



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

POTTAWATOMI
DRINKING WATER SYSTEM

Small 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:	220008319
Drinking Water System Name:	Pottawatomi Drinking Water System
Drinking Water System Owner:	Township of Georgian Bluffs
Drinking Water System Category:	Small 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 Pottawatomi Drinking Water System is supplied by a deep drilled (GUDI) groundwater well (PW 2). The water treatment facility is equipped with the following:

- a cartridge filtration system (used as pretreatment for the UV disinfection system),
- a two stage disinfection system consisting of:
 - UV Disinfection System (3 UV reactors in parallel)
 - Chlorination System (Sodium Hypochlorite)
- A sodium silicates injection system (downstream of the UV units) for iron sequestration,
- Facility-wide integrated process and instrumentation control system and
- A stand-by generator set

List of water treatment chemicals used during the reporting period:

- Sodium Hypochlorite, 12%
- Sodium Silicate

Significant expenses were incurred to:

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

Description of expenses:

- Replaced section of treated water line with clear schedule 80 pipe
- Install new sodium hypochlorite tank
- Replaced UV sensors on all UV units
- Replaced ballast on UV#1
- Installed new UPS for data logger power back-up
- Repaired leak in raw water line
- Replaced well pump
- Temporary repair of raw water line
- Installed watermain extensions for swabbing
- Performed watermain swabbing
- Installed new chlorine pump and chlorine injection line
- Replaced PRV on chlorine pump system
- Replace LED display on UV units
- Replaced contactor for sodium hypochlorite dosing pump control

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
2016/04/10	Free Chlorine Residual	0.29	mg/L	Low chlorine alarm caused by a leaking discharge fitting. Isolated the chlorine pump #2 and put chlorine pump #1 online. Flushed the low chlorinated water from the water treatment plant to waste and restored discharge chlorine levels. Notified MOH, SAC, MOECC and the Owner. Distributed precautionary notices to boil to all users of the system. Replaced the damaged chlorine discharge fitting, flushed the distribution system, took a chlorine residual sample and collected a sample for bacteriological analysis. Received laboratory results confirming 0 cfu/100 mL of Total Coliforms and E. Coli.	2016/04/13
2016/10/25	Total Coliform (DW)	33	cfu/100 mL	Resampled at site and collected 2 samples upstream (downstream sample was not feasible as the original sample site is a dead end). Moved water through the distribution system. Received laboratory results confirming 0 cfu/100 mL for Total Coliforms and E. Coli.	2016/11/03

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 (RW)	12	0	0	0	0	n/a	n/a	n/a
Distribution (DW)	56	0	0	0	33	54	0	960

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 (NTU) - TW	8760	0.02	2.44*
Free Chlorine Residual (mg/L) - TW	366	1.38	6.97**
Free Chlorine Residual, In-House (mg/L) - DW	260	1	2.2

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

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

*On February 14, 2016, higher than normal chlorine residual caused by priming the chlorine pump which was initiated by low chlorine residual alarms from the data logging system. The distribution water free chlorine residual remained within the 0.2 mg/L – 4.0 mg/L range as required by regulations

**Turbidity (cartridge filtration) values are not monitored for removal credits.

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 (yyyy/mm/dd)	Sample Result	Exceedance
Antimony: Sb (ug/L) - TW	2016/01/01	<MDL 0.02	No
Arsenic: As (ug/L) - TW	2016/01/01	2.9	No
Barium: Ba (ug/L) - TW	2016/01/01	71.5	No
Boron: B (ug/L) - TW	2016/01/01	197.0	No
Cadmium: Cd (ug/L) - TW	2016/01/01	0.004	No
Chromium: Cr (ug/L) - TW	2016/01/01	<MDL 0.03	No
Mercury: Hg (ug/L) - TW	2016/01/01	<MDL 0.01	No
Selenium: Se (ug/L) - TW	2016/01/01	<MDL 0.04	No
Uranium: U (ug/L) - TW	2016/01/01	0.07	No
Fluoride (mg/L) - TW	2016/07/04	0.15	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	0.007	No
Nitrate (mg/L) - TW	2016/04/11	0.006	No
Nitrate (mg/L) - TW	2016/07/04	0.013	No
Nitrate (mg/L) - TW	2016/10/03	0.006	No
Sodium: Na (mg/L) - TW	2016/07/04	15.9	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 Fluoride and Sodium were taken on July 4, 2016. The next set of Fluoride and Sodium samples are to be taken in 2021.

NOTE: For small municipal residential systems, Schedule 23 & 24 samples are to be taken every 60 months. The most current Schedule 23 & 24 samples were taken in January 2016 the next set of samples is scheduled to be sampled in January 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)	4	0.66	2	0
Alkalinity (mg/L)	4	219	233	n/a

NOTE: This system now qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). Four (4) distribution lead samples are only taken every 12 months. (i.e. 2 samples per period).

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Exceedance
Alachlor (ug/L) - TW	2016/01/01	<MDL 0.02	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2016/01/01	<MDL 0.01	No
Azinphos-methyl (ug/L) - TW	2016/01/01	<MDL 0.05	No
Benzene (ug/L) - TW	2016/01/01	<MDL 0.32	No
Benzo(a)pyrene (ug/L) - TW	2016/01/01	<MDL 0.004	No
Bromoxynil (ug/L) - TW	2016/01/01	<MDL 0.33	No
Carbaryl (ug/L) - TW	2016/01/01	<MDL 0.05	No
Carbofuran (ug/L) - TW	2016/01/01	<MDL 0.01	No
Carbon Tetrachloride (ug/L) - TW	2016/01/01	<MDL 0.16	No
Chlorpyrifos (ug/L) - TW	2016/01/01	<MDL 0.02	No
Diazinon (ug/L) - TW	2016/01/01	<MDL 0.02	No
Dicamba (ug/L) - TW	2016/01/01	<MDL 0.2	No
1,2-Dichlorobenzene (ug/L) - TW	2016/01/01	<MDL 0.41	No
1,4-Dichlorobenzene (ug/L) - TW	2016/01/01	<MDL 0.36	No
1,2-Dichloroethane (ug/L) - TW	2016/01/01	<MDL 0.35	No
1,1-Dichloroethylene (ug/L) - TW	2016/01/01	<MDL 0.33	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2016/01/01	<MDL 0.35	No
2,4-Dichlorophenol (ug/L) - TW	2016/01/01	<MDL 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2016/01/01	<MDL 0.19	No
Diclofop-methyl (ug/L) - TW	2016/01/01	<MDL 0.4	No
Dimethoate (ug/L) - TW	2016/01/01	<MDL 0.03	No
Diquat (ug/L) - TW	2016/01/01	<MDL 1.0	No
Diuron (ug/L) - TW	2016/01/01	<MDL 0.03	No
Glyphosate (ug/L) - TW	2016/01/01	<MDL 1.0	No
Malathion (ug/L) - TW	2016/01/01	<MDL 0.02	No
Metolachlor (ug/L) - TW	2016/01/01	<MDL 0.01	No
Metribuzin (ug/L) - TW	2016/01/01	<MDL 0.02	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2016/01/01	<MDL 0.3	No
Paraquat (ug/L) - TW	2016/01/01	<MDL 1.0	No
PCB (ug/L) - TW	2016/01/01	<MDL 0.04	No
Pentachlorophenol (ug/L) - TW	2016/01/01	<MDL 0.15	No
Phorate (ug/L) - TW	2016/01/01	<MDL 0.01	No
Picloram (ug/L) - TW	2016/01/01	<MDL 1.0	No
Prometryne (ug/L) - TW	2016/01/01	<MDL 0.03	No
Simazine (ug/L) - TW	2016/01/01	<MDL 0.01	No
Terbufos (ug/L) - TW	2016/01/01	<MDL 0.01	No
Tetrachloroethylene (ug/L) - TW	2016/01/01	<MDL 0.35	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2016/01/01	<MDL 0.2	No
Triallate (ug/L) - TW	2016/01/01	<MDL 0.01	No
Trichloroethylene (ug/L) - TW	2016/01/01	<MDL 0.44	No
2,4,6-Trichlorophenol (ug/L) - TW	2016/01/01	<MDL 0.25	No
2-methyl-4-chlorophenoxyacetic acid (MCPA)* (ug/L) - TW	2016/01/01	<MDL 0.12	No
Trifluralin (ug/L) - TW	2016/01/01	<MDL 0.02	No
Vinyl Chloride (ug/L) - TW	2016/01/01	<MDL 0.17	No
Trihalomethane: Total (ug/L) Annual Average - DW	2016/01/01	4.15	No

*As of January 1st, 2017 this parameter will be added as a chemical standard to Schedule 2 with a MAC of 0.1 mg/L
 NOTE: For small municipal residential systems, Schedule 23 & 24 samples are to be taken every 60 months. The most current Schedule 23 & 24 samples were taken in January 2016 the next set of samples is scheduled to be sampled in January 2021.

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)