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

OPTIONAL ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	**220007800**
Drinking-Water System Name:	Lake Rosalind Drinking Water System
Drinking-Water System Owner:	Municipality of Brockton
Drinking-Water System Category:	Small Municipal Residential
Period being reported:	January 1, 2021 to December 31, 2021

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [x]

Is your annual report available to the public at no charge on a website on the Internet? Yes [x] No [ ]

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

Brockton Municipal Office
100 Scott St.
Walkerton, ON
N0G 2V0
(519) 881-2223

Complete for all other Categories.

Number of Designated Facilities served:

Did you provide a copy of your annual report to all Designated Facilities you serve?
Yes [ ] No [ ]

Number of Interested Authorities you report to:

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?
Yes [ ] No [ ]

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
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?
Yes [x] No [ ]

Indicate how you notified system users that your 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

Describe your Drinking-Water System

The Lake Rosalind water system consists of two wells known as Well #1 and Well #3. Well #1 is a shallow dug well rated at 21 liters per minute and Well #3 is a 22.9 m drilled well rated at 77 liters per minute. As groundwater is pumped from each well, treatment is achieved through cartridge filters capable of removing particles down to 1 micron in size. Prior to filtration, a chlorination system consisting of 2 chemical pumps controlled by a flow meter sensor provides disinfection with sodium hypochlorite. Flow is measured from each well before entering a 30.1 m3 in-ground chlorine contact chamber followed by a 91.0 m3 clear well which provides additional chlorine contact time. Treated water flow is measured as it is pumped from the clear well to the distribution system. The filtered effluent turbidity and free chlorine residual of the treated water are monitored continuously by online equipment equipped with alarms. The system is also equipped with a standby diesel generator to provide power to the Lake Rosalind well supply system during emergency situations.

List all water treatment chemicals used over this reporting period

NSF Certified Sodium Hypochlorite (12%)

Were any significant expenses incurred to?
[X] Install required equipment
[X] Repair required equipment
[ ] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

There were no major expenses incurred.

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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
N/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 #)
POE	0				
Raw - Well #1 **Raw - Well #3**	12 12	0 – 0 0 - 0	0 - 68 0 - 0		
Distribution	52	0 - 0	0 - 0	52	0 - 20

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 Analyzer	**365**	**0.03 – 0.08 ntu**
Chlorine Analyzer **Chlorine Dist. Grab**	**365** **247**	**0.99 - 1.42** **0.66 - 1.39**
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
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alkalinity	Mar. 16, 2021 Sep. 14, 2021	402 397	mg/L	
Antimony	Feb. 20, 2018	<0.6	ug/L	
Arsenic	Feb. 20, 2018	<1.0	ug/L	
Barium	Feb. 20, 2018	22	ug/L	
Boron	Feb. 20, 2018	<50	ug/L	
Cadmium	Feb. 20, 2018	<0.1	ug/L	
Chromium	Feb. 20, 2018	<1.0	ug/L	
Lead	Oct. 12, 2021	0.78	ug/L	
Lead 15.1	Mar. 17, 2020 Sep. 22, 2020	<1.0 <1.0	ug/L	
Mercury	Feb. 20, 2018	<0.1	ug/L	
Selenium	Feb. 20, 2018	<5.0	ug/L	
Sodium	Oct. 16, 2018 Nov. 8, 2018	25.1 27.3	mg/L	Yes, Users have been notified
Uranium	Feb. 20, 2018	<5.0	ug/L	
Fluoride	Oct. 16, 2018	<0.1	mg/L	
Nitrate 1st Quarter 2nd Quarter 3rd Quarter 4th Quarter	 Jan. 12, 2021 Apr. 13, 2021 Aug. 01, 2021 Oct. 12, 2021	 4.81 5.36 5.88 5.30	mg/L	
Nitrite 1st Quarter 2nd Quarter 3rd Quarter 4th Quarter	 Jan. 12, 2021 Apr. 13, 2021 Aug. 01, 2021 Oct. 12, 2021	 <0.010 <0.003 <0.003 <0.003	mg/L	

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	Feb. 20, 2018	<0.1	ug/L	
Atrazine + N-dealkylated metabolites	Feb. 20, 2018	<0.2	ug/L	
Azinphos-methyl	Feb. 20, 2018	<0.1	ug/L	
Benzene	Feb. 20, 2018	<0.5	ug/L	
Benzo(a)pyrene	Feb. 20, 2018	<0.01	ug/L	
Bromoxynil	Feb. 20, 2018	<0.2	ug/L	
Carbaryl	Feb. 20, 2018	<0.2	ug/L	

Carbofuran	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Carbon Tetrachloride	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Chlorpyrifos	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Diazinon	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Dicamba	**Feb. 20, 2018**	**<0.2**	**ug/L**	
1,2-Dichlorobenzene	**Feb. 20, 2018**	**<0.5**	**ug/L**	
1,4-Dichlorobenzene	**Feb. 20, 2018**	**<0.5**	**ug/L**	
2,4-D (2,4-Dichlorophenoxy acetic acid)	**Feb. 20, 2018**	**<0.2**	**ug/L**	
1,2-Dichloroethane	**Feb. 20, 2018**	**<0.5**	**ug/L**	
1,1-Dichloroethylene (vinylidene chloride)	**Feb. 20, 2018**	**<0.5**	**ug/L**	
Dichloromethane	**Feb. 20, 2018**	**<5.0**	**ug/L**	
2-4 Dichlorophenol	**Feb. 20, 2018**	**<0.3**	**ug/L**	
Diclofop-methyl	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Dimethoate	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Diquat	**Feb. 20, 2018**	**<1.0**	**ug/L**	
Diuron	**Feb. 20, 2018**	**<1.0**	**ug/L**	
Glyphosate	**Feb. 20, 2018**	**<5.0**	**ug/L**	
HAA (Haloacetic Acid) **1st Quarter** **2nd Quarter** **3rd Quarter** **4th Quarter**	 **Jan. 12, 2021** **Apr. 13, 2021** **Aug. 01, 2021** **Oct. 12, 2021**	 **6.1** **5.4** **7.8** **6.9**	**ug/L**	
Malathion	**Feb. 20, 2018**	**<0.1**	**ug/L**	
MCPA (2-Methyl-4-chlorophenoxyacetic acid)	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Metolachlor	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Metribuzin	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Monochlorobenzene	**Feb. 20, 2018**	**<0.5**	**ug/L**	
Paraquat	**Feb. 20, 2018**	**<1.0**	**ug/L**	
Pentachlorophenol	**Feb. 20, 2018**	**<0.5**	**ug/L**	
Phorate	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Picloram	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Polychlorinated Biphenyls(PCB)	**Feb. 20, 2018**	**<35**	**ug/L**	
Prometryne	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Simazine	**Feb. 20, 2018**	**<0.1**	**ug/L**	
THM **(**NOTE**:** show latest annual average**)**	**2021** **Average**	**21**	**ug/L**	
Terbufos	**Feb. 20, 2018**	**<0.2**	**ug/L**	
Tetrachloroethylene	**Feb. 20, 2018**	**<0.5**	**ug/L**	
2,3,4,6-Tetrachlorophenol	**Feb. 20, 2018**	**<0.5**	**ug/L**	
Triallate	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Trichloroethylene	**Feb. 20, 2018**	**<0.5**	**ug/L**	
2,4,6-Trichlorophenol	**Feb. 20, 2018**	**<0.5**	**ug/L**	
Trifluralin	**Feb. 20, 2018**	**<0.1**	**ug/L**	
Vinyl Chloride	**Feb. 20, 2018**	**<0.2**	**ug/L**	

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
Nitrate	5.36	mg/l	Apr. 13, 2021
Nitrate	5.88	mg/l	Aug. 1, 2021
Nitrate	5.30	mg/l	Oct. 12, 2021