



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

Nakina Drinking-Water System

February 2019

Prepared by the



Ontario Clean Water Agency
Agence Ontarienne Des Eaux



Section 11 ANNUAL REPORT

Drinking-Water System Number:	220000200
Drinking-Water System Name:	Nakina Well Supply
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> <div style="border: 1px solid black; padding: 5px;"> <p>Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Nakina Ward Office 200 Centre Avenue Nakina, ON P0T 2H0</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div> </p> <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: <div style="border: 1px solid black; padding: 2px; display: inline-block;">N/A</div> </p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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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

The Nakina Water Supply System is supplied by two (2) groundwater wells. The water supply aquifer utilized by the Corporation of the Municipality of Greenstone – Nakina Ward lies within an esker complex (significant sand and gravel deposit). These deposits are common throughout the area and the most extensive of these features trend southwesterly through the Township. Composed primarily of gravelly sand, this broad belt stretches approximately 4 km in width and 60 km in length. The two wells are located approximately 72 m from the southeastern shore of Rounds Lake.

The wells are housed within the same building, and a common header delivers water to the reservoir beneath the high lift pumping station. The water is chlorinated using sodium hypochlorite at the entry point to the reservoir. The high lift and fire pumps draw water from the reservoir for the delivery to the system.

Wells #1 & #2 are each capable of supplying 18.9 L/s, and were designed to be operated simultaneously for a total of 37.9 L/s. Fire flow and emergency storage is supplied from the reservoir. The facility presently serves a population of approximately 700 persons and was designed with the anticipation of growth within the community.

A 60 kW diesel generator provides standby power for the well pumps and a 150 kW diesel generator provides power for the chemical feed system and the high lift and fire pumps.

In a hydro geological study conducted by KGS Group, the wells were identified **as not** under the direct influence of surface water.

List all water treatment chemicals used over this reporting period

- Sodium Hypochlorite

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	High lift pump replacement	\$36,000
		X	MCC upgrades as per ESA and Automation Now reports	\$25,500

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

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					
Well 1	52	0 – 0	0 – 0	N/A	N/A
Well 2	52	0 – 0	0 – 0	N/A	N/A
Treated	51	0 – 0	0 – 0	51	0 – 300
Distribution	104	0 – 0	0 – 0	27	0 – 17

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 Well #1	73	0.16 – 40.00 NTU
Raw Well #2	147	0.16 – 0.52 NTU
Treated	8760	0 – 5.00 NTU
Chlorine*		
Treated	8760	0 – 4.999
Distribution	368	0.4 – 0.70
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	03-Jan-2018	<0.6	µg/L	No
Arsenic	03-Jan-2018	<1.0	µg/L	No
Barium	03-Jan-2018	14.0	µg/L	No
Boron	03-Jan-2018	<50.0	µg/L	No
Cadmium	03-Jan-2018	<0.1	µg/L	No
Chromium	03-Jan-2018	<1.0	µg/L	No
*Lead	Refer to Summary Table Below			
Mercury	03-Jan-2018	<0.1	µg/L	No
Selenium	03-Jan-2018	<1.0	µg/L	No
Sodium	15-Oct-2018	14.9	mg/L	Yes
Uranium	03-Jan-2018	<2.0	µg/L	No
Fluoride	15-Oct-2018	0.054	mg/L	No
Nitrite	03-Jan-2018	<0.01	mg/L	No
	12-Apr-2018	<0.01	mg/L	No

	04-Jul-2018	<0.01	mg/L	No
	15-Oct-2018	<0.01	mg/L	No
Nitrate	03-Jan-2018	0.138	mg/L	No
	12-Apr-2018	0.208	mg/L	No
	04-Jul-2018	0.165	mg/L	No
	15-Oct-2018	0.117	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
Plumbing	Sampling not required as per Ont. Regulation 170	-	-
Distribution	2	<1 – 1.3	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	03-Jan-2018	<0.1	µg/L	No
Atrazine + N-dealkylated metabolites	03-Jan-2018	<0.2	µg/L	No
Azinphos-methyl	03-Jan-2018	<0.1	µg/L	No
Benzene	03-Jan-2018	<0.5	µg/L	No
Benzo(a)pyrene	03-Jan-2018	<0.01	µg/L	No
Bromoxynil	03-Jan-2018	<0.2	µg/L	No
Carbaryl	03-Jan-2018	<0.2	µg/L	No
Carbofuran	03-Jan-2018	<0.2	µg/L	No
Carbon Tetrachloride	03-Jan-2018	<0.2	µg/L	No
Chlorpyrifos	03-Jan-2018	<0.1	µg/L	No
Diazinon	03-Jan-2018	<0.1	µg/L	No
Dicamba	03-Jan-2018	<0.2	µg/L	No
1,2-Dichlorobenzene	03-Jan-2018	<0.5	µg/L	No
1,4-Dichlorobenzene	03-Jan-2018	<0.5	µg/L	No
1,2-Dichloroethane	03-Jan-2018	<0.5	µg/L	No



1,1-Dichloroethylene (vinylidene chloride)	03-Jan-2018	<0.5	µg/L	No
Dichloromethane	03-Jan-2018	<0.5	µg/L	No
2-4 Dichlorophenol	03-Jan-2018	<0.3	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	03-Jan-2018	<0.2	µg/L	No
Diclofop-methyl	03-Jan-2018	<0.2	µg/L	No
Dimethoate	03-Jan-2018	<0.1	µg/L	No
Diquat	03-Jan-2018	<1.0	µg/L	No
Diuron	03-Jan-2018	<1.0	µg/L	No
Glyphosate	03-Jan-2018	<5.0	µg/L	No
Haloacetic acids (HAA)* (NOTE: show latest annual average)	15-Oct-2018 2018 Average	8.2 6.6	µg/L	No
Malathion	03-Jan-2018	<0.1	µg/L	No
Metolachlor	03-Jan-2018	<0.1	µg/L	No
Metribuzin	03-Jan-2018	<0.1	µg/L	No
Monochlorobenzene	03-Jan-2018	<0.5	µg/L	No
Paraquat	03-Jan-2018	<1.0	µg/L	No
Pentachlorophenol	03-Jan-2018	<0.5	µg/L	No
Phorate	03-Jan-2018	<0.1	µg/L	No
Picloram	03-Jan-2018	<0.2	µg/L	No
Polychlorinated Biphenyls(PCB)	03-Jan-2018	<0.035	µg/L	No
Prometryne	03-Jan-2018	<0.1	µg/L	No
Simazine	03-Jan-2018	<0.1	µg/L	No
THM (NOTE: show latest annual average)	15-Oct-2018 2018 Average	15.9 13.6	µg/L µg/L	No No
Terbufos	03-Jan-2018	<0.2	µg/L	No
Tetrachloroethylene	03-Jan-2018	<0.5	µg/L	No
2,3,4,6-Tetrachlorophenol	03-Jan-2018	<0.5	µg/L	No
Triallate	03-Jan-2018	<0.1	µg/L	No
Trichloroethylene	03-Jan-2018	<0.5	µg/L	No
2,4,6-Trichlorophenol	03-Jan-2018	<0.5	µg/L	No
2-methyl-4-chlorophenoxyacetic acid (MCPA)	03-Jan-2018	<0.2	ug/L	No
Trifluralin	03-Jan-2018	<0.1	µg/L	No
Vinyl Chloride	03-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
Sodium	14.9	mg/L	15-Oct-2018