



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Annual Performance Report

Union Area Water Supply System

Drinking Water System # 210000853

2014

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

Dan Beaulieu

Process & Compliance Technician

dbeaulieu@ocwa.com

519-326-4447



ANNUAL REPORT

Drinking-Water System Number:	210000853
Drinking-Water System Name:	Union Area Water Supply System
Drinking-Water System Owner:	Union Area 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-2014 to 31-December-2014

<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 [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p><i>Union Water Treatment Plant P.O. Box 340, 1615 Union Ave., Ruthven, Ont. N0P 2G0</i></p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [<input type="checkbox"/>] No [<input type="checkbox"/>]</p> <p>Number of Interested Authorities you report to: <input type="text" value="N/A"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [<input type="checkbox"/>] No [<input type="checkbox"/>]</p>
---	---

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 of 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



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

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

Yes [X] No []

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

- 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: Municipal Offices**

Describe your Drinking-Water System

The Union Water Treatment Plant (UWTP) is a chemically assisted conventional filtration plant, which draws water from Lake Erie.

The UWTP 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 60,000.

The treatment process includes chemically assisted up-flow clarification, filtration with dual media filters, primary disinfection using chlorine gas and secondary disinfection using chloramination.

Seasonally, the UWTP 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:

- Aluminum Sulfate – Coagulant
- SternPAC – Coagulant
- DelPAC - Coagulant
- Magnafloc LT22 (polymer)-Coagulant Aid
- Magnafloc LT22S (polymer)-Coagulant Aid
- Powdered Activated Carbon – Taste and Odor Control

Filtration:

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

Disinfection:

- Primary: Chlorine Gas
- Secondary: Aqua Ammonia & Chlorine (to form chloramines)

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

Item	Cost
Clarifier #2	\$ 39,845.00
Cottam Booster Sodium Hypo System Upgrades	\$ 4,507.98
Generator B Transfer Switch	\$ 168,371.97
Filters #2, #3 & #4 Upgrades	\$ 103,071.44
Coagulant Pump Upgrades	\$ 26,906.00
SCADA System Upgrades	\$ 53,551.52
Water Treatment Plant - Air Compressor #3 Replacement	\$ 6,447.00
Water Treatment Plant - Air Dryer Replacement	\$ 3,030.00
Water Treatment Plant - LED Lighting Upgrades	\$ 52,304.00
Communication Upgrades	\$ 11,758.95
Instrumentation - Turbidity meter Upgrades	\$ 17,341.94
Transmission - Watermain repairs	\$ 13,834.00
Transmission System - valve and meter upgrades	\$ 10,047.00
Transmission Watermain Upgrades	\$ 142,835.31

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	Incident description	Corrective Action	AWQI #	Corrective Action Date
Jan 20, 2014	Loss of PLC resulted in no chlorine fed for approximately 45mins	Replaced and added backup PLC to system	115794	Jan 21, 2014

Note: Corrective action Date is Date of resolution.

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

	Number of Samples	Range of Ecoli Or Fecal Results (min #)-(max #) (ct/100 mL)	Range of Total Coliform Results (min #)-(max #) (ct/100 mL)	Number of HPC Samples	Range of HPC Results (min #)-(max #) (ct/mL)
Raw	51	<2 - 36	4 - 200	0	N/A
Treated	51	0 - 0	0 - 0	51	10 - <10
Distribution	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).				

Operational testing is 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 #)
Turbidity	8760	0.08 – 0.23 NTU
Chlorine Free	8760	0 – 2.22 mg/L
Chlorine Comb	8760	0 – 4.7 mg/L
Fluoride (If the DWS provides fluoridation)	N/A	N/A

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

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*

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: (Suspended Solids)	Date Sampled	Result	Unit of Measure
5-Nov-2007 C of A 4854-77PHL7	North Settling Pond	Jan 13/14	<3.0	mg/L
	North Settling Pond	Feb 10/14	<3.0	mg/L
	North Settling Pond	Mar 04/14	<3.0	mg/L
	North Settling Pond	Apr 07/14	4.0	mg/L
	North Settling Pond	May 20/14	<3.0	mg/L
	South Settling Pond	May 20/14	5.0	mg/L
	North Settling Pond	June 16/14	<3.0	mg/L
	South Settling Pond	June 16/14	28.0	mg/L
	North Settling Pond	July 07/14	<3.0	mg/L
	South Settling Pond	July 07/14	3.0	mg/L
	North Settling Pond	Aug 05/14	<3.0	mg/L
	South Settling Pond	Aug 05/14	<3.0	mg/L
	North Settling Pond	Sept 02/14	<3.0	mg/L
	South Settling Pond	Sept 02/14	<3.0	mg/L
	North Settling Pond	Oct 07/14	<3.0	mg/L
	South Settling Pond	Oct 07/14	<3.0	mg/L
	North Settling Pond	Nov 03/14	4.0	mg/L
	North Settling Pond	Dec 08/14	17.0	mg/L
Limit 25.0 mg/L		Annual Average:	5.5	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	January 15, 2014	0.1	ug/L	No
Arsenic	January 15, 2014	0.5	ug/L	No
Barium	January 15, 2014	16.0	ug/L	No
Boron	January 15, 2014	20	ug/L	No
Cadmium	January 15, 2014	<0.02	ug/L	No

Chromium	January 15, 2014	<2.0	ug/L	No
*Lead	n/a			
Mercury	January 15, 2014	0.05	ug/L	No
Sodium	January 15, 2014	7.9	mg/L	No
Selenium	January 15, 2014	1.0	ug/L	No
Uranium	January 15, 2014	0.06	ug/L	No
Fluoride	December 15, 2014	0.1	mg/L	No
Nitrite (N)	December 15, 2014	< 0.1	mg/L	No
Nitrate (N)	December 15, 2014	0.4	mg/L	No
Nitrite + Nitrate (N)	December 15, 2014	0.4	mg/L	No
Ammonia + Ammonium (N)	December 15, 2014	0.52	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

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	Result Value	Unit of Measure	Exceedance
Alachlor	January 17, 2014	<0.3	ug/L	No
Aldicarb	January 17, 2014	<3.0	ug/L	No
Aldrin + Dieldrin	January 16, 2014	<0.02	ug/L	No
Atrazine + N-dealkylated metabolites	January 17, 2014	<0.5	ug/L	No
Azinphos-methyl	January 17, 2014	<1.0	ug/L	No
Bendiocarb	January 17, 2014	<3.0	ug/L	No
Benzene	January 14, 2014	<0.5	ug/L	No
Benzo(a)pyrene	January 17, 2014	<0.005	ug/L	No
Bromoxynil	January 17, 2014	<0.3	ug/L	No
Carbaryl	January 17, 2014	<3.0	ug/L	No
Carbofuran	January 17, 2014	<1.0	ug/L	No
Carbon Tetrachloride	January 14, 2014	<0.2	ug/L	No
Chlordane (Total)	January 16, 2014	<0.01	ug/L	No
Chlorpyrifos	January 17, 2014	<0.5	ug/L	No
Cyanazine	January 17, 2014	<0.5	ug/L	No

Diazinon	January 17, 2014	<1.0	ug/L	No
Dicamba	January 17, 2014	<5.0	ug/L	No
1,2-Dichlorobenzene	January 14, 2014	<0.1	ug/L	No
1,4-Dichlorobenzene	January 14, 2014	<0.2	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	January 16, 2014	<0.01	ug/L	No
1,2-Dichloroethane	January 14, 2014	<0.1	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	January 14, 2014	<0.1	ug/L	No
Dichloromethane	January 14, 2014	<0.3	ug/L	No
2-4 Dichlorophenol	January 17, 2014	<0.1	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 17, 2014	<5.0	ug/L	No
Diclofop-methyl	January 17, 2014	<0.5	ug/L	No
Dimethoate	January 17, 2014	<1.0	ug/L	No
Dinoseb	January 17, 2014	<0.5	ug/L	No
Diquat	January 20, 2014	<5.0	ug/L	No
Diuron	January 17, 2014	<5.0	ug/L	No
Glyphosate	January 22, 2014	<25.0	ug/L	No
Heptachlor + Heptachlor Epoxide	January 16, 2014	<0.1	ug/L	No
Lindane (Total)	January 16, 2014	<0.1	ug/L	No
Malathion	January 17, 2014	<5.0	ug/L	No
Methoxychlor	January 16, 2014	<0.1	ug/L	No
Metolachlor	January 17, 2014	<3.0	ug/L	No
Metribuzin	January 17, 2014	<3.0	ug/L	No
Monochlorobenzene	January 14, 2014	<0.2	ug/L	No
Paraquat	January 20, 2014	<1.0	ug/L	No
Parathion	January 17, 2014	<3.0	ug/L	No
Pentachlorophenol	January 17, 2014	<0.1	ug/L	No
Phorate	January 17, 2014	<0.3	ug/L	No
Picloram	January 17, 2014	<5.0	ug/L	No
Polychlorinated Biphenyls(PCB)	January 16, 2014	<0.05	ug/L	No
Prometryne	January 17, 2014	<0.1	ug/L	No
Simazine	January 17, 2014	<0.5	ug/L	No
THM (NOTE: show latest annual average)	Please See Individual Annual Reports for Distribution System Information: Leamington (220004992), Kingsville (220003403), Essex (220003680), and Lakeshore (260004995).			
Temephos	January 17, 2014	<10.0	ug/L	No
Terbufos	January 17, 2014	<0.3	ug/L	No
Tetrachloroethylene	January 14, 2014	<0.2	ug/L	No
2,3,4,6-Tetrachlorophenol	January 17, 2014	<0.1	ug/L	No
Triallate	January 17, 2014	<10.0	ug/L	No
Trichloroethylene	January 14, 2014	<0.1	ug/L	No
2,4,6-Trichlorophenol	January 17, 2014	<0.1	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	January 17, 2014	<10.0	ug/L	No
Trifluralin	January 17, 2014	<0.5	ug/L	No
Vinyl Chloride	January 14, 2014	<0.2	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			