



SOUTH BRUCE WATER SYSTEMS
2023 SUMMARY REPORT

PREPARED IN ACCORDANCE WITH SCHEDULE 22
ONTARIO REGULATION 170/03, AS AMENDED

PREPARED BY VEOLIA WATER CANADA
FOR THE MUNICIPALITY OF SOUTH BRUCE

February 16, 2024

REPORTING PERIOD: JANUARY 1, 2023 TO DECEMBER 31, 2023

Summary of Reporting Requirements

O. Reg 170/03, Section 22 sets out the preparation and distribution of an annual summary report by owners of a drinking water system.

22-2. (1) The owner of a drinking water system shall ensure that, no later than March 31 of each year after 2003, a report is prepared in accordance with subsections (2) and (3) for the preceding calendar year and is given to,

(a) in the case of a drinking water system owned by a municipality, the members of the municipal council;

(b) in the case of a drinking water system owned by a municipal service board established under section 195 of the *Municipal Act, 2001*, the members of the municipal service board; or

(c) in the case of a drinking water system owned by a corporation, the board of directors of the corporation.

(2) The report must,

(a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system **that were not met at any time during the period covered by the report**; and

(b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

(3) The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.

2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water licence, or if the system is receiving all of its water from another system under an agreement pursuant to subsection 5 (4), to the flow rates specified in the written agreement.

(4) If a report is prepared under subsection (1) for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

Infrastructure Review – As part of the Drinking Water Quality Management System (DWQMS) an Infrastructure Review is required on an Annual Basis. The South Bruce Operations Manager and the Veolia Water Project Manager review Infrastructure on a regular basis. In the DWQMS Operational Plan it States: *The procedure will be for the Project Manager / Overall Responsible Operator to compile information received from the Maintenance Lead and Operators throughout the year based on work orders and observations relating to the infrastructure of the water treatment system. This information will be summarized in an Infrastructure section of the annual summary report and presented to the Owner on an annual basis. The Annual Summary is required to be submitted to the Owner by March 30th of each year.*

Mildmay Water System – Drinking Water System #220002654

Report Period: January 1st, 2023 to December 31st, 2023

On November 24, 2023, Heather Lovely from the Ministry of the Environment Conservation and Parks began an inspection of the Mildmay Water System. The final report was submitted by Heather Lovely on February 5, 2024. There was one non-compliance item reported.

Question: Are all water quality monitoring requirements imposed by the MDWL and DWWP being met?

Corrective Action: By February 21, 2024, the operating authority shall provide the author of this report proof of staff training regarding compliance to the Mildmay Municipal Drinking Water Licence 095- 101, Issue 6, Schedule E condition 3.

Completed Corrective Action: On February 7, 2024 the required training was completed, and a record of the training was submitted to Inspector Heather Lovely

The following table lists the Adverse Water Quality Incidents that occurred during the reporting period:

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
Oct. 10, 2023	Total Coliform	1	TC	Resampled adverse location and two upstream locations. All samples came back as a 0 TC and 0 E.Coli	Oct. 12, 2023

Mildmay Infrastructure Review

The following items have been identified as potential improvements for the Mildmay Water System:

- Absalom St. (Mildmay) - Water/Wastewater (Bruce County is potentially completing road reconstruction). Potential upgrades to some valves and tracer wire.
- Connecting link from Elora St Bridge to Church St. (Mildmay) - Have applied for funding
- Dietz St and Kleist St (Mildmay)
- Beverley Street Road Reconstruction to be considered in future - no planned timeframe. Consider upsizing the main and adding a Fire Hydrant.

Maintenance/Expenses

- September 25 - A new Variable Frequency Drive (VFD) was installed for Well#1



Mildmay Summary of Quantities and Flow Rates - January 1st to December 31st, 2023

MONTH	Total Flow For Month (Liters)	Average Daily Flow (Liters)	Maximum Daily Flow (Liters)
January	14,694,000	474,000	590,000
February	12,565,000	448,750	563,000
March	13,671,000	441,000	636,000
April	13,118,000	437,267	522,000
May	15,412,000	497,161	712,000
June	17,110,000	570,333	725,000
July	15,381,000	496,161	615,000
August	15,930,000	513,871	1,141,000
September	14,076,000	469,200	744,000
October	17,043,000	549,774	745,000
November	14,677,000	489,233	610,000
December	14,281,000	460,677	591,000
TOTAL:	177,958,000		
DAILY AVERAGE:		487,556	
DAILY MAXIMUM:			1,141,000
MAXIMUM ALLOWABLE TAKING, AS PER PERMIT TO TAKE WATER			
DRINKING WATER LICENCE CAPACITY (DAILY): 1,637,000 Litres			
MAXIMUM ALLOWABLE PER DAY: 1,600,000 Litres			

For 2023 the average daily flow rate was **30.47%**, and the maximum daily flow was **71.31%** of the Permit To Take water capacity of 1,600,000 Litres per day.

The maximum daily flow was **69.70%** of the Municipal Drinking Water License Rated Capacity of 1,637,000 Litres per day.



Identified Peak Flow Outliers between January 1, 2023 - December 31, 2023

August 15, 2023 - A watermain break occurred at the intersection of Kleist St. & Dietz St.

With the above outlier reasonably removed from the data, the adjusted 2023 maximum daily flow is **779,000 L**, which is **48.69%** of the Permit To Take water capacity of 1,600,000 L/day. The adjusted maximum daily flow is **47.59%** of the Municipal Drinking Water License Rated Capacity of 1,637,000 L/day.

Mildmay Well #1 Raw Water Quality Trends

The raw water quality of the Well #1 in Mildmay remains excellent.

The first two tables below show that there were no instances of E. Coli or Total Coliform in the Raw Water Sample Results.

The third table shows the Raw Water Turbidity. Turbidity is a measurement of the clarity of the water (the lower the number the more clear the water is). For 2023 the raw turbidity ranged from 0.02 to 1.23 ntu, and averaged 0.15 ntu. This range is consistent with previous years Raw Water Turbidity.

Based on this information it does not appear that a below grade inspection of the well is required at this time. The previous below grade inspection for Well #1 was completed in 2014. The next below grade inspection is planned for 2024.

Raw Water Well #1 - E. Coli			
Month	Monthly Minimum	Monthly Maximum	Monthly # Samples
Jan '23	0	0	5
Feb '23	0	0	4
Mar '23	0	0	4
Apr '23	0	0	4
May '23	0	0	5
Jun '23	0	0	4
Jul '23	0	0	4
Aug '23	0	0	5
Sep '23	0	0	4
Oct '23	0	0	5
Nov '23	0	0	4
Dec '23	0	0	4
Annual Summary			
Min	0		
Max		0	
Avg		0	
# of Samples			52

Raw Water Well #1 - Total Coliform			
Month	Monthly Minimum	Monthly Maximum	Monthly # Samples
Jan '23	0	1	5
Feb '23	0	0	4
Mar '23	0	0	4
Apr '23	0	0	4
May '23	0	0	5
Jun '23	0	0	4
Jul '23	0	0	4
Aug '23	0	0	5
Sep '23	0	0	4
Oct '23	0	0	5
Nov '23	0	0	4
Dec '23	0	0	4
Annual Summary			
Min	0		
Max		1	
Avg		0	
# of Samples			52

Raw Turbidity - Well #1				
Month	Raw Water Turbidity			
	Average NTU	Minimum NTU	Maximum NTU	# of Samples
Jan '23	0.10	0.08	0.12	5
Feb '23	0.16	0.07	0.32	4
Mar '23	0.14	0.13	0.17	4
Apr '23	0.12	0.08	0.17	4
May '23	0.18	0.11	0.39	5
Jun '23	0.10	0.09	0.11	4
Jul '23	0.07	0.02	0.10	4
Aug '23	0.11	0.09	0.12	5
Sep '23	0.39	0.10	1.23	4
Oct '23	0.13	0.11	0.17	5
Nov '23	0.19	0.13	0.32	4
Dec '23	0.18	0.14	0.21	4
Annual Summary				
Total				52
Average	0.15			
Maximum			1.23	
Minimum		0.02		



Mildmay Well #2 Raw Water Quality Trends

The raw water quality of the Well #2 in Mildmay remains excellent. The first two tables below show that there were no instances of E. Coli or Total Coliform in the Raw Water Sample Results. The third table shows the Raw Water Turbidity. For 2023 the raw turbidity ranged from 0.06 to 0.35 ntu, and averaged 0.13 ntu. This range is consistent with previous years Raw Water Turbidity. Based on this information it does not appear that a below grade inspection of the well is required at this time. The previous below grade inspection for Well #2 was completed in 2015. The next below grade inspection should take place in 2025.

Raw Water Well #2 - E. Coli				Raw Water Well #2 - Total Coliform				Raw Turbidity - Well #2				
Month	Monthly	Monthly	Monthly	Month	Monthly	Monthly	Monthly	Month	Raw Water Turbidity			
	Minimum	Maximum	# Samples		Minimum	Maximum	# Samples		Average	Minimum	Maximum	# of
	NTU	NTU			NTU	NTU			NTU	NTU	NTU	Samples
Jan '23	0	0	5	Jan '23	0	0	5	Jan '23	0.10	0.09	0.12	5
Feb '23	0	0	4	Feb '23	0	0	4	Feb '23	0.10	0.06	0.12	4
Mar '23	0	0	4	Mar '23	0	0	4	Mar '23	0.10	0.07	0.12	4
Apr '23	0	0	4	Apr '23	0	0	4	Apr '23	0.13	0.07	0.16	4
May '23	0	0	5	May '23	0	0	5	May '23	0.13	0.11	0.15	5
Jun '23	0	0	4	Jun '23	0	0	4	Jun '23	0.10	0.09	0.11	4
Jul '23	0	0	4	Jul '23	0	0	4	Jul '23	0.14	0.08	0.17	4
Aug '23	0	0	5	Aug '23	0	0	5	Aug '23	0.14	0.08	0.20	5
Sep '23	0	0	4	Sep '23	0	0	4	Sep '23	0.18	0.09	0.22	4
Oct '23	0	0	5	Oct '23	0	0	5	Oct '23	0.14	0.06	0.20	5
Nov '23	0	0	4	Nov '23	0	0	4	Nov '23	0.19	0.12	0.35	4
Dec '23	0	0	4	Dec '23	0	0	4	Dec '23	0.19	0.13	0.24	4
Annual Summary				Annual Summary				Annual Summary				
Min	0			Min	0			Total				52
Max		0		Max		0		Average	0.13			
Avg		0		Avg		0		Maximum			0.35	
Total			52	Total			52	Minimum		0.06		



Teeswater Water System – Drinking Water System #220002654

Report Period: January 1st, 2023 to December 31st, 2023

On November 24, 2023, Heather Lovely from the Ministry of the Environment Conservation and Parks began an inspection of the Teeswater Water System. The final report was submitted by Heather Lovely on February 5, 2024. There were no non-compliance items reported.

The following table lists the Adverse Water Quality Incidents that occurred during the reporting period:

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
NA					

Teeswater Infrastructure Review

The following items have been identified as potential improvements for the Teeswater Drinking Water System:

- Engineering is in progress for a Water Tower and a Second Well.

Maintenance/Expenses

- September 26 - A new Variable Frequency Drive (VFD) for pump 3 was installed.
- October 3 - Replaced the register for the pumphouse flow meter



Teeswater Summary of Quantities and Flow Rates - January 1st to December 31st, 2023

MONTH	Total Flow For Month (Liters)	Average Daily Flow (Liters)	Maximum Daily Flow (Liters)
January	10,797,000	348,290	693,000
February	8,291,000	296,107	380,000
March	8,778,000	283,161	384,000
April	8,240,000	274,667	348,000
May	10,155,000	327,581	603,000
June	12,893,000	429,767	637,000
July	10,395,000	335,323	447,000
August	10,052,000	324,258	422,000
September	8,593,000	286,433	386,000
October	9,707,000	313,129	429,000
November	9,623,000	320,767	422,000
December	9,175,000	295,968	453,000
TOTAL:	116,699,000		
DAILY AVERAGE:		319,723	
DAILY MAXIMUM:			693,000
MAXIMUM ALLOWABLE TAKING, AS PER PERMIT TO TAKE WATER			
DRINKING WATER LICENCE CAPACITY (DAILY): 2,160,000 Litres			
MAXIMUM ALLOWABLE PER DAY: 1,600,000 Litres			

For 2023 the average daily flow rate was **19.80%**, and the maximum daily flow was **43.31%** of the Permit To Take water capacity of 1,600,000 Litres per day.

The maximum daily flow was **32.08%** of the Municipal Drinking Water License Rated Capacity of 2,160,000 Litres per day.



Identified Peak Flow Outliers between January 1, 2023 - December 31, 2023

January 12, 2023 - A watermain break occurred at 12 Hillcrest St. E.

With the above outlier reasonably removed from the data, the adjusted 2023 maximum daily flow is **637,000 L**, which is **39.81%** of the Permit To Take water capacity of 1,600,000 L/day. The adjusted maximum daily flow is **29.49%** of the Municipal Drinking Water License Rated Capacity of 2,160,000 L/day.

Teeswater Raw Water Quality Trends

The raw water quality of the well in Teeswater remains excellent.

The first two tables below show that there were no instances of E. Coli or Total Coliform in the Raw Water Sample Results.

The third table shows the Raw Water Turbidity. For 2023 the raw turbidity ranged from 0.07 to 0.27 ntu, and averaged 0.14 ntu.

This range is consistent with previous years Raw Water Turbidity.

Based on this information it does not appear that a below grade inspection of the well is required at this time.

Raw Water - E. Coli Results				Raw Water - Total Coliform Results				Raw Water Turbidity				
Month	Monthly Minimum (cfu/100ml)	Monthly Maximum (cfu/100ml)	Monthly # Samples	Month	Monthly Minimum (cfu/100ml)	Monthly Maximum (cfu/100ml)	Monthly # Samples	Month	Raw Turbidity			No. of Samples
									Minimum ntu	Maximum ntu	Average ntu	
Jan '23	0	0	5	Jan '23	0	0	5	Jan '23	0.08	0.16	0.13	5
Feb '23	0	0	4	Feb '23	0	0	4	Feb '23	0.16	0.20	0.18	4
Mar '23	0	0	4	Mar '23	0	0	4	Mar '23	0.14	0.22	0.17	4
Apr '23	0	0	4	Apr '23	0	0	4	Apr '23	0.11	0.16	0.12	4
May '23	0	0	5	May '23	0	0	5	May '23	0.09	0.14	0.12	5
Jun '23	0	0	4	Jun '23	0	0	4	Jun '23	0.09	0.17	0.12	4
Jul '23	0	0	4	Jul '23	0	0	4	Jul '23	0.08	0.16	0.13	4
Aug '23	0	0	5	Aug '23	0	0	5	Aug '23	0.07	0.14	0.11	5
Sep '23	0	0	4	Sep '23	0	0	4	Sep '23	0.08	0.16	0.13	4
Oct '23	0	0	5	Oct '23	0	0	5	Oct '23	0.10	0.27	0.16	5
Nov '23	0	0	4	Nov '23	0	0	4	Nov '23	0.10	0.26	0.17	4
Dec '23	0	0	4	Dec '23	0	0	4	Dec '23	0.11	0.16	0.14	4
Annual Summary				Annual Summary				Annual Summary				
Min	0			Min	0			# of Samples				52
Max		0		Max		0		Minimum	0.07			
Avg				Avg				Maximum		0.27		
Total			52	Total			52	Average			0.14	

