



February 19, 2019

Mayor Renald Beaulieu and Council
The Corporation of the Municipality of Greenstone
P.O. Box 70
GERALDTON, Ontario
P0T 1M0

Re: O. Regulation 170 - 2018 Section 11 Annual Reports for the:

- **Beardmore Drinking-Water System**
- **Caramat Drinking-Water System**
- **Geraldton Drinking-Water System**
- **Longlac Drinking-Water System**
- **Nakina Drinking-Water System**

Ontario's Drinking-Water Systems Regulation (O.Reg. 170/03), made under the Safe Drinking Water Act, 2002, requires that the owner of a drinking water system prepare an annual report on the operation of the system and the quality of its water.

The annual report must cover the period of January 1st to December 31st in a year and *must be prepared not later than February 28th* of the following year. Pursuant to the legislative requirements, enclosed for your records are the *2018 Annual Reports* for the Municipality of Greenstone's Drinking-Water Systems.

Pursuant to the legislative requirements, Section 11 (6): the annual report must:

- (a) contain a brief description of the drinking-water system, including a list of water treatment chemicals used by the system during the period covered by the report;
- (b) summarize any reports made to the Ministry under subsection 18 (1) of the Act or section 16-4 of Schedule 16 during the period covered by the report;
- (c) summarize the results of tests required under this Regulation, or an approval or order, including an OWRA order, during the period covered by the report and, if tests required under this Regulation in respect of a parameter were not required during that period, summarize the most recent results of tests of that parameter;
- (d) describe any corrective actions taken under Schedule 17 or 18 during the period covered by the report;
- (e) describe any major expenses incurred during the period covered by the report to install, repair or replace required equipment; and

(f) in the case of a large municipal residential system or a small municipal residential system, include a statement of where a report prepared under Schedule 22 will be available for inspection under subsection 12 (4). O. Reg. 170/03, s. 11 (6)

In addition, Section 11 (7) gives the direction that a copy of an annual report for the system is given, without charge, to every person who requests a copy and be made available for inspection by any member of the public during normal business hours. The reports should be made available at the office of the municipality, or at a location that is accessible to the users of the water system.

Yours truly,



Bradley McMahon
Senior Operations Manager
Northwestern Ontario Regional Hub

Copy to: Mark Wright - CAO
Brian Aaltonen – Director of Public Services
Operations Staff – Beardmore WTP
Operations Staff – Caramat WTP
Operations Staff – Geraldton WTP
Operations Staff – Longlac WTP
Operations Staff – Nakina Well Supply

2018 Section 11 Annual Report

Beardmore Drinking-Water System

February 2019

Prepared by the



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Section 11 ANNUAL REPORT

Drinking-Water System Number:	210001264
Drinking-Water System Name:	Beardmore Water Treatment Plant
Drinking-Water System Owner:	The Corporation of the Municipality of Greenstone
Drinking-Water System Category:	Large Municipal Residential Drinking Water-System
Period being reported:	January 1 – December 31, 2018

<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> <table border="1" style="width: 100%;"> <tr> <td> Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Beardmore Ward Office 285 Main Street Beardmore, ON P0T 1G0 </td> </tr> </table>	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Beardmore Ward Office 285 Main Street Beardmore, ON P0T 1G0	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served:</p> <table border="1" style="width: 100%;"> <tr> <td>N/A</td> </tr> </table> <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> <table border="1" style="width: 100%;"> <tr> <td>N/A</td> </tr> </table> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>	N/A	N/A
Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Beardmore Ward Office 285 Main Street Beardmore, ON P0T 1G0				
N/A				
N/A				

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 (Municipal)

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 raw water is pumped from the Blackwater River by the low lift pumps into the packaged treatment plant tank, which is a Graver monoplant treatment unit; a type of solids contact clarifier. The flocculation, sedimentation, and filtration processes are all contained within the packaged plant. Aluminum sulfate is added to the raw water as a coagulant after the low lift pumps and prior to the treatment unit. Two polymers are used to assist with flocculation depending on seasonal conditions. These are injected into the raw water immediately before the treatment unit.

The floc settles onto the tube settlers in the clarifier. The water then passes through a two-compartment dual media (sand and anthracite) filter. Once through the filters, the water is chlorinated with sodium hypochlorite. Carus 8500 Ortho-polyphosphate is used for corrosion control and caustic soda is used for pH adjustment. These three chemicals are injected into the piping between the filter and reservoir. The reservoir is located beneath the process floor and is divided into two compartments having a combined capacity of 682 m3.

Two high lift pumps deliver the finished water to the distribution system and a third high lift pump delivers water under fire flow conditions.

List all water treatment chemicals used over this reporting period

- Caustic Soda (Sodium Hydroxide)
- Sodium Hypochlorite
- Nalco-2 (Sodium Aluminate)
- Nalco 8170 polymer
- Aluminum Sulphate
- Carus 8500



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

Install	Repair	Replace	Description	Expense
	X		Refurbish and repair deteriorating process tank	\$58,000

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
10-Jan-2018	Other Observation – Loss of turbidity data for more than 15 minutes	39	minutes	Reset meter when loss was noticed to not be functioning. Occurred during generator test. Verified readings 0.058 NTU before and after reset and lab grab sample 0.13 NTU.	10-Jan-2018
13-Apr-2018	Other Observation – Sheen visible on pump well, noticed on March 18 th and sampled	-	-	Sample sheen tested, testing indicated F2 hydrocarbons present on surface only. Repair fire pump seals and clean well.	18-May-2018
17-May-2018	Other Observation – Loss of pressure in distribution system due to pump failure.	-	-	Flush dead end hydrants, check chlorine residuals in system.	17-May-2018

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0 - 17	15 - 2420	N/A	N/A

Treated	55	0 - 0	0 - 0	52	0 - 2
Distribution	97	0 - 0	0 - 0	24	0 - 26

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity*		
Raw (before filter)	8760	0.0 – 9.99 NTU
Treated	8760	0.0 – 2.00 NTU
Chlorine*		
Treated	8760	0 – 5.00
Distribution	373	0.13 – 1.71
Fluoride (If the DWS provides fluoridation)	N/A	N/A

NOTE: For continuous monitors use 8760 as the number of samples.

** Turbidity & chlorine Min/Max (lows/highs) are due to planned maintenance and not plant upset.*

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
N/A	N/A	N/A	N/A	N/A

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	15-Jan-2018	<0.6	µg/L	No
Arsenic	15-Jan-2018	<1.0	µg/L	No
Barium	15-Jan-2018	11.0	µg/L	No
Boron	15-Jan-2018	<50.0	µg/L	No
Cadmium	15-Jan-2018	<0.1	µg/L	No

Chromium	15-Jan-2018	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	15-Jan-2018	<0.1	µg/L	No
Selenium	15-Jan-2018	<1.0	µg/L	No
Sodium	18-Aug-2014	18.3	mg/L	No
Uranium	15-Jan-2018	<2.0	µg/L	No
Fluoride	21-Jul-2014	<0.03	mg/L	No
Nitrite	15-Jan-2018	<0.010	mg/L	No
	09-Apr-2018	<0.010	mg/L	No
	23-Jul-2018	<0.010	mg/L	No
	09-Oct-2018	<0.010	mg/L	No
Nitrate	15-Jan-2018	0.114	mg/L	No
	09-Apr-2018	0.136	mg/L	No
	23-Jul-2018	0.046	mg/L	No
	09-Oct-2018	0.030	mg/L	No

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	Sampling not required as per Ont. Regulation 170	-	-
Distribution	Sampling not required as per Ont. Regulation 170	-	-

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	15-Jan-2018	< 0.20	µg/L	No
Azinphos-methyl (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Benzene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Benzo(a)pyrene (ug/L) - TW	15-Jan-2018	< 0.01	µg/L	No
Bromoxynil (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Carbaryl (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Carbofuran (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Carbon Tetrachloride (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Chlorpyrifos (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Diazinon (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Dicamba (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No

1,2-Dichlorobenzene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
1,4-Dichlorobenzene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
1,2-Dichloroethane (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
1,1-Dichloroethylene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	15-Jan-2018	< 5.0	µg/L	No
2,4-Dichlorophenol (ug/L) - TW	15-Jan-2018	< 0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Diclofop-methyl (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Dimethoate (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Diquat (ug/L) - TW	15-Jan-2018	< 1.0	µg/L	No
Diuron (ug/L) - TW	15-Jan-2018	< 1.0	µg/L	No
Glyphosate (ug/L) - TW	15-Jan-2018	< 5.0	µg/L	No
Haloacetic acids (HAA)* (NOTE: show latest annual average)	09-Oct-2018 2018 Average	68.1 72.4	µg/L	No
Malathion (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Metolachlor (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Metribuzin (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Paraquat (ug/L) - TW	15-Jan-2018	< 1.0	µg/L	No
PCB (ug/L) - TW	15-Jan-2018	< 0.035	µg/L	No
Pentachlorophenol (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Phorate (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Picloram (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Prometryne (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Simazine (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
THM (NOTE: show latest annual average)	09-Oct-2018 2018 Average	88.3 76.4	µg/L µg/L	No
Terbufos (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
Tetrachloroethylene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Triallate (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Trichloroethylene (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
2,4,6-Trichlorophenol (ug/L) - TW	15-Jan-2018	< 0.5	µg/L	No
Trifluralin (ug/L) - TW	15-Jan-2018	< 0.1	µg/L	No
Vinyl Chloride (ug/L) - TW	15-Jan-2018	< 0.2	µg/L	No
MCPA	15-Jan-2018	< 0.2	µg/L	No

*Parameter exceedance not reportable until 2020

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
2018 THM - Running Annual Average (RAA)	76.4	µg/L	N/A



2018 HAA – Running Annual Average (RAA)*	72.4	µg/L	N/A
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***Parameter exceedance not reportable until 2020**