



2014 ANNUAL REPORT

Drinking-Water System Number:	220001799
Drinking-Water System Name:	Owen Sound Drinking Water System
Drinking-Water System Owner:	City of Owen Sound
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2014 – December 31, 2014

<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> <ul style="list-style-type: none"> • Owen Sound City Website http://www.owensound.ca • City Clerk’s Office, City Hall • Public Works Office • Water Treatment Plant • Library 	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <p style="text-align: center;">n/a</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No [X]</p> <p>Number of Interested Authorities you report to:</p> <p style="text-align: center;">n/a</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No [X]</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
Leith Water Distribution System	260065312

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

The Richard H. Neath Water Purification plant is a surface water treatment plant that draws its water from Georgian Bay. This plant uses direct filtration, and serves a population of 22,000 people. The City's distribution network is divided into 6 pressure zones with approximately 150 km of water main.

The Water Treatment Plant comprises of the following processes; raw water screening, prechlorination, zebra mussel control (chlorination at Intake), flash mixing (initial mixing of coagulant), coagulation/flocculation (mixing of coagulant), UV disinfection, post chlorination, Fluoridation, and a residue management tank for treating backwash water.

The City has a 22,000 m³ reservoir, with two booster stations that provides addition pressure in the Southeast and southwest portions of the City and outskirts.

List all water treatment chemicals used over this reporting period

Gaseous Chlorine, Hydrofluorosilicic Acid (HFS), PAX XL-6, PAX-XL1900, Sodium Bisulphite (dechlorination chemical), and Alcomer 120L (polymer addition for residue management)

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. East Hill Pump Station Upgrades – Approximately \$700,000
2. Natural Gas Conversion and other WTP modification project - including new boilers, heaters, new valve actuators, butterfly valves, chlorinators, chlorine analyzers, variable frequency drives, and flow meters – Approximately \$650,000
3. SCADA Computer and Software Upgrade - \$50,000
4. Repair Flocculation equipment - \$15,000
5. New Coagulant Chemical Pumps - \$18,000



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

Please see Appendix “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 - 1000	0 - 14500	n/a	n/a
Treated	52	0 - 0	0 - 0	52	<10 - 10
Distribution	445	0 - 0	0 - 0	112	<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 #)
Filter 1 Turbidity	8760	0.03 – 1.26 NTU* High event was Sept 25/14, over 1 NTU for only <1 minute.
Filter 2 Turbidity	8760	0.03 - 0.67 NTU
Filter 3 Turbidity	8760	0.02 – 0.84 NTU
Filter 4 Turbidity	8760	0.02 – 1.43 NTU * High event occurred on Sept 24/14 and was over 1 NTU for <3 minutes.
Post 1 Chlorine	8760	0.01 – 4.92 * Low residual occurred Aug 10/14, was a possible restart of Cl2 analyzer, <1 min and returned to a normal level. High Residual

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



		occurred Jan 16/14. Over 4 mg/L for only 14 mins. Happened right after a 3 hour shutdown of filters for valve work. This had very little effect on the treated water residual leaving the plant.
Post 2 Chlorine	8760	0.55 – 3.24
Municipal Chlorine	8760	0.90 mg/L – 2.02 mg/L.
Industrial Chlorine	8760	0.76 – 1.94
Municipal Fluoride	8760	0.50 – 0.83
Industrial Fluoride	8760	0.47 – 0.75

*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
Municipal License # 092-101	Chlorine – Wastewater System	Jan 7	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Feb 4	0.00	mg/L
Municipal License # 092-101	Total Suspended Solids	Feb 20	3	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Mar 7	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Apr 8	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	May 2	0.00	mg/L



Municipal License # 092-101	Total Suspended Solids	May 20	1	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	May 20	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	June 4	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Jul 1	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Aug 7	0.00	mg/L
Municipal License # 092-101	Total Suspended Solids	Aug 14	2	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Aug 14	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Sep 3	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Oct 7	0.00	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Nov 1	0.00	mg/L
Municipal License # 092-101	Total Suspended Solids	Nov 14	8	mg/L
Municipal License # 092-101	Chlorine – Wastewater System	Dec 4	0.00	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	January 14	<0.0001	mg/L	No
Arsenic	January 14	0.0004	mg/L	No
Barium	January 14	0.013	mg/L	No
Boron	January 14	0.012	mg/L	No
Cadmium	January 14	<0.00002	mg/L	No



Chromium	January 14	<0.002	mg/L	No
*Lead	n/a		n/a	n/a
Mercury	January 14	<0.00002	mg/L	No
Selenium	January 14	<0.001	mg/L	No
Sodium	February 12, 2013	5.6	mg/L	No
Uranium	January 14	0.00011	mg/L	No
Fluoride – Municipal	December 31	0.66	mg/L	No
Fluoride - Industrial	December 31	0.62	mg/L	No
Nitrite	October 14	<0.01	mg/L	No
Nitrate	October 14	0.3	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

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	n/a	n/a	n/a
Distribution	n/a	n/a	n/a

No Lead Samples were collected during this time period.

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 14	<0.0003	mg/L	No
Aldicarb	Jan 14	<0.003	mg/L	No
Aldrin + Dieldrin	Jan 14	<0.00002	mg/L	No
Atrazine + N-dealkylated metabolites	Jan 14	<0.0005	mg/L	No
Azinphos-methyl	Jan 14	<0.001	mg/L	No
Bendiocarb	Jan 14	<0.003	mg/L	No
Benzene	Jan 14	<0.0005	mg/L	No
Benzo(a)pyrene	Jan 14	<0.000005	mg/L	No
Bromoxynil	Jan 14	<0.0003	mg/L	No



Carbaryl	Jan 14	<0.003	mg/L	No
Carbofuran	Jan 14	<0.001	mg/L	No
Carbon Tetrachloride	Jan 14	<0.0002	mg/L	No
Chlordane (Total)	Jan 14	<0.00004	mg/L	No
Chlorpyrifos	Jan 14	<0.0005	mg/L	No
Cyanazine	Jan 14	<0.0005	mg/L	No
Diazinon	Jan 14	<0.001	mg/L	No
Dicamba	Jan 14	<0.005	mg/L	No
1,2-Dichlorobenzene	Jan 14	<0.0001	mg/L	No
1,4-Dichlorobenzene	Jan 14	<0.0002	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 14	<0.00001	mg/L	No
1,2-Dichloroethane	Jan 14	<0.0001	mg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 14	<0.0001	mg/L	No
Dichloromethane	Jan 14	<0.0003	mg/L	No
2-4 Dichlorophenol	Jan 14	<0.0001	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 14	<0.005	mg/L	No
Diclofop-methyl	Jan 14	<0.0005	mg/L	No
Dimethoate	Jan 14	<0.001	mg/L	No
Dinoseb	Jan 14	<0.0005	mg/L	No
Diquat	Jan 14	<0.005	mg/L	No
Diuron	Jan 14	<0.005	mg/L	No
Glyphosate	Jan 14	<0.025	mg/L	No
Heptachlor + Heptachlor Epoxide	Jan 14	<0.0001	mg/L	No
Lindane (Total)	Jan 14	<0.0001	mg/L	No
Malathion	Jan 14	<0.005	mg/L	No
Methoxychlor	Jan 14	<0.0001	mg/L	No
Metolachlor	Jan 14	<0.003	mg/L	No
Metribuzin	Jan 14	<0.003	mg/L	No
Monochlorobenzene	Jan 14	<0.0002	mg/L	No
Paraquat	Jan 14	<0.001	mg/L	No
Parathion	Jan 14	<0.003	mg/L	No
Pentachlorophenol	Jan 14	<0.0001	mg/L	No
Phorate	Jan 14	<0.0003	mg/L	No
Picloram	Jan 14	<0.005	mg/L	No
Polychlorinated Biphenyls(PCB)	Jan 14	<0.00005	mg/L	No
Prometryne	Jan 14	<0.0001	mg/L	No
Simazine	Jan 14	<0.0005	mg/L	No
THM (NOTE: show latest annual average)	2014	0.0343	mg/L	No
Temephos	Jan 14	<0.010	mg/L	No
Terbufos	Jan 14	<0.0003	mg/L	No
Tetrachloroethylene	Jan 14	<0.0002	mg/L	No
2,3,4,6-Tetrachlorophenol	Jan 14	<0.0001	mg/L	No



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Triallate	Jan 14	<0.010	mg/L	No
Trichloroethylene	Jan 14	<0.0001	mg/L	No
2,4,6-Trichlorophenol	Jan 14	<0.0001	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 14	<0.010	mg/L	No
Trifluralin	Jan 14	<0.0005	mg/L	No
Vinyl Chloride	Jan 14	<0.0002	mg/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
none			

APPENDIX “A”

#	Date	AWQI #	Adverse Location	Adverse Parameter	Adverse Result	Units	Remedial Action
1	10-Feb	115997	3054 3rd Ave W Hydrant # 4-A-114	Low Cl ₂	0.03	mg/L	Hydrant flushed for 20 mins. End Free Cl ₂ residual was 0.87 mg/L
2	26-May	117633	Storm outlet to Potawatomi River	Free Cl ₂	1.02	mg/L	Chlorinated water was getting into river, broken pipe located and main repaired.
3	05-Sep	120072	Stone Tree Golf & Fitness Club Hwy 6 & 10	Negative/Low pressure	<20	psi	Due to a large storm, the East Hill Pump Station shutdown and failed to restart. Station restarted locally by an operator after being off for 11 minutes. Programming of station was checked and modifications were made to address the automatic restart of pumps when power bumps/outages occur.
4	22-Sep	120535	1046 11th Ave East	Low Cl ₂	0.01	mg/L	During the flushing of a dead end hydrant, the start residual was low (reportable), and after 46 mins of flushing, the end free Cl ₂ residual was 0.43 mg/L