



ANNUAL REPORT

Drinking-Water System Number:	210000906
Drinking-Water System Name:	Lambton Area Water Supply System
Drinking-Water System Owner:	Lambton Area Water Supply System
Drinking-Water System Category:	Large Municipal Residential System
Period being reported:	January 1, 2009 to December 31, 2009

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [] No []

Is your annual report available to the public at no charge on a web site on the Internet? Yes [] No []

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

- <http://lawss.org/>
- Lambton Area Water Supply System
1215 Fort St. Sarnia, ON. P.O. Box 790
 - City of Sarnia Municipal Office
255 N Christina St. Sarnia, ON
 - Village of Pt. Edward Municipal Office
135 Kendall St. Pt. Edward ON
 - St. Clair Township Municipal Office
1155 Emily St.
Mooretown, ON
 - Town of Plympton-Wyoming Municipal Office
546 Niagara St.
Wyoming ON
 - Township of Warwick Municipal Office
6332 Nauvoo Rd.
RR#8 Watford ON
 - Lambton Shores Municipal Office
19 Ann St.
Forest ON
 - The Township of Brooke-Alvinston
Municipal Office
3236 River St.
P.O. Box 28
Alvinston Ontario

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?

Yes [] No [] N/A []

Number of Interested Authorities you report to:

N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?

Yes [] No [] N/A []



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
City of Sarnia Distribution System (receives SOME of their drinking water from Enniskillen System)	260003136
Village of Pt. Edward Distribution System	210000924
St. Clair Township Distribution System	260006464
The Township of Plympton –Wyoming Distribution System	260006594
Warwick-Watford Distribution System	260001799
Township of Brooke-Alvinston Distribution System (receives SOME of their drinking water from Enniskillen System)	260040170
Lambton Shores Distribution System (receives SOME of their drinking water from this system)	260006594

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



Describe your Drinking-Water System

Water Treatment Plant:

The Lambton Area Water Supply System (LAWSS) is a direct filtration facility with a maximum rated capacity of 181,844m³. The Water Treatment Plant uses chemically assisted filtration with disinfection.

The facility consists of an intake system a low lift pumping system, a treatment system and distribution pumping system that supplies water to the above listed drinking water systems. Water is drawn into the plant (a zebra mussel chemical control system is available as needed) via a 1675mm intake pipe, located approx. 100 m into the St. Clair River at a depth of 15 m and screened at the surge wells (pre-disinfection is utilized). Water flows to the Low Lift pump wet wells where a total of 4 vertical turbine pumps are located and used as needed which pump to a common discharge header. Here, coagulant is added, flashed mixed (PAC is also applied at this location when needed for taste and odour) The raw water is then flocculated (Polymer is added at the flocculation trains when needed) and diverted to filtration (10 dual media filters). The gravity fed filter effluents combine into two clearwells where sodium hypochlorite is injected . To maximize the contact time, the treated water is diverted to the two baffled reservoirs (in series) and fluoridated upon exiting the reservoir(s). Six vertical turbine pumps are available for supplying the distribution demand as needed. The water treatment process and distribution components are controlled by a dedicated SCADA computer system and monitored by certified operators 24 hours a day. Should a power failure occur, generators are available to permit the treatment plant to remain in operation.

The utility serves a large part of Lambton County and has over 250 kilometres of pipeline of various sizes and materials. The LAWSS distribution system has three standpipes and one elevated tower. There is also the East Lambton Booster Station with 9,000 m³ of storage and a pumping station (West Lambton Pumping Station), with water storage of 90,000m³.

The pumping/booster station(s) are controlled and monitored from the Lambton WTP via SCADA.

Emergency Water Line connections exist between LAWSS and the following drinking water systems:

Chatham-Kent: A connection at Whitebread Line and Hwy #40

Petrolia: Confederation Line and Ploughing Match Rd.

Grand Bend: Lakeshore Rd. & NW corner of Ipperwash Rd.

Residual Management System: The system was completed in October of 2006. Backwash water is treated by the Actiflo Process and the clarified water discharged to the St. Clair River. Sludge from the Actiflo is hauled off-site to the Sarnia Waste Water Facility.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite – disinfection

Hydrofluosilicic Acid- fluoridation

Clar+Ion A7 (Aluminum Sulphate)- coagulation

Powder Activated Carbon- taste and odor (when required)

Polymer 8103 + filter aid (when required)

Sodium Bisulfite - dechlorination for Residual Management System

Note: all water treatment chemicals are NSF/ANSI approved



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

Filter (2) media replacements/rebuilds	\$200,000
Hydro upgrade to incoming service	\$146,000
Sluice Gates (5) refurbished	\$120,000
Pump and valve rebuild(s) (High Lift and WL)	\$103,000
Flow meter replacements/repairs/upgrades	\$920,300
SCADA upgrade	\$140,000
Facility upgrades (roofing; doors; equipment corrosion coating; compressors)	\$132,000
Watermain valves; Chambers; Hydrant repairs/replacement;	\$635,000
Residual Management System (repairs and replacements)	\$ 27,000
Miscellaneous	\$ 50,000

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
No incidents					

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 Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number Of Background Samples	Range of Background Results (min#-max#)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-5cfu/100mL	0-34cfu/100mL	52	0-7200cfu/100mL		
Treated	52	0-0cfu/100mL	0-0cfu/100mL	52	0-11cfu/100mL	52	<10-20cfu/1mL

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 #)	<i>NOTE: For continuous monitors use 8760 as the number of samples.</i>
Turbidity	8760	0.02-2.01 NTU	



Chlorine	8760	1.31-1.88 mg/L
Fluoride (If the DWS provides fluoridation)	8760	0.19-0.97 mg/L

Note: -The fluoridation system was out of service due to maintenance on Jan. 9, 2009
 -Turbidity is measured on each filter effluent line (10 filters) at a frequency greater than is required under O. Reg 170/03 Schedule 6-5. It should be noted that no filter effluent turbidity exceeded the prescribed test result for adverse reporting under Schedule 16-3.

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument. The following list of parameters are tested on the Residual Management System's discharge (commissioned on November 13, 2006)

Date of legal instrument issued	Parameter	Date Sampled	Result min-max	Unit of Measure
November 13, 2006	Total Suspended Solids	Monthly composite	<2-6	mg/L
November 13, 2006	Aluminum	Monthly composite	0.002-0.157	mg/L
November 13, 2006	(Total)Chlorine Residual	Monthly grab	0-0	mg/L

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	*Jan –Dec/09	0.10-0.12	ppb	No
Arsenic	*Jan –Dec/09	0.4-0.5	ppb	No
Barium	*Jan –Dec/09	13.7-14.3	ppb	No
Boron	*Jan –Dec/09	14.2-17.3	ppb	No
Cadmium	*Jan –Dec/09	<0.003	ppb	No
Chromium	*Jan –Dec/09	<0.5-0.9	ppb	No
Mercury	*Jan –Dec/09	<0.02	ppb	No
Selenium	*Jan –Dec/09	<1	ppb	No
Sodium	*Jan –Dec/09	5.67-6.09	mg/L	No
Uranium	*Jan –Dec/09	.131-.175	ppb	No
Nitrite	*Jan –Dec/09	< 0.005	mg/L	No
Nitrate	*Jan –Dec/09	0.285-.348	mg/L	No

*Note: Inorganic parameters are tested quarterly. If a parameter was/is detectable the range of detection has been provided and reported in the table above. Also: for interpretation purposes the less than sign (<) indicates the parameter was not detectable at the method detection level.

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 #)	Number of Exceedances
Plumbing			
Distribution			

Note: lead samples collected in the municipal DWS that receive water from the Lambton Area Water Supply System (contact your municipal office for corresponding lead results)

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	*Jan – Dec/09	< 0.11	ppb	No
Aldicarb	*Jan – Dec/09	< 0.30	ppb	No
Aldrin + Dieldrin	*Jan – Dec/09	< 0.067	ppb	No
Atrazine + N-dealkylated metabolites	*Jan – Dec/09	< 0.12	ppb	No
Azinphos-methyl	*Jan – Dec/09	< 0.21	ppb	No
Bendiocarb	*Jan – Dec/09	< 0.13	ppb	No
Benzene	*Jan – Dec/09	< 0.37	ppb	No
Benzo(a)pyrene	*Jan – Dec/09	< 0.004	ppb	No
Bromoxynil	*Jan – Dec/09	< 0.33	ppb	No
Carbaryl	*Jan – Dec/09	<0.16	ppb	No
Carbofuran	*Jan – Dec/09	< 0.37	ppb	No
Carbon Tetrachloride	*Jan – Dec/09	< 0.41	ppb	No
Chlordane (Total)	*Jan – Dec/09	< 0.11	ppb	No
Chlorpyrifos	*Jan – Dec/09	< 0.18	ppb	No
Cyanazine	*Jan – Dec/09	< 0.18	ppb	No
Diazinon	*Jan – Dec/09	< 0.081	ppb	No
Dicamba	*Jan – Dec/09	< 0.2	ppb	No
1,2-Dichlorobenzene	*Jan – Dec/09	< 0.5	ppb	No
1,4-Dichlorobenzene	*Jan – Dec/09	< 0.21	ppb	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	*Jan – Dec/09	< 0.14	ppb	No
1,2-Dichloroethane	*Jan – Dec/09	< 0.43	ppb	No
1,1-Dichloroethylene (vinylidene chloride)	*Jan – Dec/09	< 0.41	ppb	No
Dichloromethane	*Jan – Dec/09	< 0.34	ppb	No
2-4 Dichlorophenol	*Jan – Dec/09	< 0.15	ppb	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	*Jan – Dec/09	< 0.19	ppb	No
Diclofop-methyl	*Jan – Dec/09	< 0.4	ppb	No
Dimethoate	*Jan – Dec/09	< 0.12	ppb	No
Dinoseb	*Jan – Dec/09	< 0.36	ppb	No
Diquat	*Jan – Dec/09	< 1.0	ppb	No
Diuron	*Jan – Dec/09	< 0.087	ppb	No

Glyphosate	*Jan – Dec/09	< 6	ppb	No
Heptachlor + Heptachlor Epoxide	*Jan – Dec/09	< 0.11	ppb	No
Lindane (Total)	*Jan – Dec/09	< 0.056	ppb	No
Malathion	*Jan – Dec/09	< 0.91	ppb	No
Methoxychlor	*Jan – Dec/09	< 0.14	ppb	No
Metolachlor	*Jan – Dec/09	< 0.092	ppb	No
Metribuzin	*Jan – Dec/09	< 0.12	ppb	No
Monochlorobenzene	*Jan – Dec/09	< 0.58	ppb	No
Paraquat	*Jan – Dec/09	< 1	ppb	No
Parathion	*Jan – Dec/09	< 0.18	ppb	No
Pentachlorophenol	*Jan – Dec/09	< 0.15	ppb	No
Phorate	*Jan – Dec/09	< 0.11	ppb	No
Picloram	*Jan – Dec/09	< 0.25	ppb	No
Polychlorinated Biphenyls(PCB)	*Jan – Dec/09	< 0.04	ppb	No
Prometryne	*Jan – Dec/09	< 0.23	ppb	No
Simazine	*Jan – Dec/09	< 0.15	ppb	No
THM (NOTE: show latest annual average)	*Jan – Dec/09	37.7	ppb	No
Temephos	*Jan – Dec/09	< 0.31	ppb	No
Terbufos	*Jan – Dec/09	< 0.12	ppb	No
Tetrachloroethylene	*Jan – Dec/09	< 0.45	ppb	No
2,3,4,6-Tetrachlorophenol	*Jan – Dec/09	< 0.14	ppb	No
Triallate	*Jan – Dec/09	< 0.1	ppb	No
Trichloroethylene	*Jan – Dec/09	< 0.38	ppb	No
2,4,6-Trichlorophenol	*Jan – Dec/09	< 0.25	ppb	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	*Jan – Dec/09	< 0.22	ppb	No
Trifluralin	*Jan – Dec/09	< 0.12	ppb	No
Vinyl Chloride	*Jan – Dec/09	< 0.17	ppb	No

***Note: Organic parameters are tested quarterly. If a parameter was/is detectable the range of detection has been provided and reported in the table above. Also: for interpretation purposes the less than sign (<) indicates the parameter was not detectable at the method detection level.**

Note: No inorganic or organic parameters exceeded half the standard prescribed in Schedule 2 of the Ontario Drinking Water Quality Standards