

ANNUAL REPORT

ONTARIO REGULATION 170/03
SECTION 11

BAXTER DISTRIBUTION SYSTEM



**FOR THE PERIOD:
JANUARY 1, 2019 – DECEMBER 31, 2019**

*Prepared for the Corporation of the Township of Essa
by the Ontario Clean Water Agency*



| | |
|--|---|
| Drinking-Water System Number: | 260086866 |
| Drinking-Water System Name: | Baxter Distribution System |
| Drinking-Water System Owner: | The Corporation of the Township of Essa |
| Drinking-Water System Category: | Small Municipal Residential |
| Period being reported: | January 1, 2019 to December 31, 2019 |

Does your 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 Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Summary Report is available for inspection at the Township of Essa Municipal Office at 5786 Simcoe County Road 21, Utopia, Essa Township, ON, L0M 1T0 or on the following website: <http://www.essatownship.on.ca>

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 |
|-----------------------------------|-------------------------------------|
| Not applicable | Not applicable |

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?

Not Applicable

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**

Description of Drinking-Water System:

On November 21, 2007, the Baxter drinking water system was switched over to the treated water transmission main (pipeline) from Collingwood to Alliston. The Raymond A. Barker Ultrafiltration Plant (RAB) in Collingwood supplies safe drinking water through the pipeline to the Baxter Facility. Modifications to the chlorination system enable re-chlorination of the treated water in the pipeline prior to filling the storage tank. Treated water from Collingwood is monitored by an online free chlorine analyzer in the pumphouse. An above-ground water storage tank provides a storage capacity of 300 m³ and is equipped with a separate fill and discharge pipe. Two (2) high lift distribution pumps with VFD (one duty and one standby) are connected to the storage tank discharge pipe. An online free chlorine analyzer monitors the treated water from the storage tank.

A “dry hydrant” is provided for fire truck filling or for filling the storage tank (hauled water) if the pipeline was down for maintenance and is unavailable. The system is alarmed for numerous parameters and monitored by Huronia Alarms in Midland, Ontario. The Baxter Distribution System is equipped with a 35 kW generator and auto switch-over to provide stand-by power in the event of a power failure.

List of water treatment chemicals used during the reporting period:

- Sodium Hypochlorite 12% Solution NSF, Primary Disinfection

Significant expenses incurred to:

- Install required equipment
- Purchase required equipment
- Repair required equipment
- Replace required equipment

Description of significant expenses incurred:

1. Repaired facility communications
2. Repaired chemical dosing pumps
3. Replaced chlorine probes and caps
4. Installed facility chlorine control switches

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 (yyyy/mm/dd) | Parameter | Result | Unit of Measure | Corrective Action | Corrective Action Date (yyyy/mm/dd) |
|----------------------------|-----------|--------|-----------------|-------------------|-------------------------------------|
| Not Applicable | | | | | |

Table 1: Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period.

| Location | Number of Samples | Range of E. Coli or Fecal Results | | Range of Total Coliform Results | | Number of HPC Samples | Range of HPC Samples | |
|-------------------|-------------------|-----------------------------------|-----|---------------------------------|-----|-----------------------|----------------------|-----|
| | | Min | Max | Min | Max | | Min | Max |
| Treated – TW* | 52 | 0 | 0 | 0 | 0 | 52 | 0 | 24 |
| Distribution - DW | 52 | 0 | 0 | 0 | 0 | 52 | 0 | 6 |

*Treated Water from Storage Tank

Table 2: Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report.

| Location & Test | Number of Samples | Range of Results | |
|---|-------------------|------------------|---------|
| | | Minimum | Maximum |
| Free Chlorine Residual, Storage (Continuous) [mg/L] | 8760 | 0* | 5.17 |
| Free Chlorine Residual, Treated (Grab) [mg/L] | 166 | 0.61 | 2.2 |
| Total Chlorine Residual, Treated (Grab) [mg/L] | 166 | 0.72 | 2.8 |
| Free Chlorine Residual, Distribution (Grab) [mg/L] | 105 | 0.7 | 2.19 |

Note: The number of samples used for continuous monitoring units is 8760.

* Min treated chlorine residual due to an analyzer failure, residuals verified manually, CT met.

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 Legal Instrument Issued | Parameter | Date Sampled | Result | Unit of Measure |
|---------------------------------|-----------|--------------|--------|-----------------|
| Not Applicable | | | | |

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

| Parameter | Sample Date (yyyy/mm/dd) | Sample Result | Maximum Allowable Concentration (MAC) | Number of Exceedances | |
|---------------------|---|---------------|---------------------------------------|-----------------------|-------|
| | | | | MAC | ½ MAC |
| Antimony: Sb (µg/L) | Please refer to the Collingwood Drinking Water System Annual Compliance Report for 2019. It is located at the following website: www.collingwood.ca/water/docs | | | | |
| Arsenic: As (µg/L) | | | | | |
| Barium: Ba (µg/L) | | | | | |
| Boron: B (µg/L) | | | | | |
| Cadmium: Cd (µg/L) | | | | | |
| Chromium: Cr (µg/L) | | | | | |
| Mercury: Hg (µg/L) | | | | | |
| Selenium: Se (µg/L) | | | | | |
| Uranium: U (µg/L) | | | | | |
| Fluoride: F (mg/L) | | | | | |
| Nitrite (mg/L) | | | | | |
| Nitrate (mg/L) | | | | | |
| Sodium: Na (mg/L)* | | | | | |

*There is no "MAC" for Sodium. The aesthetic objective 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.

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

| Location Type | Number of Samples | Range of Lead Results | | MAC | Number of Exceedances |
|------------------------------|---|-----------------------|---------|-----|-----------------------|
| | | Minimum | Maximum | | |
| Lead – Plumbing (µg/L) | Not Applicable - Relief from all Plumbing Requirements* | | | | |
| Lead – Distribution** (µg/L) | Not Applicable for Reporting Period | | | | |

Note: *The Alkalinity results for 2019 were 75 and 76 mg/L as CaCO₃.*

*This system qualifies for the plumbing exemption as per O. Regulation 170/03 Schedule 15.1-5 (9) (10).

**Distribution lead samples are taken every 36 months. The next set of distribution lead samples is scheduled for 2021.

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

| Parameter | Sample Date (yyyy/mm/dd) | Sample Result | Maximum Allowable Concentration (MAC) | Number of Exceedances | |
|--|--------------------------|---------------|---------------------------------------|-----------------------|-------|
| | | | | MAC | ½ MAC |
| Alachlor (µg/L) | | | | | |
| Atrazine + N-dealkylated metabolites (µg/L) | | | | | |
| Azinphos-methyl (µg/L) | | | | | |
| Benzene (µg/L) | | | | | |
| Benzo(a)pyrene (µg/L) | | | | | |
| Bromoxynil (µg/L) | | | | | |
| Carbaryl (µg/L) | | | | | |
| Carbofuran (µg/L) | | | | | |
| Carbon Tetrachloride (µg/L) | | | | | |
| Chlorpyrifos (µg/L) | | | | | |
| Diazinon (µg/L) | | | | | |
| Dicamba (µg/L) | | | | | |
| 1,2-Dichlorobenzene (µg/L) | | | | | |
| 1,4-Dichlorobenzene (µg/L) | | | | | |
| 1,2-Dichloroethane (µg/L) | | | | | |
| 1,1-Dichloroethylene (µg/L) | | | | | |
| Dichloromethane (Methylene Chloride) (µg/L) | | | | | |
| 2,4-Dichlorophenol (µg/L) | | | | | |
| 2,4-Dichlorophenoxy acetic acid (2,4-D) (µg/L) | | | | | |
| Diclofop-methyl (µg/L) | | | | | |
| Dimethoate (µg/L) | | | | | |
| Diquat (µg/L) | | | | | |
| Diuron (µg/L) | | | | | |
| Glyphosate (µg/L) | | | | | |
| Malathion (µg/L) | | | | | |
| Metolachlor (µg/L) | | | | | |
| Metribuzin (µg/L) | | | | | |

Please refer to the Collingwood Drinking Water System Annual Compliance Report for 2019. It is located at the following website: www.collingwood.ca/water/docs



| Parameter | Sample Date (yyyy/mm/dd) | Sample Result | Maximum Allowable Concentration (MAC) | Number of Exceedances | |
|---|-----------------------------|------------------|--|--------------------------|-------|
| | | | | MAC | ½ MAC |
| Monochlorobenzene (Chlorobenzene) (µg/L) | | | | | |
| Paraquat (µg/L) | | | | | |
| PCB (µg/L) | | | | | |
| Pentachlorophenol (µg/L) | | | | | |
| Phorate (µg/L) | | | | | |
| Picloram (µg/L) | | | | | |
| Prometryne (µg/L) | | | | | |
| Simazine (µg/L) | | | | | |
| Terbufos (µg/L) | | | | | |
| Tetrachloroethylene (µg/L) | | | | | |
| 2,3,4,6-Tetrachlorophenol (µg/L) | | | | | |
| Triallate (µg/L) | | | | | |
| Trichloroethylene (µg/L) | | | | | |
| 2,4,6-Trichlorophenol (µg/L) | | | | | |
| Trifluralin (µg/L) | | | | | |
| Vinyl Chloride (µg/L) | | | | | |
| Trihalomethane: Total Annual Average (µg/L) - DW | 4 Quarters of 2019 | 45.75 | 100.00 | No | No |
| Haloacetic Acid: Total Annual Average (µg/L) - DW | 4 Quarters of 2019 | 31.725 | 80.00 | No | No |

Table 7: List of 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 |
|----------------|--------------|-----------------|----------------|
| Not Applicable | | | |

Note: This table highlights parameters with a “Yes” in the ½ MAC columns of Table 4 and Table 6. Please refer to the Town of Collingwood website for any ½ MAC exceedances.