



**OPTIONAL ANNUAL REPORT TEMPLATE**

<b>Drinking-Water System Number:</b>	220003421
<b>Drinking-Water System Name:</b>	City of Windsor Drinking Water System
<b>Drinking-Water System Owner:</b>	The Windsor Utilities Commission
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	Calendar Year 2018

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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><b><u>Complete for all other Categories.</u></b></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 CO<sub>2</sub>), 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 (CO<sub>2</sub>), 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 98 new public-use fire hydrants through capital projects.**

**Removed 92 existing public-use fire hydrants through capital projects.**

**Installed 13.26 km of watermain <400 mm and 1.35 km of watermain = 400 mm.**

**Decommissioned approximately 13.29 km of watermain <400 mm and decommissioned 0.5 km watermain >400 mm.**

**Replaced underdrain and media in a filter bed at Water Treatment Plant - \$345k in 2018.**

**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**

<b>Incident Date</b>	<b>Parameter</b>	<b>Result</b>	<b>Unit of Measure</b>	<b>Corrective Action</b>	<b>Corrective Action Date</b>
Feb. 8, 2018	<b>AWQI #138703</b> Free Chlorine residual of 0.04 mg/L	1	mg/L	After 15 minutes of flushing free chlorine residual restored. Reading of 0.46 mg/L.	Feb. 8, 2018
Mar. 16, 2018	<b>AWQI #13927</b> Count of 2 TC at the D18 sample station with free chlorine at 0.94 mg/L	1	mg/L	Testing. 2 sets taken 24 hours apart initial location, downstream and upstream	Mar. 19., 2018
May 8, 2018	<b>AWQI #139277</b> Count of 11 TC at the DO3 Sample Station. Free Chlorine residual 0.97 mg/L	11 0.97	TC mg/L	Resample initial location, downstream and upstream	May 8, 2018
May 23, 2018	<b>AWQI #139425</b> Filter #3 23:30 to 23:51 run above 1.00 NTU. Highest value 1.81 NTU. SCADA is set up to run filter to waste at 0.70 NTU. Due to a mechanical failure, Filter #3 effluent valve did not shut down. Filter #3 was placed out of service at 23:56. Treat water turbidity has not been affected.	1.81	NTU	Replaced valve actuator and tested the Filter #3 effluent valve operation. Returned Filter #3 back in service May 23, 2018 at 17:23	May 23, 2018
Sept. 25, 2018	<b>AWQI #143263</b> Count of 1 TC at the D16 Sample Station. Free Chlorine residual 1.22 mg/L	1 1.22	TC mg/L	Resampled initial location, downstream and upstream.	Oct. 1, 2018
Dec. 17, 2018	<b>AWQI #144329</b> Sample Station D7. Free Chlorine residual reading of	1 1.22	TC mg/L	After 10 minutes of flushing, Free Chlorine residual reading of 0.12 mg/L	Dec. 17/18



	0.04 mg/L			at 8:55. Additional flushing performed 0.34 mg/L obtained at 10:20 p.m. and 0.85 mg/L at 10:35.	
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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	249	0 - 520	0 - 7500	249	20 - >2000
Treated	2043	0 - 0	0 - 0	1532	<10 - 140
Distribution	1919	0 - 0	0 - 11	890	<10 - 70

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 - 0.15	NTU
Chlorine	365	1.47 - 1.61	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-18 to 31-Dec-18	0.004	mg/L
MDWL 025-101	*Bromate - Distribution	1-Jan-18 to 31-Dec-18	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 3, 2018	0.00015	mg/L	No
Arsenic	October 3, 2018	0.0003	mg/L	No
Barium	October 3, 2018	0.0156	mg/L	No
Boron	October 3, 2018	0.014	mg/L	No
Cadmium	October 3, 2018	0.000003 <MDL	mg/L	No
Chromium	October 3, 2018	0.00017	mg/L	No
Lead	October 3, 2018	0.00001 <MDL	mg/L	No

Mercury	October 3, 2018	0.00001 <MDL	mg/L	No
Selenium	October 3, 2018	0.00012	mg/L	No
Sodium	January 10, 2018	6.37	mg/L	No
Uranium	October 3, 2018	0.000009	mg/L	No
Nitrite	October 3, 2018	0.003 <MDL	mg/L	No
Nitrate	October 3, 2018	0.26	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
Plumbing	571	0.01 <MDL - 21.8	ug/L	9
Distribution	80	0.01 <MDL - 3.06	ug/L	0

**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. 3, 2018	0.00002 <MDL	mg/L	No
Atrazine + N-dealkylated metabolites	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Azinphos-methyl	Oct. 3, 2018	0.00005 <MDL	mg/L	No
Benzene	Oct. 3, 2018	0.00032 <MDL	mg/L	No
Benzo(a)pyrene	Oct. 3, 2018	0.000004 <MDL	mg/L	No
Bromoxynil	Oct. 3, 2018	0.00033 <MDL	mg/L	No
Carbaryl	Oct. 3, 2018	0.00005 <MDL	mg/L	No
Carbofuran	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Carbon Tetrachloride	Oct. 3, 2018	0.00016 <MDL	mg/L	No
Chlorpyrifos	Oct. 3, 2018	0.00002 <MDL	mg/L	No
Diazinon	Oct. 3, 2018	0.00002 <MDL	mg/L	No
Dicamba	Oct. 3, 2018	0.00020 <MDL	mg/L	No
1,2-Dichlorobenzene	Oct. 3, 2018	0.00041 <MDL	mg/L	No
1,4-Dichlorobenzene	Oct. 3, 2018	0.00036 <MDL	mg/L	No
1,2-Dichloroethane	Oct. 3, 2018	0.00035 <MDL	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Oct. 3, 2018	0.00033 <MDL	mg/L	No
Dichloromethane	Oct. 3, 2018	0.00035 <MDL	mg/L	No
2,4-Dichlorophenol	Oct. 3, 2018	0.00015 <MDL	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Oct. 3, 2018	0.00019 <MDL	mg/L	No
Diclofop-methyl	Oct. 3, 2018	0.0004 <MDL	mg/L	No
Dimethoate	Oct. 3, 2018	0.00003 <MDL	mg/L	No
Diquat	Oct. 3, 2018	0.001 <MDL	mg/L	No
Diuron	Oct. 3, 2018	0.00003 <MDL	mg/L	No



Glyphosate	Oct. 3, 2018	0.001 <MDL	mg/L	No
Haloacetic Acids (HAA5) - Running Annual Average	Oct. 3, 2018	0.0053 <MDL	mg/L	No
Malathion	Oct. 3, 2018	0.00002 <MDL	mg/L	No
MCPA	Oct. 3, 2018	0.00012 <MDL	mg/L	No
Metolachlor	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Metribuzin	Oct. 3, 2018	0.00002 <MDL	mg/L	No
Monochlorobenzene	Oct. 3, 2018	0.0003 <MDL	mg/L	No
Paraquat	Oct. 3, 2018	0.001 <MDL	mg/L	No
Pentachlorophenol	Oct. 3, 2018	0.00015 <MDL	mg/L	No
Phorate	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Picloram	Oct. 3, 2018	0.001 <MDL	mg/L	No
Polychlorinated Biphenyls (PCB)	Oct. 3, 2018	0.00004 <MDL	mg/L	No
Prometryne	Oct. 3, 2018	0.00003 <MDL	mg/L	No
Simazine	Oct. 3, 2018	0.00001 <MDL	mg/L	No
THM – Running Annual Average	Oct. 3, 2018	0.0076	mg/L	No
Q1 2018 = 0.0045 mg/L	Jan.10, 2018			No
Q2 2018 = 0.0044 mg/L	Apr. 4, 2018			No
Q3 2018 = 0.013 mg/L	Jul. 9, 2018			No
Q4 2018 = 0.0085 mg/L	Oct. 3, 2018			No
Terbofos	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Tetrachlorethylene	Oct. 3, 2018	0.00035 <MDL	mg/L	No
2,3,4,6-Tetrachlorophenol	Oct. 3, 2018	0.00020 <MDL	mg/L	No
Triallate	Oct. 3, 2018	0.00001 <MDL	mg/L	No
Trichloroethylene	Oct. 3, 2018	0.00044 <MDL	mg/L	No
2,4,6-Trichlorophenol	Oct. 3, 2018	0.00025 <MDL	mg/L	No
Trifluralin	Oct. 3, 2018	0.00002 <MDL	mg/L	No
Vinyl Chloride	Oct. 3, 2018	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.