RWTP is a chemically assisted conventional filtration plant that draws water from Lake Erie.

The UWSS supplies potable water to the Town of Kingsville, Municipality of Leamington, a portion of the Town of Essex and a portion of the Municipality of Lakeshore with an estimated service population of 66,722.

The treatment process includes raw water pH control, chemically assisted up-flow clarification, filtration with dual media filters, primary disinfection using Chlorine gas and secondary disinfection using Chlorine gas and Sodium Hypochlorite.

Seasonally, the RWTP uses sodium hypochlorite at its intakes to control Zebra Mussel formation.

There are also four water towers and a booster/storage station located on the Union Water Supply System.

List all water treatment chemicals used over this reporting period

Zebra Mussel Control:

- Sodium Hypochlorite – (Seasonal)

Clarification Chemicals:

- DelPac 2020 – Coagulant
- DelPac XG-15 - Coagulant
- Magnafloc LT22S (polymer) - Coagulant Aid
- Powdered Activated Carbon – Taste and Odor Control
- CO₂ – PH adjustment

Filtration:

- Cat-Floc 8103 Plus (polymer) – Filter Aid (Seasonal)

Disinfection:

- Primary: Chlorine Gas
- Secondary: Chlorine Gas and Sodium Hypochlorite

Were any significant expenses incurred to?

- ☒ Install required equipment
☒ Repair required equipment
☒ Replace required equipment

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

	<u>Item Description</u>	<u>Expenditures to 2021 Year End</u>
	<u>Capital Works and Major Maintenance</u>	
	Dissolved Air Flotation (DAF) Phase I Construction	\$2,258,129
	Kingsville Water Tower Recoating and Improvements	\$1,711,965
	Filter #2 and #4 Rehabilitation and Upgrades	\$763,592
	Low Lift Main Electrical Upgrades	\$172,776
	Distribution System Water Monitoring System	\$172,769
	SCADA PLC and Communication Upgrades	\$128,406
	Former Ammonia Building Retrofits	\$94,436
	New Laboratory Construction	\$81,434
	Kingsville Water Tower New Utility Building Design/Construction	\$55,889
	Low Lift Wet Well Algae Monitoring System	\$50,524
	Low Lift Pump #6 Rehabilitation	\$40,183
	Essex Water Tower New Cathodic Protection System	\$33,434
	Clarifier #3 New Water Meter	\$11,937
	High Lift Pump #4 Improvements	\$8,554
	Total Capital Works/Major Maintenance:	\$5,584,028



Drinking Water Systems Regulation O. Reg. 170/03

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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
Apr 26, 2021	TC	1	cfu/100ml	Resample	Apr 28, 2021

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

	Number of Samples	Range of E. Coli Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	2 - 400	2-400	0	N/A
Treated	52	0 – 0	0 – 0	52	<10 - <10
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).				

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

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity	8760	0.00 - 1.64	NTU
Chlorine - Free	8760	0.94 - 1.70	mg/L

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

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Nov 26, 2021	Suspended Solids	Jan 05/21	3	mg/L
	Suspended Solids	Feb 01/21	3	mg/L
	Suspended Solids	Mar 15/21	3	mg/L
	Suspended Solids	April 06/21	3	mg/L
	Suspended Solids	May 03/21	3	mg/L
	Suspended Solids	June 07/21	3	mg/L
	Suspended Solids	July 05/21	3	mg/L
	Suspended Solids	Aug 04/21	3	mg/L
	Suspended Solids	Sept 07/21	3	mg/L
	Suspended Solids	Oct 04/21	3	mg/L
	Suspended Solids	Nov 04/21	3	mg/L
	Suspended Solids	Dec 14/21	3	mg/L

Drinking Water Systems Regulation O. Reg. 170/03

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Nov 26, 2021	Total Chlorine residuals	Jan 04 2021	0.13	mg/L
	Total Chlorine residuals	Feb 01 2021	0.04	mg/L
	Total Chlorine residuals	Mar 01 2021	0.03	mg/L
	Total Chlorine residuals	Apr 08 2021	0.02	mg/L
	Total Chlorine residuals	May 03 2021	0.09	mg/L
	Total Chlorine residuals	June 08 2021	0.10	mg/L
	Total Chlorine residuals	July 06 2021	0.05	mg/L
	Total Chlorine residuals	Aug 04 2021	0.11	mg/L
	Total Chlorine residuals	Sept 07 2021	0.07	mg/L
	Total Chlorine residuals	Oct 04 2021	0.08	mg/L
	Total Chlorine residuals	Nov 01 2021	0.06	mg/L
	Total Chlorine residuals	Dec 06 2021	0.13	mg/L

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	2021/01/05	<MDL 0.9	ug/L	No
Arsenic	2021/01/05	<MDL 0.2	ug/L	No
Barium	2021/01/05	15.0	ug/L	No
Boron	2021/01/05	16.0	ug/L	No
Cadmium	2021/01/05	0.003	ug/L	No
Chromium	2021/01/05	0.75	ug/L	No
*Lead		N/A	N/A	N/A
Mercury	2021/01/05	<MDL 0.01	ug/L	No
Selenium	2021/01/05	0.09	ug/L	No
Uranium	2021/01/05	0.123	ug/L	No
Sodium	2021/01/05	7.35	mg/L	No
Fluoride	2021/01/05	0.06	mg/L	No

***only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Nitrite (N)	04-Jan-2021	<0.10	mg/L	No
Nitrate (N)		0.60	mg/L	No
Ammonia N-Total		0.01	mg/L	No
Nitrite (N)	07-Apr-2021	<0.10	mg/L	No
Nitrate (N)		0.50	mg/L	No
Ammonia N-Total		0.04	mg/L	No
Nitrite (N)	05-July-2021	< 0.10	mg/L	No
Nitrate (N)		0.30	mg/L	No
Ammonia N-Total		0.07	mg/L	No
Nitrite (N)	07-Oct-2021	<0.10	mg/L	No
Nitrate (N)		0.20	mg/L	No
Ammonia N-Total		0.16	mg/L	No

Drinking Water Systems Regulation O. Reg. 170/03

Summary of lead testing under Schedule 15.1 during this reporting period

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

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).		
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).		

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

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	Exceedance
Alachlor	2021/01/05	<MDL 0.02	ug/L	No
Atrazine + N-dealkylated metabolites	2021/01/05	<MDL 0.01	ug/L	No
Azinphos-methyl	2021/01/05	<MDL 0.05	ug/L	No
Benzene	2021/01/05	<MDL 0.32	ug/L	No
Benzo(a)pyrene	2021/01/05	<MDL 0.004	ug/L	No
Bromoxynil	2021/01/05	<MDL 0.33	ug/L	No
Carbaryl	2021/01/05	<MDL 0.05	ug/L	No
Carbofuran	2021/01/05	<MDL 0.01	ug/L	No
Carbon Tetrachloride	2021/01/05	<MDL 0.17	ug/L	No
Chlorpyrifos	2021/01/05	<MDL 0.02	ug/L	No
Diazinon	2021/01/05	<MDL 0.02	ug/L	No
Dicamba	2021/01/05	<MDL 0.2	ug/L	No
1,2-Dichlorobenzene	2021/01/05	<MDL 0.41	ug/L	No
1,4-Dichlorobenzene	2021/01/05	<MDL 0.36	ug/L	No
1,2-Dichloroethane	2021/01/05	<MDL 0.35	ug/L	No
1,1-Dichloroethylene	2021/01/05	<MDL 0.33	ug/L	No
Dichloromethane (Methylene Chloride)	2021/01/05	<MDL 0.35	ug/L	No
2,4-Dichlorophenol	2021/01/05	<MDL 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2021/01/05	<MDL 0.19	ug/L	No
Diclofop-methyl	2021/01/05	<MDL 0.4	ug/L	No
Dimethoate	2021/01/05	<MDL 0.06	ug/L	No
Diquat	2021/01/05	<MDL 1.0	ug/L	No

Drinking Water Systems Regulation O. Reg. 170/03

Diuron	2021/01/05	<MDL 0.03	ug/L	No
Glyphosate	2021/01/05	<MDL 1.0	ug/L	No
HAAAs (<i>Note: show latest running annual average</i>)		5.30	ug/L	No
Malathion	2021/01/05	<MDL 0.02	ug/L	No
Metolachlor	2021/01/05	<MDL 0.01	ug/L	No
Metribuzin	2021/01/05	<MDL 0.02	ug/L	No
Monochlorobenzene (Chlorobenzene)	2021/01/05	<MDL 0.3	ug/L	No
Paraquat	2021/01/05	<MDL 1.0	ug/L	No
PCB (ug/L) - TW	2021/01/05	<MDL 0.04	ug/L	No
Pentachlorophenol	2021/01/05	<MDL 0.15	ug/L	No
Phorate	2021/01/05	<MDL 0.01	ug/L	No
Picloram	2021/01/05	<MDL 1.0	ug/L	No
Prometryne	2021/01/05	<MDL 0.03	ug/L	No
Simazine	2021/01/05	<MDL 0.01	ug/L	No
Terbufos	2021/01/05	<MDL 0.01	ug/L	No
Tetrachloroethylene	2021/01/05	<MDL 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	2021/01/05	<MDL 0.2	ug/L	No
THMs (<i>Note: show latest running annual average</i>)		17.62	ug/L	No
Triallate	2021/01/05	<MDL 0.01	ug/L	No
Trichloroethylene	2021/01/05	<MDL 0.44	ug/L	No
2,4,6-Trichlorophenol	2021/01/05	<MDL 0.25	ug/L	No
Trifluralin	2021/01/05	<MDL 0.02	ug/L	No
Vinyl Chloride	2021/01/05	<MDL 0.17	ug/L	No

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

Parameter	Result Value	Unit of Measure	Date of Sample
None			

UW/05/22

To: Chair and Members of the Union Water Supply System Joint Board of Management

From: Rodney Bouchard, Union Water Manager

Date: February 11, 2022

Re: 2021 Summary Report for Municipalities under Regulation 170/03 made under the Safe Drinking Water Act



Aim:

To provide to the Board a Summary Report for Municipalities for 2021 as required under Schedule 22 of Regulation 170/03 made under the Safe Drinking Water Act 2002.

Background

Schedule 22 of O. Reg. 170/03 requires a water system owner to prepare a "Summary Report for Municipalities". This requirement is applicable only to large and small municipal residential water systems. The UWSS is classified as a large municipal residential water system since it provides drinking water to greater than 10,000 year round residents.

The Summary Report for the preceding year is to be prepared and issued by March 31 of the following year.

The Summary Report must be distributed by the owner of the water system. In particular it must be given to the council or board that owns the system. There are three (3) ownership cases described under the Schedule:

- If the water supply is owned by a municipality then all members of council are to receive the report.
- If owned by a municipal service board established under Section 195 of the Municipal Act, 2001 then all members of that board are to receive the report.
- If owned by a corporation then the board of directors is to receive the report.

Although not explicitly covered by any of the situations above, the UWSS Board is clearly the owner of the Union Water Supply System for the purposes of the regulation.

Also, where a water system provides potable water to another system under contract then the owner of the supplying system shall give, by March 31, a copy of the Summary Report to the system being supplied. Since UWSS provides drinking water to the local municipal drinking water systems owned and operated by the Municipality of Lakeshore, Town of Essex, Town of Kingsville and Municipality of Leamington

February 11, 2022 - UW/05/22

Re: 2021 Summary Report under the SDWA and Ontario Reg. 170/03

The contents of the Summary Report for Municipalities must include the following:

1. A list of the requirements of the Safe Drinking Water Act and its Regulations that the water system failed to meet during the year covered including the duration of the failure.
2. A list of the requirements of the water system's Certificate of Approval, drinking water works permit or municipal drinking water license that the water system failed to meet during the year covered including the duration of the failure.
3. A list of any Orders that the water system failed to meet during the year covered including the duration of the failure.
4. For each of the above failures, a description of the measures taken to correct the failures.
5. A summary of the quantities and flow rates of the water supplied during the year covered "including monthly average and maximum daily flows and daily instantaneous peak flow rates." (Information is to enable the owner to assess the capability of the water system to meet existing and future uses.).
6. A statement that captures the comparison of the flow information above to the rated capacity and flow rates approved in the water supply's approval.

Discussion

The attached Summary Report fulfils the requirements of Schedule 22 listed above. It will also fulfil the requirements for the municipalities when it is presented to each municipal council for the municipal water supply system supplied with water by the Union Water Supply System if council so wishes.

The UWSS and its participating municipalities were in compliance with all requirements of Ontario Drinking Water legislation and regulations in 2021, except for the noted occurrences in the Summary Report.

Recommendation

That the Board receive the Summary Report for 2021 which fulfils the requirements of Schedule 22 of Ontario Regulation 170/03; and

That the Summary Report be forwarded to the four participating municipalities namely the Town of Kingsville, Town of Essex, Town of Lakeshore, and Municipality of Leamington.

Respectfully submitted,



Rodney Bouchard

General Manager

Union Water Supply System Joint Board of Management

rb/kmj Filename: t:\union wtr\reports to board\2022\uw05-22 summary report for 2021 (board report).docx

UNION WATER SUPPLY SYSTEM SUMMARY REPORT 2021

Made under Schedule 22 of Ontario Regulation 170/03, a regulation made under
the Safe Drinking Water Act, 2002

EXPLANATION

Schedule 22 of Ontario Regulation 170/03, a regulation made under the Safe Drinking Water Act, 2002 requires that a large municipal residential drinking-water system that is owned by a municipality, municipal board or municipal corporation must provide to its councillors or board members a Summary Report on various aspects of the system before March 31 of the following year. The Union Water Supply System is classed as a large municipal residential drinking-water system and is therefore subject to Schedule 22.

The Summary Report must list the following:

- Any requirements of the Safe Drinking Water Act, 2002 that the system failed to meet during the period covered by the Summary Report
- Any requirements of the regulations made under the Safe Drinking Water Act, 2002 that the system failed to meet during the period covered by the Summary Report
- Any condition of the drinking-water system's drinking water works permit or municipal drinking water license that the system failed to meet during the period covered by the Summary Report
- Any order that the system failed to meet during the period covered by the Summary Report, the duration of any such failure and any measures that were taken to correct such failure
- A summary of the quantities and flow rates of water supplied by the drinking-water system by monthly average and maximum daily flow rates and instantaneous peak flow rates
- A comparison of actual flow rates with rated capacity and flow rates in the systems approval

A drinking-water system that supplies water to another drinking water system must provide a copy of the Summary Report to that system's owner by March 31 of the year following the year covered in the Summary Report.

The sections below details the occasions on which the Union Water Supply System (UWSS) and the connected municipal water systems failed to meet the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders in 2021.

UNION WATER SUPPLY SYSTEM (UWSS)

The following provides details of occurrences where the Union Water Supply System was not in compliance with the requirements of the Safe Drinking Water Act 2002, associated regulations, system approvals and provincial officer orders.

Non-Compliance Item:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Union Water common Distribution System that is supplied by Union Water Supply System.

LEAMINGTON WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Leamington Distribution System that is supplied by the Union Water Supply System

KINGSVILLE WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Kingsville Distribution System that is supplied by the Union Water Supply System.

ESSEX WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There were no non-compliances or Adverse Water Quality Incidents (AWQIs) identified for the portion of the Essex Distribution System that is supplied by the Union Water Supply System.

LAKESHORE WATER DISTRIBUTION SYSTEM

Non-Compliance Item:

There was one Adverse Water Quality Incident (AWQI) identified for the portion of the Lakeshore Distribution System that is supplied by the Union Water Supply System

- AWQI #153950 on April 27, 2022 - sample taken at distribution station SS-LS-09 with a Total Coliform count of 1. Staff re-flushed and resampled the affected area upstream and downstream on April 28, 2022 and again April 29, 2022. Those samples were returned clean.

Summary of the Quantities

The following sections provide information in regards to the Union Water Supply System's Permit to Take Water, issued under Ontario Regulation 387/04 and Drinking Water License issued under the Safe Drinking Water Act, 2002. Information includes the following:

- Flow Rates of Water
- Monthly Average
- Maximum Daily Flows
- Daily Instantaneous Peak Flow Rates

PERMIT TO TAKE WATER

The Union Water Supply System operated under Permit to Take Water (PTTW) Number 0816-9T9SVT, which expires at the end of 2025. The PTTW has the following flow conditions:

- | | |
|--|-------------|
| • Maximum Allowable Amount Taken per Minute (Litres/Min) | 113,650 |
| • Maximum Allowable Amount Taken Per Day (Litres/Day) | 163,656,000 |

The maximum amounts of raw water taken during 2021 (see Table 1 below) are as follows:

- | | |
|--|------------|
| • Maximum Amount Taken per Minute in 2021 (Litres/Min) | 93,533 |
| • Maximum Amount Taken Per Day in 2021 (Litres/Day) | 93,829,000 |

The system did not exceed the PTTW limits in 2021.

DRINKING WATER LICENSE

The UWSS operates under Municipal Drinking Water Licence 041-101; issue Number 7 which has been issued for the period July 18, 2021 to July 17, 2024. The Certificate of Approval and licence had the following condition:

- The drinking water system shall not be operated to exceed 124,588 m³/d (27.4 MIGD) on any calendar day, conveyed from the treatment system to the distribution system.
- The maximum daily volume of water pumped into the distribution system was 97,115m³ (21.37 MIGD).

Tables 1A through 3B below provide the monthly average, maximum and peak flows for raw and treated water for the Union Water Supply System.

Table 1A
2021 Raw Water Taking from Lake Erie in Metric Units

	Maximum Allowed Flow Rate (m3/Day)	Average Flow (m3/Day)	Maximum Flow (m3/Day)	Maximum Flow (Litres/Day)	Maximum Allowed Flow Rate (Litres/ Minute)	Peak Flow (Litres/ Minute)
January	163,656	43,045	62,827	62,827,000	113,650	49,592
February	163,656	48,190	58,630	58,630,000	113,650	62,980
March	163,656	55,166	62,156	62,156,000	113,650	55,661
April	163,656	56,792	68,937	68,937,000	113,650	57,756
May	163,656	69,355	98,759	98,759,000	113,650	74,181
June	163,656	73,788	95,295	95,295,000	113,650	72,394
July	163,656	69,739	87,409	87,409,000	113,650	68,935
August	163,656	75,281	90,747	90,747,000	113,650	73,535
September	163,656	72,915	90,977	90,977,000	113,650	71,901
October	163,656	50,676	74,424	74,424,000	113,650	55,652
November	163,656	38,168	44,796	44,796,000	113,650	38,268
December	163,656	31,829	36,606	36,606,000	113,650	37,034

Table 1B
2021 Raw Water Taking from Lake Erie in Imperial Units

	Maximum Allowed Flow Rate (MGD)	Average Flow (MGD)	Maximum Flow (MGD)	Maximum Allowed Flow Rate (Gallons/ Minute)	Peak Flow (Gallons/ Minute)
January	36.00	9.47	13.82	25,000	10,909
February	36.00	10.60	12.90	25,000	13,854
March	36.00	12.13	13.67	25,000	12,244
April	36.00	12.49	15.16	25,000	12,705
May	36.00	15.26	21.72	25,000	16,318
June	36.00	16.23	20.96	25,000	15,925
July	36.00	15.34	19.23	25,000	15,164
August	36.00	16.56	19.96	25,000	16,175
September	36.00	16.04	20.01	25,000	15,816
October	36.00	11.15	16.37	25,000	12,242
November	36.00	8.40	9.85	25,000	8,418
December	36.00	7.00	8.05	25,000	8,146

Table 2A**2021 Treated Water Flow Into Distribution System in Metric Units**

	Maximum Allowed Flow Rate (m ³ /Day)	Average Daily Flow (m ³ /Day)	Maximum Daily Flow (m ³ /Day)	Peak Instantaneous Flow (Litres/ Second)
January	124,588	35,412	43,089	867
February	124,588	42,940	52,064	1,082
March	124,588	52,147	60,411	1,290
April	124,588	55,124	64,701	1,421
May	124,588	66,355	93,829	1,559
June	124,588	70,565	93,018	1,412
July	124,588	67,393	84,977	1,483
August	124,588	72,317	85,904	1,520
September	124,588	69,774	88,348	1,553
October	124,588	48,573	73,541	1,301
November	124,588	37,603	45,064	1,022
December	124,588	33,997	41,751	725

Table 2B**2021 Treated Water Flow Into Distribution System in Imperial Units**

	Maximum Allowed Flow Rate (MGD)	Average Daily Flow (MGD)	Maximum Daily Flow (MGD)	Peak Instantaneous Flow (Gallons/ Second)
January	27.4	7.79	9.48	191
February	27.4	9.45	11.45	238
March	27.4	11.47	13.29	284
April	27.4	12.13	14.23	313
May	27.4	14.60	20.64	343
June	27.4	15.52	20.46	311
July	27.4	14.83	18.69	326
August	27.4	15.91	18.90	334
September	27.4	15.35	19.44	342
October	27.4	10.69	16.18	286
November	27.4	8.27	9.91	225
December	27.4	7.48	9.19	159

Table 3A
2021 Treated Flow to Local Municipalities in Metric Units

	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)	Monthly Total (m3)	Average Day (m3/day)
January	597,955	19,289	413,553	13,340	63,448	2,047	56,196	1,813
February	651,665	22,471	446,492	15,396	57,917	1,997	48,796	1,683
March	852,325	27,494	587,107	18,939	62,619	2,020	52,039	1,679
April	938,051	31,268	588,802	19,627	67,880	2,263	55,937	1,865
May	1,186,723	38,281	717,110	23,133	84,048	2,711	66,555	2,147
June	1,217,763	40,592	757,780	25,259	97,745	3,258	64,601	2,153
July	1,182,358	38,141	678,975	21,902	76,254	2,460	58,306	1,881
August	1,281,944	41,353	858,684	27,699	85,247	2,750	60,437	1,950
September	1,184,630	39,488	721,091	24,036	73,322	2,444	63,105	2,104
October	898,754	28,992	486,209	15,684	78,827	2,543	52,904	1,707
November	680,031	22,668	401,902	13,397	67,752	2,258	56,196	1,873
December	570,190	18,393	378,959	12,224	65,574	2,115	32,273	1,041
Total	11,242,389	30,703	7,036,664	19,220	880,633	2,406	667,345	1,824

Table 3A
2021 Treated Flow to Local Municipalities in Imperial Units

	<u>Leamington</u>		<u>Kingsville</u>		<u>Essex</u>		<u>Lakeshore</u>	
	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)	Monthly Total (Imperial Gallons)	Average Day (MGD)
January	131,531,712	4.24	90,968,943	2.93	13,956,609	0.45	12,361,392	0.40
February	143,346,260	4.94	98,214,510	3.39	12,739,959	0.44	10,733,619	0.37
March	187,485,290	6.05	129,145,485	4.17	13,774,254	0.44	11,446,980	0.37
April	206,342,373	6.88	129,518,333	4.32	14,931,513	0.50	12,304,420	0.41
May	261,042,566	8.42	157,742,148	5.09	18,487,975	0.60	14,640,053	0.47
June	267,870,412	8.93	166,688,297	5.56	21,500,894	0.72	14,210,233	0.47
July	260,082,400	8.39	149,353,620	4.82	16,773,535	0.54	12,825,527	0.41
August	281,988,258	9.10	188,884,074	6.09	18,751,719	0.60	13,294,281	0.43
September	260,582,171	8.69	158,617,845	5.29	16,128,585	0.54	13,881,159	0.46
October	197,698,242	6.38	106,951,028	3.45	17,339,516	0.56	11,637,253	0.38
November	149,585,908	4.99	88,406,081	2.95	14,903,357	0.50	12,361,392	0.41
December	125,424,266	4.05	83,359,326	2.69	14,424,263	0.47	7,099,068	0.23
Total	2,472,979,857	6.75	1,547,849,691	4.23	193,712,179	0.53	146,795,378	0.40