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

ANNUAL REPORT

Drinking-Water System Number:	260091117
Drinking-Water System Name:	West Elgin Drinking Water System
Drinking-Water System Owner:	Corporation of the Municipality of West Elgin
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1st to December 31st, 2013

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 [X]

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

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

West Elgin Municipal Office
22413 Hoskins Line
Rodney, ON N0L 2C0

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
Southwest Middlesex Distribution System	260005502

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 West Elgin Water Treatment Plant is a membrane filtration surface water treatment facility with a total design capacity of 12,160m^3/day, located at 9210 Graham Road in the Municipality of West Elgin. The low lift pumping station is located south of the Water Treatment Plant at 8662 Graham Road, on the shores of Lake Erie.

The water treatment facility consists of an intake system, a low lift pumping station, a treatment system and distribution pumping system that supplies water to the following secondary distribution systems: West Elgin, Dutton-Dunwich, Southwest Middlesex, Newbury, and Bothwell.

Intake
The intake consists of one 700mm diameter polyethylene pipe extending approximately 610m into Lake Erie at a depth of 5.7m. A zebra mussel chemical control system is used seasonally. There is a second intake located at the shoreline, this is used only as a backup if required due to water quality or a blockage. The raw water is screened by two coarse screens.

Low Lift Pumping Station
Raw water is pumped from the low lift wet wells by four low lift pumps to the Water Treatment Plant.

Treatment Plant
Filtration
At the water treatment plant the water is pre-filtered by four automatic strainers to protect the filter membranes from coarser particles and algae in the raw water.

After the water has been strained it enters the membrane filtration system which removes fine particles, sediment, algae, protozoa and bacteria. Filtered water can be directed through the UV advanced oxidation process (AOP) unit to the treated water storage tanks.

Disinfection
Disinfection is achieved by the use of sodium hypochlorite for primary disinfection. Note that UV is intended for use with hydrogen peroxide (AOP) for taste and odour control. The treated water is stored in treated water storage tanks where it is pumped into the distribution network by the High Lift pumps. Post chlorination of the treated water is done at two points. The first dosing point is upstream of the Treated Water Storage Tanks and the second dosing point is downstream of the four High Lift Pumps before the distribution header.

Process Drain Water
Waste water from the floor drains and online analyzers are directed to the process water handling facilities that include a settling basin and constructed wetlands. Flush water that cleans the pre-strainers and the membranes is also sent to the process water handling facilities.

Monitor and Control
The water treatment process and distribution components are controlled by a dedicated Supervisory Control and Data Acquisition (SCADA) computer system and monitored by certified operators.

Standby Power
Two diesel generators are available to permit the treatment plant to remain in operation should a power failure occur.

Distribution
The West Elgin WTP serves several communities. The primary transmission line from the WTP ends at the West Lorne Standpipe. Included in the distribution system is the Iona Re-Chlorination Station. The West Lorne Standpipe and Iona Re-chlorination Station are controlled and monitored from the WTP via SCADA.

The West Elgin Water Distribution System consists of various size and types of watermains in the village of West Lorne, Rodney and rural West Elgin. There are auto flushers situated throughout the distribution system to maintain chlorine residuals.

List all water treatment chemicals used over this reporting period

Chlorine Gas
Sodium Hypochlorite 12%
Hydrogen Peroxide 50%
Citric Acid 50%*
Caustic Soda 50%*
Sodium Bisulphite 38%*
*used in the cleaning process of the membranes

Were any significant expenses incurred to?

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

-Compressor repairs ($3,843)
-Replace solenoids on flow control valve ($796)
-Repair kit for actuator valve ($316)
-Repair high lift pump ($1,906)
-Repair flow control valve ($5,326)
-Repair main WTP generator ($8,624)
-Repair air release valve ($304)
-Repair turbidity meter ($411)
-Replace neutralization tank pH probe ($800)
-Repair pinhole leaks on stainless steel piping ($3,000)
-Replace gas chlorine equipment ($15,000)
-Repair high lift pump motor mounts ($3,000)
-Hydrant steamer ($1,700)
-Hydrant maintenance ($5,000)
-Replace check valve on Pioneer Line ($2,340)
-Watermain repair/maintenance ($12,400)
-Replace 4" water meter ($3,400)
-Rodney Tower Engineering Report on Disinfection Residuals ($15,000)
-Rodney Tower building maintenance ($4,700)

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
n/a	n/a	n/a	n/a	n/a	n/a

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 HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-560	0-6200	n/a	n/a
Treated	53	0-0	0-0	53	<10-240
Distribution	408	0-0	0-0	111	<10->2000

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 (Rack 1)	8760	0.01 – 0.99	ntu
Turbidity (Rack 2)	8760	0.01 – 0.43	ntu
Turbidity (Rack 3)	8760	0.01 – 0.58	ntu
Turbidity (Rack 4)	8760	0.01 – 0.66	ntu
Free Chlorine (Primary Disinfection)	8760	0.75 – 2.69	mg/L
Free Chlorine (Secondary Disinfection)	8760	0.92 – 2.02	mg/L
Free Chlorine (Distribution—Grab)	939	0.27 – 2.02	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
2010-06-04	Suspended Solids	2013-01-07 2013-04-15 2013-07-08 2013-10-07	8 14 <2 2 Avg.: 6.5	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	2013-01-07	0.18	µg/L	No
Arsenic	2013-01-07	1.0	µg/L	No
Barium	2013-01-07	22.7	µg/L	No
Boron	2013-01-07	23	µg/L	No
Cadmium	2013-01-07	<0.003	µg/L	No
Chromium	2013-01-07	<0.5	µg/L	No
Mercury	2013-01-07	<0.01	µg/L	No
Selenium	2013-01-07	<1	µg/L	No
Sodium	2009-05-19	12.1	mg/L	No
Uranium	2013-01-07	0.43	µg/L	No
Fluoride	2009-05-19	0.12	mg/L	No
Nitrite	2013-01-07 2013-04-15 2013-07-08 2013-10-07	<0.005 <0.003 <0.003 <0.003	mg/L	No
Nitrate	2013-01-07 2013-04-15 2013-07-08 2013-10-07	0.134 0.25 0.12 0.04	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	n/a	n/a	n/a	n/a
Distribution	n/a	n/a	n/a	n/a

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	2013-01-07	<0.02	µg/L	No
Aldicarb	2013-01-07	<0.01	µg/L	No
Aldrin + Dieldrin	2013-01-07	<0.01	µg/L	No
Atrazine + N-dealkylated metobolites	2013-01-07	0.09	µg/L	No
Azinphos-methyl	2013-01-07	<0.02	µg/L	No
Bendiocarb	2013-01-07	<0.01	µg/L	No
Benzene	2013-01-07	<0.32	µg/L	No
Benzo(a)pyrene	2013-01-07	<0.004	µg/L	No
Bromoxynil	2013-01-07	<0.33	µg/L	No
Carbaryl	2013-01-07	<0.01	µg/L	No
Carbofuran	2013-01-07	<0.01	µg/L	No
Carbon Tetrachloride	2013-01-07	<0.16	µg/L	No
Chlordane (Total)	2013-01-07	<0.01	µg/L	No
Chlorpyrifos	2013-01-07	<0.02	µg/L	No
Cyanazine	2013-01-07	<0.03	µg/L	No
Diazinon	2013-01-07	<0.02	µg/L	No
Dicamba	2013-01-07	<0.2	µg/L	No
1,2-Dichlorobenzene	2013-01-07	<0.41	µg/L	No
1,4-Dichlorobenzene	2013-01-07	<0.36	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	2013-01-07	<0.01	µg/L	No
1,2-Dichloroethane	2013-01-07	<0.35	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	2013-01-07	<0.33	µg/L	No
Dichloromethane	2013-01-07	<0.35	µg/L	No
2-4 Dichlorophenol	2013-01-07	<0.15	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2013-01-07	<0.19	µg/L	No
Diclofop-methyl	2013-01-07	<0.4	µg/L	No
Dimethoate	2013-01-07	<0.03	µg/L	No
Dinoseb	2013-01-07	<0.36	µg/L	No
Diquat	2013-01-07	<1.0	µg/L	No
Diuron	2013-01-07	<0.03	µg/L	No

Glyphosate	2013-01-07	<6.0	µg/L	No
Heptachlor + Heptachlor Epoxide	2013-01-07	<0.01	µg/L	No
Lindane (Total)	2013-01-07	<0.01	µg/L	No
Malathion	2013-01-07	<0.02	µg/L	No
Methoxychlor	2013-01-07	<0.01	µg/L	No
Metolachlor	2013-01-07	<0.01	µg/L	No
Metribuzin	2013-01-07	<0.02	µg/L	No
Monochlorobenzene	2013-01-07	<0.3	µg/L	No
Paraquat	2013-01-07	<1.0	µg/L	No
Parathion	2013-01-07	<0.02	µg/L	No
Pentachlorophenol	2013-01-07	<0.15	µg/L	No
Phorate	2013-01-07	<0.01	µg/L	No
Picloram	2013-01-07	<1.0	µg/L	No
Polychlorinated Biphenyls(PCB)	2013-01-07	<0.04	µg/L	No
Prometryne	2013-01-07	<0.03	µg/L	No
Simazine	2013-01-07	<0.01	µg/L	No
THM (NOTE: show latest annual average)	Annual Average	47.2	µg/L	No
Temephos	2013-01-07	<0.01	µg/L	No
Terbufos	2013-01-07	<0.01	µg/L	No
Tetrachloroethylene	2013-01-07	<0.35	µg/L	No
2,3,4,6-Tetrachlorophenol	2013-01-07	<0.14	µg/L	No
Triallate	2013-01-07	<0.01	µg/L	No
Trichloroethylene	2013-01-07	<0.44	µg/L	No
2,4,6-Trichlorophenol	2013-01-07	<0.25	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	2013-01-07	<0.22	µg/L	No
Trifluralin	2013-01-07	<0.02	µg/L	No
Vinyl Chloride	2013-01-07	<0.17	µg/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
n/a	n/a	n/a	n/a