2024 SECTION 11 ANNUAL REPORT

SHALLOW LAKE DRINKING WATER SYSTEM

For the period of:
JANUARY 1, 2024 TO DECEMBER 31, 2024

Prepared for the Township of Georgian Bluffs by the Ontario Clean Water Agency

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Township of GEORGIAN BLUFFS

Drinking Water System Regulation: O. Reg 170/03
Section 11 Annual Report: January 1, 2024 to December 31, 2024
Township of Georgian Bluffs: Shallow Lake Drinking Water System

This report was prepared in accordance with the requirements of *O.Reg 170/03, Section 11, Annual reports* for the following system and reporting period:

Drinking Water System Number:	220009096
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, 2024 – December 31, 2024

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

No

Is your Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, Section 11. (10)

Location where Summary Report required under O. Reg 170/03, Schedule 22 will be available for inspection. *(O. Reg 170/03, Section 11.(6)(5))*:

- Georgian Bluffs Municipal Office, 177964 Grey Rd #18 RR#3, Owen Sound ON, N4K 5N5
- https://www.georgianbluffs.ca/en/township-services/utilities-and-water.aspx

Note: this is required for large municipal residential systems or small municipal residential systems.

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
N/A	N/A

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?

N/A

How system users are notified that the annual report is available, and is free of charge:

X	Public access/notice via the web
X	Public access/notice via Government Office
	Public access/notice via a newspaper
X	Public access/notice via Public Request
	Public access/notice via a Public Library

☐ Public access/notice via other method: _____

Note: The owner of a drinking water system shall ensure that a copy of an annual report for the system is given, without charge, to every person who requests a copy. ((O.Reg 170/03, Section 11.(7))

Description of Drinking Water System *(O.Reg 170/03, Section 11.(6)(a)):*

The Shallow Lake Drinking Water System (DWS) is classified as a Class III Treatment and a Class I Distribution and Supply Subsystem and categorized as a Large Municipal Residential Drinking Water System under O. Reg 170/03, servicing an approximate population of 498 persons. The Shallow Lake Drinking Water System is owned by the Corporation of the Township of Georgian Bluffs and operated by the Ontario Clean Water Agency (OCWA) in Georgian Bluffs, Ontario.

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 holding/disposal tanks)
- Sodium hypochlorite addition (for primary and secondary disinfection/trim chlorination)
- UV Disinfection System - Two (2) UV reactor units (one duty and one standby) for primary disinfection
- 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 by the system during the reporting period *(O.Reg 170/03, Section 11.(6)(a)):*

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

Significant expenses were incurred to:

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

Description of major expenses during the reporting period to install, repair or replace required equipment (O.Reg 170/03, Section 11.(6)(e)):

- UV unit repair parts
- Replacement propane boiler system
- Miscellaneous distribution repair parts

Summary of any reports/notices submitted to the Ministry and/or Spills Action Centre in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 during the reporting period, including a description of any corrective actions taken under Schedule 17 or 18 *(O. Reg 170/03, Section 11.(6)(b),(d):*

Incident Date (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
N/A	N/A	N/A	N/A	N/A	N/A

Table 1. Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period *(O.Reg 170/03, Section 11.(6)(c)).*

Location	Number of Samples	Range of E. Coli or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
Well #1 (PW2)[1a]	53	0	NDOGT	2	NDOGT	N/A	N/A	N/A
Well #2 (PW3)[1a]	53	0	<20	10	960	N/A	N/A	N/A
Treated[1b]	53	0	0	0	0	53	0	2
Distribution[1c]	106	0	0	0	0	53	0	32

Note: HPC = Heterotrophic Plate Count, NDOGT = No Data: Overgrown with Target Bacteria
Note: Units for E.Coli or Fecal Results are cfu/100 mL, units for Total Coliform Results are cfu/100 mL, units for HPC results are cfu/1mL

[1a]O.Reg 170/03, Schedule 10-4. (1)(3) requires for a large municipal residential system that a water sample is taken at least once every week from the drinking water system's raw water, before any treatment is applied to the water and tested for E.Coli and total coliforms.

[1b]O.Reg 170/03, Schedule 10-3 requires for a large municipal residential system that a treated water sample is taken at least once every week and tested for E.Coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic count (HPC).

[1c]O.Reg. 170/03 Schedule 10-2.(1)(2)(3) requires that a system that serves 100,000 people or less, at least eight distribution samples, plus one additional sample for every 1,000 people served by the system to be taken every month, with at least one of the samples being taken in each week and be tested for E.Coli, Total Coliforms. At least 25 percent of the samples required must be tested for general bacteria population expressed as colony counts on heterotrophic plate count (HPC). The number of people served by the system is 498 (as confirmed with the Owner on April 26, 2023), and therefore requires at minimum eight (8) distribution samples per month.

Table 2. Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report *(O. Reg 170/03, Section 11.(6)(c)).*

Parameter & Location	Number of Samples	Range of Results	
		Min.	Max.
Turbidity, Filter 1[2a] (NTU)	8760	0.02	1.35[2d]
Turbidity, Filter 2[2a] (NTU)	8760	0.02	0.38
Free Chlorine Residual, Treated Water (mg/L)[2b]	8760	0.46[2e]	2.05
Free Chlorine Residual, Distribution Water (mg/L)[2c]	420	0.38	1.63

Note: The number of samples used for continuous monitoring units is 8760.

[2a]If a drinking water system obtains water from a raw water supply that is surface water (or well water deemed as GUDI) and the system provides filtration, the owner of a system shall ensure that sampling and testing for turbidity is carried out by continuous monitoring equipment on each filter effluent line (O.Reg.170/03, Schedule 7-3.(2)(b)). Monthly filter efficiency requirements met.

[2b]O.Reg 170/03 Schedule 7-2.(1) requires a drinking water system that provides chlorination for primary disinfection to sample and test for free chlorine residual with continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed.

[2c]O.Reg 170/03 Schedule 7-2.(3) requires a large municipal residential system that provides secondary disinfection to take at least seven distribution samples each week and immediately tested for free chlorine residual, if the system provides chlorination and does not provide chloramination. Sampling for distribution free chlorine residual at the Shallow Lake Drinking Water is taken twice a week.

[2d]December 30, 2024 - Turbidity spike after backwash. Filters were ran to waste until turbidity dropped below 0.5 NTU. Turbidity was over 1.0 NTU for 5 minutes, no adverse water was sent to the distribution system.

[2e]August 19, 2024 – Fire flow testing caused a 1 minute drop in chlorine residual. CT met, no adverse water was sent to the distribution system.

Table 3. Summary of additional testing and sampling results carried out in accordance with the requirement of an approval, municipal drinking water licence or order (including OWRA) or other legal instrument. *(O. Reg 170/03, Section 11.(6)(c))*

Legal Instrument & Issue Date (yyyy/mm/dd)	Sample Location & Parameter	Sampling Frequency	Allowable Result	Actual Result & Date (yyyy/mm/dd)
N/A	N/A	N/A	N/A	N/A

Table 4. Summary of Inorganic parameters tested during this reporting period or the most recent sample results *(O.Reg 170/03, Section 11.(6)(c))*

Parameter & Location	Sample Date[4a] (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Antimony: Sb (ug/L) - TW	2024/01/31	<MDL 0.6	6.0	No
Arsenic: As (ug/L) - TW	2024/01/31	<MDL 0.2	10.0	No
Barium: Ba (ug/L) - TW	2024/01/31	2.64	1000.0	No
Boron: B (ug/L) - TW	2024/01/31	12	5000.0	No
Cadmium: Cd (ug/L) - TW	2024/01/31	0.003	5.0	No
Chromium: Cr (ug/L) - TW	2024/01/31	<MDL 0.08	50.0	No
Mercury: Hg (ug/L) - TW	2024/01/31	<MDL 0.01	1.0	No
Selenium: Se (ug/L) - TW	2024/01/31	<MDL 0.04	50.0	No
Uranium: U (ug/L) - TW	2024/01/31	0.03	20.0	No
Fluoride (mg/L) - TW	2021/04/12[4b]	0.06	1.5	No
Nitrite (mg/L) - TW	2024/01/02	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2024/04/09	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2024/07/02	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2024/10/01	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2024/01/02	0.569	10.0	No
Nitrate (mg/L) - TW	2024/04/09	0.435	10.0	No
Nitrate (mg/L) - TW	2024/07/02	0.194	10.0	No
Nitrate (mg/L) - TW	2024/10/01	0.100	10.0	No

Note: MDL = Minimum Detection Limit, TW = Treated Water

[4a]The owner of a small or large municipal residential system that obtains water from a raw water supply that is surface water shall ensure that at least one water sample for inorganics is taken every 12 months (O.Reg 170/03, Schedule 13-2.(1)). The last set of samples were collected and tested in 2024, the next set of samples are scheduled to be collected and tested in 2025.

[4b]Fluoride is reportable every 60 months. The most recent sample was taken in 2021. The next set of Fluoride samples are scheduled to be sampled in 2026.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) - TW	2021/04/12[4c]	7.96	200	No	No

Note: MDL = Minimum Detection Limit, TW = Treated Water

Note: There is no regulatory Maximum Allowable Concentration (MAC) Sodium. The aesthetic objective (AO) 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.

[4c]Sodium is reportable every 60 months. The most recent Sodium samples were tested in 2021, the next set of reportable samples is scheduled to be tested in 2026.

Table 5: Summary of lead testing under Schedule 15.1 during this reporting period (O.Reg 170/03, Section 11.(6)(g))

Location/Type & Parameter	Number of Samples[5a]	Range of Results		Number of Lead Exceedances (MAC = 10 µg/L)
		Min.	Max.	
Period: January 1 to April 15				
Plumbing – Lead (µg/L)[5b]	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L)[5c]	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as $CaCO_3$)	2	231	236	N/A
Distribution – pH	2	7.60	7.61	N/A
Period: June 15 to October 15				
Plumbing – Lead (µg/L)[5b]	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L)[5c]	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as $CaCO_3$)	2	264	267	N/A
Distribution – pH	2	7.55	7.59	N/A
Period: December 15 to 31				
Plumbing – Lead (µg/L)[5b]	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L)[5c]	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as $CaCO_3$)	N/A	N/A	N/A	N/A
Distribution - pH	N/A	N/A	N/A	N/A

Note: this is required for large municipal residential systems, small municipal residential systems or non-municipal year-round residential system. (O.Reg 170/03, Section 11.(6)(g))

[5a]This system follows a reduced sampling schedule (O.Reg. 170/03, Section 15.1.5). The number of sampling points for the system is based on the population served by the system. The number of people served by the system is 498 (as confirmed with the Owner on April 26, 2023), and therefore requires 1 distribution sampling points per sampling period. As best practice, OCWA takes 2 distribution samples.

[5b]Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).

[5c]This system follows a reduced sampling schedule (O.Reg 170/03, Section 15.1.5). Distribution lead samples are collected every 36 months. The most recent set of distribution lead samples were collected within the winter period of December 15, 2021 to April 15, 2022 and summer period of June 15, 2022 to October 15, 2022. The next set of distribution lead samples is scheduled to be collected within the winter period of December 15, 2024 to April 15, 2025 and summer period of June 15, 2025 to October 15, 2025.

Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results *(O.Reg 170/03, Section 11.(6)(c)).*

Parameter & Location	Sample Date[6a] (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Alachlor (ug/L) - TW	2024/01/31	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2024/01/31	<MDL 0.01	5.0	No
Azinphos-methyl (ug/L) - TW	2024/01/31	<MDL 0.05	20.0	No
Benzene (ug/L) - TW	2024/01/31	<MDL 0.32	1.0	No
Benzo(a)pyrene (ug/L) - TW	2024/01/31	<MDL 0.004	0.01	No
Bromoxynil (ug/L) - TW	2024/01/31	<MDL 0.33	5.0	No
Carbaryl (ug/L) - TW	2024/01/31	<MDL 0.05	90.0	No
Carbofuran (ug/L) - TW	2024/01/31	<MDL 0.01	90.0	No
Carbon Tetrachloride (ug/L) - TW	2024/01/31	<MDL 0.17	2.0	No
Chlorpyrifos (ug/L) - TW	2024/01/31	<MDL 0.02	90.0	No
Diazinon (ug/L) - TW	2024/01/31	<MDL 0.02	20.0	No
Dicamba (ug/L) - TW	2024/01/31	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (ug/L) - TW	2024/01/31	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (ug/L) - TW	2024/01/31	<MDL 0.36	5.0	No
1,2-Dichloroethane (ug/L) - TW	2024/01/31	<MDL 0.35	5.0	No
1,1-Dichloroethylene (ug/L) - TW	2024/01/31	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2024/01/31	<MDL 0.35	50.0	No
2,4-Dichlorophenol (ug/L) - TW	2024/01/31	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2024/01/31	<MDL 0.19	100.0	No
Diclofop-methyl (ug/L) - TW	2024/01/31	<MDL 0.4	9.0	No
Dimethoate (ug/L) - TW	2024/01/31	<MDL 0.06	20.0	No
Diquat (ug/L) - TW	2024/01/31	<MDL 1.0	70.0	No
Diuron (ug/L) - TW	2024/01/31	<MDL 0.03	150.0	No
Glyphosate (ug/L) - TW	2024/01/31	<MDL 1.0	280.0	No
Malathion (ug/L) - TW	2024/01/31	<MDL 0.02	190.0	No
Metolachlor (ug/L) - TW	2024/01/31	<MDL 0.01	50.0	No
Metribuzin (ug/L) - TW	2024/01/31	<MDL 0.02	80.0	No

Parameter & Location	**Sample Date**[6a] (yyyy/mm/dd)	**Sample Result**	**Maximum Allowable Concentration (MAC)**	**Exceedance of MAC**
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2024/01/31	<MDL 0.3	80.0	No
Paraquat (ug/L) - TW	2024/01/31	<MDL 1.0	10.0	No
PCB (ug/L) - TW	2024/01/31	<MDL 0.04	3.0	No
Pentachlorophenol (ug/L) - TW	2024/01/31	<MDL 0.15	60.0	No
Phorate (ug/L) - TW	2024/01/31	<MDL 0.01	2.0	No
Picloram (ug/L) - TW	2024/01/31	<MDL 1.0	190.0	No
Prometryne (ug/L) - TW	2024/01/31	<MDL 0.03	1.0	No
Simazine (ug/L) - TW	2024/01/31	<MDL 0.01	10.0	No
Terbufos (ug/L) - TW	2024/01/31	<MDL 0.01	1.0	No
Tetrachloroethylene (ug/L) - TW	2024/01/31	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2024/01/31	<MDL 0.2	100.0	No
Triallate (ug/L) - TW	2024/01/31	<MDL 0.01	230.0	No
Trichloroethylene (ug/L) - TW	2024/01/31	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (ug/L) - TW	2024/01/31	<MDL 0.25	5.0	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2024/01/31	<MDL 0.12	100.0	No
Trifluralin (ug/L) - TW	2024/01/31	<MDL 0.02	45.0	No
Vinyl Chloride (ug/L) - TW	2024/01/31	<MDL 0.17	1.0	No
Trihalomethane: Total (ug/L) Annual Average - DW	2024 (Quarterly)	55.0	100.0	No
HAA Total (ug/L) Annual Average - DW	2024 (Quarterly)	24.4	80.0	No

Note: TW = Treated Water, DW = Distribution Water, MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration, HAA = Haloacetic Acids

[6a]The owner of a large municipal residential system that obtains water from a raw water supply that is surface water shall ensure that at least one water sample for organics is taken every 12 months (O.Reg 170/03, Schedule 13-4.(1)). The last set of samples were collected and tested in 2024, the next set of samples are scheduled to be collected and tested in 2025.

Table 7: List of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards for the reporting period.

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result
Trihalomethane: Total (ug/L) Annual Average - DW	2024 (Quarterly)	55.0