

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

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	210000078
Drinking-Water System Name:	Southampton Water Treatment Plant & Distribution System
Drinking-Water System Owner:	Town of Saugeen Shores
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 to December 31, 2005

<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 [] No [X]</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>Town of Saugeen Shores 600 Tomlinson Drive Port Elgin, Ontario N0H 2C0 519-832-2008</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text"/></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: <input type="text"/></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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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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
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 [X] 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

Class 2 Water Distribution, Class 3 Water Treatment

The Southampton Water Treatment Plant draws its raw water from Lake Huron through a raw water intake consisting of a 600 mm diameter concrete pipe approximately 355 m in length. A wooden intake crib with a flat sealed top is located at the end of the intake pipe for protection at a depth of approximately 1.8 to 2.3 meters. A 35 mm diameter high density polyethylene chlorine solution feed line is located inside the 600 mm diameter concrete intake pipe and provides chlorination for zebra mussel control. Zebra mussel control chlorination levels are monitored by a total chlorine residual analyzer located within the low lift pumping station.

The Southampton Water Treatment Plant (WTP) is a surface water treatment plant and is located at 140 Island Street. Southampton WTP is rated at a maximum daily flow of 9072 m³/day. The low lift pumping station draws water from Lake Huron by means of three vertical turbine pumps and stores the raw water in a clearwell. From there the water is directed to the plant through a 300-400 mm diameter pipe. When the raw water enters the treatment plant, a flow measurement is taken utilizing a magnetic flow meter in order to determine the incoming raw water flow rate.

Poly aluminum chloride (PACL) is injected into the raw water line and passed through a static mixer. The coagulant is stored in a separate room in tow 3000L storage tanks.

The water then passes through the two solids recirculating upflow clarifiers with tube settlers to aid in the settling of suspended particles. Then the water is directed through three circular package filter units. Each package filter unit contains tow individual dual-media filter beds, composed of 450mm of anthracite and 250mm of silica sand, for a total of six filters.

Once filtered, the water is then chlorinated using a diffuser and pumped into a chlorination basin which feeds two separate tanks in the clearwell. The clearwell has a combined capacity of 1336 m³. The finished water is then pumped into the distribution system via one of the three highlift pumps.

The Southampton WTP has continuous water quality analyzers for free chlorine and turbidity with alarm systems in place.

Details on the treatment process can be found in the facility CofA, Appendix 1.

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The Southampton Water Distribution system services approximately 5470 residents in Saugeen Township including residents of Chippewa Hill, a section of the Saugeen First Nations Reserve.

The treatment water is fed into the distribution system via three vertical turbine pumps, two of which have a rated capacity of 60 L/s, and one at 50 L/s. A water storage tower is connected to the system with a capacity of 3406 m³ to ensure that there is adequate pressure within the system, to provide storage for firefighting purposes, as well as, domestic supply. There is also a booster pump station located on Rankin Street South, on the north side of the Saugeen River, which increases line pressure in the service area and on the Saugeen First Nations.

There are approximately 320 fire hydrants in Southampton's water distribution system

List all water treatment chemicals used over this reporting period

Polyaluminum chloride
Chlorine (gas)

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

1. Gas Sensor
2. Datalogger
3. Inspection of Intake Structure
4. Anthracite Filter Media
5. Cleaning & Repairs to Cathodic Protection System of Tower
6. Robotic Cleaning of Clearwells & Contact Chambers

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
Aug.17/05 AWQI #58203	Distribution Free Cl ₂ <0.2 as per CofA 2149-668L8J	<0.2	mg/L	Increase Cl ₂ dosage. Flushing Take Bacti sample	Aug. 17/05

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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/HPC Samples	Range of Background/HPC Results (min #)-(max #)
Raw	51	0-360	0-4900	30	0-2400
Treated	51	0-0	0-0	48	0-0
Distribution	202	0-0	0-0	139	0-0

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 #)
Turbidity	8670	0.04 – 0.35
Chlorine	8670	0.66 – 1.59
Fluoride (If the DWS provides fluoridation)		

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

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

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
C of A 2149-668L8J Dated April 15/05	Suspended Solids (composite)	Monthly	Annual Average 17.9	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.17/05	<0.6	ug/L	No
Arsenic	Jan.17/05	<2	ug/L	No
Barium	Jan.17/05	12	ug/L	No
Boron	Jan.17/05	13	ug/L	No
Cadmium	Jan.17/05	<0.1	ug/L	No
Chromium	Jan.17/05	<3	ug/L	No
Lead (DDW)	Jan.17/05	<0.1	ug/L	No
Mercury	Jan.17/05	<0.1	ug/L	No
Selenium	Jan.17/05	<3	ug/L	No
Sodium	April 06/04	5.2	mg/L	No
Uranium	Jan.17/05	<0.05	ug/L	No

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Fluoride	Jan.14/03	0.18	mg/L	No
Nitrite	Jan.17/05	<0.005	mg/L	No
Nitrate	Jan.17/05	0.491	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	Jan.17/05	<0.11	ug/L	No
Aldicarb	Jan.17/05	<0.3	ug/L	No
Aldrin + Dieldrin	Jan.17/05	<0.067	ug/L	No
Atrazine + N-dealkylated metabolites	Jan.17/05	<0.12	ug/L	No
Azinphos-methyl	Jan.17/05	<0.21	ug/L	No
Bendiocarb	Jan.17/05	<0.13	ug/L	No
Benzene	Jan.17/05	<0.36	ug/L	No
Benzo(a)pyrene	Jan.17/05	<0.004	ug/L	No
Bromoxynil	Jan.17/05	<0.094	ug/L	No
Carbaryl	Jan.17/05	<0.16	ug/L	No
Carbofuran	Jan.17/05	<0.37	ug/L	No
Carbon Tetrachloride	Jan.17/05	<0.34	ug/L	No
Chlordane (Total)	Jan.17/05	<0.11	ug/L	No
Chlorpyrifos	Jan.17/05	<0.18	ug/L	No
Cyanazine	Jan.17/05	<0.18	ug/L	No
Diazinon	Jan.17/05	<0.081	ug/L	No
Dicamba	Jan.17/05	<0.17	ug/L	No
1,2-Dichlorobenzene	Jan.17/05	<0.56	ug/L	No
1,4-Dichlorobenzene	Jan.17/05	<0.25	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan.17/05	<0.14	ug/L	No
1,2-Dichloroethane	Jan.17/05	<0.32	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan.17/05	<0.52	ug/L	No
Dichloromethane	Jan.17/05	<1.17	ug/L	No
2-4 Dichlorophenol	Jan.17/05	<0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan.17/05	<0.11	ug/L	No
Dicofop-methyl	Jan.17/05	<0.13	ug/L	No
Dimethoate	Jan.17/05	<0.12	ug/L	No
Dinoseb	Jan.17/05	<0.084	ug/L	No
Diquat	Jan.17/05	<1	ug/L	No
Diuron	Jan.17/05	<0.087	ug/L	No
Glyphosate	Jan.17/05	<6	ug/L	No
Heptachlor + Heptachlor Epoxide	Jan.17/05	<0.11	ug/L	No
Lindane (Total)	Jan.17/05	<0.056	ug/L	No
Malathion	Jan.17/05	<0.091	ug/L	No
Methoxychlor	Jan.17/05	<0.14	ug/L	No

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Metolachlor	Jan.17/05	<0.092	ug/L	No
Metribuzin	Jan.17/05	<0.12	ug/L	No
Monochlorobenzene	Jan.17/05	<0.46	ug/L	No
Paraquat	Jan.17/05	<1	ug/L	No
Parathion	Jan.17/05	<0.18	ug/L	No
Pentachlorophenol	Jan.17/05	<0.15	ug/L	No
Phorate	Jan.17/05	<0.11	ug/L	No
Picloram	Jan.17/05	<0.20	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan.17/05	<0.04	ug/L	No
Prometryne	Jan.17/05	<0.23	ug/L	No
Simazine	Jan.17/05	<0.15	ug/L	No
THM (NOTE: show latest annual average)	Oct.2005	30.0	ug/L	No
Temephos	Jan.17/05	<0.31	ug/L	No
Terbufos	Jan.17/05	<0.12	ug/L	No
Tetrachloroethylene	Jan.17/05	<0.48	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan.17/05	<0.14	ug/L	No
Triallate	Jan.17/05	<0.10	ug/L	No
Trichloroethylene	Jan.17/05	<0.54	ug/L	No
2,4,6-Trichlorophenol	Jan.17/05	<0.25	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan.17/05	<0.14	ug/L	No
Trifluralin	Jan.17/05	<0.12	ug/L	No
Vinyl Chloride	Jan.17/05	<0.08	ug/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

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