

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, 2017 to December 31, 2017

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> Municipality of South Bruce Administration Office 21 Gordon Street East Teeswater, Ontario </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to:</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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 No

Indicate how you notified system users that your 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**

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

A Supervisory Control and Data Acquisition (SCADA) system was installed to improve data recording and trending.

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. 28, 2017	Low Chlorine AWQI# 137679	0.08	mg/L	Switched to Well 2 from Well 1 as Cl2 pump was sir locked. Got Cl2 pump working and got Residual restored and meeting CT. Took 5 distribution residuals, all good.	Oct. 28, 2017

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	53	0-0	0-0		
Treated (Contact Simulator)	52	0-0	0-0	52	0 - 4
Treated (First Customer)	52	0-0	0-0	52	0 - 5
Distribution System	156	0-0	0-0	104	0 - 9

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)		Treated (First Customer)		Distribution System	
	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)	# grab samples	Range of Results (#-#)
Turbidity	52	0.07-0.16 ntu	51	0.07-0.17 ntu	52	0.05-0.12 ntu	52	0.06-0.14 ntu	213	0.05-0.19 ntu
Free Chlorine	N/A	N/A	N/A	N/A	365	1.10 – 2.36	365	0.71-2.13	471	0.71-2.04

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
January 1, 2017	HAA (Haloacetic Acid)	Apr. 11, 2017	5.3 <MDL	ug/L
		May 16, 2017	5.3 <MDL	
		Jul. 18, 2017	5.3 <MDL	
		Oct. 24, 2017	5.7	

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
Antimony	01/20/15	<0.10	ug/L	No
Arsenic	Jan. 20, 2015	0.40	ug/L	No
	Nov. 24, 2015	0.30		
Barium	01/20/15	54	ug/L	No
Boron	01/20/15	13	ug/L	No
Cadmium	01/20/15	<0.02	ug/L	No
Chromium	01/20/15	<2	ug/L	No
Lead (Distribution) Lead 15.1	Jan. 17/17	0.41	ug/L	No
	Feb. 7, 2017	0.02		
	Jul. 18, 2017	0.23		
Mercury	01/20/15	<0.02	ug/L	No
Selenium	Jan. 20, 2015	1	ug/L	No
	Nov. 24, 2015	<1		
Sodium every 5 years next 2021	Jan. 19, 2016 Well #1	11.5	mg/L	No
Uranium	01/20/15	0.65	ug/L	No
Fluoride every 5 years next 2021)	April 19, 2016	0.20	mg/L	No
	Jan. 19, 2016	0.20		
Nitrite	1) Jan. 17, 2017	<0.10	mg/L	No
	2) April 18, 2017	<0.10	mg/L	No
	3) July 18, 2017	<0.10	mg/L	No
	4) Oct. 24, 2017	<0.10	mg/L	No
Nitrate	1 Jan. 17, 2017	3.00	mg/L	No
	2 April 18, 2017	3.30	mg/L	No
	3 July 18, 2017	3.20	mg/L	No
	4 Oct. 24, 2017	2.80	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	01/20/15	<0.3	ug/L	No
Aldicarb	01/20/15	<3.0	ug/L	No
Aldrin + Dieldrin	01/20/15	<0.02	ug/L	No
Atrazine + N-dealkylated metabolites	01/20/15	<0.5	ug/L	No
Azinphos-methyl	01/20/15	<1.0	ug/L	No
Bendiocarb	01/20/15	<3.0	ug/L	No
Benzene	01/20/15	<0.5	ug/L	No
Benzo(a)pyrene	01/20/15	<0.005	ug/L	No
Bromoxynil	01/20/15	<0.3	ug/L	No
Carbaryl	01/20/15	<3.0	ug/L	No
Carbofuran	01/20/15	<.1.0	ug/L	No
Carbon Tetrachloride	01/20/15	<0.2	ug/L	No
Chlordane (Total)	01/20/15	<0.04	ug/L	No
Chlorpyrifos	01/20/15	<0.5	ug/L	No
Cyanazine	01/20/15	<0.5	ug/L	No
Diazinon	01/20/15	<1.0	ug/L	No
Dicamba	01/20/15	<5.0	ug/L	No
1,2-Dichlorobenzene	01/20/15	<0.10	ug/L	No
1,4-Dichlorobenzene	01/20/15	<0.2	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/20/15	<0.01	ug/L	No
1,2-Dichlorethane	01/20/15	<0.10	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	01/20/15	<0.10	ug/L	No
Dichloromethane	01/20/15	<0.3	ug/L	No
2-4 Dichlorophenol	01/20/15	<0.10	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/20/15	<5.0	ug/L	No
Diclofop-methyl	01/20/15	<0.50	ug/L	No
Dimethoate	01/20/15	<1.0	ug/L	No
Dinoseb	01/20/15	<0.5	ug/L	No
Diquat	01/20/15	<5	ug/L	No
Diuron	01/20/15	<5.0	ug/L	No
Glyphosate	01/20/15	<25	ug/L	No
Heptachlor + Heptachlor Epoxide	01/20/15	<0.1	ug/L	No
Linadane (Total)	01/20/15	<0.1	ug/L	No
Malathion	01/20/15	<5.0	ug/L	No
Methoxychlor	01/20/15	<0.1	ug/L	No
Metolachlor	01/20/15	<3.0	ug/L	No
Metribuzin	01/20/15	<3.0	ug/L	No
Monochlorobenzene	01/20/15	<0.2	ug/L	No
Paraquat	01/20/15	<1	ug/L	No
Parathion	01/20/15	<3.0	ug/L	No

Pentachlorophenol	01/20/15	<0.1	ug/L	No
Phorate	01/20/15	<0.3	ug/L	No
Picloram	01/20/15	<5.0	ug/L	No
Polychlorinated Biphenyls (PCB)	01/20/15	<0.05	ug/L	No
Prometryne	01/20/15	<0.10	ug/L	No
Simazine	01/20/15	<0.5	ug/L	No
THM (Note: show latest annual average)	2017 Average	8.4	ug/L	No
Temphos	01/20/15	<10	ug/L	No
Terbufos	01/20/15	<0.3	ug/L	No
Tetrachloroethylene	01/20/15	<0.2	ug/L	No
2,3,4,6-Tetrachlorophenol	01/20/15	<0.1	ug/L	No
Triallate	01/20/15	<10	ug/L	No
Trichloroethylene	01/20/15	<0.10	ug/L	No
2,4,6-Trichlorophenol	01/20/15	<0.10	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/20/15	<10	ug/L	No
Trifluralin	01/20/15	<0.5	ug/L	No
Vinyl Chloride	01/20/15	<0.2	ug/L	No

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

PARAMTER	SAMPLE DATE	RESULT VALUE	UNIT OF MEASURE	EXCEEDANCE
Antimony	01/20/15	<0.10	ug/L	No
Arsenic	Jan. 20, 2015 Nov. 17, 2015	0.40 0.50	ug/L	No
Barium	01/20/15	54	ug/L	No
Boron	01/20/15	13	ug/L	No
Cadmium	01/20/15	<0.02	ug/L	No
Chromium	01/20/15	<2	ug/L	No
Lead (Distribution)	Jan. 17/17	0.41	ug/L	No
Lead 15.1	Feb. 7, 2017 Jul. 18, 2017	0.02 0.23		
Mercury	01/20/15	<0.02	ug/L	No
Selenium	Jan. 20, 2015 Nov. 17, 2015	<1 <1	ug/L	No
Sodium Next 2021	Jan. 19, 2016 Well #2	11.2	mg/L	No
Uranium	01/20/15	0.63	ug/L	No
Fluoride (every 5 years next 2021)	April 19, 2016	0.20	mg/L	No
Nitrite	1) Jan. 17, 2017	<0.10	mg/L	No
	2) April 18, 2017	<0.10	mg/L	No
	3) July 18, 2017	<0.10	mg/L	No
	4) Oct. 24, 2017	<0.10	mg/L	No
Nitrate	1 Jan. 17, 2017	2.90	mg/L	No
	2 April 18, 2017	3.20	mg/L	No
	3 July 18, 2017	3.20	mg/L	No

4	Oct. 24, 2017	2.80	mg/L	No
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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	01/20/15	<0.3	ug/L	No
Aldicarb	01/20/15	<3.0	ug/L	No
Aldrin + Dieldrin	01/20/15	<0.02	ug/L	No
Atrazine + N-dealkylated metabolites	01/20/15	<0.5	ug/L	No
Azinphos-methyl	01/20/15	<1.0	ug/L	No
Bendiocarb	01/20/15	<3.0	ug/L	No
Benzene	01/20/15	<0.5	ug/L	No
Benzo(a)pyrene	01/20/15	<0.005	ug/L	No
Bromoxynil	01/20/15	<0.3	ug/L	No
Carbaryl	01/20/15	<3.0	ug/L	No
Carbofuran	01/20/15	<1.0	ug/L	No
Carbon Tetrachloride	01/20/15	<0.2	ug/L	No
Chlordane (Total)	01/20/15	<0.04	ug/L	No
Chlorpyrifos	01/20/15	<0.5	ug/L	No
Cyanazine	01/20/15	<0.5	ug/L	No
Diazinon	01/20/15	<1.0	ug/L	No
Dicamba	01/20/15	<5.0	ug/L	No
1,2-Dichlorobenzene	01/20/15	<0.10	ug/L	No
1,4-Dichlorobenzene	01/20/15	<0.2	ug/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	01/20/15	<0.01	ug/L	No
1,2-Dichlorethane	01/20/15	<0.10	ug/L	No
1,1-Dichloroethene (vinylidene chloride)	01/20/15	<0.10	ug/L	No
Dichloromethane	01/20/15	<0.3	ug/L	No
2-4 Dichlorophenol	01/20/15	<0.10	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	01/20/15	<5.0	ug/L	No
Diclofop-methyl	01/20/15	<0.50	ug/L	No
Dimethoate	01/20/15	<1.0	ug/L	No
Dinoseb	01/20/15	<0.5	ug/L	No
Diquat	01/20/15	<5	ug/L	No
Diuron	01/20/15	<5.0	ug/L	No
Glyphosate	01/20/15	<25	ug/L	No
Heptachlor + Heptachlor Epoxide	01/20/15	<0.1	ug/L	No
Linadane (Total)	01/20/15	<0.1	ug/L	No
Malathion	01/20/15	<5.0	ug/L	No
Methoxychlor	01/20/15	<0.1	ug/L	No
Metolachlor	01/20/15	<3.0	ug/L	No
Metribuzin	01/20/15	<3.0	ug/L	No
Monochlorobenzene	01/20/15	<0.2	ug/L	No
Paraquat	01/20/15	<1	ug/L	No
Parathion	01/20/15	<3.0	ug/L	No

Pentachlorophenol	01/20/15	<0.1	ug/L	No
Phorate	01/20/15	<0.3	ug/L	No
Picloram	01/20/15	<5.0	ug/L	No
Polychlorinated Biphenyls (PCB)	01/20/15	<0.05	ug/L	No
Prometryne	01/20/15	<0.10	ug/L	No
Simazine	01/20/15	<0.5	ug/L	No
THM (Note: show latest annual average)	2017 Average	8.4	ug/L	No
Temphos	01/20/15	<10	ug/L	No
Terbufos	01/20/15	<0.3	ug/L	No
Tetrachloroethylene	01/20/15	<0.2	ug/L	No
2,3,4,6-Tetrachlorophenol	01/20/15	<0.1	ug/L	No
Triallate	01/20/15	<10	ug/L	No
Trichloroethylene	01/20/15	<0.10	ug/L	No
2,4,6-Trichlorophenol	01/20/15	<0.10	ug/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	01/20/15	<10	ug/L	No
Trifluralin	01/20/15	<0.5	ug/L	No
Vinyl Chloride	01/20/15	<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
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A