Ontario Clean Water Agency
Agence Ontarienne Des Eaux

AMABEL-SAUBLE
DRINKING WATER SYSTEM

Large Municipal Residential

SCHEDULE 22
SUMMARY REPORT

For the period of
JANUARY 1, 2017 TO DECEMBER 31, 2017

Prepared by the Ontario Clean Water Agency
For The Corporation of the Town of South Bruce Peninsula

Summary

This report is a summary of water quality and quantity information submitted in accordance with Schedule 22 of Ontario's Drinking Water System Regulation for the reporting period of January 1, 2017 to December 31, 2017 for the Amabel-Sauble Drinking Water System located in the Town of South Bruce Peninsula. The summary includes the following information:

- Any requirements of the Act and Regulation, Orders or System Approval(s) that the system failed to meet during the reporting period and the measures taken to correct each failure.
- A summary of the quantities and flow rates of water supplied during the reporting period, including monthly averages and maximum daily flows.
- A comparison of the average and monthly maximum daily flows to the approved capacity specified in the System Approval.

Issues of Non-Compliance

An MOECC Drinking Water System Inspection was performed on November 11, 2017. On February 02, 2018 the report for this inspection was issued, the Amabel-Sauble Drinking Water System received an inspection rating of 100%.

The following is a summary of the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; as well as the duration of the failure and the measures that were taken to correct the failure:

Non-Compliance(s)	Duration	Required Actions & Corrective Actions
Weekly Treated Water (TW) heterotrophic plate count (HPC) sample date did not meet the requirements of a weekly sample as it was not taken at least five days after the previous weekly sample • Laboratory equipment failure on Monday's samples required operators to resample (Thursday). Operators took the next samples on Monday (4 days later, not meeting the regulation of a weekly sample 5 to 10 days)	March 27, 2017 Weekly TW Sample	Corrective Actions: • Reviewed the requirements as per O.Reg 170/03 for frequency and sampling and equipment checks with Operations Staff at the next staff meeting. • Reviewed with staff where the most recent copy of O.Reg 170/03 can be found (a copy is on the Shared Drive and can be found online). • Reviewed the summary of the frequency and sampling and equipment checks which is provided on the sampling schedule.

Refer to the Section 11 Annual Report for a summary of any Adverse Water Quality Incident(s) which occurred during the reporting period.

Assessment of Flowrates and Quantity of Water Supplied

The following tables summarize the quantities (Table 1) and flow rates (Table 2) of the water supplied during the period covered by the report, including monthly average and maximum daily flows as well as a comparison of the summary to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license.

As per Municipal Drinking Water License (MDWL) 094-101 (Issue Number: 2, expires March 17, 2020), the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a rated capacity of 687 m^3/day. There is no maximum allowable limit listed in the MDWL for the flowrate of water that flows into a treatment subsystem, however, raw water flowrate has been included in this report (Table 3, 4, 5).

Table 1. Treated Water Monthly Average and Maximum Daily Flows and Comparison to Rated Capacity for 2017

	Treated Water Flow			
2017	**Average Flow (m^3/day)**	**Percent of Rated Capacity**	**Maximum Flow (m^3/day)**	**Percent of Rated Capacity**
January	63.48	9.24%	78.55	11.43%
February	64.93	9.45%	106.73	15.54%
March	64.37	9.37%	85.82	12.49%
April	98.56	14.35%	127.67	18.58%
May	180.58	26.29%	286.84	41.75%
June	223.41	32.52%	272.19	39.62%
July	193.72	28.20%	286.96	41.77%
August	202.16	29.43%	227.40	33.10%
September	188.88	27.49%	238.80	34.76%
October	151.33	22.02%	320.17	46.60%
November	65.92	9.60%	77.19	11.24%
December	71.62	10.43%	89.17	12.98%

Table 2. Treated Water Monthly Average and Maximum Flowrates for 2017

2017	**Treated Water**	
	Average Flowrate (l/s)	**Maximum Flowrate (l/s)**
January	0.73	6.69
February	0.75	50.79
March	0.75	4.43
April	1.14	9.48
May	2.09	75.77
June	2.58	11.00
July	2.25	62.10
August	2.34	61.14
September	2.19	61.87
October	1.75	57.47
November	0.76	4.97
December	0.83	6.47

Table 3. Raw Water Monthly Average and Maximum Flowrates for 2017 (Well 1 PW1)

2017	**Raw Water**	
	Average Flowrate (l/s)	**Maximum Flowrate (l/s)**
January	3.881	4.31
February	3.881	4.68
March	3.853	4.55
April	3.872	4.71
May	3.876	4.69
June	3.879	4.67
July	3.877	4.66
August	3.876	4.65
September	3.880	4.64
October	3.878	4.68
November	3.885	4.80
December	3.859	4.71

Table 4. Raw Water Monthly Average and Maximum Flowrates for 2017 (Well 2 PW2)

2017	Raw Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	3.998	4.96
February	3.982	4.94
March	3.995	4.95
April	3.997	5.04
May	3.997	4.94
June	3.999	4.94
July	4.006	4.87
August	4.008	4.89
September	4.004	4.89
October	4.006	4.92
November	3.993	4.94
December	4.010	4.94

Table 5. Raw Water Monthly Average and Maximum Flowrates for 2017 (W10-Winburk Well)

2017	Raw Water	
	Average Flowrate (l/s)	Maximum Flowrate (l/s)
January	3.96	4.21
February	4.01	4.16
March	4.01	4.16
April	4.01	4.18
May	3.92	4.21
June	3.98	4.19
July	3.97	4.12
August	4.00	4.22
September	3.86	4.17
October	3.95	4.22
November	3.96	4.18
December	3.95	4.21

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

AMABEL-SAUBLE
DRINKING WATER SYSTEM

Large Municipal Residential

SECTION 11
ANNUAL REPORT

For the period of
JANUARY 1, 2017 TO DECEMBER 31, 2017

Prepared by the Ontario Clean Water Agency
For The Town of South Bruce Peninsula

Drinking Water System Number:	220007917
Drinking Water System Name:	Amabel-Sauble Drinking Water System
Drinking Water System Owner:	Town of South Bruce Peninsula
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2017 to December 31, 2017

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

No.

Is your annual report available to the public at no charge on a web site on the Internet?

Yes.

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

Town of South Bruce Peninsula
315 George Street
Wiarton, Ontario
N0H 2T0
519-534-1400

Drinking-Water Systems (if any), which receive all of their drinking water from your system:

n/a.

Did you provide a copy of the 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
- [ ] Public access/notice via Public Request
- [ ] Public access/notice via a Public Library
- [ ] Public access/notice via other method: _____

Description of Drinking Water System:

The Amabel-Sauble Well Supply Drinking Water System (DWS) is a Class II Treatment and a Class II Water Distribution System.

The Amabel-Sauble DWS is supplied by the following deep drilled GUDI wells:

- Well PW1
- Well PW2
- Winburk Well

The treatment system consists of:

- Sodium hypochlorite oxidation/disinfection system (for iron and manganese oxidation, primary disinfection and secondary disinfection/chemical top up)
- Filtration (for iron and manganese removal)
- Cartridge filtration (as pretreatment for ultra violet disinfection)
- UV disinfection
- Pressure tanks
- Backwash wastewater holding tank for residuals management (supernatant is discharged to a ditch and settled sludge is removed)
- SCADA Instrumentation and control systems (to control process equipment function within the plant and at each of the raw water wells)

Reservoir/clearwell (for storage and to help achieve that required contact time for disinfection)

The distribution system for the Amabel-Sauble DWS has approximately 15.6 kilometers of distribution watermains.

List of water treatment chemicals used during the reporting period:

- Sodium Hypochlorite 12%

Significant expenses were incurred to:

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

Description of expenses:

- Replaced high lift (6 stage vertical pump) & high lift pump motor
- Rebuilt chlorine pumps and chlorine panel.
- Replaced chlorine pump #3.
- Replaced/repaired curbstops.
- Repaired watermain leak in distribution system (Manley Cres)
- Replaced battery in UPS for PLC
- Replaced main breaker at Winburk Well House.

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:

Date of Incident	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
n/a	n/a	n/a	n/a	n/a	n/a

Table 1. Microbiological testing done under Schedule 10, 11 or 12 of Regulation 170/03 during this reporting Period

Location	Number of Samples	Range of E.coli Results		Range of Total Coliforms Results		Number of HPC Samples	Range of HPC Samples	
		Minimum	Maximum	Minimum	Maximum		Minimum	Maximum
Raw (Well 1)	52	0	0	0	0	n/a	n/a	n/a
Raw (Well 2)	52	0	0	0	0	n/a	n/a	n/a
Raw (Well 3)	52	0	0	0	0	n/a	n/a	n/a
Treated (TW)	52	0	0	0	0	53	0	4
Distribution (DW)	104	0	0	0	0	53	0	2

Table 2. Operational testing done under Schedule 7, 8 or 9 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) – Filter	8760	0.023	0.649
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.38	2.666
Free Chlorine Residual, In-House (mg/L) - DW	416	0.66	1.50

NOTE: Record the unit of measure if it is not milligrams per litre.
NOTE: For continuous monitors use 8760 as the number of samples

Table 3. Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of Order of MDWL	Parameter	Date Sampled	Result (Annual Average)	MDWL Allowable Annual Average Concentration
March 19, 2015 094-101 (Issue 2)	Total Suspended Solids (Filter backwash)	2017 (Quarterly)	2 mg/L	25 mg/L

Table 4. Summary of Inorganic parameters tested during this reporting period or most recent sample results

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	Exceedance
Antimony: Sb (µg/L) - TW	2016/01/10	0.04	No
Arsenic: As (µg/L) - TW	2016/01/10	0.7	No
Barium: Ba (µg/L) - TW	2016/01/10	316.0	No
Boron: B (µg/L) - TW	2016/01/10	120.0	No
Cadmium: Cd (µg/L) - TW	2016/01/10	0.007	No
Chromium: Cr (µg/L) - TW	2016/01/10	0.6	No
Mercury: Hg (µg/L) - TW	2016/01/10	<MDL 0.01	No
Selenium: Se (µg/L) - TW	2016/01/10	0.13	No
Uranium: U (µg/L) - TW	2016/01/10	0.162	No
Fluoride (mg/L) - TW	2015/01/11	1.48	No
Nitrite (mg/L) - TW	2016/01/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/04/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/07/11	<MDL 0.003	No
Nitrite (mg/L) - TW	2016/10/17	<MDL 0.003	No
Nitrate (mg/L) - TW	2016/01/11	0.018	No
Nitrate (mg/L) - TW	2016/04/11	0.017	No
Nitrate (mg/L) - TW	2016/07/11	0.016	No
Nitrate (mg/L) - TW	2016/10/17	0.032	No
Sodium: Na (mg/L) - TW	2015/01/11	13.8	No

NOTE: There is no "MAC" for Sodium. The aesthetic objective 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.
NOTE: Sodium and Fluoride samples are to be taken every 60 months. The most current sampling session was in January 2015 for Sodium and Fluoride; the next sampling session is scheduled for January 2020.

Table 5. Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results		Number of Exceedances
		Minimum	Maximum	
Plumbing	n/a	n/a	n/a	n/a
Distribution (µg/L)	5	0.04	7.36	0
Alkalinity (mg/L)	8	189	205	n/a

NOTE: This system qualifies for the plumbing exemption as per Ontario Regulation 170/03 Schedule 15.1-5 (9) (10). This system also qualifies for reduced distribution sampling. Every 36 months, 4 distribution samples are taken during each sampling period and sampled for lead (2 per period). The most recent lead sampling session was in 2016 for the summer period (June 15th to October 15th) and 2016/7 for the winter period (December 15th to April 15th). The next sampling session will be 2019 for the summer period and 2020 for the winter period.

Table 6. Summary of Organic parameters sampled during this reporting period or most recent sample results.

Parameter	Sample Date	Result Value	Exceedance
Alachlor (µg/L) - TW	2017/01/09	<MDL 0.02	No
Atrazine + N-dealkylated metabolites (µg/L) - TW	2017/01/09	<MDL 0.01	No
Azinphos-methyl (µg/L) - TW	2017/01/09	<MDL 0.05	No
Benzene (µg/L) - TW	2017/01/09	<MDL 0.32	No
Benzo(a)pyrene (µg/L) - TW	2017/01/09	<MDL 0.004	No
Bromoxynil (µg/L) - TW	2017/01/09	<MDL 0.33	No
Carbaryl (µg/L) - TW	2017/01/09	<MDL 0.05	No
Carbofuran (µg/L) - TW	2017/01/09	<MDL 0.01	No
Carbon Tetrachloride (µg/L) - TW	2017/01/09	<MDL 0.16	No
Chlorpyrifos (µg/L) - TW	2017/01/09	<MDL 0.02	No
Diazinon (µg/L) - TW	2017/01/09	<MDL 0.02	No
Dicamba (µg/L) - TW	2017/01/09	<MDL 0.2	No
1,2-Dichlorobenzene (µg/L) - TW	2017/01/09	<MDL 0.41	No
1,4-Dichlorobenzene (µg/L) - TW	2017/01/09	<MDL 0.36	No
1,2-Dichloroethane (µg/L) - TW	2017/01/09	<MDL 0.35	No
1,1-Dichloroethylene (µg/L) - TW	2017/01/09	<MDL 0.33	No
Dichloromethane (Methylene Chloride) (µg/L) - TW	2017/01/09	<MDL 0.35	No
2,4-Dichlorophenol (µg/L) - TW	2017/01/09	<MDL 0.15	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) - TW	2017/01/09	<MDL 0.19	No
Diclofop-methyl (µg/L) - TW	2017/01/09	<MDL 0.4	No
Dimethoate (µg/L) - TW	2017/01/09	<MDL 0.03	No
Diquat (µg/L) - TW	2017/01/09	<MDL 1.0	No
Diuron (µg/L) - TW	2017/01/09	<MDL 0.03	No
Glyphosate (µg/L) - TW	2017/01/09	<MDL 1.0	No
Malathion (µg/L) - TW	2017/01/09	<MDL 0.02	No
Metolachlor (µg/L) - TW	2017/01/09	<MDL 0.01	No
Metribuzin (µg/L) - TW	2017/01/09	<MDL 0.02	No
Monochlorobenzene (Chlorobenzene) (µg/L) - TW	2017/01/09	<MDL 0.3	No
Paraquat (µg/L) - TW	2017/01/09	<MDL 1.0	No
PCB (µg/L) - TW	2017/01/09	<MDL 0.04	No
Pentachlorophenol (µg/L) - TW	2017/01/09	<MDL 0.15	No
Phorate (µg/L) - TW	2017/01/09	<MDL 0.01	No
Picloram (µg/L) - TW	2017/01/09	<MDL 1.0	No
Prometryne (µg/L) - TW	2017/01/09	<MDL 0.03	No
Simazine (µg/L) - TW	2017/01/09	<MDL 0.01	No
Terbufos (µg/L) - TW	2017/01/09	<MDL 0.01	No
Tetrachloroethylene (µg/L) - TW	2017/01/09	<MDL 0.35	No
2,3,4,6-Tetrachlorophenol (µg/L) - TW	2017/01/09	<MDL 0.2	No
Triallate (µg/L) - TW	2017/01/09	<MDL 0.01	No
Trichloroethylene (µg/L) - TW	2017/01/09	<MDL 0.44	No
2,4,6-Trichlorophenol (µg/L) - TW	2017/01/09	<MDL 0.25	No
Trifluralin (µg/L) - TW	2017/01/09	<MDL 0.02	No
Vinyl Chloride (µg/L) - TW	2017/01/09	<MDL 0.17	No
Trihalomethane: Total (µg/L) Annual Average - DW	2017 (Quarterly)	35.0	No
HAA Total (µg/L) Annual Average - DW	2017 (Quarterly)	7.6	No

Table 7. 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
Fluoride	1.48	mg/L	2015/01/11

NOTE: This is required only if DWS category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non municipal non-residential)