



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

SHALLOW LAKE
DRINKING WATER SYSTEM

Large Municipal Residential

SECTION 11
ANNUAL REPORT

For the period of
JANUARY 1, 2016 TO DECEMBER 31, 2016

Prepared by the Ontario Clean Water Agency
For The Township of Georgian Bluffs

Drinking Water System Number:	2220009096
Drinking Water System Name:	Shallow Lake Drinking Water System
Drinking Water System Owner:	Township of Georgian Bluffs
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2016 to December 31, 2016

Does the Drinking Water System serve more than 10,000 people?

No.

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

Yes.

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

Georgian Bluffs Municipal Office
 177964 Grey Road #18
 R.R. #3 Owen Sound, ON
 N4K 5N5

Drinking-Water Systems (if any), which receive all of their drinking water from your system:

n/a.

Did you provide a copy of the annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

n/a.

How system users are notified that the 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: _____

Description of Drinking Water System:

The Shallow Lake Drinking Water System (DWS) is Class III Treatment and Class I Distribution System. The treatment plant is supplied by 2 deep drilled GUDI wells and consists of the following:

- Potassium permanganate dosing system (upstream of green sand filtration to assist with iron and manganese removal)
- Greensand filtration (for iron and manganese removal)
- Coagulation, flocculation and settling
- Dual media filtration (sand/anthracite)
- Anion resin exchange system (to remove inorganics)
- Waste Residual Management System (waste from filter backwash and ion exchange is stored in a holding/disposal tank)
- Sodium hypochlorite addition (for primary and secondary disinfection/ trim chlorination)
- Reservoir/contact tank (for onsite storage to help achieve the required contact time)
- Integrated process and instrumentation control system (for system control and data acquisition)
- Standby diesel engine generator set (back-up power supply)

List of water treatment chemicals used during the reporting period:

- Sodium Hypochlorite, 12%
- Polyaluminum Chloride (PACl)
- Potassium Permanganate

Significant expenses were incurred to:

- Install required equipment
 Repair required equipment
 Replace required equipment
 No significant expenses were incurred

Description of expenses:

Replaced flow control valve on Polyaluminum chloride injection system
 Replaced level transducer for brine tank
 Replaced submersible pump for backwash tank

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:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. 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 Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
Well 2 (PW3)	52	0	40	0	620	n/a	n/a	n/a
Well 1 (PW2, Standby)	52	0	20	5	780	n/a	n/a	n/a
Treated (TW)	52	0	0	0	0	52	0	1340
Distribution (DW)	116	0	0	0	0	52	0	480

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) – Filter 1	8760	0.01	0.741
Turbidity, On-Line (NTU) – Filter 2	8760	0.009	0.969
Free Chlorine Residual, On-Line (mg/L) - TW	8760	1.06	1.92
Free Chlorine Residual, In-House (mg/L) - DW	366	0.56	1.68

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

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

Table 3. Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of Order of MDWL	Parameter	Date Sampled	Result	MDWL Allowable Annual Average Concentration
n/a	n/a	n/a	n/a	n/a

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

Parameter	Sample Date (mm/dd/yyyy)	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2016/01/05	<MDL 0.02	No
Arsenic: As (ug/L) - TW	2016/01/05	<MDL 0.2	No
Barium: Ba (ug/L) - TW	2016/01/05	3.37	No
Boron: B (ug/L) - TW	2016/01/05	12.9	No
Cadmium: Cd (ug/L) - TW	2016/01/05	<MDL 0.003	No
Chromium: Cr (ug/L) - TW	2016/01/05	0.14	No
Mercury: Hg (ug/L) - TW	2016/01/05	<MDL 0.01	No
Selenium: Se (ug/L) - TW	2016/01/05	<MDL 0.04	No
Uranium: U (ug/L) - TW	2016/01/05	0.008	No
Fluoride (mg/L) - TW	2016/07/04	0.09	No
Nitrite (mg/L) - TW	2016/01/05	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/04/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/07/04	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/10/03	<MDL 0.003	No
Nitrate (mg/L) - TW	2016/01/05	0.286	No
Nitrate (mg/L) - TW	2016/04/11	0.866	No
Nitrate (mg/L) - TW	2016/07/04	0.224	No
Nitrate (mg/L) - TW	2016/10/03	0.203	No
Sodium: Na (mg/L) - TW	2016/07/04	11.3	No

NOTE: There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

NOTE: Fluoride and Sodium are to be sampled every 60 months. The most current samples for Sodium were taken on July 4, 2016. The next set of Sodium samples are to be taken in April 2021. The most current samples for Fluoride were taken on July 4, 2016. The next set of Fluoride samples are to be taken in April 2021.

Table 5. Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	n/a	n/a	n/a	n/a
Distribution (ug/L)	2	0.32	0.7	0
Alkalinity (mg/L)	2	185	247	n/a

NOTE: This system qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Two (2) distribution lead samples are each year. (i.e. 1 sample per period).

Table 6. Summary of Organic parameters sampled during this reporting period or most recent sample results.

Parameter	Sample Date	Result Value	Exceedance
Alachlor (ug/L) - TW	2016/01/05	<MDL 0.02	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2016/01/05	<MDL 0.01	No
Azinphos-methyl (ug/L) - TW	2016/01/05	<MDL 0.05	No
Benzene (ug/L) - TW	2016/01/05	<MDL 0.32	No
Benzo(a)pyrene (ug/L) - TW	2016/01/05	<MDL 0.004	No
Bromoxynil (ug/L) - TW	2016/01/05	<MDL 0.33	No
Carbaryl (ug/L) - TW	2016/01/05	<MDL 0.05	No
Carbofuran (ug/L) - TW	2016/01/05	<MDL 0.01	No
Carbon Tetrachloride (ug/L) - TW	2016/01/05	<MDL 0.16	No
Chlorpyrifos (ug/L) - TW	2016/01/05	<MDL 0.02	No
Diazinon (ug/L) - TW	2016/01/05	<MDL 0.02	No
Dicamba (ug/L) - TW	2016/01/05	<MDL 0.2	No
1,2-Dichlorobenzene (ug/L) - TW	2016/01/05	<MDL 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2016/01/05	<MDL 0.36	No
1,2-Dichloroethane (ug/L) - TW	2016/01/05	<MDL 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2016/01/05	<MDL 0.33	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2016/01/05	<MDL 0.35	No
2,4-Dichlorophenol (ug/L) - TW	2016/01/05	<MDL 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2016/01/05	<MDL 0.19	No
Diclofop-methyl (ug/L) - TW	2016/01/05	<MDL 0.4	No
Dimethoate (ug/L) - TW	2016/01/05	<MDL 0.03	No
Diquat (ug/L) - TW	2016/01/05	<MDL 1.0	No
Diuron (ug/L) - TW	2016/01/05	<MDL 0.03	No
Glyphosate (ug/L) - TW	2016/01/05	<MDL 1.0	No
Malathion (ug/L) - TW	2016/01/05	<MDL 0.02	No
Metolachlor (ug/L) - TW	2016/01/05	<MDL 0.01	No
Metribuzin (ug/L) - TW	2016/01/05	<MDL 0.02	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2016/01/05	<MDL 0.3	No
Paraquat (ug/L) - TW	2016/01/05	<MDL 1.0	No
PCB (ug/L) - TW	2016/01/05	<MDL 0.04	No
Pentachlorophenol (ug/L) - TW	2016/01/05	<MDL 0.15	No
Phorate (ug/L) - TW	2016/01/05	<MDL 0.01	No
Picloram (ug/L) - TW	2016/01/05	<MDL 1.0	No
Prometryne (ug/L) - TW	2016/01/05	<MDL 0.03	No
Simazine (ug/L) - TW	2016/01/05	<MDL 0.01	No
Terbufos (ug/L) - TW	2016/01/05	<MDL 0.01	No
Tetrachloroethylene (ug/L) - TW	2016/01/05	<MDL 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2016/01/05	<MDL 0.2	No
Triallate (ug/L) - TW	2016/01/05	<MDL 0.01	No
Trichloroethylene (ug/L) - TW	2016/01/05	<MDL 0.44	No
2,4,6-Trichlorophenol (ug/L) - TW	2016/01/05	<MDL 0.25	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2016/01/05	<MDL 0.12	No
Trifluralin (ug/L) - TW	2016/01/05	<MDL 0.02	No
Vinyl Chloride (ug/L) - TW	2016/01/05	<MDL 0.17	No
Trihalomethane: Total (ug/L) Annual Average - DW	2016 (Quarterly)	26.75	No

Table 7. 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

NOTE: This is required only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non municipal non-residential)