Union Water Supply System

P.O. Box 340, 1615 Union Avenue, Ruthven, Ontario, N0P 2G0
Tele: 519-326-1668 Fax: 519-326-3490
Email: rbouchard@unionwater.ca
www.unionwater.ca

SENT BY: EMAIL
February 18, 2021

Municipality of Leamington
111 Erie St. N.
Leamington, Ontario
N8H 2Z9
Attention: Mr. Peter Neufeld, Chief Administrative Officer

Town of Kingsville
2021 Division Road North
Kingsville, Ontario
N9Y 2Y9
Attention: Mr. John Norton, Chief Administrative Officer

Town of Essex
33 Talbot Street South
Essex, Ontario
N8M 1A8
Attention: Mr. Chris Nepszy, Chief Administrative Officer

Town of Lakeshore
419 Notre Dame Street
Belle River, Ontario
N0R 1A0
Attention: Mr. Truper McBride, Chief Administrative Officer

RE: Union Water Supply System Annual Report for 2020 in accordance with Section 11 O. Reg. 170/03

At its meeting on February 17, 2021, the Joint Board of Management of the UWSS received the Annual Report for 2020 prepared in accordance with Section 11 of O. Reg. 170/03. By this letter and as required by O. Reg. 170/03 I am providing the owners of the drinking water systems that obtain water from the UWSS with a copy of the UWSS Annual Report for 2020.

I request that you do the following:

1. Provide each member of your municipal council with the report on or before February 28, 2021.
2. Provide a copy of the report to anyone who requests it, free of charge (Section 11 (8) O. Reg. 170/03) (Copies will also be made available free of charge at the Ruthven WTP).

3. Post a copy of the report on your municipal website (Section 11(10), O. Reg. 170/03).
4. Include a notice that the report is available at your municipal office and at the Ruthven Water Treatment Plant in any newsletter or other notice that you issue to your residents (Section 11(9.1) O. Reg. 170/03.

Please call me if you have any questions.

Yours truly,

Rodney Bouchard, Manager
Union Water Supply System Joint Board of Management
kmj
Filename: e:\khristine\annual-summary\2020\02-18-21 ltr to caos re - uwss annual rpt for 2020.docx
CC: Robert Sharon, Shannon Belleau, Nelson Carvalho, Andrew Plancke, Shaun Martinho, Andy Graf, Kevin Girard, Albert Dionne, Krystal Kalbol, Dale Dillen, Ken Penney, Sam Wen, Dave Jubenville

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

UNION WATER SUPPLY SYSTEM

Annual Performance Report

Union Area Water Supply System

Drinking Water System # 210000853

2020

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

By the Ontario Clean Water Agency
Sam Wen
Process & Compliance Technician
swen@ocwa.com
519-326-4447

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, Town of Lakeshore)**
Drinking Water System Category:	**Large Municipal Residential**
Period being reported:	**01-January-2020 to 31-December-2020**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories***
Does your Drinking Water System serve more than 10,000 people? Yes [X] No [ ] **Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]** **Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.** **Union Water Supply System** **P.O. Box 340,** **1615 Union Ave., Ruthven, Ont.** **N0P 2G0**	**Number of Designated Facilities served:** **N/A** **Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]** **Number of Interested Authorities you report to:** **N/A** **Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]**

***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
Town 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.

[X] Public access/notice via the web
[ ] Public access/notice via Government Office
[ ] Public access/notice via a newspaper
[X] Public access/notice via Public Request
[ ] Public access/notice via a Public Library
[X] 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 Town of Lakeshore with an estimated service population of 66,600.

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?

[X] Install required equipment
[X] Repair required equipment

[X] Replace required equipment

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

	Item Description	**Expenditures to 2020 Year End**
	Capital Works and Major Maintenance	
1	SCADA System Upgrades	$554,317
2	Raw Water pH Adjustment System	$186,300
3	Distribution Pressure/Temperature Monitoring System	$170,299
4	Chlorine Gas System Upgrades	$110,060
5	DAF System for Clarifier #2	$138,378
6	Residuals Management	$136,031
7	New Security and Access Control System	$108,100
8	Kingsville Water Tower Rehabilitation	$84,808
9	Treatment Plant Building and Grounds Improvements	$52,900
10	Low Lift Electrical Upgrades	$52,754
11	Clarifier #1 Raw Water Pipe–New Flow Meter, Valve & Rotork	$26,320
12	Clarifier #2 Raw Water Pipe – New Flow Meter	$18,113
13	New Laboratory	$15,400
14	High Lift #9 Soft Start	$9,677
15	Meter Pit #13 Flow Meter	$8,170
16	Spare Actuator for Filters #5-8	$5,410
17	Spare Powdered Activated Carbon Feed Pump	$5,020
18	Clarifier #1 Blow off Valve	$4,724
	Total Capital Works/Major Maintenance:	$1,686,781

	New Capital Works in 2021	
1	DAF System for Clarifier #2	$4,500,000
2	Kingsville Water Tower Rehabilitation	$1,650,000
3	Filter #2 Rehabilitation	$360,000
4	Filter #4 Rehabilitation	$360,000
5	Low Lift Electrical Upgrades	$200,000
6	High Lift #7 Pump - New	$175,000
7	Grounds Improvements	$170,000
8	PLC Upgrades (Low Lift, Cottam Booster, Generator B)	$150,000
9	New Utility Building – Kingsville Water Tower	$150,000
10	Distribution System Upgrades – Valves, Monitoring, etc.	$150,000

11	Former Ammonia Building Retrofit to Maintenance Shop	$125,000
12	Low Lift Roof Replacement	$75,000
13	Cottam Booster Mixing System	$75,000
14	New Laboratory Construction	$75,000
15	Electrical Upgrades – New Capacitors, etc.	$70,000
16	Filter Aid System Upgrades	$60,000
17	Wastewater System – New Backup Pump	$50,000
18	Billing Meters Upgrades	$50,000
19	Essex Water Tower New Cathodic Protection System	$40,000
20	Low Lift Pump #3 Rehabilitation	$35,000
21	Communication System Upgrades	$35,000
22	Treatment Plant Admin Area Improvements	$30,000
23	Clearwell #1 Inlet Rotork	$20,000
24	New Fencing–Treatment Plant and Leamington Water Tower	$20,000
	Total Approve New Capital Works for 2021:	$8,625,000

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
July 21, 2020	**TC**	**count 5**	**cfu/100ml**	**Flushing affected area and resampling. BWA was issued on July 21, 2020.**	**July 24, 2020**

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**	**1 - 54**	**2-2000**	**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	Unit of Measure

		(min #)-(max #)	
Turbidity	**8760**	**0.00- 1.998**	**NTU**
Chlorine - Free	**8760**	**0.975-1.698**	**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
July 18, 2019	Suspended Solids	Jan 06/20	3	mg/L
	Suspended Solids	Feb 03/20	3	mg/L
	Suspended Solids	Mar 02/20	3	mg/L
	Suspended Solids	April 06/20	3	mg/L
	Suspended Solids	May 04/20	3	mg/L
	Suspended Solids	June 01/20	3	mg/L
	Suspended Solids	July 06/20	4	mg/L
	Suspended Solids	Aug 04/20	4	mg/L
	Suspended Solids	Sept 08/20	4	mg/L
	Suspended Solids	Oct 05/20	4.5	mg/L
	Suspended Solids	Nov 02/20	3	mg/L
	Suspended Solids	Dec07 /20	3	mg/L

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
July 18, 2019	Total Chlorine residuals	Jan 03/20	0.13	mg/L
	Total Chlorine residuals	Feb 03/20	0.08	mg/L
	Total Chlorine residuals	Mar 02/20	0.06	mg/L
	Total Chlorine residuals	April 06/20	0.09	mg/L
	Total Chlorine residuals	May 05/20	0.12	mg/L
	Total Chlorine residuals	June 01/20	0.14	mg/L
	Total Chlorine residuals	July 06/20	0.06	mg/L
	Total Chlorine residuals	Aug 04/20	0.09	mg/L
	Total Chlorine residuals	Sept 09/20	0.19	mg/L
	Total Chlorine residuals	Oct 06/20	0.12	mg/L
	Total Chlorine residuals	Nov 02/20	0.02	mg/L
	Total Chlorine residuals	Dec10 /20	0.04	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	2020/01/07	0.13	Ug/L	No
Arsenic	2020/01/07	0.2	Ug/L	No
Barium	2020/01/07	16.3	Ug/L	No
Boron	2020/01/07	16.0	Ug/L	No
Cadmium	2020/01/07	0.01	Ug/L	No

Chromium	**2020/01/07**	**0.19**	**Ug/L**	**No**
***Lead**	**N/A**	**N/A**	**N/A**	**N/A**
Mercury	**2020/01/07**	**0.01<MDL**	**Ug/L**	**No**
Selenium	**2020/01/07**	**0.07**	**Ug/L**	**No**
Sodium	**2020/01/07**	**7.83**	**Mg/L**	**No**
Uranium	**2020/01/07**	**0.166**	**Ug/L**	**No**
Fluoride	**2020/01/07**	**0.09**	**Mg/L**	**No**
Nitrite	**N/A**	**N/A**	**N/A**	**N/A**
Nitrate	**N/A**	**N/A**	**N/A**	**N/A**

***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)	**06-Jan-2020**	**<0.1**	**mg/L**	**No**
Nitrate (N)		**0.4**	**mg/L**	**No**
Ammonia N-Total		**0.04**	**mg/L**	**No**
Nitrite (N)	**06-Apr-2020**	**<0.1**	**mg/L**	**No**
Nitrate (N)		**0.6**	**mg/L**	**No**
Ammonia N-Total		**0.03**	**mg/L**	**No**
Nitrite (N)	**07-July-2020**	**< 0.1**	**mg/L**	**No**
Nitrate (N)		**0.4**	**mg/L**	**No**
Ammonia N-Total		**0.03**	**mg/L**	**No**
Nitrite (N)	**05-Oct-2020**	**<0.1**	**mg/L**	**No**
Nitrate (N)		**0.2**	**mg/L**	**No**
Ammonia N-Total		**0.03**	**mg/L**	**No**

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 (ug/L)	2020/01/07	<MDL 0.02	Ug/L	No
Atrazine + N-dealkylated metabolites (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No
Azinphos-methyl (ug/L)	2020/01/07	<MDL 0.05	Ug/L	No
Benzene (ug/L)	2020/01/07	<MDL 0.32	Ug/L	No
Benzo(a)pyrene (ug/L)	2020/01/07	<MDL 0.004	Ug/L	No
Bromoxynil (ug/L)	2020/01/07	<MDL 0.33	Ug/L	No
Carbaryl (ug/L)	2020/01/07	<MDL 0.05	Ug/L	No
Carbofuran (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No
Carbon Tetrachloride (ug/L)	2020/01/07	<MDL 0.17	Ug/L	No
Chlorpyrifos (ug/L)	2020/01/07	<MDL 0.02	Ug/L	No
Diazinon (ug/L)	2020/01/07	<MDL 0.02	Ug/L	No
Dicamba (ug/L)	2020/01/07	<MDL 0.2	Ug/L	No
1,2-Dichlorobenzene (ug/L)	2020/01/07	<MDL 0.41	Ug/L	No
1,4-Dichlorobenzene (ug/L)	2020/01/07	<MDL 0.36	Ug/L	No
1,2-Dichloroethane (ug/L)	2020/01/07	<MDL 0.35	Ug/L	No
1,1-Dichloroethylene (ug/L)	2020/01/07	<MDL 0.33	Ug/L	No
Dichloromethane (Methylene Chloride) (ug/L)	2020/01/07	<MDL 0.35	Ug/L	No
2,4-Dichlorophenol (ug/L)	2020/01/07	<MDL 0.15	Ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2020/01/07	<MDL 0.19	Ug/L	No
Diclofop-methyl (ug/L)	2020/01/07	<MDL 0.4	Ug/L	No
Dimethoate (ug/L)	2020/01/07	<MDL 0.06	Ug/L	No
Diquat (ug/L)	2020/01/07	<MDL 1.0	Ug/L	No
Diuron (ug/L)	2020/01/07	<MDL 0.03	Ug/L	No
Glyphosate (ug/L)	2020/01/07	<MDL 1.0	Ug/L	No
HAAs (*Note***:** show latest running annual average**)**		7.55	Ug/L	No
Malathion (ug/L)	2020/01/07	<MDL 0.02	Ug/L	No
Metolachlor (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No
Metribuzin (ug/L)	2020/01/07	<MDL 0.02	Ug/L	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2020/01/07	<MDL 0.3	Ug/L	No
Paraquat (ug/L)	2020/01/07	<MDL 1.0	Ug/L	No
PCB (ug/L) - TW	2020/01/07	<MDL 0.04	Ug/L	No
Pentachlorophenol (ug/L)	2020/01/07	<MDL 0.15	Ug/L	No
Phorate (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No
Picloram (ug/L)	2020/01/07	<MDL 1.0	Ug/L	No
Prometryne (ug/L)	2020/01/07	<MDL 0.03	Ug/L	No
Simazine (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No
Terbufos (ug/L)	2020/01/07	<MDL 0.01	Ug/L	No

Tetrachloroethylene (ug/L)	**2020/01/07**	**<MDL 0.35**	**Ug/L**	**No**
2,3,4,6-Tetrachlorophenol (ug/L)	**2020/01/07**	**<MDL 0.2**	**Ug/L**	**No**
THMs (*Note:* show latest running annual average)		**18.42**	**Ug/L**	**No**
Triallate (ug/L)	**2020/01/07**	**<MDL 0.01**	**Ug/L**	**No**
Trichloroethylene (ug/L)	**2020/01/07**	**<MDL 0.44**	**Ug/L**	**No**
2,4,6-Trichlorophenol (ug/L)	**2020/01/07**	**<MDL 0.25**	**Ug/L**	**No**
Trifluralin (ug/L)	**2020/01/07**	**<MDL 0.02**	**Ug/L**	**No**
Vinyl Chloride (ug/L)	**2020/01/07**	**<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			