



Drinking-Water System Number:	210000791
Drinking-Water System Name:	Lake Huron Primary Water Supply System
Drinking-Water System Owner:	Lake Huron Primary Water Supply System Joint Board of Management c/o the City of London
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2011 through December 31, 2011

<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;"> <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 http://www.watersupply.london.ca</p> <p>Lake Huron Water Treatment Plant 71155 Bluewater Hwy., Grand Bend, ON</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </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: <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </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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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Systems that receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
City of London	260004917
Municipality of Bluewater	260006542
Municipality of Lambton Shores (East Lambton Shores Water Distribution System)	260006568
Township of Lucan-Biddulph	260003071
Municipality of Middlesex Centre (Middlesex Centre Distribution System)	260004202
Municipality of North Middlesex	260006529



Municipality of Strathroy-Caradoc (Strathroy- Caradoc Distribution System)	260080106
Municipality of South Huron (South Huron Water Distribution System)	220001520

Systems that may receive their drinking water from the LHPWSS:

Drinking Water System Name	Drinking Water System Number
Municipality of Lambton Shores (West Lambton Shores Distribution System) *Normally supplied by the Lambton Area Water Supply System (LAWSS) but a connection to the LHPWSS exists	260006581

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 News Release**

Describe your Drinking-Water System

The Lake Huron Water Treatment Plant (WTP) employs pre-chlorination, screening, powder activated carbon addition (seasonally on an as-required basis), coagulation, flocculation, sedimentation, dual-media filtration, post-chlorination, and sodium hydroxide addition to treat raw water obtained from Lake Huron. The WTP intake crib and raw water intake pipe have an estimated gross capacity of 454.6 Megalitres/day (MLD). The WTP rated capacity is 340.0 MLD.

The distribution system is comprised of the McGillivray Booster Pumping Station and Reservoir, the Exeter-Hensall Booster Pumping Station and Reservoir, the Arva Terminal Reservoir, the Komoka-Mt. Brydges Booster Pumping Station (PS#4) and the associated interconnecting transmission water mains, which includes the primary, Strathroy, Exeter-Hensall, and Komoka-Mt. Brydges transmission water mains.

The drinking water system is monitored at various locations throughout the system via a Supervisory Control and Data Acquisition (SCADA) system.

List all water treatment chemicals used over this reporting period

Filter aid polymer (on an as-required basis)
Acidified alum
Powder activated carbon
Dewatering polymer
Chlorine gas
50% Sodium Hydroxide
12% Sodium Hypochlorite

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**Lake Huron Water Treatment Plant**

Electrical savings upgrades.
Surge Tank cleaning, inspection and painting.
SCADA Maintenance and upgrades.
Shop door repairs.
Crane and hoist maintenance and certification.
Hoist motor replacement for centrifuge cranes.
Backflow preventer testing and certifications.
Installation of chlorine detectors.
Insulation removal.
Installation of filter influent and drain valves.
Installation of 2" U.V. to Port Blake park.
Repair to man down alarm.
Glass replacement to various windows.
Analyser replacement (pH and chlorine).
MS2 Strathroy valve controls replaced.
Drained, inspected and topped up all 12 filters with anthracite.
Overhauled highlift #4 pump.
Repairs to highlift, lowlift and backwash pumps.
Repaired flocculator drives.
Fire hydrant inspection and testing.
Painting of facility buildings.
Replaced controls for centrifuges.
Cleaned out low lift, wet well and surge well.
Repairs to building expansion joints.
Program chlorine permissive interlocks.
Program interlocks for filter turbidity F1 valves.

Replaced 3 turbidimeters.
 Replaced 2 flowmeters.
 Replaced 2 ultrasonic level meters.

Pumping Station #4

Replaced controls on KM2 valve.

Arva Reservoir

Replaced cell #3 Pressure Transmitter.

McGillivray Booster Pumping Station

Surge Tank cleaning, inspection and repainting.

Work on actuator for Gate Valve.

Replaced sample pump.

Exeter Hensall Booster Pumping Station

Pump out of holding tank.

Repaired flow meter.

Replaced pressure transmitter.

EH3 heating controls replaced.

EH3 Replaced flowmeter.

EH4 Installed new flow sensor on meter.

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 31, 2011	Turbidity	Signal Fault	NTU	Signal fault alarms, auto shutdowns on filter effluent valves	March 31, 2011
April 5, 2011	Chlorine	No flow to analyser	mg/L	Flow restored to analyser	April 5, 2011
May 6, 2011	Total Coliforms	19	cfu/100ml	Resample and test	May 9, 2011

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 (CFU/100mL) (min #)-(max #)	Range of Total Coliform Results (CFU/100mL) (min #)-(max #)	Number Of Heterotrophic Plate Count (HPC) Samples	Range of HPC Results (CFU/1mL) (min #)-(max #)
Raw	102	(0)-(50)	(0) – (16,600)	102	(<10) – (>2000)
Treated	254	0 – 0	0 – 19*	254	(<10) – (90)
Distribution	548	0 – 0	0 – 0	548	(<10) – (10)

* Treated water result of 19 cfu/100ml for total coliforms was determined to be due to laboratory error (May 6, 2011 incident noted in table above)



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)	105120	0.59-2.00
Treated Water Turbidity (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #1 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #2 (NTU)	105120	0.05-2.0
Filtered Water Turbidity - Filter #3 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #4 (NTU)	105120	0.05-2.0
Filtered Water Turbidity - Filter #5 (NTU)	105120	0.0-0.388
Filtered Water Turbidity - Filter #6 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #7 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #8 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #9 (NTU)	105120	0.0-1.999
Filtered Water Turbidity - Filter #10 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #11 (NTU)	105120	0.0-2.0
Filtered Water Turbidity - Filter #12 (NTU)	105120	0.015-1.998

NOTE: There were a few instances in 2011 when the treated water turbidity exceeded 1.00 NTU. Each of these events coincided with a pump start-up. Filter effluent turbidity spikes greater than 1.00 NTU did not exceed fifteen minutes on any of the filters.

NOTE: Where filtered water turbidity min # is equal to 0.00 NTU, there was a short period where the analyser failed to record. See above list of reports made to the Spill Action Centre.

Summary of Inorganic parameters tested during this reporting period

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	January 24, 2011	Not Detected	mg/L	NO
Arsenic	January 24, 2011	Not Detected	mg/L	NO
Barium	January 24, 2011	0.015	mg/L	NO
Boron	January 24, 2011	Not Detected	mg/L	NO
Cadmium	January 24, 2011	Not Detected	mg/L	NO
Chromium	January 24, 2011	Not Detected	mg/L	NO
Lead	January 24, 2011 July 14, 2011	Not Detected Not Detected	mg/L	NO
Mercury	January 24, 2011	Not Detected	mg/L	NO
Selenium	January 24, 2011	Not Detected	mg/L	NO
Sodium	January 24, 2011	14	mg/L	NO
Uranium	January 24, 2011	Not Detected	mg/L	NO
Fluoride	N/A	Not Tested	mg/L	NO
Nitrite	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	Not Detected Not Detected Not Detected Not Detected	mg/L	NO
Nitrate	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	0.8 1.2 0.3 0.4	mg/L	NO

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 24, 2011	Not Detected	µg/L	NO
Aldicarb	January 24, 2011	Not Detected	µg/L	NO
Aldrin + Dieldrin	January 24, 2011	Not Detected	µg/L	NO
Atrazine + N-dealkylated metabolites	January 24, 2011	Not Detected	µg/L	NO
Azinphos-methyl	January 24, 2011	Not Detected	µg/L	NO
Bendiocarb	January 24, 2011	Not Detected	µg/L	NO
Benzene	January 24, 2011	Not Detected	µg/L	NO
Benzo(a)pyrene	January 24, 2011	Not Detected	µg/L	NO
Bromoxynil	January 24, 2011	Not Detected	µg/L	NO
Carbaryl	January 24, 2011	Not Detected	µg/L	NO
Carbofuran	January 24, 2011	Not Detected	µg/L	NO
Carbon Tetrachloride	January 24, 2011	Not Detected	µg/L	NO
Chlordane (Total)	January 24, 2011	Not Detected	µg/L	NO
Chlorpyrifos	January 24, 2011	Not Detected	µg/L	NO
Cyanazine	January 24, 2011	Not Detected	µg/L	NO
Diazinon	January 24, 2011	Not Detected	µg/L	NO
Dicamba	January 24, 2011	Not Detected	µg/L	NO
1,2-Dichlorobenzene	January 24, 2011	Not Detected	µg/L	NO
1,4-Dichlorobenzene	January 24, 2011	Not Detected	µg/L	NO
Dichlorodiphenyltrichloroethane (DDT) + metabolites	January 24, 2011	Not Detected	µg/L	NO
1,2-Dichloroethane	January 24, 2011	Not Detected	µg/L	NO
1,1-Dichloroethylene (vinylidene chloride)	January 24, 2011	Not Detected	µg/L	NO
Dichloromethane	January 24, 2011	Not Detected	µg/L	NO
2-4 Dichlorophenol	January 24, 2011	Not Detected	µg/L	NO
2,4-Dichlorophenoxy acetic acid (2,4-D)	January 24, 2011	Not Detected	µg/L	NO
Diclofop-methyl	January 24, 2011	Not Detected	µg/L	NO
Dimethoate	January 24, 2011	Not Detected	µg/L	NO
Dinoseb	January 24, 2011	Not Detected	µg/L	NO
Diquat	January 24, 2011	Not Detected	µg/L	NO
Diuron	January 24, 2011	Not Detected	µg/L	NO
Glyphosate	January 24, 2011	Not Detected	µg/L	NO
Heptachlor + Heptachlor Epoxide	January 24, 2011	Not Detected	µg/L	NO
Lindane (Total)	January 24, 2011	Not Detected	µg/L	NO
Malathion	January 24, 2011	Not Detected	µg/L	NO
Methoxychlor	January 24, 2011	Not Detected	µg/L	NO
Metolachlor	January 24, 2011	Not Detected	µg/L	NO
Metribuzin	January 24, 2011	Not Detected	µg/L	NO
Monochlorobenzene	January 24, 2011	Not Detected	µg/L	NO
Paraquat	January 24, 2011	Not Detected	µg/L	NO
Parathion	January 24, 2011	Not Detected	µg/L	NO
Pentachlorophenol	January 24, 2011	Not Detected	µg/L	NO



Phorate	January 24, 2011	Not Detected	µg/L	NO
Picloram	January 24, 2011	Not Detected	µg/L	NO
Polychlorinated Biphenyls(PCB)	January 24, 2011	Not Detected	µg/L	NO
Prometryne	January 24, 2011	Not Detected	µg/L	NO
Simazine	January 24, 2011	Not Detected	µg/L	NO
Total Trihalomethanes (Arva Reservoir)	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	0.0146 0.0198 0.0216 0.0198	mg/L	NO
Total Trihalomethanes (Exeter-Hensall Monitoring Stn. 3)	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	0.0201 0.0242 0.0404 0.0419	mg/L	NO
Total Trihalomethanes (Komoka Mt-Brydges Monitoring Stn. 2)	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	0.0195 0.0236 0.0296 0.0342	mg/L	NO
Total Trihalomethanes (Strathroy-Caradoc Monitoring Stn. 2)	January 24, 2011 April 14, 2011 July 14, 2011 October 5, 2011	0.0173 0.0206 0.0293 0.0226	mg/L	NO
Temephos	January 24, 2011	Not Detected	µg/L	NO
Terbufos	January 24, 2011	Not Detected	µg/L	NO
Tetrachloroethylene	January 24, 2011	Not Detected	µg/L	NO
2,3,4,6-Tetrachlorophenol	January 24, 2011	Not Detected	µg/L	NO
Triallate	January 24, 2011	Not Detected	µg/L	NO
Trichloroethylene	January 24, 2011	Not Detected	µg/L	NO
2,4,6-Trichlorophenol	January 24, 2011	Not Detected	µg/L	NO
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	January 24, 2011	Not Detected	µg/L	NO
Trifluralin	January 24, 2011	Not Detected	µg/L	NO
Vinyl Chloride	January 24, 2011	Not Detected	µg/L	NO

NOTE: During 2011, no Inorganic or Organic parameter(s) exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.