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

Part III Form 2
Section 11. ANNUAL REPORT.

Drinking-Water System Number:	**220002654**
Drinking-Water System Name:	Mildmay Water System
Drinking-Water System Owner:	Municipality of South Bruce
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2023 to December 31, 2023

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.

Municipality of South Bruce
Administration Office
21 Gordon Street East
Teeswater, Ontario

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 Mildmay Water System has 2 production wells. Well #1 was drilled in 1968 to a depth of 35 metres. In 1989 a second well was added. This newer well is 250 mm in diameter and 34 metres deep. It is known as Well #2. Each well is capable of pumping 1137 L/min (250 Igpm). The pump house contains Well #1 plus the appropriate appurtenances to disinfect the water and direct it into the distribution system and elevated Storage structure. The pump house also houses a diesel generator set, 2 hypochlorite solution metering pumps, a chemical storage tank, water meters, a chlorine contact simulator, a continuous chlorine analyzer, and a continuous turbidity analyzer. In 2017 a Supervisory Control and Data Acquisition (SCADA) system was installed to monitor chlorine, flow, pressure, and tower level giving the operators 24 hour trending.
Chlorine is introduced into the raw water in the pump house to provide disinfection. The water then passes through a 181 metres length of large diameter piping (with no service connections) where 15 minutes of "contact time" is provided to complete the disinfection process. Residual chlorine levels are maintained within the distribution system to effectively provide disinfection throughout the entire system.
A chlorine contact simulator that provides 15 minutes of contact time before the water reaches the chlorine residual and turbidity analyzers is installed in the pump house.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite

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

N/A

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
Oct. 10, 2023	Total Coliform	1	TC	Resampled point of incident and two upstream locations. All results came back with 0 T.C. & 0 E.Coli	Oct. 17, 2023

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	# of E.Coli & Total Coliform Samples	Range of E.Coli or Fecal Results	Range of Total Coliform Results (#-#)	# of HPC Samples	Range of HPC Results (#-#)
Well #1	52	0-0	0-1		
Well #2	52	0-0	0-0		
Treated (Contact Simulator)	52	0-0	0-0	52	<10 - 100
Distribution System	165	0-0	0-1	104	<10 - 70

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Raw Well #1		Raw Well #2		Treated (Contact Simulator)		Distribution System	
	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)
Turbidity	52	0.02-1.23 ntu	52	0.06-0.35 ntu	52	0.06-0.50 ntu	193	0.06-3.00 ntu
Free Chlorine	N/A	N/A	N/A	N/A	365	1.01-3.03	469	0.79-1.80

__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 (Well #1)

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	EXCEEDANCE
Alkalinity	Jul. 25, 2023	291	mg/L	No
Antimony	Jan. 20, 2021	<0.6	ug/L	No
Arsenic	Jan. 20, 2021	<1.0	ug/L	No
Barium	Jan. 20, 2021	62	ug/L	No
Boron	Jan. 20, 2021	<50	ug/L	No
Cadmium	Jan. 20, 2021	<0.1	ug/L	No
Chromium	Jan. 20, 2021	<1.0	ug/L	No
Lead (Distribution)	Jan. 10, 2023 Jul. 25, 2023	0.24 0.32	ug/L	No
Lead 15.1	Mar. 17, 2020 Sep. 22, 2020	<1.0 <1.0 <1.0 2.2	ug/L	No
Mercury	Jan. 20, 2021	<0.1	ug/L	No
Selenium	Jan. 20, 2021	<5.0	ug/L	No
Sodium every 5 years next 2026	Jan. 12, 2021 Well #1	10.3	mg/L	No
Uranium	Jan. 20, 2021	<5.0	ug/L	No
Fluoride every 5 years next 2026)	Jan. 12, 2021	<0.1	mg/L	No
Nitrate	Jan. 10, 2023	3.88	mg/L	No
	Apr. 11, 2023	3.90	mg/L	No
	Jul. 11, 2023	3.77	mg/L	No
	Oct. 17, 2023	4.05	mg/L	No
Nitrite	Jan. 10, 2023	<0.003	mg/L	No
	Apr. 11, 2023	<0.003	mg/L	No
	Jul. 11, 2023	<0.003	mg/L	No
	Oct. 17, 2023	<0.003	mg/L	No

Summary of Organic parameters sampled during this reporting period or the most recent sample results (Well #1)

Parameter	Sample Date	Results Value	Unit of Measure	Exceedance
Alachlor	Jan. 19, 2021	<0.1	ug/L	No
Atrazine + N-dealkylated metabolites	Jan. 19, 2021	<0.2	ug/L	No
Azinphos-methyl	Jan. 19, 2021	<0.1	ug/L	No
Benzene	Jan. 19, 2021	<0.5	ug/L	No
Benzo(a)pyrene	Jan. 19, 2021	<0.005	ug/L	No
Bromoxynil	Jan. 19, 2021	<0.2	ug/L	No
Carbaryl	Jan. 19, 2021	<0.2	ug/L	No
Carbofuran	Jan. 19, 2021	<0.2	ug/L	No
Carbon Tetrachloride	Jan. 19, 2021	<0.2	ug/L	No

Chlorpyrifos	Jan. 19, 2021	<0.1	ug/L	No
Diazinon	Jan. 19, 2021	<0.1	ug/L	No
Dicamba	Jan. 19, 2021	<0.2	ug/L	No
1,2-Dichlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
1,4-Dichlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
1,2-Dichloroethane	Jan. 19, 2021	<0.5	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	Jan. 19, 2021	<0.5	ug/L	No
Dichloromethane	Jan. 19, 2021	<5.0	ug/L	No
2-4 Dichlorophenol	Jan. 19, 2021	<0.3	ug/L	No
2,4-D (2,4-Dichlorophenoxy acetic acid)	Jan. 19, 2021	<0.2	ug/L	No
Diclofop-methyl	Jan. 19, 2021	<0.2	ug/L	No
Dimethoate	Jan. 19, 2021	<0.1	ug/L	No
Diquat	Jan. 19, 2021	<1.0	ug/L	No
Diuron	Jan. 19, 2021	<1.0	ug/L	No
Glyphosate	Jan. 19, 2021	<5.0	ug/L	No
HAA (Haloacetic Acid)	Jan. 10, 2023 Apr. 11, 2023 Jul. 11, 2023 Oct. 17, 2023	<5.30 <5.30 <5.30 <5.30	ug/L	No
Malathion	Jan. 19, 2021	<0.1	ug/L	No
MCPA (2-Methyl-4-chlorophenoxyacetic acid)	Jan. 19, 2021	<0.2	ug/L	No
Metolachlor	Jan. 19, 2021	<0.1	ug/L	No
Metribuzin	Jan. 19, 2021	<0.1	ug/L	No
Monochlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
Paraquat	Jan. 19, 2021	<1.0	ug/L	No
Pentachlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Phorate	Jan. 19, 2021	<0.1	ug/L	No
Picloram	Jan. 19, 2021	<0.2	ug/L	No
Polychlorinated Biphenyls (PCB)	Jan. 19, 2021	<0.035	ug/L	No
Prometryne	Jan. 19, 2021	<0.1	ug/L	No
Simazine	Jan. 19, 2021	<0.1	ug/L	No
THM (Note: show latest annual average)	**2023 Average**	9.3	ug/L	No
Terbufos	Jan. 19, 2021	<0.2	ug/L	No
Tetrachloroethylene	Jan. 19, 2021	<0.5	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Triallate	Jan. 19, 2021	<0.1	ug/L	No
Trichloroethylene	Jan. 19, 2021	<0.5	ug/L	No
2,4,6-Trichlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Trifluralin	Jan. 19, 2021	<0.1	ug/L	No
Vinyl Chloride	Jan. 19, 2021	<0.2	ug/L	No

Summary of Inorganic parameters tested during this reporting period or the most recent sample results (Well #2)

PARAMETER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	EXCEEDANCE
Alkalinity	Jul. 25, 2023	291	mg/L	No
Antimony	Jan. 20, 2021	<0.6	ug/L	No
Arsenic	Jan. 20, 2021	<1.0	ug/L	No
Barium	Jan. 20, 2021	62	ug/L	No
Boron	Jan. 20, 2021	<50	ug/L	No
Cadmium	Jan. 20, 2021	<0.1	ug/L	No
Chromium	Jan. 20, 2021	<1.0	ug/L	No
Lead 15.1	Jan. 10, 2023 Jul. 25, 2023	0.24 0.32	ug/L	No
Lead	Mar. 17, 2020 Sep. 22, 2020	<1.0 <1.0 <1.0 2.2	ug/L	No
Mercury	Jan. 20, 2021	<0.1	ug/L	No
Selenium	Jan. 20, 2021	<5.0	ug/L	No
Sodium **Next 2026**	Jan. 12, 2021	10.5	mg/L	No
Uranium	Jan. 20, 2021	<5.0	ug/L	No
Fluoride (every 5 years next 2026)	Jan. 12, 2021	<0.1	mg/L	No
Nitrate	Jan. 10, 2023 Apr. 11, 2023 Jul. 11, 2023 Oct. 17, 2023	3.86 3.84 3.76 4.05	mg/L mg/L mg/L mg/L	No No No No
Nitrite	Jan. 10, 2023 Apr. 11, 2023 Jul. 11, 2023 Oct. 17, 2023	<0.003 <0.003 <0.003 <0.003	mg/L mg/L mg/L mg/L	No No No No

Summary of Organic parameters sampled during this reporting period or the most recent sample results (Well #2)

Parameter	Sample Date	Results Value	Unit of Measure	Exceedance
Alachlor	Feb.16, 2021	<0.1	ug/L	No
Atrazine + N-dealkylated metabolites	Feb.16, 2021	<0.2	ug/L	No
Azinphos-methyl	Feb.16, 2021	<0.1	ug/L	No
Benzene	Jan. 19, 2021	<0.5	ug/L	No
Benzo(a)pyrene	Feb.16, 2021	<0.0050	ug/L	No
Bromoxynil	Jan. 19, 2021	<0.2	ug/L	No
Carbaryl	Feb.16, 2021	<0.2	ug/L	No
Carbofuran	Feb.16, 2021	<0.2	ug/L	No
Carbon Tetrachloride	Jan. 19, 2021	<0.5	ug/L	No
Chlorpyrifos	Feb.16, 2021	<0.1	ug/L	No

Diazinon	Feb.16, 2021	<0.1	ug/L	No
Dicamba	Jan. 19, 2021	<0.2	ug/L	No
1,2-Dichlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
1,4-Dichlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
1,2-Dichloroethane	Jan. 19, 2021	<0.5	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	Jan. 19, 2021	<0.5	ug/L	No
Dichloromethane	Jan. 19, 2021	<5.0	ug/L	No
2-4 Dichlorophenol	Jan. 19, 2021	<0.3	ug/L	No
2,4-D (2,4-Dichlorophenoxy acetic acid)	Jan. 19, 2021	<0.2	ug/L	No
Diclofop-methyl	Feb.16, 2021	<0.2	ug/L	No
Dimethoate	Feb.16, 2021	<0.1	ug/L	No
Diquat	Jan. 19, 2021	<1.0	ug/L	No
Diuron	Jan. 19, 2021	<1.0	ug/L	No
Glyphosate	Jan. 19, 2021	<5.0	ug/L	No
HAA (Haloacetic Acid)	Jan. 10, 2023 Apr. 11, 2023 Jul. 11, 2023 Oct. 17, 2023	<5.30 <5.30 <5.30 <5.30	ug/L	No
Malathion	Feb.16, 2021	<0.1	ug/L	No
MCPA (2-Methyl-4-chlorophenoxyacetic acid)	Jan. 19, 2021	<0.2	ug/L	No
Metolachlor	Feb.16, 2021	<0.1	ug/L	No
Metribuzin	Feb.16, 2021	<0.1	ug/L	No
Monochlorobenzene	Jan. 19, 2021	<0.5	ug/L	No
Paraquat	Jan. 19, 2021	<1.0	ug/L	No
Pentachlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Phorate	Feb.16, 2021	<0.1	ug/L	No
Picloram	Jan. 19, 2021	<0.2	ug/L	No
Polychlorinated Biphenyls (PCB)	Jan. 19, 2021	<0.035	ug/L	No
Prometryne	Feb.16, 2021	<0.1	ug/L	No
Simazine	Feb.16, 2021	<0.1	ug/L	No
THM (Note: show latest annual average)	**2023 Average**	9.3	ug/L	No
Terbufos	Feb.16, 2021	<0.2	ug/L	No
Tetrachloroethylene	Jan. 19, 2021	<0.5	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Triallate	Feb.16, 2021	<0.1	ug/L	No
Trichloroethylene	Jan. 19, 2021	<0.5	ug/L	No
2,4,6-Trichlorophenol	Jan. 19, 2021	<0.5	ug/L	No
Trifluralin	Feb.16, 2021	<0.1	ug/L	No
Vinyl Chloride	Jan. 19, 2021	<0.2	ug/L	No

***N.D. = Not Detected**

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
Sodium Well #1	**10.3**	**mg/l**	**January 12, 2021**
Sodium Well #2	**10.5**	**mg/l**	**January 12, 2021**