



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, 2016 TO DECEMBER 31, 2016**

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, 2016 to December 31, 2016 |

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
Warton, 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:

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Public access/notice via the web |
| <input checked="" type="checkbox"/> | Public access/notice via Government Office |
| <input type="checkbox"/> | Public access/notice via a newspaper |
| <input type="checkbox"/> | Public access/notice via Public Request |
| <input type="checkbox"/> | Public access/notice via a Public Library |
| <input type="checkbox"/> | 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
- Repair required equipment
- Replace required equipment
- No significant expenses were incurred

Description of expenses:

-

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 | 52 | 0 | 2 |
| Distribution (DW) | 104 | 0 | 0 | 0 | 0 | 52 | 0 | 1 |

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 | 0.026 | 0.8344 |
| Free Chlorine Residual, On-Line (mg/L) - TW | 8760 | 0.7628 | 2.6672 |
| Free Chlorine Residual, In-House (mg/L) - DW | 418 | 0.58 | 1.54 |

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) | 2016 (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 (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Arsenic: As (ug/L) - TW | 2016/01/10 | 0.6 | No |
| Barium: Ba (ug/L) - TW | 2016/01/10 | 278.0 | No |
| Boron: B (ug/L) - TW | 2016/01/10 | 115.0 | No |
| Cadmium: Cd (ug/L) - TW | 2016/01/10 | <MDL 0.003 | No |
| Chromium: Cr (ug/L) - TW | 2016/01/10 | <MDL 0.03 | No |
| Mercury: Hg (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Selenium: Se (ug/L) - TW | 2016/01/10 | <MDL 0.04 | No |
| Uranium: U (ug/L) - TW | 2016/01/10 | 0.178 | 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 | 0.017 | 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 | 0.017 | 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 (ug/L) | | 0.16 | 1 | 0 |
| Alkalinity (mg/L) | 8 | 188 | 192 | 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 current 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 (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Atrazine + N-dealkylated metabolites (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Azinphos-methyl (ug/L) - TW | 2016/01/10 | <MDL 0.05 | No |
| Benzene (ug/L) - TW | 2016/01/10 | <MDL 0.32 | No |
| Benzo(a)pyrene (ug/L) - TW | 2016/01/10 | <MDL 0.004 | No |
| Bromoxynil (ug/L) - TW | 2016/01/10 | <MDL 0.33 | No |
| Carbaryl (ug/L) - TW | 2016/01/10 | <MDL 0.05 | No |
| Carbofuran (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Carbon Tetrachloride (ug/L) - TW | 2016/01/10 | <MDL 0.16 | No |
| Chlorpyrifos (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Diazinon (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Dicamba (ug/L) - TW | 2016/01/10 | <MDL 0.2 | No |
| 1,2-Dichlorobenzene (ug/L) - TW | 2016/01/10 | <MDL 0.41 | No |
| 1,4-Dichlorobenzene (ug/L) - TW | 2016/01/10 | <MDL 0.36 | No |
| 1,2-Dichloroethane (ug/L) - TW | 2016/01/10 | <MDL 0.35 | No |
| 1,1-Dichloroethylene (ug/L) - TW | 2016/01/10 | <MDL 0.33 | No |
| Dichloromethane (Methylene Chloride) (ug/L) - TW | 2016/01/10 | <MDL 0.35 | No |
| 2,4-Dichlorophenol (ug/L) - TW | 2016/01/10 | <MDL 0.15 | No |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW | 2016/01/10 | <MDL 0.19 | No |
| Diclofop-methyl (ug/L) - TW | 2016/01/10 | <MDL 0.4 | No |
| Dimethoate (ug/L) - TW | 2016/01/10 | <MDL 0.03 | No |
| Diquat (ug/L) - TW | 2016/01/10 | <MDL 1.0 | No |
| Diuron (ug/L) - TW | 2016/01/10 | <MDL 0.03 | No |
| Glyphosate (ug/L) - TW | 2016/01/10 | <MDL 1.0 | No |
| Malathion (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Metolachlor (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Metribuzin (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Monochlorobenzene (Chlorobenzene) (ug/L) - TW | 2016/01/10 | <MDL 0.3 | No |
| Paraquat (ug/L) - TW | 2016/01/10 | <MDL 1.0 | No |
| PCB (ug/L) - TW | 2016/01/10 | <MDL 0.04 | No |
| Pentachlorophenol (ug/L) - TW | 2016/01/10 | <MDL 0.15 | No |
| Phorate (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Picloram (ug/L) - TW | 2016/01/10 | <MDL 1.0 | No |
| Prometryne (ug/L) - TW | 2016/01/10 | <MDL 0.03 | No |
| Simazine (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Terbufos (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Tetrachloroethylene (ug/L) - TW | 2016/01/10 | <MDL 0.35 | No |
| 2,3,4,6-Tetrachlorophenol (ug/L) - TW | 2016/01/10 | <MDL 0.2 | No |
| Triallate (ug/L) - TW | 2016/01/10 | <MDL 0.01 | No |
| Trichloroethylene (ug/L) - TW | 2016/01/10 | <MDL 0.44 | No |
| 2,4,6-Trichlorophenol (ug/L) - TW | 2016/01/10 | <MDL 0.25 | No |
| Trifluralin (ug/L) - TW | 2016/01/10 | <MDL 0.02 | No |
| Vinyl Chloride (ug/L) - TW | 2016/01/10 | <MDL 0.17 | No |
| Trihalomethane: Total (ug/L) Annual Average - DW | 2016 (Quarterly) | 40.5 | 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)