



OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220003421
Drinking-Water System Name:	City of Windsor Drinking Water System
Drinking-Water System Owner:	The Windsor Utilities Commission
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	Calendar Year 2017

<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; margin-top: 10px;"> <p>The Windsor Utilities Commission 4545 Rhodes Dr. Windsor ON N9A 5T7</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <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: <input style="width: 100px; height: 20px;" type="text"/></p> <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 of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Town of Lasalle, ON	220004402
Town of Tecumseh, ON	260004969

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

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

- [X] Public access/notice via the web
- [X] Public access/notice via Government Office
- [] Public access/notice via a newspaper
- [X] Public access/notice via Public Request



Public access/notice via a Public Library

Public access/notice via other method _____

Describe your Drinking-Water System

The Windsor Utilities Commission water treatment facility employs screening, pre-chlorination (on an as needed basis), pH adjustment (utilizing CO₂), primary disinfection (utilizing ozone), coagulation, flocculation, sedimentation, dual-media filtration with post chlorination and corrosion control adjustment (utilizing phosphoric acid) to treat raw water obtained from the Detroit River.

The water treatment plant pumps sedimentation sludge and backwash water to the sanitary sewer. Treated water from the plant is routed to an on-site reservoir and subsequently pumped into the distribution system from two pumping stations that are co-located nearby the water treatment facilities. Water from the pumping stations satisfies demand for the greater Windsor area including the communities of Tecumseh and LaSalle. A remote reservoir and pumping station provides a re-chlorination facility (using sodium hypochlorite) to provide system pressure and flow to the southwest portion of the city, while a centrally located water tower provides pressure and flow control to the downtown core.

The drinking water system is monitored at various locations, both at the water treatment and pumping stations as well as throughout the transmission system via a Supervisory Control and Data Acquisition (SCADA) system.

List all water treatment chemicals used over this reporting period

Chlorine gas, Sodium Hypochlorite, Carbon dioxide (CO₂), Ozone (generated on-site using liquid oxygen), Calcium Thiosulfate (ozone quench agent), Polyaluminum chloride (PaCl), Filter aid cationic polymer and phosphoric acid (corrosion control agent).

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

Installed 87 new public-use fire hydrants through capital projects.

Replaced 58 existing public-use fire hydrants through capital projects.

Installed 11.0 km of watermain <400 mm and 0.5 km of watermain = 400 mm.

Decommissioned approximately 12.4 km of watermain <400 mm and decommissioned 0.5 km watermain >400 mm.

Mirlees diesel engines removed and one was replaced with Caterpillar engine at the AJ Brian pumping station. This was a normal life cycle replacement.



Replaced the east intake screens at the AJ Brian pumping station. This was a normal life cycle replacement.

Began improvements to the Security System at the AH Weeks Treatment plant. This was a normal life cycle replacement.

Phase two of the three phase roof replacement for the AH Weeks Treatment plant was completed. This was a normal life cycle replacement.

Replaced / installed 8,002 of new water meter units ranging in size from 5/8” to 8”.

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
March 3, 2017	AWQI #132562 Lead at Hydrant	Lead results of 0.0139 mg/L at distribution system hydrant located at 505 Dougall Ave.	mg/L	Resampled initial location, downstream and up stream of the location.	March 9, 2017
April 24, 2017	AWQI #132294 Free Chlorine Residual 0.01 mg/L WS0386-05 Blow Off	Free Chlorine Residual of 0.01 mg/L	mg/L	After a total of 1 hour of flushing a free chlorine residual of 1.09 mg/L was obtained. The adverse was recorded on a New Watermain not commissioned and segregated by backflow prevention from the live DWS.	April 24, 2017
May 31, 2017	AWQI #133210 Free Chlorine Residual 0.03 mg/L at hydrant in front of 3728 Blackburn St.	Free Chlorine residual of 0.03	mg/L	After flushing the hydrant for 25 minutes a free chlorine residual of 0.44 mg/L was obtained.	May 3, 2017
June 5, 2017	AWQI #133257 On June 3, 2017 Treated Water (TW) Free Chlorine residual at 9:50 a.m. was 0.03 mg/L.	Treated Water (TW) Free Chlorine residual at 9:50 a.m. was 0.03	mg/L	Free Residual Chlorine on treated water (TW) June 3, 2017 at 9:45 a.m. 0.05 mg/L, 9:50 a.m. 0.03 mg/L, 9:55 a.m. 0.01 mg/L, 10:00 a.m. 0.03 mg/L, 10:05 a.m. 0.11 mg/L, 10:15 a.m. 0.08 mg/L, 10:20	June 5, 2017



				a.m. 0.01 mg/L, 10:25 a.m. 0.13 mg/L. During maintenance in the plant the Chlorine injection to the treated water clearwell was shut down inadvertently. Chlorine injection to AJ Brian and George Avenue pumping stations was operational at all times. Average Chlorine values during this time for AJ Brian 1.08 mg/L and for George Avenue was 1.45 mg/L. No customers have been affected.	
July 12, 2017	AWQI #133994 Free residual chlorine reading of 0.04 mg/L at hydrant in front of 3728 Blackburn street. Hydrant is on a weekly flushing maintenance system.	Free residual chlorine reading of 0.04 mg/L at hydrant in front of 3728 Blackburn street. Hydrant is on a weekly flushing maintenance system.	mg/L	After flushing the hydrant for 20 minutes a free residual chlorine reading of 0.44 has been obtained.	July 12, 2017
Nov. 21, 2017	AWQI #138140 1 Total Coliform (TC) Count at Sample station D02--2350 College Avenue	1 Total Coliform	CFU/100 mL	Resample initial location downstream and upstream of the location.	Nov. 23, 2017

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	240	0 - 1100	0 - 8500	240	<10 to >2000
Treated	1959	0 - 0	0 - 0	1476	<10 to >2000
Distribution	1970	0 - 0	0 - 1	1160	<10 to >2000



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

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	365	0.02 - 0.11	NTU
Chlorine	365	1.44 - 1.72	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
MDWL 025-101	*Bromate - Treated	1-Jan-17 to 31-Dec-17	0.004	mg/L
MDWL 025-101	*Bromate - Distribution	1-Jan-17 to 31-Dec-17	0.004	mg/L

* Reported as Running Annual Average

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	October 4, 2017	0.00008	mg/L	No
Arsenic	October 4, 2017	0.0004	mg/L	No
Barium	October 4, 2017	0.0153	mg/L	No
Boron	October 4, 2017	0.027	mg/L	No
Cadmium	October 4, 2017	0.00001	mg/L	No
Chromium	October 4, 2017	0.00072	mg/L	No
Lead	October 4, 2017	0.00001 <MDL	mg/L	No
Mercury	October 4, 2017	0.00001 <MDL	mg/L	No
Selenium	October 4, 2017	0.00015	mg/L	No
Sodium	January 4, 2017	5.66	mg/L	No
Uranium	October 4, 2017	0.000085	mg/L	No
Fluoride	January 4, 2017	0.09	mg/L	No
Nitrite	October 4, 2017	0.003 <MDL	mg/L	No
Nitrate	October 4, 2017	0.204	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 #)	Unit of Measure	Number of Exceedances
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Plumbing	295	0.01 <MDL - 44.3	ug/L	29
Distribution	201	0.01 <MDL - 13.9	ug/L	1

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	Oct 4, 2017	0.00002 <MDL	mg/L	No
Atrazine + N-dealkylated metabolites	Oct 4, 2017	0.00001 <MDL	mg/L	No
Azinphos-methyl	Oct 4, 2017	0.00005 <MDL	mg/L	No
Benzene	Oct 4, 2017	0.00032 <MDL	mg/L	No
Benzo(a)pyrene	Oct 4, 2017	0.000004 <MDL	mg/L	No
Bromoxynil	Oct 4, 2017	0.00033 <MDL	mg/L	No
Carbaryl	Oct 4, 2017	0.00005 <MDL	mg/L	No
Carbofuran	Oct 4, 2017	0.00001 <MDL	mg/L	No
Carbon Tetrachloride	Oct 4, 2017	0.00016 <MDL	mg/L	No
Chlorpyrifos	Oct 4, 2017	0.00002 <MDL	mg/L	No
Diazinon	Oct 4, 2017	0.00002 <MDL	mg/L	No
Dicamba	Oct 4, 2017	0.00020 <MDL	mg/L	No
1,2-Dichlorobenzene	Oct 4, 2017	0.00041 <MDL	mg/L	No
1,4-Dichlorobenzene	Oct 4, 2017	0.00036 <MDL	mg/L	No
1,2-Dichloroethane	Oct 4, 2017	0.00035 <MDL	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Oct 4, 2017	0.00033 <MDL	mg/L	No
Dichloromethane	Oct 4, 2017	0.00035 <MDL	mg/L	No
2,4-Dichlorophenol	Oct 4, 2017	0.00015 <MDL	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Oct 4, 2017	0.00019 <MDL	mg/L	No
Diclofop-methyl	Oct 4, 2017	0.0004 <MDL	mg/L	No
Dimethoate	Oct 4, 2017	0.00003 <MDL	mg/L	No
Diquat	Oct 4, 2017	0.001 <MDL	mg/L	No
Diuron	Oct 4, 2017	0.00003 <MDL	mg/L	No
Glyphosate	Oct 4, 2017	0.001 <MDL	mg/L	No
Haloacetic Acids (HAA5) - Running Annual Average	Oct 4, 2017	0.0053 <MDL	mg/L	No
Malathion	Oct 4, 2017	0.00002 <MDL	mg/L	No
MCPA	Oct 4, 2017	0.00012 <MDL	mg/L	No
Metolachlor	Oct 4, 2017	0.00001 <MDL	mg/L	No
Metribuzin	Oct 4, 2017	0.00002 <MDL	mg/L	No
Monochlorobenzene	Oct 4, 2017	0.0003 <MDL	mg/L	No
Paraquat	Oct 4, 2017	0.001 <MDL	mg/L	No
Pentachlorophenol	Oct 4, 2017	0.00015 <MDL	mg/L	No
Phorate	Oct 4, 2017	0.00001 <MDL	mg/L	No
Picloram	Oct 4, 2017	0.001 <MDL	mg/L	No
Polychlorinated Biphenyls (PCB)	Oct 4, 2017	0.00004 <MDL	mg/L	No
Prometryne	Oct 4, 2017	0.00003 <MDL	mg/L	No
Simazine	Oct 4, 2017	0.00001 <MDL	mg/L	No



THM – Running Annual Average	Oct 4, 2017	0.0090	mg/L	No
Q1 2017 = 0.006 mg/L	Jan 4, 2017			No
Q2 2017 = 0.007 mg/L	April 3, 2017			No
Q3 2017 = 0.012 mg/L	July 3, 2017			No
Q4 2017 = 0.011 mg/L	Oct 4, 2017			No
Terbofos	Oct 4, 2017	0.00001 <MDL	mg/L	No
Tetrachlorethylene	Oct 4, 2017	0.00035 <MDL	mg/L	No
2,3,4,6-Tetrachlorophenol	Oct 4, 2017	0.00020 <MDL	mg/L	No
Triallate	Oct 4, 2017	0.00001 <MDL	mg/L	No
Trichloroethylene	Oct 4, 2017	0.00044 <MDL	mg/L	No
2,4,6-Trichlorophenol	Oct 4, 2017	0.00025 <MDL	mg/L	No
Trifluralin	Oct 4, 2017	0.00002 <MDL	mg/L	No
Vinyl Chloride	Oct 4, 2017	0.00017 <MDL	mg/L	No

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

No Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standard.