



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 1<sup>st</sup> to December 31<sup>st</sup> in a year and *must be prepared not later than February 28<sup>th</sup>* 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

## Geraldton Drinking-Water System

February 2019

Prepared by the



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**



**Section 11 ANNUAL REPORT**

<b>Drinking-Water System Number:</b>	<b>210000292</b>
<b>Drinking-Water System Name:</b>	Geraldton Water Treatment Plant
<b>Drinking-Water System Owner:</b>	The Corporation of the Municipality of Greenstone
<b>Drinking-Water System Category:</b>	<b>Large Municipal Residential Drinking Water-System</b>
<b>Period being reported:</b>	January 1 – December 31, 2018

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ X ]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Geraldton Ward Office (Administration)</b> 1800 Main Street Geraldton, ON POT 1M0</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b>  <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </p> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b>  <div style="border: 1px solid black; padding: 2px; width: 100px; text-align: center;">N/A</div> </p> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></p>
---	---

**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	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**

Cecile Lake is the sole source of supply for the Geraldton water system. The surface water is conveyed by gravity through two (2) coarse screens to the intake well and low lift pumping chamber.

Prior to entering the treatment plant, Alum (aluminum sulphate) and polymer are added for coagulation. Potassium permanganate is added to the raw water for manganese removal as required.

The raw water passes through stages of mixing, flocculation, sedimentation with the aid of tube settlers and passes through a filter of mixed media consisting of anthracite, sand and gravel.

Disinfection is provided by injecting chlorine gas into the filtered water before it enters the storage reservoirs.

Three high lift pumps deliver water to the distribution system.

**List all water treatment chemicals used over this reporting period**

- Aluminum Sulphate A-10
- Magnafloc LT-20 polymer
- Potassium Permanganate
- Chlorine Gas

**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			Tower inspection/mixer install	\$12,700
X			Form 1 for Geraldton waterline install	\$9,500

**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
21-Feb-2018	Other Observation – Low pressure for four (4) homes and hospital to install backflow to hospital	-	-	Boil water advisory issued for affected users. Two (2) sets of bacteriological samples taken.	23-Feb-2018
08-Mar-2018	Other Observation – Low pressure for nine (9) homes and nine (9) businesses to repair water main.	-	-	Boil water advisory issued for affected users. Two (2) sets of bacteriological samples taken.	12-Mar-2018
25-Mar-2018	Physical/Chemical – Turbidity meter failed. Missing turbidity data.	-	-	Sample turbidity every fifteen (15) minutes. New controller installed.	27-Mar-2018
02-May-2018	Other Observation – Hydrant replacement affecting seven (7) homes on Mosher Street. Water restored at 15:05.	-	-	Boil water advisory issued to affected users. Bacteriological samples taken, mains/pipes flushed and disinfection restored.	05-May-2018
15-May-2018	Other Observation – Loss of pressure. Valve and hydrant replacement	-	-	Boil water advisory issued. Disinfection restored,	22-May-2018



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

	watermain shut down affecting twenty-six (26) homes and a restaurant/motel on Edith Avenue.			mains/pipes flushed and two (2) sets of bacteriological samples taken.	
18-May-2018	Other Observation – Water main break affecting twenty (20) homes and eight (8) businesses on Rosedale Pt.	-	-	Boil water advisory issued. Disinfection restored, mains/pipes flushed and two (2) sets of bacteriological samples taken.	20-May-2018
14-Jun-2018	Other Observation – Loss of pressure. Hydrant repair; watermain shutdown affecting seven (7) homes and a business on Tombill.	-	-	Boil water advisory issued. Disinfection restored, mains/pipes flushed and two (2) sets of bacteriological samples taken.	20-Jun-2018
27-Jun-2018	Other Observation – Loss of pressure. Hydrant removal watermain shutdown affecting a home and a bed and breakfast on East St.	-	-	Boil water advisory issued. Disinfection restored, mains/pipes flushed and two (2) sets of bacteriological samples taken.	30-Jun-2018
28-Jun-2018	Other Observation – Water break requiring main line shutdown at approximately 13:15. Loss of pressure affecting two (2) homes: 318 and 319 Clarke Ave. SE.	-	-	Boil water advisory issued. Resample and test, disinfection restored, mains/pipes flushed.	05-Jul-2018
18-Oct-2018	Other Observation – Loss of pressure. Repair water break main shutdown affecting eleven (11) homes and two (2) businesses on Main, Draper, 1 <sup>st</sup> East and Clarke.	-	-	Boil water advisory issued. Resample and test, disinfection restored, mains/pipes flushed.	22-Oct-2018
29-Oct-2018	Other Observation – Loss of pressure. Install new waterline; main shutdown affecting ten (10) homes and a business on Tombill.	-	-	Boil water advisory issued. Resample and test, disinfection restored, mains/pipes flushed.	02-Nov-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 – 19	0 – 435	N/A	N/A
Treated	52	0	0	52	0 – 2
Distribution	181	0	0	50	0 – 4

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 #)
<b>Turbidity*</b>		
Raw	244	0.927 – 3.98 NTU
Filter #1	8760	0 – 3.00 NTU
Filter #2	8760	0 – 3.00 NTU
<b>Chlorine*</b>		
Treated	8760	0 – 4.999
Distribution	366	0.35 – 1.76
<b>Fluoride</b> (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
July 4, 2011  Municipal Drinking Water Licence 225-104	Suspended Solids (Composite)  Frequency: Monthly  Location: Point of Discharge to Yvonne Lake	22-May-2018	<2.0*	mg/L
		11-Jun-2018	<2.0*	mg/L
		10-Jul-2018	5.2	mg/L
		13-Aug-2018	2.0	mg/L
		12-Sep-2018	28.1	mg/L
Note: Samples can only be collected when conditions permit. Winter conditions prevent sampling as the discharge location is frozen.		Average Annual Concentration for 2018	7.9 (*2.0 used for average calculation)	mg/L

**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	08-Jan-2018	<0.6	µg/L	No
Arsenic	08-Jan-2018	<1.0	µg/L	No
Barium	08-Jan-2018	<10.0	µg/L	No
Boron	08-Jan-2018	<50.0	µg/L	No
Cadmium	08-Jan-2018	<0.1	µg/L	No
Chromium	08-Jan-2018	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	08-Jan-2018	<0.1	µg/L	No
Selenium	08-Jan-2018	<1.0	µg/L	No
Sodium	13-Jan-2014	17.8	mg/L	No
Uranium	08-Jan-2018	<2.0	µg/L	No
Fluoride	13-Jan-2014	<0.03	mg/L	No
Nitrite	08-Jan-2018	<0.010	mg/L	No
	03-Apr-2018	<0.010	mg/L	No
	09-Jul-2018	<0.010	mg/L	No
	01-Oct-2018	<0.010	mg/L	No
Nitrate	08-Jan-2018	0.037	mg/L	No
	03-Apr-2018	0.178	mg/L	No
	09-Jul-2018	0.092	mg/L	No
	01-Oct-2018	<0.02	mg/L	No

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

### 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
<b>Plumbing</b>	Sampling not required as per Ont. Regulation 170	-	-
<b>Distribution</b>	4	1 – 5.0 µg/L	0

### 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	08-Jan-2018	<0.1	µg/L	No
Atrazine + N-dealkylated metabolites	08-Jan-2018	<0.2	µg/L	No
Azinphos-methyl	08-Jan-2018	<0.1	µg/L	No
Benzene	08-Jan-2018	<0.5	µg/L	No
Benzo(a)pyrene	08-Jan-2018	<0.01	µg/L	No
Bromoxynil	08-Jan-2018	<0.2	µg/L	No
Carbaryl	08-Jan-2018	<0.2	µg/L	No
Carbofuran	08-Jan-2018	<0.2	µg/L	No
Carbon Tetrachloride	08-Jan-2018	<0.2	µg/L	No
Chlorpyrifos	08-Jan-2018	<0.1	µg/L	No
Diazinon	08-Jan-2018	<0.1	µg/L	No
Dicamba	08-Jan-2018	<0.2	µg/L	No
1,2-Dichlorobenzene	08-Jan-2018	<0.5	µg/L	No
1,4-Dichlorobenzene	08-Jan-2018	<0.5	µg/L	No
1,2-Dichloroethane	08-Jan-2018	<0.5	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	08-Jan-2018	<0.5	µg/L	No
Dichloromethane	08-Jan-2018	<5.0	µg/L	No
2-4 Dichlorophenol	08-Jan-2018	<0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	08-Jan-2018	<0.2	µg/L	No
Diclofop-methyl	08-Jan-2018	<0.2	µg/L	No



<b>Dimethoate</b>	08-Jan-2018	<0.1	µg/L	No
<b>Diquat</b>	08-Jan-2018	<1.0	µg/L	No
<b>Diuron</b>	08-Jan-2018	<1.0	µg/L	No
<b>Glyphosate</b>	08-Jan-2018	<5.0	µg/L	No
<b>Haloacetic acids (HAA)*</b> (NOTE: show latest annual average)	01-Oct-2018 2018 Average	44.6 39.0	µg/L	Yes
<b>Malathion</b>	08-Jan-2018	<0.1	µg/L	No
<b>Metolachlor</b>	08-Jan-2018	<0.1	µg/L	No
<b>Metribuzin</b>	08-Jan-2018	<0.1	µg/L	No
<b>Monochlorobenzene</b>	08-Jan-2018	<0.5	µg/L	No
<b>Paraquat</b>	08-Jan-2018	<1.0	µg/L	No
<b>Pentachlorophenol</b>	08-Jan-2018	<0.5	µg/L	No
<b>Phorate</b>	08-Jan-2018	<0.1	µg/L	No
<b>Picloram</b>	08-Jan-2018	<0.2	µg/L	No
<b>Polychlorinated Biphenyls(PCB)</b>	08-Jan-2018	<0.035	µg/L	No
<b>Prometryne</b>	08-Jan-2018	<0.1	µg/L	No
<b>Simazine</b>	08-Jan-2018	<0.1	µg/L	No
<b>THM</b> (NOTE: show latest annual average)	01-Oct-2018 2018 Average	65.3 50.0	µg/L µg/L	No No
<b>Terbufos</b>	08-Jan-2018	<0.2	µg/L	No
<b>Tetrachloroethylene</b>	08-Jan-2018	<0.5	µg/L	No
<b>2,3,4,6-Tetrachlorophenol</b>	08-Jan-2018	<0.5	µg/L	No
<b>Triallate</b>	08-Jan-2018	<0.1	µg/L	No
<b>Trichloroethylene</b>	08-Jan-2018	<0.5	µg/L	No
<b>2,4,6-Trichlorophenol</b>	08-Jan-2018	<0.5	µg/L	No
<b>Trifluralin</b>	08-Jan-2018	<0.1	µg/L	No
<b>Vinyl Chloride</b>	08-Jan-2018	<0.2	µg/L	No
<b>MCPA</b>	08-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
N/A	N/A	N/A	N/A