

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

Drinking-Water System Number:	210000871
Drinking-Water System Name:	Elgin Area Primary Water Supply System
Drinking-Water System Owner:	Elgin Area Primary Water Supply System Joint Board of Management
Drinking-Water System Operating Authority:	Ontario Clean Water Agency (OCWA)
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2020 through December 31, 2020

<p>Complete if your Category is Large Municipal Residential or Small Municipal Residential</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> <p>Lake Huron and Elgin Area Water Supply Systems c/o Regional Water Supply Division 235 North Centre Road, Suite 200 London, ON N5X 4E7 https://huronelginwater.ca/</p> <p>Elgin Area Water Treatment Plant 43665 Dexter Line, Union, ON N0L 2L0</p>	<p>Complete for all other Categories.</p> <p>Number of Designated Facilities served: 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: 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>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water directly from the EAPWSS:

Drinking Water System Name	Drinking Water System Number
City of London Distribution System	260004917
St. Thomas Area Secondary Water Supply System	260078897
Aylmer Area Secondary Water Supply System	260004722
Port Burwell Area Secondary Water Supply System	260004735
Central Elgin Distribution System	260004761
St. Thomas Distribution System	260002187

Systems that receive their drinking water indirectly from the EAPWSS:

Drinking Water System Name	Drinking Water System Number
Aylmer Distribution System	260002136
Malahide Distribution System	260004774
Dutton/Dunwich Distribution System	220002967
Bayham Distribution System	260004748
Southwold Distribution System	210001362
Ontario Police College Distribution System	260002161

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 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 _____

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Describe your Drinking-Water System

The Elgin Area Primary Water Supply System employs pre-chlorination, screening, process pH adjustment (utilizing carbon dioxide), powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, UV disinfection, post-chlorination, final pH adjustment (utilizing sodium hydroxide) and fluoridation to treat raw water obtained from Lake Erie. The WTP has a rated capacity of 91 ML/day (MLD). Water is pumped from the plant through the water main (900mm diameter) to various communities enroute to the Elgin-Middlesex Terminal Reservoir located northeast of St. Thomas in the Municipality of Central Elgin. The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

A Residuals Management Facility (RMF) provides equalization, clarification, sediment thickening and dechlorination. Thickened sediment is dewatered by centrifuges and the thickened sediment is sent to the landfill for final disposal. Clarified and dechlorinated liquid streams are discharged back to Lake Erie through the plant drain.

List all water treatment chemicals used over this reporting period

Carbon Dioxide
 Aluminum Sulphate
 Cationic Polymer
 Powder Activated Carbon
 Chlorine Gas
 Hydrofluosilicic Acid
 Sodium Hydroxide
 Dewatering Polymer (Residuals Management Facility)
 Sodium Bisulphite (Residuals Management Facility)

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:

Capital Projects:

- Instrumentation replacements
- High lift pumps and motors replacement
- LED lighting upgrades
- Filter #3 drain valve actuator replacement
- Fluoride injection diffuser relocation
- Backwash flow meter replacement
- Window replacements
- Utility pole replacement

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- Maintenance shop door replacement
- Service water pressure transmitter replacement
- Hand railing replacements
- Low lift sluice gate repairs
- Port Burwell flow meter replacement
- Administration building roof replacement
- Caustic pump replacements
- Safety shower replacements
- RMF truck conveyor system modifications
- RMF tank ladder installations
- RMF dechlorination chemical on-site bulk storage tank system installation
- Ultraviolet Transmittance (UVT) analyzer installation for each filter and integration to SCADA
- Low lift HVAC mechanical cooling system upgrade
- Security system gate upgrades
- Low lift sluice gate repairs
- Low lift drain dechlorination basket installation
- High voltage breaker replacement

Maintenance Projects:

- Chamber elevation modifications
- Sedimentation scraper system repairs and modifications
- RMF various pump rebuilds
- Elgin-Middlesex Terminal Reservoir Cell #1 dewatering, inspection and cleaning

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 Report Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

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

Location	Number of Samples	Range of E.coli Results (CFU/100 mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)	Range of HPC Results (CFU/100 mL) (min #)-(max #)
Raw Water	106	(0-210)	(0-19,500)	(<10- >2,000)
Treated Water (WTP)	282	(0-0)	(0-0)	(0-850)
Distribution (EMPS Valve House)	105	(0-0)	(0-0)	(<10-20)
Distribution (Fruitridge Surge Facility)	55	(0-0)	(0-0)	(<10-120)

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

Parameter	Number of Grab Samples	Range of Results (min #)-(max #)
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.27)-(2.11)
Treated Water Free Chlorine (mg/L)	2109	(0.88)-(1.61)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.018)-(2.00)
Treated Water Turbidity (NTU)	2109	(0.015)-(0.180)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.12)-(1.52)*
Treated Water Fluoride (mg/L)	739	(0.27)-(0.83)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.016)-(0.283)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.011)-(0.356)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.160)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.012)-(0.375)
Combined Filtered Water Turbidity (NTU)	2109	(0.013)-(0.100)

*On November 9, 2020 there was a treated water fluoride residual spike >1.50mg/L. The treated water fluoride residual was above 1.50 mg/L for <2 minutes therefore not reportable (not an adverse result).

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Summary of Inorganic parameters tested during this reporting period
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Jan.7, 2020	0.00016	mg/L	NO
	Aug.11, 2020	0.00015	mg/L	
Arsenic	Jan.7, 2020	0.0002	mg/L	NO
	Aug.11, 2020	0.0004	mg/L	
Barium	Jan.7, 2020	0.0227	mg/L	NO
	Aug.11, 2020	0.0228	mg/L	
Boron	Jan.7, 2020	0.018	mg/L	NO
	Aug.11, 2020	0.017	mg/L	
Cadmium	Jan.7, 2020	0.000012	mg/L	NO
	Aug.11, 2020	0.000004	mg/L	
Chromium	Jan.7, 2020	Not Detected	mg/L	NO
	Aug.11, 2020	0.00062	mg/L	
Lead (EMPS Valve House)	Jan.7, 2020	0.00002	mg/L	NO
	July 7, 2020	0.00002	mg/L	
Mercury	Jan.7, 2020	Not Detected	mg/L	NO
	Aug.11, 2020	Not Detected	mg/L	
Selenium	Jan.7, 2020	0.00016	mg/L	NO
	Aug. 11, 2020	0.00015	mg/L	
Uranium	Jan.7, 2020	0.000059	mg/L	NO
	Aug.11, 2020	0.000038	mg/L	
Sodium	Jan.7, 2020	17.6	mg/L	NO
Nitrite	Jan. 7, 2020	Not Detected	mg/L	NO
	Apr. 7, 2020	Not Detected	mg/L	
	Jul. 7, 2020	Not Detected	mg/L	
	Oct. 15, 2020	Not Detected	mg/L	
Nitrate	Jan. 7, 2020	0.205	mg/L	NO
	Apr. 7, 2020	0.166	mg/L	
	Jul. 7, 2020	0.091	mg/L	
	Oct. 15, 2020	0.156	mg/L	

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Summary of Organic parameters sampled during this reporting period
*(*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Atrazine + N-dealkylated metabolites	Jan.7, 2020 Aug.11, 2020	0.00006 0.00002	mg/L mg/L	NO
Azinphos-methyl	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Benzene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Benzo(a)pyrene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Bromoxynil	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Carbaryl	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Carbofuran	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Carbon Tetrachloride	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Chlorpyrifos	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Diazinon	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Dicamba	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichlorobenzene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
1,4-Dichlorobenzene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
1,2-Dichloroethane	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Dichloromethane	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
2-4 Dichlorophenol	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Diclofop-methyl	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Dimethoate	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Diquat	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Diuron	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Glyphosate	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House)	Jan. 7, 2020 Apr. 7, 2020 Jul. 7, 2020 Oct. 14, 2020	Not Detected Not Detected Not Detected 0.007	mg/L mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) (EMPS Valve House) Running Annual Average	2020	0.002	mg/L	NO
Malathion	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Metolachlor	Jan.7, 2020 Aug.11, 2020	0.00001 Not Detected	mg/L mg/L	NO
Metribuzin	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Monochlorobenzene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Paraquat	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO

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Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Pentachlorophenol	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Phorate	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Picloram	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Polychlorinated Biphenyls (PCB)	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Prometryne	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Simazine	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House)	Jan. 7, 2020 Apr. 7, 2020 Jul. 7, 2020 Oct. 14, 2020	0.012 0.014 0.015 0.026	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) (EMPS Valve House) Running Annual Average	2020	0.017	mg/L	NO
Terbufos	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Tetrachloroethylene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Triallate	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Trichloroethylene	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
2,4,6-Trichlorophenol	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Trifluralin	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO
Vinyl Chloride	Jan.7, 2020 Aug.11, 2020	Not Detected Not Detected	mg/L mg/L	NO



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NOTE: During 2020, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.