



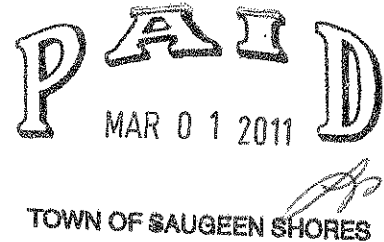
**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

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February 28, 2011

Larry Allison, CAO  
Town of Saugeen Shores  
600 Tomlinson Dr.  
Box 820  
Port Elgin, Ontario  
N0H 2C0



**Re: Requirement under O. Reg. 170/03 Annual Report**

Attached is the 2010 Annual Report for the Southampton WTP. This report is completed in accordance with Section 11 of O. Reg. 170/03, which requires an Annual Report to be prepared not later than February 28th of each year for the preceding calendar year.

This Annual Report is to be provided to the members of the municipal council. Please ensure this distribution.

Section 12 of O. Reg. 170/03, requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the municipality, or at a location that is reasonably convenient to the users of the water system.

Please acknowledge receipt of this document.

Sincerely,

Richard Laliberte, Operations Manager  
Ontario Clean Water Agency  
West Highlands Hub

# O.Reg 170 SECTION 11 ANNUAL REPORT

<b>Drinking-Water System Number:</b>	210000078
<b>Drinking-Water System Name:</b>	The Southampton Water Treatment Plant & Distribution System
<b>Drinking-Water System Owner:</b>	Town of Saugeen Shores
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1, 2010 to December 31, 2010

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b></p> <p><b>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"/></b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">             Town of Saugeen Shores              600 Tomlinson Drive              Port Elgin, Ontario              N0H 2C0              519-832-2008         </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes <input type="checkbox"/> No <input type="checkbox"/></b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>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"/></b></p>
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**List Drinking-Water Systems, which receive all of their drinking water from your system:**

- Saugeen First Nations

**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

# O.Reg 170 SECTION 11 ANNUAL REPORT

[ ] Public access/notice via other method \_\_\_\_\_

## Describe your Drinking-Water System

Class 3 Distribution, Class 3 Treatment

**Note: The Southampton WTP Facility provides the treated water to Southampton and Port Elgin through the Saugeen Shores Distribution System. There are two pressure Zones. Zone 1 provides water to Southampton part of the Saugeen Shores Distribution System and Zone 2 provides water to Port Elgin part of Saugeen Shores Distribution System.**

The Southampton Water Treatment Plant (WTP) draws its raw water from Lake Huron through a 1600 m long, 750 mm diameter intake pipe with a chlorine solution feed line for zebra mussel control and a raw water sample line. There is also a backup 600 mm diameter concrete pipe. It has a wooden intake crib and flat sealed top and a 38 mm diameter solution feed for zebra mussel control inside the concrete pipe. There is an underground inlet chamber equipped with a manually cleaned raw water screen.

The low lift pumping is located on the shores of Lake Huron consisting of a raw water well with a 20 m long by 14 m wide heated superstructure housing the pumping, treatment and control facilities.

This includes:

- three VFD-controlled vertical turbine pumps (two duty, one standby) each rated at 104 L/s at a total dynamic head (TDH) of 37 m
- two self-cleaning strainers (one duty and one standby) with a 1.5 m<sup>3</sup> strainer backwash wastewater storage tank
- metering pumps (one duty and one standby) each rated at 20 L/hr and a chlorine solution feed line to the diffuser located in the mouth of the intake pipe for pre chlorination and/or zebra mussel control
- a 230 kW diesel engine standby power generator set and associated equipment

The Southampton WTP is approximately 31 m long by 19 m wide enclosed building located at 140 Island St. housing all the facilities described below as well as a laboratory/control room, an electrical/mechanical room, a storage room and a washroom.

The membrane filtration system is comprised of the following components:

- four individual submerged membrane trains (each with a capacity of 5950 m<sup>3</sup>/day)
- five permeate pumps (four duty and one shelf standby) each rated at 73 L/s at 11.5 m TDH
- two back pulse pumps (one duty and one standby) each rated at 73 L/s at 13.5 m TDH
- two Clean-in-place (CIP) membrane wash pumps (one duty and one standby) each rated at 56 L/s at 13.5 m TDH
- two Vacuum Pumps (one duty and one standby) each rated at 22 L/s at 3.0 m TDH
- two oil free compressors rated at 37.4 m<sup>3</sup>/hr
- two air blowers (one duty and one standby) each rated at 4.4 m<sup>3</sup>/min at 31.5 kPa
- sodium hypochlorite feed system consisting of two metering pumps for recovery cleaning (one duty and one standby) with capacity of 28.1 L/min, two metering pumps for biogrowth protection (one duty and one standby) with capacity of 2.78 L/min and one 1000 L storage tank
- citric acid feed system consisting of two metering pumps (one duty and one standby) with capacity of 0.37 L/s and one 200 L storage tank

## O.Reg 170 SECTION 11 ANNUAL REPORT

- sodium bisulfate feed system consisting of two metering pumps (one duty and one standby) with capacity of 2.06 L/min and one 60 L storage tank
- sodium hydroxide feed system consisting of two metering pumps (one duty and one standby) with capacity of 2.83 L/min and one 60 L storage tank

The Membrane Wastewater Treatment System is comprised of:

- one flocculator/clarifier including coagulation and sedimentation chambers equipped with draining system discharging sludge by gravity to sanitary sewer
- two equalization tanks with total volume of 160 m<sup>3</sup>, for membrane back pulse water equalization
- two tank drain/recirculation pumps (one duty and one standby) each rated at 24 L/s at 7.9 m TDH
- two pumps (one duty and one standby) rated at 22 L/s at 12 m TDH to pump equalized wastewater to clarifier
- alum feed system consisting of one storage tank and two mechanical metering pumps (one duty and one standby) each rated at 3.0 L/hr
- one 25 m<sup>3</sup> neutralization tank
- two 8.8 m long x 7 m wide decant chambers discharging clarifier effluent by gravity to the adjacent surface drainage ditch
- sodium bisulfate feed system consisting of two metering pumps (one duty and one standby) with capacity of 0.32 L/hr and storage tank

There are two clear wells in parallel at the Water Treatment Plant with a total storage volume of 3720 m<sup>3</sup>. It is complete with intra basin baffling for storage and chlorine contact

There are also two sets of high lift pumps that consist of the following:

- three vertical turbine pumps (two duty, one standby), two pumps rated at 60 L/s at a TDH of 50 m and one pump rated at 50 L/s at a TDH of 49.7 m
- three vertical turbine pumps (two duty, one standby), each rated at 54 L/s at a TDH of 80 m

A sodium hypochlorite disinfection system is used at the Southampton WTP. The system consists of two storage tanks and two metering pumps (one duty and one standby) for post chlorination, each rated at 20 L/hr

Finally, there is a 750 kW diesel engine standby power generator set and associated equipment located in a separate room of the Plant Enclosure Building.

### List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite 12%
- Polyaluminumchloride
- Citric Acid
- Sodium Hydroxide
- Sodium Bisulfate

# O.Reg 170 SECTION 11 ANNUAL REPORT

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment

Describe

- Installed High Lift pump #4 (Zone 1)
- Replaced control valve at the reservoir

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
06/09/10 AWQI #95258	Watermain Break Loss of Pressure Precautionary BWA Issued			Break repaired Flushed Bacti Sample	06/14/10

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

Location	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 - RW	52	0 - 22	0 - 700		
Treated - TW	52	0 - 0	0 - 0	52	0 - 3
Distribution - DW	318	0 - 0	0 - 0	107	0 - 20

Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (#-#)
Turbidity	8760	#1 0 – 1.0 #2 0 – 1.0 #3 0 – 1.0. #4 0 – 1.0.
Chlorine	8760	0.19 – 2.80
Chlorine Residual Distribution System	730	0.70 – 1.90

*NOTE: For continuous monitors use 8760 as the number of samples.*

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*

# O.Reg 170 SECTION 11 ANNUAL REPORT

## Summary of Inorganic parameters tested during this reporting period or most recent

Parameter	Sample Date	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2010/01/18	0.11	No
Arsenic: As (ug/L) - TW	2010/01/18	0.50	No
Barium: Ba (ug/L) - TW	2010/01/18	13.80	No
Boron: B (ug/L) - TW	2010/01/18	15.60	No
Cadmium: Cd (ug/L) - TW	2010/01/18	< 0.0030	No
Chromium: Cr (ug/L) - TW	2010/01/18	< 0.50	No
Lead: Pb (ug/L) - DW	2010/01/18	0.060	No
Mercury: Hg (ug/L) - TW	2010/01/18	< 0.020	No
Selenium: Se (ug/L) - TW	2010/01/18	< 1.00	No
Sodium: Na (mg/L) - TW	2010/01/18	6.18	No
Uranium: U (ug/L) - TW	2010/01/18	0.22	No
Fluoride Residual: Mean (mg/L) - TW	2010/01/18	0.080	No
Nitrite (mg/L) - TW	2010/01/18	< 0.0050	No
Nitrite (mg/L) - TW	2010/04/12	< 0.0050	No
Nitrite (mg/L) - TW	2010/07/05	< 0.0050	No
Nitrite (mg/L) - TW	2010/10/04	< 0.0050	No
Nitrate (mg/L) - TW	2010/01/18	0.36	No
Nitrate (mg/L) - TW	2010/04/12	0.28	No
Nitrate (mg/L) - TW	2010/07/05	0.35	No
Nitrate (mg/L) - TW	2010/10/04	0.43	No

## Summary of additional testing and sampling carried out in accordance with the requirement of an approval or order.

Date of order or C of A	Parameter	Date Sampled	Result	C of A Limit	Unit of Measure
C of A 2084-6UNL4F	Suspended Solids (composite)	Monthly	Annual Average < 2.0	15	mg/L

## O.Reg 170 SECTION 11 ANNUAL REPORT

### Summary of Organic parameters sampled during this reporting period or most recent

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	2010/01/18	< 0.11	No
Aldicarb (ug/L) - TW	2010/01/18	< 0.30	No
Aldrin + Dieldrin (ug/L) - TW	2010/01/18	< 0.067	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2010/01/18	< 0.12	No
Azinphos-methyl (ug/L) - TW	2010/01/18	< 0.21	No
Bendiocarb (ug/L) - TW	2010/01/18	< 0.13	No
Benzene (ug/L) - TW	2010/01/18	< 0.32	No
Benzo(a)pyrene (ug/L) -	2010/01/18	<0.004	No
Bromoxynil (ug/L) - TW	2010/01/18	< 0.33	No
Carbaryl (ug/L) - TW	2010/01/18	< 0.16	No
Carbofuran (ug/L) - TW	2010/01/18	< 0.37	No
Carbon Tetrachloride (ug/L) - TW	2010/01/18	< 0.16	No
Chlordane:Total (ug/L) - TW	2010/01/18	< 0.11	No
Chlorpyrifos (ug/L) - TW	2010/01/18	< 0.18	No
Cyanazine (ug/L) - TW	2010/01/18	< 0.18	No
Diazinon (ug/L) - TW	2010/01/18	< 0.081	No
Dicamba (ug/L) - TW	2010/01/18	< 0.20	No
1,2-Dichlorobenzene (ug/L) - TW	2010/01/18	< 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2010/01/18	< 0.36	No
Dichlorodiphenyltrichloroethane(DDT) + metabolites (ug/L) - TW	2010/01/18	< 0.14	No
1,2-Dichloroethane (ug/L) - TW	2010/01/18	< 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2010/01/18	< 0.33	No
Dichloromethane (ug/L) - TW	2010/01/18	< 0.35	No
2,4-Dichlorophenol (ug/L) -	2010/01/18	<0.015	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2010/01/18	< 0.19	No
Diclofop-methyl (ug/L) - TW	2010/01/18	< 0.40	No
Dimethoate (ug/L) - TW	2010/01/18	< 0.12	No
Dinoseb (ug/L) - TW	2010/01/18	< 0.36	No
Diquat (ug/L) -	2010/01/18	<1.0	no
Diuron (ug/L) - TW	2010/01/18	< 0.087	No
Glyphosate (ug/L) -	2010/01/18	<6	No
Heptachlor+Hepachlor Epoxide (ug/L) - TW	2010/01/18	< 0.11	No

## O.Reg 170 SECTION 11 ANNUAL REPORT

Lindane: (ug/L) - TW	2010/01/18	< 0.056	No
Malathion (ug/L) - TW	2010/01/18	< 0.091	No
Methoxychlor (ug/L) - TW	2010/01/18	< 0.14	No
Metolachlor (ug/L) - TW	2010/01/18	< 0.092	No
Metribuzin (ug/L) - TW	2010/01/18	< 0.12	No
Monochlorobenzene (ug/L) - TW	2010/01/18	< 0.30	No
Paraquat (ug/L) -	2010/01/18	<1	No
Parathion (ug/L) - TW	2010/01/18	< 0.18	No
Pentachlorophenol (ug/L) - TW	2010/01/18	< 0.15	No
Phorate (ug/L) - TW	2010/01/18	< 0.11	No
Picloram (ug/L) - TW	2010/01/18	< 0.25	No
Polychlorinated Bichenysl(PCB) (ug/L) -	2010/01/18	<0.04	No
Prometryne (ug/L) - TW	2010/01/18	< 0.23	No
Simazine (ug/L) - TW	2010/01/18	< 0.15	No
***THM (ug/L) - DW	2010	41.75	No
Temephos (ug/L) - TW	2010/01/18	< 0.31	No
Terbufos (ug/L) - TW	2010/01/18	< 0.12	No
Tetrachloroethylene (ug/L) - TW	2010/01/18	< 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2010/01/18	< 0.14	No
Triallate (ug/L) - TW	2010/01/18	< 0.10	No
Trichloroethylene (ug/L) - TW	2010/01/18	< 0.43	No
2,4,6-Trichlorophenol (ug/L) - TW	2010/01/18	< 0.25	No
2,4,5-Trichlorophenoxy acetic acid (ug/L) - TW	2010/01/18	< 0.22	No
Trifluralin (ug/L) - TW	2010/01/18	< 0.12	No
Vinyl Chloride (ug/L) - TW	2010/01/18	< 0.17	No

\*\*\* Annual average (THMs)

**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

(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, small municipal non residential, large non municipal non residential)



## O.Reg 170 SECTION 11 ANNUAL REPORT

### 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)

<b>Location Type</b>	<b>Number of Samples</b>	<b>Range of Lead Results (min#) – (max #)</b>	<b>Number of Exceedances</b>
<b>Plumbing</b>	NA	NA	<b>0</b>
<b>Distribution</b>	NA	NA	<b>0</b>

Regulatory Relief of requirements under Schedule 15.1 has been granted under Regulatory Relief C of A # PB210000078R-01F.