

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

<b>Drinking-Water System Number:</b>	210000871
<b>Drinking-Water System Name:</b>	<b>Elgin Area Primary Water Supply System</b>
<b>Drinking-Water System Owner:</b>	Elgin Area Primary Water Supply System Joint Board of Management
<b>Drinking-Water System Operating Authority:</b>	Ontario Clean Water Agency (OCWA)
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2023 through December 31, 2023

<p><b>Complete if your Category is Large Municipal Residential or Small Municipal Residential</b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></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 <a href="https://huroneginwater.ca/">https://huroneginwater.ca/</a></p> <p>Elgin Area Water Treatment Plant 43665 Dexter Line, Union, ON N0L 2L0</p>	<p><b>Complete for all other Categories.</b></p> <p><b>Number of Designated Facilities served:</b> N/A</p> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve?</b> Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p><b>Number of Interested Authorities you report to:</b> N/A</p> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?</b> 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:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
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:**

<b>Drinking Water System Name</b>	<b>Drinking Water System Number</b>
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 primary transmission main (900mm diameter) to various communities enroute to the Elgin-Middlesex Terminal Reservoir located in northeast St. Thomas. 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:

- Low lift service water connection project
- Safety railing replacements (Low Lift Building, Surge Building)
- Standby generator Technical Standards & Safety Authority (TSSA) fuel system upgrades
- Flocculation Building roof replacement
- Chlorine Building roof drain replacements
- Replaced lighting (Tunnel, Flocculation Building, Chlorine Building, and Low Lift Building)

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- Residuals Management Facility (RMF) sludge mixing pump modifications
- Security Upgrades: Installation of cameras and card readers at WTP; fencing and lighting upgrades
- SCADA & PLC software review and upgrade

**Maintenance Projects:**

- Filter #2 Rebuild
- Chamber P039B and P048 chamber modifications and actuator replacements
- Replacement of Elgin Middlesex Pumping Station Reservoir level transmitter in cell #2

**Studies and Design:**

- Sodium Bisulphite (SBS) Room industrial hygiene sampling and recommendations
- Water Quality Facility Plan update
- Financial Plan update
- Asset condition field assessment
- Ultraviolet (UV) System Replacement Project – detailed design & equipment pre-selection and pre-purchase
- Backwash Pump Replacement Project – detailed design

**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 Report Date</b>	<b>Parameter</b>	<b>Result</b>	<b>Unit of Measure</b>	<b>Corrective Action</b>	<b>Corrective Action Date</b>
N/A	N/A	N/A	N/A	N/A	N/A

**Drinking-Water Systems Regulation O. Reg. 170/03**
**Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.**

<b>Location</b>	<b>Number of Samples</b>	<b>Range of E. coli Results (CFU/100 mL) (min #)-(max #)</b>	<b>Range of Total Coliform Results (CFU/100 mL) (min #)-(max #)</b>	<b>Range of HPC Results (CFU/100 mL) (min #)-(max #)</b>
Raw Water	103	(0)-(200)	(0)-(18,100)	(<10)-(1,360)
Treated Water (WTP)	217	(0)-(0)	(0)-(0)	(0)-(20)
Distribution (EMPS Valve House)	53	(0)-(0)	(0)-(0)	(<10)-(30)
Distribution (Fruitridge Surge Facility)	53	(0)-(0)	(0)-(0)	(<10)-(30)

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

<b>Parameter</b>	<b>Number of Grab Samples</b>	<b>Range of Results (min #)-(max #)</b>
Treated Water Free Chlorine (mg/L)	Continuous Monitoring	(0.48)-(1.75)
Treated Water Free Chlorine (mg/L)	2130	(0.77)-(1.83)
Treated Water Turbidity (NTU)	Continuous Monitoring	(0.020)-(1.56)
Treated Water Turbidity (NTU)	2129	(0.019)-(0.196)
Treated Water Fluoride (mg/L)	Continuous Monitoring	(0.11)-(1.43)
Treated Water Fluoride (mg/L)	726	(0.29)-(0.80)
Filter #1 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.024)-(0.269)
Filter #2 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.023)-(0.282)
Filter #3 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.019)-(0.333)
Filter #4 - Filtered Water Turbidity (NTU)	Continuous Monitoring	(0.013)-(0.310)
Combined Filtered Water Turbidity (NTU)	2131	(0.007)-(0.680)

**Drinking-Water Systems Regulation O. Reg. 170/03**
**Summary of Inorganic parameters tested during this reporting period**
*(\*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Antimony	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Arsenic	January 4, 2023 August 1, 2023 November 22, 2023	0.0002 0.0003 0.0003	mg/L mg/L mg/L	NO
Barium	January 4, 2023 August 1, 2023 November 22, 2023	0.0247 0.0238 0.0309	mg/L mg/L mg/L	NO
Boron	January 4, 2023 August 1, 2023 November 22, 2023	0.018 0.019 0.022	mg/L mg/L mg/L	NO
Cadmium	January 4, 2023 August 1, 2023 November 22, 2023	0.000006 0.000004 0.000010	mg/L mg/L mg/L	NO
Chromium	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected 0.00015 Not Detected	mg/L mg/L mg/L	NO
Lead (EMPS Valve House)	January 4, 2023 July 4, 2023 October 3, 2023	Not Detected Not Detected 0.00001	mg/L mg/L mg/L	NO
Mercury	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Selenium	January 4, 2023 August 1, 2023 November 22, 2023	0.00017 0.00013 0.00015	mg/L mg/L mg/L	NO
Uranium	January 4, 2023 August 1, 2023 November 22, 2023	0.000028 0.000037 0.000057	mg/L mg/L mg/L	NO
Sodium	January 12, 2023	16.9	mg/L	NO
Nitrite	January 12, 2023 April 4, 2023 July 4, 2023 October 3, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Nitrate	January 12, 2023 April 4, 2023 July 4, 2023 October 3, 2023	0.024 0.277 0.073 0.028	mg/L mg/L mg/L mg/L	NO

**Drinking-Water Systems Regulation O. Reg. 170/03**
**Summary of Organic parameters sampled during this reporting period**
*(\*All tests were conducted on treated water leaving the WTP unless otherwise noted)*

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Alachlor	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Atrazine + N-dealkylated metabolites	January 4, 2023 August 1, 2023 November 22, 2023	0.00006 0.00004 0.00006	mg/L mg/L mg/L	NO
Azinphos-methyl	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Benzene	January 4, 2023 August 1, 2023 November 22, 2023 November 23, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Benzo(a)pyrene	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Bromoxynil	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Carbaryl	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Carbofuran	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Carbon Tetrachloride	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Chlorpyrifos	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Diazinon	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Dicamba	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO

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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
1,2-Dichlorobenzene	January 4, 2023 January 19, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
1,4-Dichlorobenzene	January 4, 2023 January 19, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
1,2-Dichloroethane	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Dichloromethane	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
2,4-Dichlorophenol	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Diclofop-methyl	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Dimethoate	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Diquat	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Diuron	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Glyphosate	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Haloacetic Acids (HAA's) EMPS Valve House	January 4, 2023 April 4, 2023 July 4, 2023 September 19, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO



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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Haloacetic Acids (HAA's) EMPS Valve House = Running Annual Average	2023	Not Detected	mg/L	NO
Malathion	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
2-Methyl-4-chlorophenoxyacetic acid	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Metolachlor	January 4, 2023 August 1, 2023 November 22, 2023	0.00002 0.00001 0.00002	mg/L mg/L mg/L	NO
Metribuzin	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Monochlorobenzene	January 4, 2023 January 19, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected Not Detected	mg/L mg/L mg/L mg/L	NO
Paraquat	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Pentachlorophenol	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Phorate	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Picloram	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Polychlorinated Biphenyls (PCB)	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Prometryne	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Simazine	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO

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<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
Total Trihalomethanes (THMs) EMPS Valve House	January 4, 2023 April 4, 2023 July 4, 2023 September 19, 2023	0.010 0.012 0.018 0.019	mg/L mg/L mg/L mg/L	NO
Total Trihalomethanes (THMs) EMPS Valve House = Running Annual Average	2023	0.015	mg/L	NO
Terbufos	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Tetrachloroethylene	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
2,3,4,6-Tetrachlorophenol	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Triallate	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Trichloroethylene	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
2,4,6-Trichlorophenol	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Trifluralin	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO
Vinyl Chloride	January 4, 2023 August 1, 2023 November 22, 2023	Not Detected Not Detected Not Detected	mg/L mg/L mg/L	NO

**NOTE:** During 2023, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.