

February 2025

Mayor James McPherson and Council
The Corporation of the Municipality of Greenstone
P.O. Box 70
Geraldton, Ontario
P0T 1M0

Re: 2024 O.Reg 170/03 Schedule 22 Summary Report, O.Reg 170/03 Section 11 Annual Report & O.Reg 387/04 Annual Record of Water Taking for the:

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

Attached are the 2024 Annual and Summary Reports for the Greenstone Drinking Water Systems. The Reports are based on information provided by Operators in accordance with Section 11 and Schedule 22 of O. Reg. 170/03, under the Safe Drinking Water Act. A confirmation of submission of the PTTW reporting, as required by O.Reg 387, is included as part of the report.

As per Schedule 22 of O. Reg. 170/03, this Summary Report is to be provided to the members of the municipal council no later than March 31, 2025. Please ensure this distribution.

Section 12 of O. Reg. 170/03, requires both the Summary Report and the Annual Report be made available for inspection by any member of the public during normal business hours, without charge. The reports should be made available for inspection at the office of the municipality or at a location that is reasonably convenient to the users of the water system

These reports were prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone and are based on information kept on record by OCWA at each specific water treatment plant. The report covers the period January 1st through to December 31st 2024.

Yours truly,



Patti O'Handley
Senior Operations Manager
Northwestern Ontario Regional Hub
807-853-2356

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 WTP

Beardmore Drinking Water System

Large Municipal Residential Drinking Water System

January 1 – December 31, 2024

*O.Reg 170/03 Schedule 22 Summary Report
O.Reg 170/03 Section 11 Annual Report
&
O.Reg 387/04 Annual Record of Water Taking*

Issued: **February 2025**

Prepared by the



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



Drinking-Water System Number: 210001264
Drinking-Water System Name: Beardmore Drinking Water System
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, 2024](#)

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act.

The reports are prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by [March 31, 2025](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry



- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water license or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A. –Annual Water Taking Data](#)

SECTION 3: SECTION 11 REPORT

Information	
Population Served	250
Does your Drinking-Water System serve more than 10,000 people?	Yes [] No [X]
Is your annual report available to the public at no charge on a web site on the Internet?	Yes [X] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Beardmore Ward Office 285 Main Street Beardmore, ON P0T 1G0
Number of Designated Facilities served:	N/A
Did you provide a copy of your annual report to all Designated Facilities you serve?	
Number of Interested Authorities you report to:	N/A
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	
List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
DWS Name:	DWS: #
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.	
<input checked="" type="checkbox"/> Public access/notice via the web <input checked="" type="checkbox"/> Public access/notice via Government Office (Municipal) <input checked="" type="checkbox"/> Public access/notice via a newspaper <input checked="" 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 – Community Television Channel

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

Facility Description

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.

A 160-kW-diesel generator provides standby power to the WTP.

Chemicals Used During Reporting Period

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

Significant Expenses

Significant expenses were incurred to:

- Install Required Equipment
- X Repair Required Equipment
- X Replace Required Equipment

Install	Repair	Replace	Description	Expense
	X		Curb Stop Bells & Pipe	\$5,000
	X		Spare Chemical Feeder	\$10,000
		X	Treated Flow Meter Display	\$4,000
		X	Chlorine Panel Replacement	\$15,000



		X	Filter Media inspection / Addition	\$10,000
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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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
June 25 2024	Physical/Chemical - Sodium over 20 mg/l	22	mg/l	Reduce dosage of Sodium Aluminate, Sodium Hypochlorite and Caustic soda - Resample value 20.1 mg/l	July 12 2024
Dec 19 2024	Physical/Chemical - HAA RAA over 80 ug/l	83.8	ug/l		Dec 19 2024

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	46 – <1	1120 – 25	N/A	N/A
Treated	52	0 – 0	0 – 0	52	4 – <1
Distribution	95	0 – 0	0 – 0	31	7 – <1

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 Filter	8760 8760	0.11 – 10.01 NTU 0.04 – 2.00 NTU
Chlorine Treated Distribution	8760 365	0.00 – 1.87 mg/L 0.24 – 2.20 mg/L
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.

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 (yyyy/mm/dd)	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 (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Antimony	2024/01/08	< MDL 0.6	µg/L	6	No	No
Arsenic	2024/01/08	< MDL 1	µg/L	10	No	No
Barium	2024/01/08	< MDL 10	µg/L	1000	No	No
Boron	2024/01/08	< MDL 50	µg/L	5000	No	No
Cadmium	2024/01/08	< MDL 0.1	µg/L	5	No	No
Chromium	2024/01/08	< MDL 1	µg/L	50	No	No
Mercury	2024/01/08	< MDL 0.1	µg/L	1	No	No
Selenium	2024/01/08	< MDL 1	µg/L	50	No	No
Uranium	2024/01/08	< MDL 2	µg/L	20	No	No
Fluoride	2024/06/17	< MDL 0.02	mg/L	1.5	No	No
Nitrate	2024/01/08	0.14	mg/L	10	No	No
	2024/04/15	0.162	mg/L	10	No	No
	2024/07/08	0.051	mg/L	10	No	No
	2024/10/15	< MDL 0.02	mg/L	10	No	No
Nitrite	2024/01/08	< MDL 0.01	mg/L	1	No	No
	2024/04/15	< MDL 0.01	mg/L	1	No	No
	2024/07/08	< MDL 0.01	mg/L	1	No	No
	2024/10/15	< MDL 0.01	mg/L	1	No	No
Sodium	2024/06/17	22	mg/L	20**	Yes	Yes
*Lead	<i>Refer to Summary Table Below</i>					
<p>*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</p> <p>**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.</p>						

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	N/A	N/A	N/A
Distribution	0		0
Distribution - Alkalinity_ CaCO3: (mg/L)	2	60 - 90	0

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Treated Water						
1,1-Dichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	200	No	No
1,2-Dichloroethane (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
1,4-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No



2,3,4,6-Tetrachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.3	µg/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	100	No	No
Alachlor (ug/L) -TW	2024/01/08	< MDL 0.05	µg/L	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW	2024/01/08	< MDL 0.14	µg/L	5	No	No
Azinphos-methyl (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	20	No	No
Benzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Benzo(a)pyrene (ug/L)-TW	2024/01/08	< MDL 0.005	µg/L	0.01	No	No
Bromoxynil (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	5	No	No
Carbaryl (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	90	No	No
Carbofuran (ug/L) -TW	2024/01/08	< MDL 0.025	µg/L	90	No	No
Carbon Tetrachloride (ug/L) -TW	2024/01/08	< MDL 0.2	µg/L	2	No	No
Chlorpyrifos (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	90	No	No
Diazinon (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	20	No	No
Dicamba (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2024/01/08	< MDL 1	µg/L	50	No	No
Diclofop-methyl (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	9	No	No
Dimethoate (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	20	No	No
Diquat (ug/L)-TW	2024/01/08	< MDL 1	µg/L	70	No	No
Diuron (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	150	No	No
Glyphosate (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	280	No	No
Malathion (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	190	No	No
Metolachlor (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	50	No	No
Metribuzin (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	80	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	80	No	No
Paraquat (ug/L)-TW	2024/01/08	< MDL 1	µg/L	10	No	No
PCB (ug/L)-TW	2024/01/08	< MDL 0.03	µg/L	3	No	No
Pentachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	60	No	No
Phorate (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	2	No	No
Picloram (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	190	No	No
Prometryne (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	1	No	No
Simazine (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	10	No	No
Terbufos (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Tetrachloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	10	No	No
Triallate (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	230	No	No
Trichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
Trifluralin (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	45	No	No
Vinyl Chloride (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Distribution Water						
THM	2024/12/09	72.25	µg/L	N/A		
(NOTE: show latest annual average)	2024 Average	77.27	µg/L	100	No	Yes
Haloacetic acids (HAA)	2024/12/09	69.4	µg/L	N/A		
(NOTE: show latest annual average)	2024 Average	83.84	µg/L	80	Yes	Yes

SECTION 4: SCHEDULE 22 REPORT



Flows – Treated

In accordance with the ***Municipal Drinking Water Licence 297-101 Schedule C: System – Specific Conditions 1.0 Performance Limits***, the Beardmore drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **752 m³ / day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for

- i. The purposes of fighting a large fire or,
- ii. The maintenance of the drinking-water system

In 2024, the average monthly treated flow rate was **1872.94 m³**; the average daily treated flow rate was **61.45 m³**; and the maximum daily treated flow rate for the year was **172.85 m³** representing **22.98%** of the allowable daily volume.

The Beardmore Drinking-Water facility operated **below** the rated capacity **in 2024**.

Flows – Raw

The daily raw maximum flow is stated in the PTTW as a maximum rate of flow of **945 L/min (15.75 L/s)** and a maximum daily volume of **1360 m³/d**.

The average monthly raw flow rate was **2188.56 m³**; the average raw daily flow rate was **71.78 m³**, with a maximum raw daily flow rate of **172.12 m³**.

The quantity of raw water supplied during the reporting period **did not** exceed the terms and conditions of the *Permit to Take Water*.



Summary of Flows

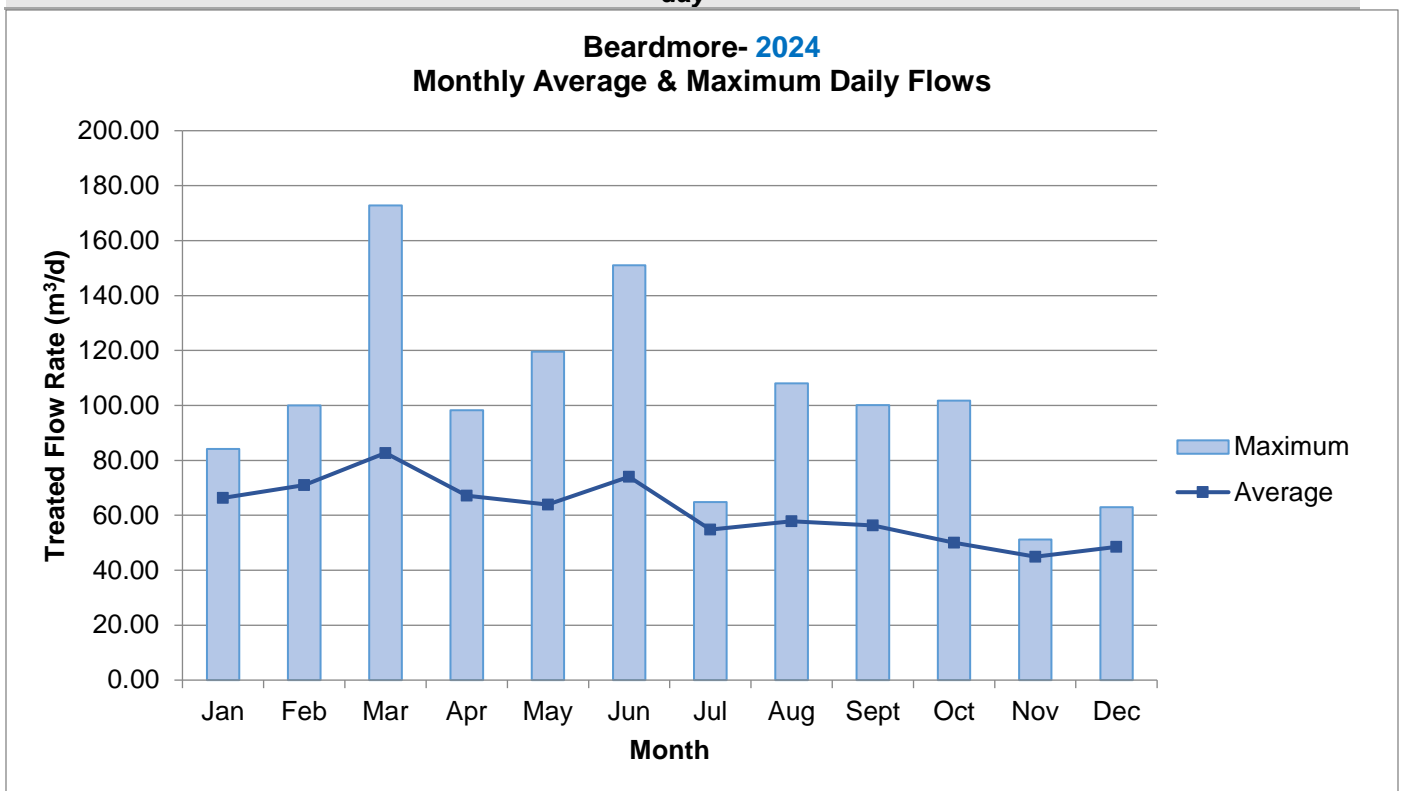
A summary of raw and treated flows are included in the tables/graphs below.

Monthly Raw & Treated Flow Rates for 2024

Month	Average Daily Flow Rate	Maximum Daily Flow Rate	Average Daily Flow Rate	Maximum Daily Flow Rate	Total Monthly Flow Rate
	Raw (m ³ /d)	Raw (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /month)
January	73.72	99.92	66.28	84.16	2054.77
February	76.24	124.69	70.96	99.94	2057.91
March	86.70	175.12	82.69	172.85	2563.24
April	76.84	109.32	67.11	98.27	2013.32
May	76.37	146.96	63.93	119.55	1981.92
June	86.13	168.60	74.03	150.97	2221.02
July	67.16	117.36	54.81	64.80	1699.12
August	69.71	135.16	57.86	108.00	1793.65
September	68.35	116.14	56.33	100.08	1689.93
October	61.82	134.78	50.02	101.71	1550.61
November	57.18	89.24	44.92	51.20	1347.63
December	61.19	119.50	48.46	62.97	1502.17

2024 Total Treated Flows (m³) 22475.28

**Raw - The daily raw maximum rate of flow is 15.75 L/s and a maximum daily volume of 1360 m³/d.
Treated - The maximum flow rate from the treatment subsystem to the distribution system is 752 m³/day





System Failures & Corrective Actions

The Ministry of Environment conducted an inspection of the Beardmore Drinking Water System on [January 15, 2024](#). The [2023/24](#) final inspection report identified [one](#) non-compliance.

The [2023/24](#) final inspection rating record for the Beardmore Drinking Water System was [99.20%](#)

Item	Non-Compliance Identified	Compliance Date <i>yyyy/mm/dd</i>	Action Being Taken to Address item	Status
1	Logbooks were not properly maintained and/or did not contain the required information.	Not Specified	Operators reminded of need to log all adjustments to operational parameters."	Complete

Adverse Water Quality Incidents (AWQIs)


In the reporting year of [2024](#), there were [two](#) adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date <i>yyyy/mm/dd</i>	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date <i>yyyy/mm/dd</i>
June 25 2024	Physical/Chemical - Sodium over 20 mg/l	22	mg/l	Reduce dosage of Sodium Aluminate, Sodium Hypochlorite and Caustic soda - Resample value 20.1 mg/l	July 12 2024
Dec 19 2024	Physical/Chemical - HAA RAA over 80 ug/l	83.8	ug/l		Dec 19 2024



SECTION 5: RAW WATER SUBMISSIONS

The raw water flows were submitted to the Ministry on [February 18, 2025](#).

Ontario 

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 4327-CXTP7H
Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF GREENSTONE.
Received on: Feb 18, 2025 2:13 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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SECTION 6: CONCLUSION

For the operating year of [2024](#), the Beardmore Drinking-Water System delivered water that, in all its treated and distribution samples, indicates the water to be [free of bacteriological contamination](#).

In addition, the system was able to meet the demand of water use within the town [without exceeding](#) the Permit to Take Water or the Municipal Drinking Water Licence and Permit.



List of Acronyms and Definitions	
Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m³/d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks
NDOGN	No Data: Overgrown with Non Target Bacteria
NDOGT	No Data: Overgrown with Target Bacteria
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A – Annual Water Taking Data

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: BEARDMORE DRINKING WATER SYSTEM - 5923
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Water

Permit#: 4327-CXTP7H	Coordinate Zone:
Source Name: Blackwater River	Easting:
Source: River	Northing:
Type:	Method deter:
Purpose: Municipal	

Date Measured	Value (m ³ /d)	Value(Liters)
01/01/2024	78.7100	78709.9991
02/01/2024	43.1350	43134.9983
03/01/2024	76.8200	76819.9997
04/01/2024	44.5540	44554.0009
05/01/2024	67.8210	67820.9991
06/01/2024	49.6660	49666.0004
07/01/2024	79.6190	79619.0033
08/01/2024	41.8290	41828.9986
09/01/2024	72.3900	72389.9994
10/01/2024	49.0060	49006.0005
11/01/2024	88.9450	88944.9997
12/01/2024	79.9580	79958.0002
13/01/2024	50.0450	50044.9982
14/01/2024	88.0480	88047.9965
15/01/2024	48.9150	48915.0009
16/01/2024	86.3900	86389.9994
17/01/2024	99.9160	99916.0004
18/01/2024	59.9730	59972.9996
19/01/2024	95.5880	95587.9974
20/01/2024	67.1060	67106.0028
21/01/2024	96.6840	96683.9981
22/01/2024	75.9830	75983.0017
23/01/2024	85.4020	85402.0004
24/01/2024	86.2340	86234.0012
25/01/2024	90.0910	90091.0034
26/01/2024	89.6610	89661.0031
27/01/2024	92.1060	92106.0028
28/01/2024	77.9470	77946.9986

29/01/2024	64.5280	64527.9999
30/01/2024	89.3620	89361.9995
31/01/2024	68.8300	68830.0018
01/02/2024	57.2000	57200.0008
02/02/2024	91.1170	91116.9968
03/02/2024	55.4550	55455.0018
04/02/2024	91.9540	91954.0024
05/02/2024	56.7160	56715.9996
06/02/2024	85.2140	85213.9969
07/02/2024	69.3620	69361.9995
08/02/2024	73.8230	73822.9980
09/02/2024	70.3200	70319.9997
10/02/2024	67.0970	67097.0001
11/02/2024	54.9770	54977.0012
12/02/2024	68.5410	68541.0004
13/02/2024	84.7510	84750.9995
14/02/2024	124.6870	124686.9965
15/02/2024	49.5160	49515.9988
16/02/2024	72.1120	72111.9995
17/02/2024	94.4860	94486.0001
18/02/2024	80.0320	80031.9977
19/02/2024	70.5320	70531.9977
20/02/2024	96.2960	96295.9976
21/02/2024	49.2370	49236.9995
22/02/2024	96.2110	96210.9985
23/02/2024	60.9320	60931.9992
24/02/2024	85.8670	85866.9968
25/02/2024	70.5830	70583.0002
26/02/2024	85.2380	85237.9990
27/02/2024	57.0910	57090.9996
28/02/2024	96.2940	96293.9987
29/02/2024	95.3250	95324.9969
01/03/2024	68.0060	68005.9967
02/03/2024	75.6280	75627.9984
03/03/2024	79.4060	79405.9982
04/03/2024	72.9150	72915.0009
05/03/2024	82.5630	82563.0035
06/03/2024	79.8360	79835.9985
07/03/2024	72.4890	72488.9984
08/03/2024	68.3150	68315.0024
09/03/2024	83.3240	83323.9975
10/03/2024	68.9800	68980.0034
11/03/2024	63.5760	63576.0002
12/03/2024	84.6590	84658.9966

13/03/2024	83.3470	83347.0001
14/03/2024	61.0400	61040.0009
15/03/2024	85.6840	85683.9981
16/03/2024	128.5070	128507.0038
17/03/2024	175.1150	175115.0055
18/03/2024	46.8570	46856.9984
19/03/2024	83.7930	83792.9993
20/03/2024	86.4630	86462.9974
21/03/2024	99.8090	99808.9981
22/03/2024	89.1660	89166.0004
23/03/2024	102.7170	102717.0029
24/03/2024	99.9730	99972.9996
25/03/2024	91.2060	91206.0013
26/03/2024	97.3070	97306.9992
27/03/2024	113.8290	113829.0024
28/03/2024	78.2290	78228.9963
29/03/2024	80.1210	80121.0022
30/03/2024	88.8370	88836.9980
31/03/2024	96.0250	96025.0015
01/04/2024	100.4940	100494.0033
02/04/2024	78.6130	78612.9990
03/04/2024	99.8760	99875.9995
04/04/2024	101.7430	101742.9962
05/04/2024	93.7520	93751.9989
06/04/2024	87.5970	87597.0001
07/04/2024	97.3120	97311.9965
08/04/2024	109.3200	109319.9997
09/04/2024	64.7310	64731.0028
10/04/2024	50.0100	50009.9983
11/04/2024	82.4750	82474.9985
12/04/2024	70.5370	70537.0026
13/04/2024	71.3510	71350.9979
14/04/2024	55.1970	55196.9986
15/04/2024	83.0030	83002.9984
16/04/2024	69.0020	69001.9989
17/04/2024	82.7470	82747.0016
18/04/2024	60.5360	60535.9993
19/04/2024	74.5820	74582.0007
20/04/2024	62.3980	62397.9988
21/04/2024	77.7160	77716.0034
22/04/2024	46.8770	46876.9989
23/04/2024	76.3890	76388.9999
24/04/2024	62.0870	62087.0018
25/04/2024	81.0300	81029.9988

26/04/2024	66.3690	66369.0033
27/04/2024	73.5380	73538.0020
28/04/2024	66.1970	66196.9986
29/04/2024	74.1150	74114.9979
30/04/2024	85.6910	85691.0019
01/05/2024	61.8570	61856.9984
02/05/2024	60.9930	60993.0000
03/05/2024	75.6720	75671.9971
04/05/2024	75.3280	75328.0029
05/05/2024	59.2310	59230.9990
06/05/2024	46.7530	46752.9984
07/05/2024	83.8630	83862.9990
08/05/2024	48.6560	48655.9982
09/05/2024	44.4740	44473.9990
10/05/2024	87.1500	87150.0015
11/05/2024	74.0240	74024.0021
12/05/2024	57.8170	57817.0013
13/05/2024	43.8530	43853.0006
14/05/2024	74.2140	74213.9969
15/05/2024	60.7930	60792.9993
16/05/2024	85.9010	85901.0010
17/05/2024	99.7520	99751.9989
18/05/2024	54.8400	54840.0002
19/05/2024	83.5170	83516.9983
20/05/2024	54.9730	54972.9996
21/05/2024	146.9620	146962.0056
22/05/2024	103.2440	103244.0033
23/05/2024	56.7890	56789.0015
24/05/2024	66.6830	66682.9987
25/05/2024	72.5370	72537.0026
26/05/2024	79.6730	79672.9965
27/05/2024	69.6940	69694.0002
28/05/2024	119.6470	119647.0032
29/05/2024	124.8950	124894.9966
30/05/2024	131.1370	131136.9934
31/05/2024	62.4930	62493.0000
01/06/2024	51.0720	51071.9986
02/06/2024	111.6920	111692.0013
03/06/2024	51.9390	51938.9992
04/06/2024	103.9830	103983.0017
05/06/2024	47.3110	47311.0008
06/06/2024	94.7240	94723.9990
07/06/2024	70.4130	70413.0020
08/06/2024	68.4890	68488.9984

09/06/2024	70.1880	70188.0035
10/06/2024	46.1460	46145.9999
11/06/2024	91.0660	91066.0019
12/06/2024	52.1120	52111.9995
13/06/2024	100.4200	100419.9982
14/06/2024	50.9730	50972.9996
15/06/2024	60.8940	60894.0010
16/06/2024	82.7920	82791.9998
17/06/2024	46.3450	46345.0012
18/06/2024	74.3770	74376.9989
19/06/2024	79.6930	79693.0000
20/06/2024	59.6890	59688.9992
21/06/2024	87.1760	87176.0025
22/06/2024	48.9740	48973.9990
23/06/2024	96.4980	96498.0011
24/06/2024	81.0990	81098.9990
25/06/2024	108.5500	108550.0031
26/06/2024	130.3620	130361.9995
27/06/2024	168.6020	168602.0050
28/06/2024	147.6290	147628.9978
29/06/2024	147.3120	147311.9965
30/06/2024	153.3440	153343.9941
01/07/2024	67.5220	67522.0032
02/07/2024	50.8250	50825.0008
03/07/2024	51.4370	51437.0003
04/07/2024	89.4100	89410.0037
05/07/2024	64.1110	64111.0001
06/07/2024	61.8780	61877.9984
07/07/2024	53.9110	53910.9993
08/07/2024	96.4930	96492.9962
09/07/2024	88.9500	88949.9969
10/07/2024	46.0470	46047.0009
11/07/2024	53.8110	53811.0008
12/07/2024	79.4940	79494.0033
13/07/2024	51.4440	51444.0002
14/07/2024	86.9620	86961.9980
15/07/2024	52.9630	52963.0013
16/07/2024	47.6910	47691.0019
17/07/2024	76.8190	76819.0002
18/07/2024	66.7380	66737.9990
19/07/2024	78.7880	78788.0020
20/07/2024	90.6410	90640.9988
21/07/2024	47.9050	47904.9988
22/07/2024	64.6390	64638.9999

23/07/2024	117.3570	117357.0023
24/07/2024	52.1800	52180.0003
25/07/2024	66.6430	66642.9977
26/07/2024	83.7910	83791.0004
27/07/2024	48.4440	48444.0002
28/07/2024	47.4750	47474.9985
29/07/2024	61.2960	61296.0014
30/07/2024	77.7350	77735.0006
31/07/2024	58.5990	58598.9990
01/08/2024	90.0040	90003.9978
02/08/2024	49.1390	49138.9999
03/08/2024	64.3010	64301.0025
04/08/2024	80.9760	80975.9979
05/08/2024	54.9430	54943.0008
06/08/2024	70.6340	70634.0027
07/08/2024	80.4020	80402.0004
08/08/2024	50.4130	50412.9982
09/08/2024	50.6470	50646.9994
10/08/2024	86.5160	86515.9988
11/08/2024	45.5080	45507.9994
12/08/2024	66.9750	66974.9985
13/08/2024	76.1040	76103.9963
14/08/2024	62.6000	62599.9985
15/08/2024	72.4810	72481.0028
16/08/2024	64.5650	64565.0024
17/08/2024	84.7680	84767.9977
18/08/2024	47.7050	47705.0018
19/08/2024	92.6030	92602.9968
20/08/2024	51.0860	51085.9985
21/08/2024	53.9960	53995.9984
22/08/2024	91.0620	91061.9965
23/08/2024	53.4360	53436.0008
24/08/2024	85.4570	85457.0007
25/08/2024	52.0190	52019.0010
26/08/2024	135.1580	135158.0048
27/08/2024	55.7970	55797.0009
28/08/2024	95.4810	95481.0028
29/08/2024	56.7330	56733.0017
30/08/2024	90.9730	90972.9996
31/08/2024	48.6020	48602.0012
01/09/2024	52.1150	52115.0017
02/09/2024	96.9650	96964.9963
03/09/2024	54.6580	54658.0009
04/09/2024	58.8470	58847.0001

05/09/2024	76.2210	76221.0007
06/09/2024	54.6780	54678.0014
07/09/2024	89.6620	89662.0026
08/09/2024	48.1290	48129.0016
09/09/2024	56.4970	56497.0016
10/09/2024	92.5700	92569.9997
11/09/2024	57.0810	57081.0013
12/09/2024	75.3460	75346.0007
13/09/2024	64.1470	64147.0032
14/09/2024	53.9730	53972.9996
15/09/2024	87.2440	87244.0033
16/09/2024	49.0590	49058.9981
17/09/2024	49.6910	49691.0019
18/09/2024	87.7300	87730.0034
19/09/2024	46.9160	46916.0004
20/09/2024	66.8540	66853.9963
21/09/2024	49.7730	49772.9988
22/09/2024	66.9330	66932.9987
23/09/2024	71.4080	71407.9971
24/09/2024	114.1430	114142.9977
25/09/2024	93.4040	93403.9993
26/09/2024	116.1350	116135.0021
27/09/2024	49.2810	49280.9982
28/09/2024	70.6790	70679.0009
29/09/2024	52.8040	52804.0009
30/09/2024	47.5390	47539.0015
01/10/2024	75.8850	75885.0021
02/10/2024	134.7810	134781.0059
03/10/2024	105.3080	105307.9987
04/10/2024	38.0800	38080.0018
05/10/2024	47.8350	47834.9991
06/10/2024	56.2510	56250.9995
07/10/2024	109.8350	109834.9991
08/10/2024	109.3280	109328.0029
09/10/2024	40.2570	40257.0000
10/10/2024	64.5440	64543.9987
11/10/2024	45.9730	45972.9996
12/10/2024	80.8690	80869.0033
13/10/2024	42.8080	42807.9987
14/10/2024	47.8730	47873.0011
15/10/2024	44.5800	44580.0018
16/10/2024	51.2690	51269.0010
17/10/2024	80.9100	80910.0037
18/10/2024	40.5700	40569.9997

19/10/2024	66.2340	66234.0012
20/10/2024	63.3940	63394.0010
21/10/2024	35.0140	35013.9999
22/10/2024	45.8920	45891.9983
23/10/2024	54.1090	54109.0012
24/10/2024	72.2330	72233.0017
25/10/2024	45.6970	45696.9986
26/10/2024	85.7070	85707.0007
27/10/2024	48.6330	48632.9994
28/10/2024	37.9420	37942.0013
29/10/2024	45.9420	45942.0013
30/10/2024	53.5610	53561.0008
31/10/2024	45.2080	45208.0002
01/11/2024	73.6330	73633.0032
02/11/2024	44.3790	44379.0016
03/11/2024	49.1910	49191.0019
04/11/2024	53.5080	53507.9994
05/11/2024	89.2360	89236.0001
06/11/2024	54.0240	54023.9983
07/11/2024	47.4460	47445.9991
08/11/2024	50.9880	50987.9990
09/11/2024	66.4310	66430.9998
10/11/2024	66.1310	66130.9967
11/11/2024	49.0580	49057.9987
12/11/2024	46.1420	46141.9983
13/11/2024	45.1710	45171.0014
14/11/2024	49.2320	49231.9984
15/11/2024	49.0290	49028.9993
16/11/2024	47.9730	47972.9996
17/11/2024	50.3800	50380.0011
18/11/2024	71.3140	71314.0030
19/11/2024	73.8840	73884.0027
20/11/2024	74.7370	74736.9995
21/11/2024	76.5930	76593.0023
22/11/2024	58.7290	58729.0001
23/11/2024	44.7340	44734.0012
24/11/2024	48.2340	48234.0012
25/11/2024	47.9700	47970.0012
26/11/2024	65.0470	65046.9971
27/11/2024	51.0100	51009.9983
28/11/2024	48.2670	48266.9983
29/11/2024	47.5400	47540.0009
30/11/2024	75.2950	75294.9982
01/12/2024	61.5960	61596.0007

02/12/2024	44.4180	44417.9993
03/12/2024	52.3380	52338.0013
04/12/2024	43.9680	43967.9985
05/12/2024	38.5750	38575.0008
06/12/2024	119.5020	119501.9989
07/12/2024	49.7060	49706.0013
08/12/2024	52.0340	52034.0004
09/12/2024	75.6220	75622.0016
10/12/2024	63.2260	63226.0017
11/12/2024	66.8750	66875.0000
12/12/2024	87.6210	87621.0022
13/12/2024	58.8850	58884.9983
14/12/2024	50.7000	50700.0008
15/12/2024	87.3860	87386.0016
16/12/2024	45.1600	45159.9998
17/12/2024	57.6690	57668.9987
18/12/2024	59.0450	59044.9982
19/12/2024	63.1550	63154.9988
20/12/2024	61.4500	61450.0008
21/12/2024	53.2060	53206.0013
22/12/2024	88.4160	88416.0004
23/12/2024	59.7050	59705.0018
24/12/2024	50.5360	50535.9993
25/12/2024	71.6510	71651.0010
26/12/2024	59.3100	59310.0014
27/12/2024	49.8650	49865.0017
28/12/2024	65.1940	65194.0002
29/12/2024	65.5150	65514.9994
30/12/2024	49.7740	49773.9983
31/12/2024	44.7130	44713.0013

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5495083

Metered

Caramat Drinking Water System

Small Municipal Residential Drinking Water System

January 1 – December 31, 2024

*O.Reg 170/03 Schedule 22 Summary Report
O.Reg 170/03 Section 11 Annual Report
&
O.Reg 387/04 Annual Record of Water Taking*

Issued: **February 2025**

Prepared by the



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



Drinking-Water System Number: 220000184
Drinking-Water System Name: Caramat Drinking Water System
Drinking-Water System Owner: The Corporation of the Municipality of Greenstone
Drinking-Water System Category: Small Municipal Residential Drinking Water-System
Period being reported: [January 1 – December 31, 2024](#)

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act.

The reports are prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by [March 31, 2025](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry



- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water license or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A. – Annual Water Taking Data](#)

SECTION 3: SECTION 11 REPORT

Information	
Population Served	58
Does your Drinking-Water System serve more than 10,000 people?	Yes [] No [X]
Is your annual report available to the public at no charge on a web site on the Internet?	Yes [X] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Longlac Ward Office 105 Hamel Avenue Longlac, ON P0T 2A0
Number of Designated Facilities served:	N/A
Did you provide a copy of your annual report to all Designated Facilities you serve?	
Number of Interested Authorities you report to:	N/A
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	
List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
DWS Name:	DWS: #
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.	
<input checked="" type="checkbox"/> Public access/notice via the web <input checked="" type="checkbox"/> Public access/notice via Government Office (Municipal) <input checked="" type="checkbox"/> Public access/notice via a newspaper <input checked="" type="checkbox"/> Public access/notice via Public Request <input type="checkbox"/> Public access/notice via a Public Library	



[] Public access/notice via other method – Community Television Channel

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

Facility Description

The treatment process generally consists of pre-ozonation, filtration through the multi-stage slow sand filter, primary chlorination, storage, and secondary chlorination.

The filtration system consists of a 75.2 m³/day pre-packaged, two-train, multi-stage filtration system designed and manufactured by MS Filter Inc. The two-train roughing filter, slow sand filter and granular activated carbon (GAC) contractor are all contained within one overall filter tank. The ozone generation and contactor equipment is separate from the filter tank.

Primary disinfection is achieved using a 12% sodium hypochlorite solution injected into the raw water, downstream of the filtration system, by means of two (duty/stand-by) chemical metering pumps. The necessary chlorine contact time is achieved within the two 57 m³ reservoirs. The reservoirs provide the necessary minimum contact time for adequate disinfection as well as equalization and emergency water storage as per MOE guidelines.

Two high lift pumps (duty and stand-by) draw treated water from the reservoirs to the distribution system.

One backwash pump also draws treated water from the reservoirs and is used to backwash the filtration system.

The free chlorine residual of the treated water is monitored continuously by an online analyzer, and recorded in the PLC.

A magnetic flow meter measures the treated water flow to the distribution system. This information is recorded in the PLC.

Secondary disinfection is achieved using a 12% sodium hypochlorite solution injected into the high lift pump discharge header by means of two (duty and stand-by) chemical metering pumps.

A 60-kW-diesel generator in a stand alone container provides standby power to the WTP.

In November 2009, an oxygen concentrator system was installed and put into operation

Chemicals Used During Reporting Period

- Sodium Hypochlorite 12%
- Oxygen (generated on site)
- Ozone (generated on site)
- Granular activated carbon (GAC)



Significant Expenses

Significant expenses were incurred to:

- Install Required Equipment
- Repair Required Equipment
- X Replace Required Equipment

Install	Repair	Replace	Description	Expense
		X	High Lift Pump/Motor Replacement X2	\$25000

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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)

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	N/A	N/A	N/A	N/A	N/A
Treated	N/A	N/A	N/A	N/A	N/A
Distribution	52	0 – 0	0 – 0	53	10 – 10

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 Filter #1 Filter #2	100 8760 8760	0.67 – 2.03 NTU 0.00 – 0.95 NTU 0.00 – 0.080 NTU
Chlorine Treated Distribution	8760 101	0.32 – 3.26 mg/L 0.74 – 1.97 mg/L
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.

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 (yyyy/mm/dd)	Result	Unit of Measure
December 16, 2021 Municipal Drinking Water Licence (MDWL)#225-101	Nitrosodimethylamine (NDMA) Quarterly	2024/01/04	<0.00360	µg/L
		2024/04/02	<0.00110	µg/L
		2024/07/08	<0.00120	µg/L
		2024/10/01	<0.00414	µg/L
December 16, 2021 Municipal Drinking Water Licence (MDWL)#225-101	Trihalomethanes (THM's) Monthly	2024/01/08	31.8	µg/L
		2024/02/05	24.4	µg/L
		2024/03/04	28.2	µg/L
		2024/04/02	38.2	µg/L
		2024/05/06	13.7	µg/L
		2024/06/10	14	µg/L
		2024/07/08	29	µg/L
		2024/08/06	42	µg/L
		2024/09/09	27	µg/L
		2024/10/01	25	µg/L
		2024/11/04	25.8	µg/L
2024/12/09	28.3	µg/L		

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Antimony	2022/01/17	< MDL 0.6	µg/L	6	No	No
Arsenic	2022/01/17	< MDL 1	µg/L	10	No	No
Barium	2022/01/17	18	µg/L	1000	No	No
Boron	2022/01/17	< MDL 50	µg/L	5000	No	No
Cadmium	2022/01/17	< MDL 0.1	µg/L	5	No	No
Chromium	2022/01/17	< MDL 1	µg/L	50	No	No
Mercury	2022/01/17	< MDL 0.1	µg/L	1	No	No
Selenium	2022/01/17	< MDL 1	µg/L	50	No	No
Uranium	2022/01/17	< MDL 2	µg/L	20	No	No
Fluoride	2022/01/17	0.022	mg/L	1.5	No	No
Nitrate	2024/01/08	0.346	mg/L	10	No	No
	2024/04/02	0.239	mg/L	10	No	No
	2024/07/08	0.417	mg/L	10	No	No
	2024/10/01	0.411	mg/L	10	No	No
Nitrite	2024/01/08	< MDL 0.01	mg/L	1	No	No
	2024/04/02	< MDL 0.01	mg/L	1	No	No
	2024/07/08	< MDL 0.01	mg/L	1	No	No
	2024/10/01	< MDL 0.01	mg/L	1	No	No
Sodium	2022/01/17	5.74	mg/L	20**	No	No
*Lead	<i>Refer to Summary Table Below</i>					

*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

**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.



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	N/A	N/A	N/A
Distribution	0		0
Distribution - Alkalinity_ CaCO ₃ : (mg/L)	2	63.4 - 81.7	0

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	1/2 MAC
Treated Water						
1,1-Dichloroethylene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	200	No	No
1,2-Dichloroethane (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	5	No	No
1,4-Dichlorobenzene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW	2022/01/17	< MDL 0.5	µg/L	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2022/01/17	< MDL 0.5	µg/L	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2022/01/17	< MDL 0.3	µg/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	100	No	No
Alachlor (ug/L) -TW	2022/01/17	< MDL 0.1	µg/L	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	5	No	No
Azinphos-methyl (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	20	No	No
Benzene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	1	No	No
Benzo(a)pyrene (ug/L)-TW	2022/01/17	< MDL 0.005	µg/L	0.01	No	Yes
Bromoxynil (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	5	No	No
Carbaryl (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	90	No	No
Carbofuran (ug/L) -TW	2022/01/17	< MDL 0.2	µg/L	90	No	No
Carbon Tetrachloride (ug/L) -TW	2022/01/19	< MDL 0.2	µg/L	2	No	No
Chlorpyrifos (ug/L) -TW	2022/01/17	< MDL 0.1	µg/L	90	No	No
Diazinon (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	20	No	No
Dicamba (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2022/01/19	< MDL 5.0	µg/L	50	No	No
Diclofop-methyl (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	9	No	No
Dimethoate (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	20	No	No
Diquat (ug/L)-TW	2022/01/17	< MDL 1.0	µg/L	70	No	No
Diuron (ug/L)-TW	2022/01/17	< MDL 1.0	µg/L	150	No	No
Glyphosate (ug/L)-TW	2022/01/17	< MDL 5.0	µg/L	280	No	No
Malathion (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	190	No	No
Metolachlor (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	50	No	No
Metribuzin (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	80	No	No



Monochlorobenzene (Chlorobenzene) (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	80	No	No
Paraquat (ug/L)-TW	2022/01/17	< MDL 1.0	µg/L	10	No	No
PCB (ug/L)-TW	2022/01/25	< MDL 0.035	µg/L	3	No	No
Pentachlorophenol (ug/L)-TW	2022/01/17	< MDL 0.5	µg/L	60	No	No
Phorate (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	2	No	No
Picloram (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	190	No	No
Prometryne (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	1	No	No
Simazine (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	10	No	No
Terbufos (ug/L)-TW	2022/01/17	< MDL 0.2	µg/L	1	No	No
Tetrachloroethylene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	10	No	No
Triallate (ug/L) -TW	2022/01/17	< MDL 0.1	µg/L	230	No	No
Trichloroethylene (ug/L)-TW	2022/01/19	< MDL 0.5	µg/L	5	No	No
Trifluralin (ug/L)-TW	2022/01/17	< MDL 0.1	µg/L	45	No	No
Vinyl Chloride (ug/L)-TW	2022/01/19	< MDL 0.2	µg/L	1	No	No
Distribution Water						
THM	2024/12/09	23.5	µg/L	N/A		
(NOTE: show latest annual average)	2024 Average	35.39	µg/L	100	No	No
Haloacetic acids (HAA)	2024/10/01	28.8	µg/L	N/A		
(NOTE: show latest annual average)	2024 Average	64.58	µg/L	80	No	Yes

SECTION 4: SCHEDULE 22 REPORT

Flows – Treated

In accordance with the **Municipal Drinking Water Licence 297-101 Schedule C: System – Specific Conditions 1.0 Performance Limits**, the Caramat drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **75.2 m³/ day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for

- i. The purposes of fighting a large fire or,
- ii. The maintenance of the drinking-water system

Due to the capacity of the water treatment facility the hydrants in the system are only used for system maintenance.

In 2024, the average monthly treated flow rate was **385.12 m³**; the average daily treated flow rate was **12.62 m³**; and the maximum daily treated flow rate for the year was **27.30 m³** representing **36.30%** of the allowable daily volume.

The Caramat Drinking-Water facility operated **below** the rated capacity **in 2024**.

Flows – Raw

The daily raw maximum flow is stated in the PTTW as a maximum rate of flow of **60 L/min (1 L/s)** and a maximum daily volume of **86.4 m³/d**.



The average monthly raw flow rate was **373.84 m³**; the average raw daily flow rate was **12.25 m³**, with a maximum raw daily flow rate of **21.5 m³**.

The quantity of raw water supplied during the reporting period did not exceed the terms and conditions of the *Permit to Take Water*.

Summary of Flows

A summary of raw and treated flows are included in the tables/graphs below.

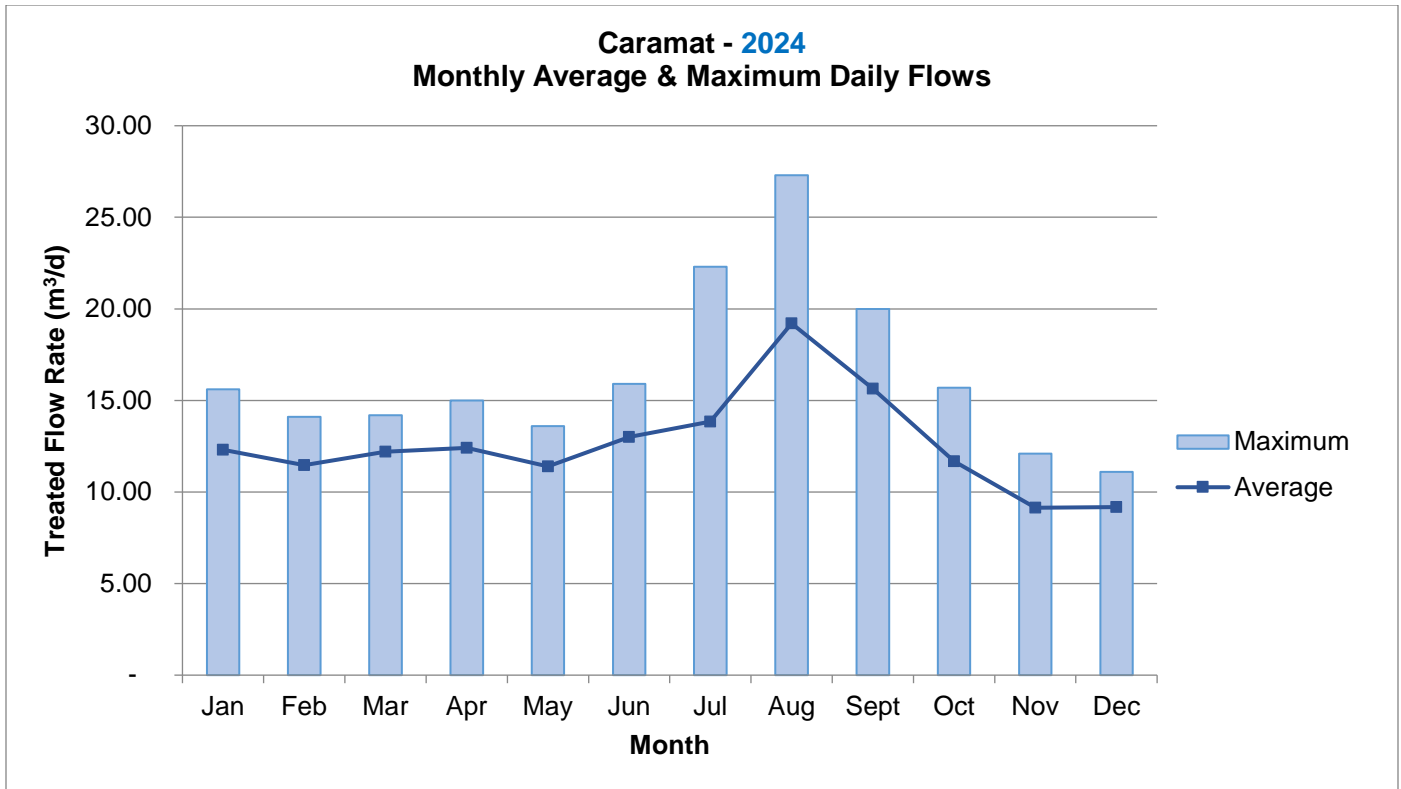
Monthly Raw & Treated Flow Rates for 2024

Month	Average Daily Flow Rate	Maximum Daily Flow Rate	Average Daily Flow Rate	Maximum Daily Flow Rate	Total Monthly Flow Rate
	Raw (m ³ /d)	Raw (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /month)
January	13.81	21.50	12.31	15.60	381.70
February	11.93	16.10	11.47	14.10	332.50
March	13.56	20.50	12.20	14.20	378.30
April	12.66	15.50	12.41	15.00	372.30
May	10.65	13.30	11.40	13.60	353.30
June	11.77	15.30	13.00	15.90	390.00
July	12.67	19.30	13.84	22.30	429.10
August	17.89	21.10	19.20	27.30	595.30
September	14.47	20.50	15.64	20.00	469.30
October	10.47	15.20	11.68	15.70	362.10
November	8.36	17.20	9.14	12.10	274.20
December	8.78	13.80	9.18	11.10	284.50

2024 Total Treated Flows (m³) 4622.60

**Raw - The daily raw maximum rate of flow is 1 L/s and a maximum daily volume of 86.4 m³/d.*

**Treated - The maximum flow rate from the treatment subsystem to the distribution system is 75.2 m³/day*



System Failures & Corrective Actions

The Ministry of Environment conducted did not inspect the Caramat Drinking Water System in 2024.

Item	Non-Compliance Identified	Compliance Date yyyy/mm/dd	Action Being Taken to Address item	Status
1				

Adverse Water Quality Incidents (AWQIs)


In the reporting year of 2024, there were No adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date yyyy/mm/dd	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date yyyy/mm/dd



SECTION 5: RAW WATER SUBMISSIONS

The raw water flows were submitted to the Ministry on [February 18, 2025](#).

Ontario 

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 1254-CUKQ7Q
Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF GREENSTONE.
Received on: Feb 18, 2025 2:08 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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SECTION 6: CONCLUSION

For the operating year of [2024](#), the Caramat Drinking-Water System delivered water that, in all its treated and distribution samples, indicates the water to be [free of bacteriological contamination](#).

In addition, the system was able to meet the demand of water use within the town [without exceeding](#) the Permit to Take Water or the Municipal Drinking Water Licence and Permit.



List of Acronyms and Definitions	
Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m³/d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks
NDOGN	No Data: Overgrown with Non Target Bacteria
NDOGT	No Data: Overgrown with Target Bacteria
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A – Annual Water Taking Data

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: CARAMAT DRINKING WATER SYSTEM - 5095
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Water

Permit#: 1254-CUKQ7Q	Coordinate Zone:
Source Name: Caramat Lake	Easting:
Source: Lake	Northing:
Type:	Method deter:
Purpose: Municipal	

Date Measured	Value (m ³ /d)	Value(Liters)
01/01/2024	14.3000	14300.0002
02/01/2024	20.7000	20700.0008
03/01/2024	21.5000	21500.0000
04/01/2024	15.8000	15800.0002
05/01/2024	13.6000	13600.0004
06/01/2024	12.9000	12899.9996
07/01/2024	14.3000	14300.0002
08/01/2024	12.8000	12800.0002
09/01/2024	11.6000	11600.0004
10/01/2024	13.7000	13699.9998
11/01/2024	11.9000	11899.9996
12/01/2024	13.4000	13399.9996
13/01/2024	16.0000	16000.0000
14/01/2024	15.3000	15300.0002
15/01/2024	16.2000	16200.0008
16/01/2024	12.3000	12300.0002
17/01/2024	13.0000	13000.0000
18/01/2024	13.2000	13199.9998
19/01/2024	12.0000	12000.0000
20/01/2024	14.6000	14600.0004
21/01/2024	13.9000	13899.9996
22/01/2024	11.7000	11699.9998
23/01/2024	11.7000	11699.9998
24/01/2024	12.0000	12000.0000
25/01/2024	11.7000	11699.9998
26/01/2024	11.9000	11899.9996
27/01/2024	13.5000	13500.0000
28/01/2024	16.1000	16100.0004

29/01/2024	12.6000	12600.0004
30/01/2024	11.3000	11300.0002
31/01/2024	12.5000	12500.0000
01/02/2024	11.4000	11399.9996
02/02/2024	11.9000	11899.9996
03/02/2024	10.6000	10600.0004
04/02/2024	16.1000	16100.0004
05/02/2024	10.5000	10500.0000
06/02/2024	9.8000	9800.0002
07/02/2024	11.3000	11300.0002
08/02/2024	11.2000	11199.9998
09/02/2024	11.0000	11000.0000
10/02/2024	12.5000	12500.0000
11/02/2024	12.5000	12500.0000
12/02/2024	10.1000	10100.0004
13/02/2024	13.6000	13600.0004
14/02/2024	10.9000	10899.9996
15/02/2024	11.4000	11399.9996
16/02/2024	13.8000	13800.0002
17/02/2024	12.8000	12800.0002
18/02/2024	12.5000	12500.0000
19/02/2024	12.3000	12300.0002
20/02/2024	10.8000	10800.0002
21/02/2024	10.8000	10800.0002
22/02/2024	11.7000	11699.9998
23/02/2024	12.2000	12199.9998
24/02/2024	13.1000	13100.0004
25/02/2024	13.2000	13199.9998
26/02/2024	9.9000	9899.9996
27/02/2024	13.3000	13300.0002
28/02/2024	12.4000	12399.9996
29/02/2024	12.5000	12500.0000
01/03/2024	12.7000	12699.9998
02/03/2024	13.4000	13399.9996
03/03/2024	15.0000	15000.0000
04/03/2024	9.7000	9699.9998
05/03/2024	17.0000	17000.0000
06/03/2024	11.9000	11899.9996
07/03/2024	12.4000	12399.9996
08/03/2024	11.0000	11000.0000
09/03/2024	15.4000	15399.9996
10/03/2024	16.4000	16399.9996
11/03/2024	14.4000	14399.9996
12/03/2024	12.0000	12000.0000

13/03/2024	12.6000	12600.0004
14/03/2024	11.1000	11100.0004
15/03/2024	15.1000	15100.0004
16/03/2024	14.3000	14300.0002
17/03/2024	15.3000	15300.0002
18/03/2024	11.5000	11500.0000
19/03/2024	15.6000	15600.0004
20/03/2024	20.5000	20500.0000
21/03/2024	17.6000	17600.0004
22/03/2024	10.8000	10800.0002
23/03/2024	12.7000	12699.9998
24/03/2024	15.1000	15100.0004
25/03/2024	11.2000	11199.9998
26/03/2024	10.9000	10899.9996
27/03/2024	13.1000	13100.0004
28/03/2024	12.2000	12199.9998
29/03/2024	14.0000	14000.0000
30/03/2024	12.8000	12800.0002
31/03/2024	12.8000	12800.0002
01/04/2024	15.5000	15500.0000
02/04/2024	11.6000	11600.0004
03/04/2024	12.2000	12199.9998
04/04/2024	12.4000	12399.9996
05/04/2024	12.7000	12699.9998
06/04/2024	15.1000	15100.0004
07/04/2024	13.4000	13399.9996
08/04/2024	11.8000	11800.0002
09/04/2024	12.0000	12000.0000
10/04/2024	11.5000	11500.0000
11/04/2024	11.8000	11800.0002
12/04/2024	14.2000	14199.9998
13/04/2024	13.1000	13100.0004
14/04/2024	13.9000	13899.9996
15/04/2024	10.8000	10800.0002
16/04/2024	12.7000	12699.9998
17/04/2024	12.4000	12399.9996
18/04/2024	13.4000	13399.9996
19/04/2024	14.3000	14300.0002
20/04/2024	14.9000	14899.9996
21/04/2024	14.2000	14199.9998
22/04/2024	13.6000	13600.0004
23/04/2024	9.8000	9800.0002
24/04/2024	10.5000	10500.0000
25/04/2024	12.1000	12100.0004

26/04/2024	10.6000	10600.0004
27/04/2024	15.5000	15500.0000
28/04/2024	14.3000	14300.0002
29/04/2024	10.2000	10199.9998
30/04/2024	9.2000	9199.9998
01/05/2024	9.9000	9899.9996
02/05/2024	10.2000	10199.9998
03/05/2024	11.3000	11300.0002
04/05/2024	12.5000	12500.0000
05/05/2024	13.3000	13300.0002
06/05/2024	9.1000	9100.0004
07/05/2024	11.3000	11300.0002
08/05/2024	11.5000	11500.0000
09/05/2024	10.6000	10600.0004
10/05/2024	10.5000	10500.0000
11/05/2024	12.7000	12699.9998
12/05/2024	13.2000	13199.9998
13/05/2024	10.0000	10000.0000
14/05/2024	10.0000	10000.0000
15/05/2024	12.1000	12100.0004
16/05/2024	9.2000	9199.9998
17/05/2024	9.9000	9899.9996
18/05/2024	9.5000	9500.0000
19/05/2024	11.7000	11699.9998
20/05/2024	11.3000	11300.0002
21/05/2024	9.4000	9399.9996
22/05/2024	11.0000	11000.0000
23/05/2024	10.2000	10199.9998
24/05/2024	9.8000	9800.0002
25/05/2024	9.6000	9600.0004
26/05/2024	11.9000	11899.9996
27/05/2024	8.3000	8300.0002
28/05/2024	8.9000	8899.9996
29/05/2024	8.2000	8199.9998
30/05/2024	11.5000	11500.0000
31/05/2024	11.5000	11500.0000
01/06/2024	11.9000	11899.9996
02/06/2024	13.5000	13500.0000
03/06/2024	11.5000	11500.0000
04/06/2024	10.6000	10600.0004
05/06/2024	13.7000	13699.9998
06/06/2024	11.4000	11399.9996
07/06/2024	11.6000	11600.0004
08/06/2024	12.9000	12899.9996

09/06/2024	9.1000	9100.0004
10/06/2024	13.8000	13800.0002
11/06/2024	12.3000	12300.0002
12/06/2024	10.2000	10199.9998
13/06/2024	11.0000	11000.0000
14/06/2024	10.7000	10699.9998
15/06/2024	12.1000	12100.0004
16/06/2024	11.2000	11199.9998
17/06/2024	10.5000	10500.0000
18/06/2024	10.0000	10000.0000
19/06/2024	9.7000	9699.9998
20/06/2024	9.9000	9899.9996
21/06/2024	11.9000	11899.9996
22/06/2024	14.4000	14399.9996
23/06/2024	13.0000	13000.0000
24/06/2024	12.6000	12600.0004
25/06/2024	15.3000	15300.0002
26/06/2024	12.9000	12899.9996
27/06/2024	13.9000	13899.9996
28/06/2024	10.4000	10399.9996
29/06/2024	11.2000	11199.9998
30/06/2024	9.8000	9800.0002
01/07/2024	12.7000	12699.9998
02/07/2024	10.5000	10500.0000
03/07/2024	8.6000	8600.0004
04/07/2024	10.8000	10800.0002
05/07/2024	11.4000	11399.9996
06/07/2024	14.9000	14899.9996
07/07/2024	15.1000	15100.0004
08/07/2024	8.0000	8000.0000
09/07/2024	8.8000	8800.0002
10/07/2024	10.8000	10800.0002
11/07/2024	10.9000	10899.9996
12/07/2024	9.3000	9300.0002
13/07/2024	14.0000	14000.0000
14/07/2024	15.5000	15500.0000
15/07/2024	9.8000	9800.0002
16/07/2024	9.2000	9199.9998
17/07/2024	10.7000	10699.9998
18/07/2024	14.3000	14300.0002
19/07/2024	11.8000	11800.0002
20/07/2024	11.0000	11000.0000
21/07/2024	14.1000	14100.0004
22/07/2024	12.5000	12500.0000

23/07/2024	12.2000	12199.9998
24/07/2024	14.3000	14300.0002
25/07/2024	15.0000	15000.0000
26/07/2024	15.1000	15100.0004
27/07/2024	15.6000	15600.0004
28/07/2024	15.3000	15300.0002
29/07/2024	19.3000	19299.9992
30/07/2024	14.4000	14399.9996
31/07/2024	16.8000	16799.9992
01/08/2024	21.1000	21100.0004
02/08/2024	21.0000	21000.0000
03/08/2024	20.9000	20899.9996
04/08/2024	20.7000	20700.0008
05/08/2024	20.7000	20700.0008
06/08/2024	20.2000	20200.0008
07/08/2024	18.8000	18799.9992
08/08/2024	15.2000	15199.9998
09/08/2024	13.0000	13000.0000
10/08/2024	16.7000	16700.0008
11/08/2024	18.5000	18500.0000
12/08/2024	17.0000	17000.0000
13/08/2024	16.0000	16000.0000
14/08/2024	17.7000	17700.0008
15/08/2024	17.6000	17600.0004
16/08/2024	20.6000	20600.0004
17/08/2024	16.5000	16500.0000
18/08/2024	17.3000	17299.9992
19/08/2024	16.4000	16399.9996
20/08/2024	17.7000	17700.0008
21/08/2024	18.3000	18299.9992
22/08/2024	13.6000	13600.0004
23/08/2024	14.5000	14500.0000
24/08/2024	13.3000	13300.0002
25/08/2024	15.4000	15399.9996
26/08/2024	19.4000	19399.9996
27/08/2024	15.3000	15300.0002
28/08/2024	19.7000	19700.0008
29/08/2024	20.4000	20399.9996
30/08/2024	20.5000	20500.0000
31/08/2024	20.5000	20500.0000
01/09/2024	20.5000	20500.0000
02/09/2024	19.5000	19500.0000
03/09/2024	18.2000	18200.0008
04/09/2024	15.2000	15199.9998

05/09/2024	13.3000	13300.0002
06/09/2024	14.2000	14199.9998
07/09/2024	17.0000	17000.0000
08/09/2024	16.4000	16399.9996
09/09/2024	15.1000	15100.0004
10/09/2024	14.2000	14199.9998
11/09/2024	15.5000	15500.0000
12/09/2024	12.7000	12699.9998
13/09/2024	11.4000	11399.9996
14/09/2024	12.8000	12800.0002
15/09/2024	12.8000	12800.0002
16/09/2024	14.1000	14100.0004
17/09/2024	13.9000	13899.9996
18/09/2024	11.5000	11500.0000
19/09/2024	13.1000	13100.0004
20/09/2024	12.1000	12100.0004
21/09/2024	20.1000	20100.0004
22/09/2024	13.3000	13300.0002
23/09/2024	13.6000	13600.0004
24/09/2024	17.8000	17799.9992
25/09/2024	17.3000	17299.9992
26/09/2024	15.3000	15300.0002
27/09/2024	10.1000	10100.0004
28/09/2024	11.4000	11399.9996
29/09/2024	11.3000	11300.0002
30/09/2024	10.3000	10300.0002
01/10/2024	11.7000	11699.9998
02/10/2024	10.4000	10399.9996
03/10/2024	9.6000	9600.0004
04/10/2024	10.1000	10100.0004
05/10/2024	11.6000	11600.0004
06/10/2024	11.9000	11899.9996
07/10/2024	12.6000	12600.0004
08/10/2024	9.6000	9600.0004
09/10/2024	11.7000	11699.9998
10/10/2024	10.6000	10600.0004
11/10/2024	11.5000	11500.0000
12/10/2024	13.5000	13500.0000
13/10/2024	13.2000	13199.9998
14/10/2024	15.2000	15199.9998
15/10/2024	11.5000	11500.0000
16/10/2024	12.4000	12399.9996
17/10/2024	14.1000	14100.0004
18/10/2024	14.1000	14100.0004

19/10/2024	9.7000	9699.9998
20/10/2024	12.4000	12399.9996
21/10/2024	10.8000	10800.0002
22/10/2024	8.5000	8500.0000
23/10/2024	8.7000	8699.9998
24/10/2024	8.6000	8600.0004
25/10/2024	8.4000	8399.9996
26/10/2024	7.6000	7599.9999
27/10/2024	7.8000	7800.0002
28/10/2024	6.3000	6300.0002
29/10/2024	6.9000	6900.0001
30/10/2024	6.7000	6699.9998
31/10/2024	6.9000	6900.0001
01/11/2024	9.5000	9500.0000
02/11/2024	17.2000	17200.0008
03/11/2024	9.8000	9800.0002
04/11/2024	8.3000	8300.0002
05/11/2024	7.1000	7099.9999
06/11/2024	7.4000	7400.0001
07/11/2024	8.6000	8600.0004
08/11/2024	6.6000	6599.9999
09/11/2024	10.1000	10100.0004
10/11/2024	9.6000	9600.0004
11/11/2024	7.7000	7699.9998
12/11/2024	8.3000	8300.0002
13/11/2024	8.0000	8000.0000
14/11/2024	7.4000	7400.0001
15/11/2024	6.7000	6699.9998
16/11/2024	8.6000	8600.0004
17/11/2024	9.4000	9399.9996
18/11/2024	6.7000	6699.9998
19/11/2024	7.6000	7599.9999
20/11/2024	7.0000	7000.0000
21/11/2024	7.8000	7800.0002
22/11/2024	7.0000	7000.0000
23/11/2024	10.3000	10300.0002
24/11/2024	8.1000	8100.0004
25/11/2024	8.5000	8500.0000
26/11/2024	6.7000	6699.9998
27/11/2024	8.0000	8000.0000
28/11/2024	6.4000	6400.0001
29/11/2024	7.0000	7000.0000
30/11/2024	9.4000	9399.9996
01/12/2024	13.8000	13800.0002

02/12/2024	8.8000	8800.0002
03/12/2024	10.5000	10500.0000
04/12/2024	9.4000	9399.9996
05/12/2024	10.6000	10600.0004
06/12/2024	7.2000	7199.9998
07/12/2024	8.2000	8199.9998
08/12/2024	10.4000	10399.9996
09/12/2024	7.7000	7699.9998
10/12/2024	8.7000	8699.9998
11/12/2024	9.4000	9399.9996
12/12/2024	6.7000	6699.9998
13/12/2024	8.5000	8500.0000
14/12/2024	9.6000	9600.0004
15/12/2024	8.7000	8699.9998
16/12/2024	6.7000	6699.9998
17/12/2024	7.2000	7199.9998
18/12/2024	7.8000	7800.0002
19/12/2024	6.0000	6000.0000
20/12/2024	8.6000	8600.0004
21/12/2024	8.9000	8899.9996
22/12/2024	9.2000	9199.9998
23/12/2024	8.2000	8199.9998
24/12/2024	7.7000	7699.9998
25/12/2024	7.4000	7400.0001
26/12/2024	8.9000	8899.9996
27/12/2024	9.0000	9000.0000
28/12/2024	11.9000	11899.9996
29/12/2024	8.9000	8899.9996
30/12/2024	8.2000	8199.9998
31/12/2024	9.3000	9300.0002

16

561716

5495907

Metered

Geraldton Drinking Water System

Large Municipal Residential Drinking Water System

January 1 – December 31, 2024

*O.Reg 170/03 Schedule 22 Summary Report
O.Reg 170/03 Section 11 Annual Report
&
O.Reg 387/04 Annual Record of Water Taking*

Issued: **February 2025**

Prepared by the



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



Drinking-Water System Number: 210000292
Drinking-Water System Name: Geraldton Drinking Water System
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, 2024](#)

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act.

The reports are prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by [March 31, 2025](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry



- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water license or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A. –Annual Water Taking Data](#)

SECTION 3: SECTION 11 REPORT

Information	
Population Served	1893
Does your Drinking-Water System serve more than 10,000 people?	Yes [] No [X]
Is your annual report available to the public at no charge on a web site on the Internet?	Yes [X] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0
Number of Designated Facilities served:	N/A
Did you provide a copy of your annual report to all Designated Facilities you serve?	
Number of Interested Authorities you report to:	N/A
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	
List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
DWS Name:	DWS: #
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.	
<input checked="" type="checkbox"/> Public access/notice via the web <input checked="" type="checkbox"/> Public access/notice via Government Office (Municipal) <input checked="" type="checkbox"/> Public access/notice via a newspaper <input checked="" 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 – Community Television Channel	



Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

Facility Description

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.
A 200-kW-diesel generator provides standby power to the WTP.

Chemicals Used During Reporting Period

- Aluminum Sulphate A-10
- PRAESTOL(TM) DW20 polymer
- Potassium Permanganate
- Chlorine Gas

Significant Expenses

Significant expenses were incurred to:

- Install Required Equipment
- X Repair Required Equipment
- X Replace Required Equipment

Install	Repair	Replace	Description	Expense
		X	Polymer Feeder Replacement	\$10000
		X	KMNO4 Feeder Replacement	\$10000
		X	Turbidity Meter Replacement X2 (Obsolete)	\$25000
	X		Filter Media	\$10000
	X		Water Tower Painting & Upgrades	\$1342552
	X		Water Tower Painting Management Fee	\$15,400
	X		3rd party inspection - tower	\$33,176
	X		Distribution Repairs	\$54260



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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
March 6 2024	Low treated water chlorine	<0.45	mg/L	Restore disinfection	March 5 2024
April 23 2024	Low Pressure - water break BWA 15 residence and 3 business			Repair, flush and sample one downstream sample as per MOH	April 26 2024
July 7 2024	Low Pressure - system wide due to water plant shutdown(tower down low cl2)			Restore pressure, flush and collect residuals	July 10 2024
Sept 18 2024	TC in Distribution Sample - Main Street			Flush, resample at location, upstream and downstream	Sept 20 2024
Oct 25 2024	Low Pressure - water break requiring main shut down 3rd Ave north			Flush and sample downstream of break	28-Oct-24

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	<1 – 10	<1 – 2420	N/A	N/A
Treated	52	0 – 0	0 – 0	51	2 – <1
Distribution	161	0 – 0	0 – 1	52	3 – 1

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 Filter #1 Filter #2	250 8760 8760	0.08 – 6.73 NTU 0.00 – 2.29 NTU 0.00 – 3.00 NTU
Chlorine Treated Distribution	8760 356	0.00 – 4.86 mg/L 0.09– 1.97 mg/L
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.

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 (yyyy/mm/dd)	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 (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Antimony	2024/01/08	< MDL 0.6	µg/L	6	No	No
Arsenic	2024/01/08	< MDL 1	µg/L	10	No	No
Barium	2024/01/08	< MDL 10	µg/L	1000	No	No
Boron	2024/01/08	< MDL 50	µg/L	5000	No	No
Cadmium	2024/01/08	< MDL 0.1	µg/L	5	No	No
Chromium	2024/01/08	< MDL 1	µg/L	50	No	No
Mercury	2024/01/08	< MDL 0.1	µg/L	1	No	No
Selenium	2024/01/08	< MDL 1	µg/L	50	No	No
Uranium	2024/01/08	< MDL 2	µg/L	20	No	No
Fluoride	2024/04/05	< MDL 0.02	mg/L	1.5	No	No
Nitrate	2024/01/08	0.049	mg/L	10	No	No
	2024/04/05	0.195	mg/L	10	No	No
	2024/07/24	< MDL 0.02	mg/L	10	No	No
	2024/10/29	< MDL 0.02	mg/L	10	No	No
Nitrite	2024/01/08	< MDL 0.01	mg/L	1	No	No
	2024/04/05	< MDL 0.01	mg/L	1	No	No
	2024/07/24	< MDL 0.01	mg/L	1	No	No
	2024/10/29	< MDL 0.01	mg/L	1	No	No
Sodium	2024/04/05	14.7	mg/L	20**	No	Yes
*Lead	<i>Refer to Summary Table Below</i>					
*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						
**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.						

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
Distribution - Lead(µg/l)	2	1	0
Distribution - Alkalinity_CaCO3:(mg/L)	4	62.9 – 87.4	N/A

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Treated Water						
1,1-Dichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	200	No	No
1,2-Dichloroethane (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No



2024 Annual Report
Geraldton Water Treatment

1,4-Dichlorobenzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.3	µg/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	100	No	No
Alachlor (ug/L) -TW	2024/01/08	< MDL 0.05	µg/L	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW	2024/01/08	< MDL 0.14	µg/L	5	No	No
Azinphos-methyl (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	20	No	No
Benzene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Benzo(a)pyrene (ug/L)-TW	2024/01/08	< MDL 0.005	µg/L	0.01	No	Yes
Bromoxynil (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	5	No	No
Carbaryl (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	90	No	No
Carbofuran (ug/L) -TW	2024/01/08	< MDL 0.025	µg/L	90	No	No
Carbon Tetrachloride (ug/L) -TW	2024/01/08	< MDL 0.2	µg/L	2	No	No
Chlorpyrifos (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	90	No	No
Diazinon (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	20	No	No
Dicamba (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2024/01/08	< MDL 2.1	µg/L	50	No	No
Diclofop-methyl (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	9	No	No
Dimethoate (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	20	No	No
Diquat (ug/L)-TW	2024/01/08	< MDL 1	µg/L	70	No	No
Diuron (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	150	No	No
Glyphosate (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	280	No	No
Malathion (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	190	No	No
Metolachlor (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	50	No	No
Metribuzin (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	80	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	80	No	No
Paraquat (ug/L)-TW	2024/01/08	< MDL 1	µg/L	10	No	No
PCB (ug/L)-TW	2024/01/08	< MDL 0.03	µg/L	3	No	No
Pentachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	60	No	No
Phorate (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	2	No	No
Picloram (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	190	No	No
Prometryne (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	1	No	No
Simazine (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	10	No	No
Terbufos (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Tetrachloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	10	No	No
Triallate (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	230	No	No
Trichloroethylene (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
Trifluralin (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	45	No	No
Vinyl Chloride (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Distribution Water						



THM (NOTE: show latest annual average)	2024/10/29	40.8	µg/L	N/A		
	2024 Average	50.18	µg/L	100	No	Yes
Haloacetic acids (HAA) (NOTE: show latest annual average)	2024/10/29	50.5	µg/L	N/A		
	2024 Average	46.05	µg/L	80	No	Yes

SECTION 4: SCHEDULE 22 REPORT

Flows – Treated

In accordance with the **Municipal Drinking Water Licence 225-104 Schedule C: System – Specific Conditions 1.0 Performance Limits**, the Red Rock drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **6045 m³ / day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for

- i. The purposes of fighting a large fire or,
- ii. The maintenance of the drinking-water system

In 2024, the average monthly treated flow rate was 26,526 m³; the average daily treated flow rate was 869.86 m³; and the maximum daily treated flow rate for the year was 1434 m³ representing 23.37% of the allowable daily volume.

The Geraldton Drinking-Water facility operated below the rated capacity in 2024.

Flows – Raw

The daily raw maximum flow is stated in the PTTW as a maximum rate of flow of 4165 l/min (69.4 L/s) and a maximum daily volume of 5997m³/d.

The average monthly raw flow rate was 30,012 m³; the average raw daily flow rate was 984.1 m³, with a maximum raw daily flow rate of 1660 m³.

The quantity of raw water supplied during the reporting period did not exceed the terms and conditions of the *Permit to Take Water*.



Summary of Flows

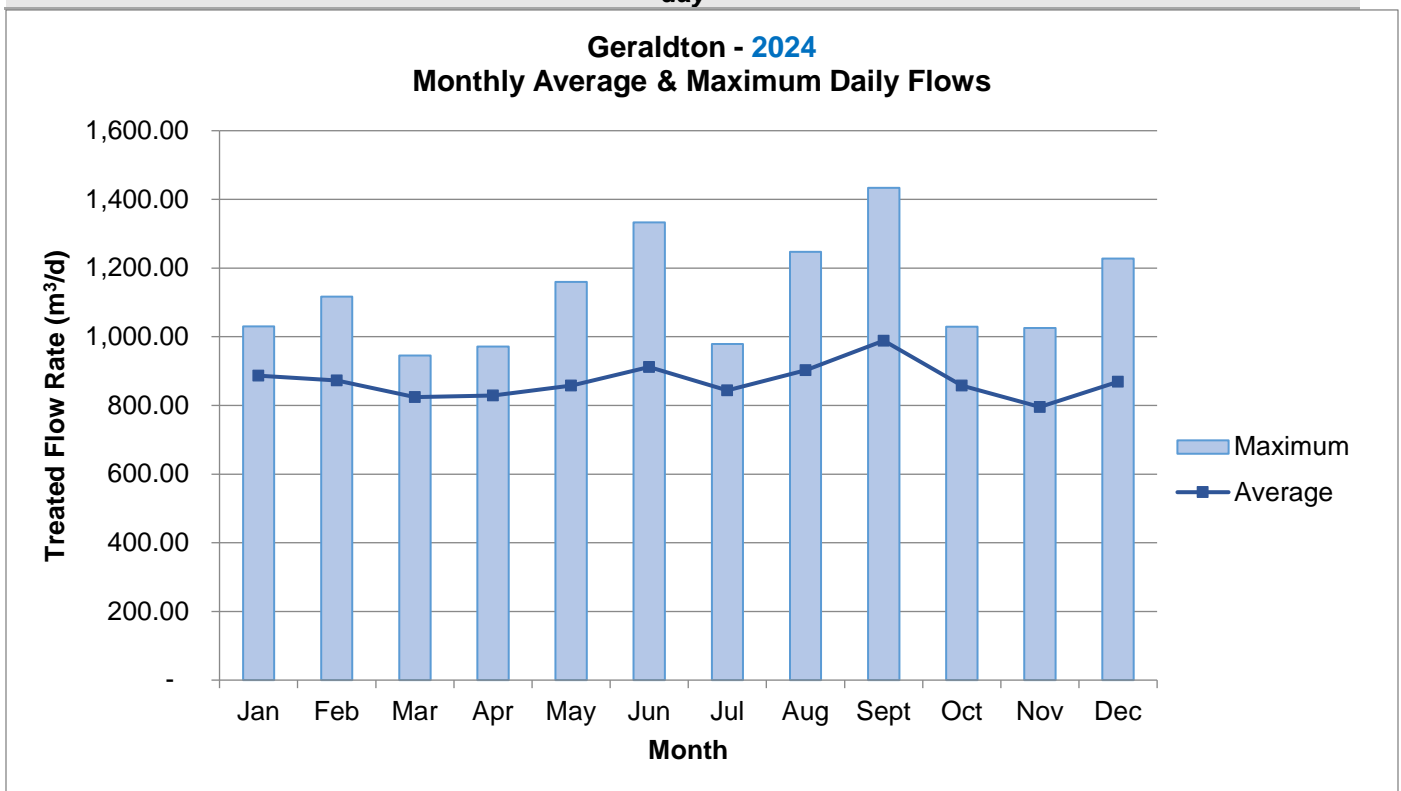
A summary of raw and treated flows are included in the tables/graphs below.

Monthly Raw & Treated Flow Rates for 2024

Month	Average Daily Flow Rate	Maximum Daily Flow Rate	Average Daily Flow Rate	Maximum Daily Flow Rate	Total Monthly Flow Rate
	Raw (m ³ /d)	Raw (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /month)
January	1012.26	1346.00	886.13	1030.00	27470.00
February	985.48	1119.00	872.62	1117.00	25306.00
March	941.03	1055.00	824.35	945.00	25555.00
April	929.17	1021.00	829.20	971.00	24876.00
May	953.42	1316.00	857.42	1160.00	26580.00
June	1016.30	1364.00	911.90	1333.00	27357.00
July	964.71	1162.00	843.35	979.00	26144.00
August	1034.00	1368.00	902.68	1247.00	27983.00
September	1124.30	1660.00	988.57	1434.00	29657.00
October	971.90	1169.00	857.29	1029.00	26576.00
November	891.53	1175.00	795.50	1025.00	23865.00
December	985.13	1406.00	869.26	1228.00	26947.00

2024 Total Treated Flows (m³) 318316.00

**Raw - The daily raw maximum rate of flow is 69.4 L/s and a maximum daily volume of 5997 m³/d.
Treated - The maximum flow rate from the treatment subsystem to the distribution system is 6045 m³ / day





System Failures & Corrective Actions

The Ministry of Environment conducted an inspection of the Geraldton Drinking Water System on **May 28 2024**. The **2024/25** final inspection report identified **no** non-compliance items.

The **2023/24** final inspection rating record for the Red Rock Drinking Water System was **96.98%**

Item	Non-Compliance Identified	Compliance Date yyyy/mm/dd	Action Being Taken to Address item	Status
1				

Adverse Water Quality Incidents (AWQIs)

In the reporting year of **2024**, there were **five** adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date yyyy/mm/dd	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date yyyy/mm/dd
March 6 2024	Low treated water chlorine	<0.45	mg/L	Restore disinfection	March 5 2024
April 23 2024	Low Pressure - water break BWA 15 residence and 3 business			Repair, flush and sample one downstream sample as per MOH	April 26 2024
July 7 2024	Low Pressure - system wide due to water plant shutdown(tower down low cl2)			Restore pressure, flush and collect residuals	July 10 2024
Sept 18 2024	TC in Distribution Sample - Main Street			Flush, resample at location, upstream and downstream	Sept 20 2024
Oct 25 2024	Low Pressure - water break requiring main shut down 3rd Ave north			Flush and sample downstream of break	28-Oct-24



SECTION 5: RAW WATER SUBMISSIONS

The raw water flows were submitted to the Ministry on [February 18, 2025](#).



Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#)

WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 1640-CU6P2E

Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF GREENSTONE.

Received on: Feb 18, 2025 2:11 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

[Return to Main Page](#)

SECTION 6: CONCLUSION

For the operating year of [2024](#), the Geraldton Drinking-Water System delivered water that, in all its treated and distribution samples, indicates the water to be [free of bacteriological contamination with the except for the incident as noted in the Adverse Water Quality table..](#)

In addition, the system was able to meet the demand of water use within the town [without exceeding](#) the Permit to Take Water or the Municipal Drinking Water Licence and Permit.



List of Acronyms and Definitions	
Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m³/d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks
NDOGN	No Data: Overgrown with Non Target Bacteria
NDOGT	No Data: Overgrown with Target Bacteria
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A – Annual Water Taking Data

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: GERALDTON DRINKING WATER SYSTEM - 5790
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Water

Permit#: 1640-CU6P2E	Coordinate Zone:
Source Name: Cecile Lake	Easting:
Source: Lake	Northing:
Type:	Method deter:
Purpose: Municipal	

Date Measured	Value (m³/d)	Value(Liters)
01/01/2024	1624.0000	1624000.0000
02/01/2024	1461.0000	1461000.0000
03/01/2024	1544.0000	1544000.0000
04/01/2024	1597.0000	1597000.0000
05/01/2024	1592.0000	1592000.0000
06/01/2024	1605.0000	1605000.0000
07/01/2024	1620.0000	1620000.0000
08/01/2024	1573.0000	1573000.0000
09/01/2024	1527.0000	1527000.0000
10/01/2024	1563.0000	1563000.0000
11/01/2024	1596.0000	1596000.0000
12/01/2024	1649.0000	1649000.0000
13/01/2024	1509.0000	1509000.0000
14/01/2024	1630.0000	1630000.0000
15/01/2024	1710.0000	1710000.0000
16/01/2024	1712.0000	1712000.0000
17/01/2024	1606.0000	1606000.0000
18/01/2024	1667.0000	1667000.0000
19/01/2024	1558.0000	1558000.0000
20/01/2024	1652.0000	1652000.0000
21/01/2024	1513.0000	1513000.0000
22/01/2024	1824.0000	1824000.0000
23/01/2024	1638.0000	1638000.0000
24/01/2024	1529.0000	1529000.0000
25/01/2024	1716.0000	1716000.0000
26/01/2024	1557.0000	1557000.0000
27/01/2024	1564.0000	1564000.0000
28/01/2024	1659.0000	1659000.0000

29/01/2024	1687.0000	1687000.0000
30/01/2024	1665.0000	1665000.0000
31/01/2024	1650.0000	1650000.0000
01/02/2024	1543.0000	1543000.0000
02/02/2024	1628.0000	1628000.0000
03/02/2024	1662.0000	1662000.0000
04/02/2024	1645.0000	1645000.0000
05/02/2024	1597.0000	1597000.0000
06/02/2024	1670.0000	1670000.0000
07/02/2024	1702.0000	1702000.0000
08/02/2024	1676.0000	1676000.0000
09/02/2024	1501.0000	1501000.0000
10/02/2024	1692.0000	1692000.0000
11/02/2024	1602.0000	1602000.0000
12/02/2024	1580.0000	1580000.0000
13/02/2024	1629.0000	1629000.0000
14/02/2024	1679.0000	1679000.0000
15/02/2024	1611.0000	1611000.0000
16/02/2024	1689.0000	1689000.0000
17/02/2024	1741.0000	1741000.0000
18/02/2024	1728.0000	1728000.0000
19/02/2024	1899.0000	1899000.0000
20/02/2024	1897.0000	1897000.0000
21/02/2024	1820.0000	1820000.0000
22/02/2024	1776.0000	1776000.0000
23/02/2024	1813.0000	1813000.0000
24/02/2024	1912.0000	1912000.0000
25/02/2024	1896.0000	1896000.0000
26/02/2024	1911.0000	1911000.0000
27/02/2024	1825.0000	1825000.0000
28/02/2024	1868.0000	1868000.0000
29/02/2024	1866.0000	1866000.0000
01/03/2024	1888.0000	1888000.0000
02/03/2024	1873.0000	1873000.0000
03/03/2024	1912.0000	1912000.0000
04/03/2024	1844.0000	1844000.0000
05/03/2024	2141.0000	2141000.0000
06/03/2024	1958.0000	1958000.0000
07/03/2024	1918.0000	1918000.0000
08/03/2024	1824.0000	1824000.0000
09/03/2024	1837.0000	1837000.0000
10/03/2024	1867.0000	1867000.0000
11/03/2024	1829.0000	1829000.0000
12/03/2024	2005.0000	2005000.0000

13/03/2024	1768.0000	1768000.0000
14/03/2024	1868.0000	1868000.0000
15/03/2024	1747.0000	1747000.0000
16/03/2024	1800.0000	1800000.0000
17/03/2024	1914.0000	1914000.0000
18/03/2024	1884.0000	1884000.0000
19/03/2024	1843.0000	1843000.0000
20/03/2024	1878.0000	1878000.0000
21/03/2024	1820.0000	1820000.0000
22/03/2024	1918.0000	1918000.0000
23/03/2024	1899.0000	1899000.0000
24/03/2024	1713.0000	1713000.0000
25/03/2024	3541.0000	3541000.0000
26/03/2024	1789.0000	1789000.0000
27/03/2024	1908.0000	1908000.0000
28/03/2024	1856.0000	1856000.0000
29/03/2024	1913.0000	1913000.0000
30/03/2024	1964.0000	1964000.0000
31/03/2024	1947.0000	1947000.0000
01/04/2024	1943.0000	1943000.0000
02/04/2024	1955.0000	1955000.0000
03/04/2024	1916.0000	1916000.0000
04/04/2024	1887.0000	1887000.0000
05/04/2024	1893.0000	1893000.0000
06/04/2024	1937.0000	1937000.0000
07/04/2024	1942.0000	1942000.0000
08/04/2024	1974.0000	1974000.0000
09/04/2024	2012.0000	2012000.0000
10/04/2024	2005.0000	2005000.0000
11/04/2024	1973.0000	1973000.0000
12/04/2024	2173.0000	2173000.0000
13/04/2024	2824.0000	2824000.0000
14/04/2024	2185.0000	2185000.0000
15/04/2024	1672.0000	1672000.0000
16/04/2024	1837.0000	1837000.0000
17/04/2024	1664.0000	1664000.0000
18/04/2024	1648.0000	1648000.0000
19/04/2024	1482.0000	1482000.0000
20/04/2024	1565.0000	1565000.0000
21/04/2024	1568.0000	1568000.0000
22/04/2024	1715.0000	1715000.0000
23/04/2024	1583.0000	1583000.0000
24/04/2024	1360.0000	1360000.0000
25/04/2024	1406.0000	1406000.0000

26/04/2024	1370.0000	1370000.0000
27/04/2024	1480.0000	1480000.0000
28/04/2024	1435.0000	1435000.0000
29/04/2024	1437.0000	1437000.0000
30/04/2024	1316.0000	1316000.0000
01/05/2024	1459.0000	1459000.0000
02/05/2024	1396.0000	1396000.0000
03/05/2024	1457.0000	1457000.0000
04/05/2024	1469.0000	1469000.0000
05/05/2024	1354.0000	1354000.0000
06/05/2024	1591.0000	1591000.0000
07/05/2024	1654.0000	1654000.0000
08/05/2024	1301.0000	1301000.0000
09/05/2024	1533.0000	1533000.0000
10/05/2024	1256.0000	1256000.0000
11/05/2024	1322.0000	1322000.0000
12/05/2024	1428.0000	1428000.0000
13/05/2024	1446.0000	1446000.0000
14/05/2024	1290.0000	1290000.0000
15/05/2024	1257.0000	1257000.0000
16/05/2024	1308.0000	1308000.0000
17/05/2024	1253.0000	1253000.0000
18/05/2024	1261.0000	1261000.0000
19/05/2024	1284.0000	1284000.0000
20/05/2024	1347.0000	1347000.0000
21/05/2024	1472.0000	1472000.0000
22/05/2024	1386.0000	1386000.0000
23/05/2024	1465.0000	1465000.0000
24/05/2024	1393.0000	1393000.0000
25/05/2024	1000.0000	1000000.0000
26/05/2024	2319.0000	2319000.0000
27/05/2024	1170.0000	1170000.0000
28/05/2024	2377.0000	2377000.0000
29/05/2024	1192.0000	1192000.0000
30/05/2024	1131.0000	1131000.0000
31/05/2024	1344.0000	1344000.0000
01/06/2024	1211.0000	1211000.0000
02/06/2024	1106.0000	1106000.0000
03/06/2024	1150.0000	1150000.0000
04/06/2024	1154.0000	1154000.0000
05/06/2024	1056.0000	1056000.0000
06/06/2024	1090.0000	1090000.0000
07/06/2024	921.0000	921000.0000
08/06/2024	1244.0000	1244000.0000

09/06/2024	995.0000	995000.0000
10/06/2024	1206.0000	1206000.0000
11/06/2024	1056.0000	1056000.0000
12/06/2024	1144.0000	1144000.0000
13/06/2024	808.0000	808000.0000
14/06/2024	865.0000	865000.0000
15/06/2024	1229.0000	1229000.0000
16/06/2024	1052.0000	1052000.0000
17/06/2024	1125.0000	1125000.0000
18/06/2024	1189.0000	1189000.0000
19/06/2024	1033.0000	1033000.0000
20/06/2024	933.0000	933000.0000
21/06/2024	1179.0000	1179000.0000
22/06/2024	1023.0000	1023000.0000
23/06/2024	1125.0000	1125000.0000
24/06/2024	780.0000	780000.0000
25/06/2024	1679.0000	1679000.0000
26/06/2024	1510.0000	1510000.0000
27/06/2024	1125.0000	1125000.0000
28/06/2024	998.0000	998000.0000
29/06/2024	1282.0000	1282000.0000
30/06/2024	1290.0000	1290000.0000
01/07/2024	1287.0000	1287000.0000
02/07/2024	1251.0000	1251000.0000
03/07/2024	1286.0000	1286000.0000
04/07/2024	1331.0000	1331000.0000
05/07/2024	1303.0000	1303000.0000
06/07/2024	1395.0000	1395000.0000
07/07/2024	1892.0000	1892000.0000
08/07/2024	1397.0000	1397000.0000
09/07/2024	1373.0000	1373000.0000
10/07/2024	1280.0000	1280000.0000
11/07/2024	1343.0000	1343000.0000
12/07/2024	1366.0000	1366000.0000
13/07/2024	1049.0000	1049000.0000
14/07/2024	1320.0000	1320000.0000
15/07/2024	1210.0000	1210000.0000
16/07/2024	2080.0000	2080000.0000
17/07/2024	1802.0000	1802000.0000
18/07/2024	1121.0000	1121000.0000
19/07/2024	1217.0000	1217000.0000
20/07/2024	1008.0000	1008000.0000
21/07/2024	1202.0000	1202000.0000
22/07/2024	1062.0000	1062000.0000

23/07/2024	1020.0000	1020000.0000
24/07/2024	2200.0000	2200000.0000
25/07/2024	1252.0000	1252000.0000
26/07/2024	1287.0000	1287000.0000
27/07/2024	1199.0000	1199000.0000
28/07/2024	2585.0000	2585000.0000
29/07/2024	1159.0000	1159000.0000
30/07/2024	1196.0000	1196000.0000
31/07/2024	1132.0000	1132000.0000
01/08/2024	1372.0000	1372000.0000
02/08/2024	1491.0000	1491000.0000
03/08/2024	1217.0000	1217000.0000
04/08/2024	1215.0000	1215000.0000
05/08/2024	1195.0000	1195000.0000
06/08/2024	1008.0000	1008000.0000
07/08/2024	1315.0000	1315000.0000
08/08/2024	1301.0000	1301000.0000
09/08/2024	1335.0000	1335000.0000
10/08/2024	1473.0000	1473000.0000
11/08/2024	1429.0000	1429000.0000
12/08/2024	1360.0000	1360000.0000
13/08/2024	1472.0000	1472000.0000
14/08/2024	1560.0000	1560000.0000
15/08/2024	1610.0000	1610000.0000
16/08/2024	1557.0000	1557000.0000
17/08/2024	1655.0000	1655000.0000
18/08/2024	1535.0000	1535000.0000
19/08/2024	1445.0000	1445000.0000
20/08/2024	1448.0000	1448000.0000
21/08/2024	1413.0000	1413000.0000
22/08/2024	1870.0000	1870000.0000
23/08/2024	2720.0000	2720000.0000
24/08/2024	1548.0000	1548000.0000
25/08/2024	1453.0000	1453000.0000
26/08/2024	1210.0000	1210000.0000
27/08/2024	1267.0000	1267000.0000
28/08/2024	1151.0000	1151000.0000
29/08/2024	1302.0000	1302000.0000
30/08/2024	1205.0000	1205000.0000
31/08/2024	966.0000	966000.0000
01/09/2024	1324.0000	1324000.0000
02/09/2024	1170.0000	1170000.0000
03/09/2024	1344.0000	1344000.0000
04/09/2024	1070.0000	1070000.0000

05/09/2024	1302.0000	1302000.0000
06/09/2024	1076.0000	1076000.0000
07/09/2024	1243.0000	1243000.0000
08/09/2024	1256.0000	1256000.0000
09/09/2024	1453.0000	1453000.0000
10/09/2024	1276.0000	1276000.0000
11/09/2024	1275.0000	1275000.0000
12/09/2024	1440.0000	1440000.0000
13/09/2024	1348.0000	1348000.0000
14/09/2024	1379.0000	1379000.0000
15/09/2024	1191.0000	1191000.0000
16/09/2024	1490.0000	1490000.0000
17/09/2024	1382.0000	1382000.0000
18/09/2024	1396.0000	1396000.0000
19/09/2024	1327.0000	1327000.0000
20/09/2024	2690.0000	2690000.0000
21/09/2024	1183.0000	1183000.0000
22/09/2024	1339.0000	1339000.0000
23/09/2024	1392.0000	1392000.0000
24/09/2024	1362.0000	1362000.0000
25/09/2024	1401.0000	1401000.0000
26/09/2024	1453.0000	1453000.0000
27/09/2024	1479.0000	1479000.0000
28/09/2024	1535.0000	1535000.0000
29/09/2024	1550.0000	1550000.0000
30/09/2024	2936.0000	2936000.0000
01/10/2024	1536.0000	1536000.0000
02/10/2024	1501.0000	1501000.0000
03/10/2024	1624.0000	1624000.0000
04/10/2024	1642.0000	1642000.0000
05/10/2024	1548.0000	1548000.0000
06/10/2024	1693.0000	1693000.0000
07/10/2024	1694.0000	1694000.0000
08/10/2024	1855.0000	1855000.0000
09/10/2024	1780.0000	1780000.0000
10/10/2024	1909.0000	1909000.0000
11/10/2024	1631.0000	1631000.0000
12/10/2024	1500.0000	1500000.0000
13/10/2024	1482.0000	1482000.0000
14/10/2024	1743.0000	1743000.0000
15/10/2024	1619.0000	1619000.0000
16/10/2024	1457.0000	1457000.0000
17/10/2024	1724.0000	1724000.0000
18/10/2024	1666.0000	1666000.0000

19/10/2024	1501.0000	1501000.0000
20/10/2024	1700.0000	1700000.0000
21/10/2024	1718.0000	1718000.0000
22/10/2024	1832.0000	1832000.0000
23/10/2024	1638.0000	1638000.0000
24/10/2024	1748.0000	1748000.0000
25/10/2024	1397.0000	1397000.0000
26/10/2024	1634.0000	1634000.0000
27/10/2024	1677.0000	1677000.0000
28/10/2024	1587.0000	1587000.0000
29/10/2024	1560.0000	1560000.0000
30/10/2024	1219.0000	1219000.0000
31/10/2024	1940.0000	1940000.0000
01/11/2024	1620.0000	1620000.0000
02/11/2024	1488.0000	1488000.0000
03/11/2024	1781.0000	1781000.0000
04/11/2024	1605.0000	1605000.0000
05/11/2024	1479.0000	1479000.0000
06/11/2024	1413.0000	1413000.0000
07/11/2024	1499.0000	1499000.0000
08/11/2024	1300.0000	1300000.0000
09/11/2024	2577.0000	2577000.0000
10/11/2024	1411.0000	1411000.0000
11/11/2024	1429.0000	1429000.0000
12/11/2024	1422.0000	1422000.0000
13/11/2024	1362.0000	1362000.0000
14/11/2024	1283.0000	1283000.0000
15/11/2024	1302.0000	1302000.0000
16/11/2024	1212.0000	1212000.0000
17/11/2024	1399.0000	1399000.0000
18/11/2024	2678.0000	2678000.0000
19/11/2024	1231.0000	1231000.0000
20/11/2024	1403.0000	1403000.0000
21/11/2024	1378.0000	1378000.0000
22/11/2024	1342.0000	1342000.0000
23/11/2024	1409.0000	1409000.0000
24/11/2024	1493.0000	1493000.0000
25/11/2024	1387.0000	1387000.0000
26/11/2024	1333.0000	1333000.0000
27/11/2024	1442.0000	1442000.0000
28/11/2024	1403.0000	1403000.0000
29/11/2024	1418.0000	1418000.0000
30/11/2024	1362.0000	1362000.0000
01/12/2024	1373.0000	1373000.0000

02/12/2024	1320.0000	1320000.0000
03/12/2024	1485.0000	1485000.0000
04/12/2024	1350.0000	1350000.0000
05/12/2024	1347.0000	1347000.0000
06/12/2024	1396.0000	1396000.0000
07/12/2024	1273.0000	1273000.0000
08/12/2024	1384.0000	1384000.0000
09/12/2024	1357.0000	1357000.0000
10/12/2024	1469.0000	1469000.0000
11/12/2024	1297.0000	1297000.0000
12/12/2024	1436.0000	1436000.0000
13/12/2024	1413.0000	1413000.0000
14/12/2024	2814.0000	2814000.0000
15/12/2024	1492.0000	1492000.0000
16/12/2024	1502.0000	1502000.0000
17/12/2024	1619.0000	1619000.0000
18/12/2024	1511.0000	1511000.0000
19/12/2024	3082.0000	3082000.0000
20/12/2024	1585.0000	1585000.0000
21/12/2024	1575.0000	1575000.0000
22/12/2024	1581.0000	1581000.0000
23/12/2024	1675.0000	1675000.0000
24/12/2024	1598.0000	1598000.0000
25/12/2024	1538.0000	1538000.0000
26/12/2024	1679.0000	1679000.0000
27/12/2024	1638.0000	1638000.0000
28/12/2024	1676.0000	1676000.0000
29/12/2024	1586.0000	1586000.0000
30/12/2024	1572.0000	1572000.0000
31/12/2024	3284.0000	3284000.0000

16

502775

5510370

Metered

Longlac Drinking Water System

Large Municipal Residential Drinking Water System

January 1 – December 31, 2024

*O.Reg 170/03 Schedule 22 Summary Report
O.Reg 170/03 Section 11 Annual Report
&
O.Reg 387/04 Annual Record of Water Taking*

Issued: **February 2025**

Prepared by the



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



Drinking-Water System Number: 220000264
Drinking-Water System Name: Longlac Drinking Water System
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, 2024](#)

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act.

The reports are prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by [March 31, 2025](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry



- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water license or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A. – Annual Water Taking Data](#)

SECTION 3: SECTION 11 REPORT

Information	
Population Served	1388
Does your Drinking-Water System serve more than 10,000 people?	Yes [] No [X]
Is your annual report available to the public at no charge on a web site on the Internet?	Yes [X] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Longlac Ward Office 105 Hamel Avenue Longlac, ON P0T 2A0
Number of Designated Facilities served:	N/A
Did you provide a copy of your annual report to all Designated Facilities you serve?	
Number of Interested Authorities you report to:	N/A
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	
List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
DWS Name:	DWS: #
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.	
<input checked="" type="checkbox"/> Public access/notice via the web <input checked="" type="checkbox"/> Public access/notice via Government Office (Municipal) <input checked="" type="checkbox"/> Public access/notice via a newspaper <input checked="" type="checkbox"/> Public access/notice via Public Request <input type="checkbox"/> Public access/notice via a Public Library	



Public access/notice via other method – Community Television Channel

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

Facility Description

The Longlac Water Treatment Plant (WTP), located on Park Street, draws raw water from Long Lake. The WTP is a package plant, consisting of two Graver Reactors/Filters. Treatment includes coagulation, flocculation, and sedimentation with the aid of tube settlers, filtration, corrosion control and disinfection. This plant has a design capacity of 6,050 m3/day. The WTP presently serves a population of approximately 1750 persons within the community and 500 persons within two First Nations. The WTP was designed with the anticipation that the community would experience growth.

Long Lake is the sole source of supply for the Longlac water system. A surface water intake with 245 m of 450 mm diameter intake piping through two course screens convey water by gravity to the intake well, and the low lift pumping chamber. Alum is the coagulant and the flocculation aid is Nalclear 8181 (polymer), they are added to the raw water between the low lift pumps and the treatment unit. The water is then pumped to the Graver Reactors/Filters Treatment Unit. The Reactivators are solids contact clarifiers combining coagulation, flocculation, and sedimentation in one unit. The water is flocculated, and the floc settled out using tube settlers in the solids contact clarifier and by maintaining a sludge blanket. The water then passes through a two-compartment dual media (sand and anthrafil) filter.

Once through the filters the water is chlorinated with chlorine gas; and Carus 8500 orthophosphate is added for corrosion control. The water then enters a treated water reservoir. The reservoir, located beneath the process floor, is divided into three compartments with a total capacity of 705 m3. Three high lift pumps deliver the finished water to the distribution system. The elevated storage tank with a capacity of 2273 m3 provides emergency storage and fire flow. Pressure is controlled by a pilot operated Pressure Relief Valve.

Wastewater from the filter backwash and clarifier blowdown is collected in a wastewater storage tank, and then pumped to the municipal sanitary sewer system.

A 200-kW-diesel generator provides standby power to the entire WTP.

Chemicals Used During Reporting Period

- Aluminum Sulphate
- Chlorine Gas
- Carus 8500
- Nalclear 8181 Polymer

Significant Expenses

Significant expenses were incurred to:

- Install Required Equipment
- X Repair Required Equipment
- Replace Required Equipment



Install	Repair	Replace	Description	Expense
	X		Water Tower Painting & Upgrades	\$1,342,552.72
	X		Water Tower Painting Management Fee	\$13,400.00
	X		3rd party inspection - tower	\$33,176.30
	X		Distribution repairs and maintenance	\$52,923.49

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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
2024/03/03	Loss of Pressure due to water main break			repair main break	2024/03/07
2024/03/23	TC exceedance in Distribution sample	Present		resample at site and upstream and downstream	2024/03/28
2024/09/05	TC exceedance in Distribution sample	Present		resample at site and upstream and downstream	2024/09/09
2024/12/02	Loss of Pressure due to water main break			Repair main , Flush and MOH Request 2 sets of bacti 24 hr apart	2024/12/06

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	<1 – 28	<1 – 2420	N/A	N/A
Treated	52	0 – 0	0 – 0	52	<1 – 6
Distribution	137	0 – 0	1 – 0	52	<1 – 94

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	240	0.93 – 16.20 NTU
Filter #1	8760	0.04 – 3.00 NTU
Filter #2	8760	0.04 – 3.00 NTU
Chlorine		
Treated	8760	1.32 – 2.63 mg/L
Distribution	365	0.24 – 2.20 mg/L
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.



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 (yyyy/mm/dd)	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 (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Antimony	2024/01/08	< MDL 0.6	µg/L	6	No	No
Arsenic	2024/01/08	< MDL 1	µg/L	10	No	No
Barium	2024/01/08	< MDL 10	µg/L	1000	No	No
Boron	2024/01/08	< MDL 50	µg/L	5000	No	No
Cadmium	2024/01/08	< MDL 0.1	µg/L	5	No	No
Chromium	2024/01/08	< MDL 1	µg/L	50	No	No
Mercury	2024/01/08	< MDL 0.1	µg/L	1	No	No
Selenium	2024/01/08	< MDL 1	µg/L	50	No	No
Uranium	2024/01/08	< MDL 2	µg/L	20	No	No
Fluoride	2023/01/09	> MDL 0.05	mg/L	1.5	No	No
Nitrate	2024/01/02	0.132	mg/L	10	No	No
	2024/04/02	0.069	mg/L	10	No	No
	2024/07/03	0.023	mg/L	10	No	No
	2024/10/01	< MDL 0.02	mg/L	10	No	No
Nitrite	2024/01/02	< MDL 0.01	mg/L	1	No	No
	2024/04/02	< MDL 0.01	mg/L	1	No	No
	2024/07/03	< MDL 0.01	mg/L	1	No	No
	2024/10/01	< MDL 0.01	mg/L	1	No	No
Sodium	2023/01/09	2.7	mg/L	20**	No	Yes
*Lead	<i>Refer to Summary Table Below</i>					
<p>*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</p> <p>**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.</p>						

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
Distribution	0		0
Distribution - Alkalinity_CaCO3:(mg/L)	4	28.6 – 52.1	N/A

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



2024 Annual Report
Longlac Water Treatment

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Treated Water						
1,1-Dichloroethylene (ug/L)-TW	2023/01/09	< MDL 0.3	µg/L	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2023/01/09	< MDL 0.2	µg/L	200	No	No
1,2-Dichloroethane (ug/L)-TW	2023/01/09	< MDL 0.2	µg/L	5	No	No
1,4-Dichlorobenzene (ug/L)-TW	2023/01/09	< MDL 0.3	µg/L	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2023/01/09	< MDL 0.2	µg/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	100	No	No
Alachlor (ug/L) -TW	2024/01/08	< MDL 0.05	µg/L	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW	2024/01/08	< MDL 0.14	µg/L	5	No	No
Azinphos-methyl (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	20	No	No
Benzene (ug/L)-TW	2023/01/09	< MDL 0.01	µg/L	1	No	No
Benzo(a)pyrene (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	0.01	No	Yes
Bromoxynil (ug/L)-TW	2024/01/08	< MDL 0.005	µg/L	5	No	No
Carbaryl (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	90	No	No
Carbofuran (ug/L) -TW	2024/01/08	< MDL 0.05	µg/L	90	No	No
Carbon Tetrachloride (ug/L) -TW	2024/01/08	< MDL 0.025	µg/L	2	No	No
Chlorpyrifos (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	90	No	No
Diazinon (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	20	No	No
Dicamba (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	50	No	No
Diclofop-methyl (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	9	No	No
Dimethoate (ug/L)-TW	2024/01/08	< MDL 1	µg/L	20	No	No
Diquat (ug/L)-TW	2024/01/08	< MDL 0.05	µg/L	70	No	No
Diuron (ug/L)-TW	2024/01/08	< MDL 0.2	µg/L	150	No	No
Glyphosate (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	280	No	No
Malathion (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	190	No	No
Metolachlor (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	50	No	No
Metribuzin (ug/L)-TW	2024/01/08	< MDL 0.005	µg/L	80	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)-TW	2023/01/09	< MDL 0.5	µg/L	80	No	No
Paraquat (ug/L)-TW	2024/01/08	< MDL 1	µg/L	10	No	No
PCB (ug/L)-TW	2024/01/08	< MDL 0.03	µg/L	3	No	No
Pentachlorophenol (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	60	No	No
Phorate (ug/L)-TW	2024/01/08	< MDL 0.25	µg/L	2	No	No
Picloram (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	190	No	No
Prometryne (ug/L)-TW	2024/01/08	< MDL 0.025	µg/L	1	No	No
Simazine (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	10	No	No
Terbufos (ug/L)-TW	2024/01/08	< MDL 0.5	µg/L	1	No	No
Tetrachloroethylene (ug/L)-TW	2024/01/08	< MDL 0.1	µg/L	10	No	No



Triallate (ug/L) -TW	2024/01/08	< MDL 0.1	µg/L	230	No	No
Trichloroethylene (ug/L)-TW	2024/01/08	< MDL 1	µg/L	5	No	No
Trifluralin (ug/L)-TW	2024/01/08	< MDL 0.03	µg/L	45	No	No
Vinyl Chloride (ug/L)-TW	2023/01/09	< MDL 0.1	µg/L	1	No	No
Distribution Water						
THM (NOTE: show latest annual average)	2024/10/01	55.5	µg/L	N/A		
	2024 Average	48.93	µg/L	100	No	No
Haloacetic acids (HAA) (NOTE: show latest annual average)	2024/10/01	61.0	µg/L	N/A		
	2024 Average	50.65	µg/L	80	No	Yes

SECTION 4: SCHEDULE 22 REPORT

Flows – Treated

In accordance with the **Municipal Drinking Water Licence 225-105 Schedule C: System – Specific Conditions 1.0 Performance Limits**, the Longlac drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **4540 m³/ day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for

- i. The purposes of fighting a large fire or,
- ii. The maintenance of the drinking-water system

In 2024, the average monthly treated flow rate was **26,526.3 m³**; the average daily treated flow rate was **869.86m³**; and the maximum daily treated flow rate for the year was **1434 m³** representing **31.58%** of the allowable daily volume.

The Longlac Drinking-Water facility operated **below** the rated capacity **in 2024**.

Flows – Raw

The daily raw maximum flow is stated in the PTTW as a maximum rate of flow of **3153 L/min (52.55 L/s)** and a maximum daily volume of **4540 m³/d**.

The average monthly raw flow rate was **30,012.8m³**; the average raw daily flow rate was **984.1m³**, with a maximum raw daily flow rate of **1660m³**.

The quantity of raw water supplied during the reporting period **did not** exceed the terms and conditions of the *Permit to Take Water*.



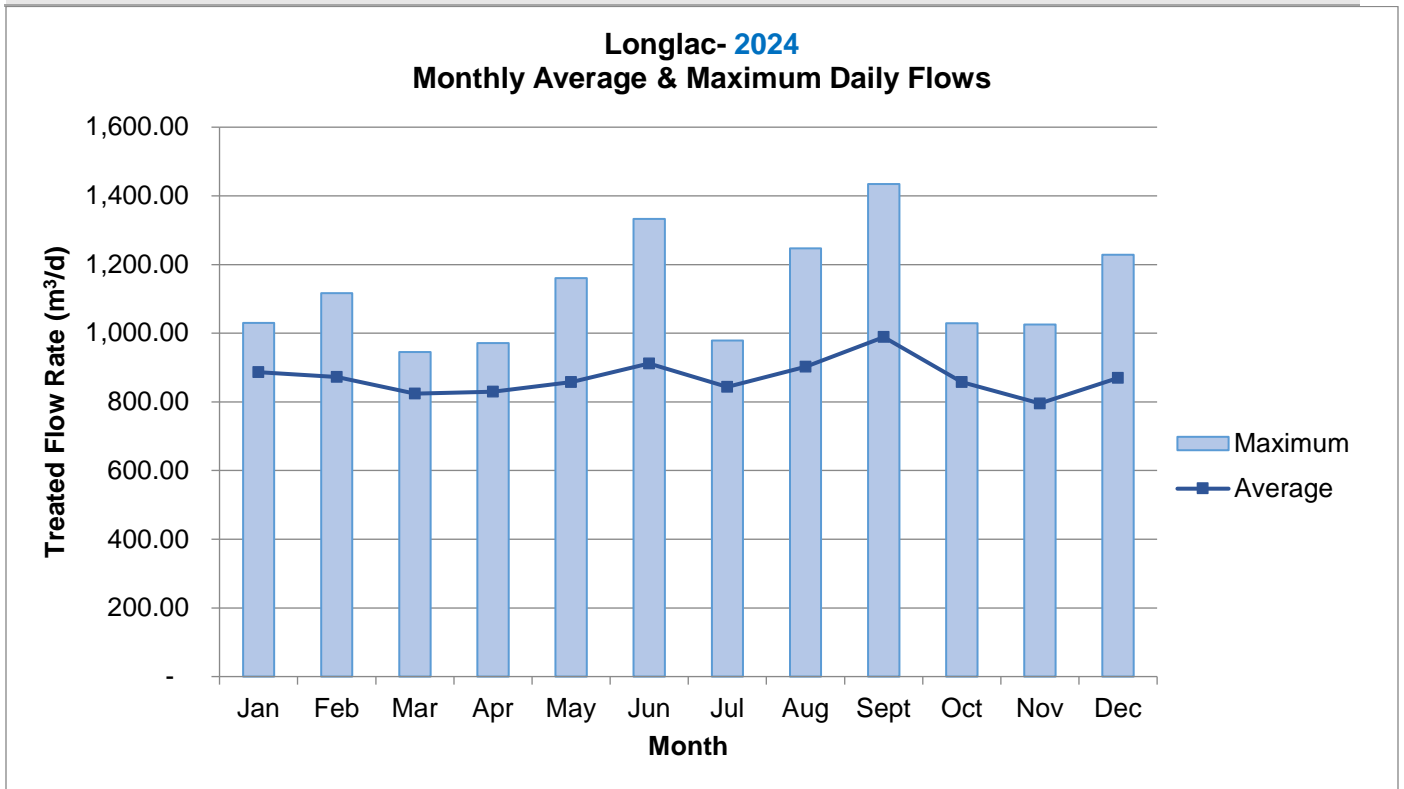
Summary of Flows

A summary of raw and treated flows are included in the tables/graphs below.

Monthly Raw & Treated Flow Rates for 2024

Month	Average Daily Flow Rate	Maximum Daily Flow Rate	Average Daily Flow Rate	Maximum Daily Flow Rate	Total Monthly Flow Rate
	Raw (m ³ /d)	Raw (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /month)
January	1012.26	1346.00	886.13	1030.00	27470.00
February	985.48	1119.00	872.62	1117.00	25306.00
March	941.03	1055.00	824.35	945.00	25555.00
April	929.17	1021.00	829.20	971.00	24876.00
May	953.42	1316.00	857.42	1160.00	26580.00
June	1016.30	1364.00	911.90	1333.00	27357.00
July	964.71	1162.00	843.35	979.00	26144.00
August	1034.00	1368.00	902.68	1247.00	27983.00
September	1124.30	1660.00	988.57	1434.00	29657.00
October	971.90	1169.00	857.29	1029.00	26576.00
November	891.53	1175.00	795.50	1025.00	23865.00
December	985.13	1406.00	869.26	1228.00	26947.00

2024 Total Treated Flows (m³) 318316.00





System Failures & Corrective Actions

The Ministry of Environment conducted an inspection of the Longlac Drinking Water System on [September 25, 2024](#). The [2024/25](#) final inspection report identified [no](#) non-compliance items.

The [2024/25](#) final inspection rating record for the Longlac Drinking Water System was [100%](#)

Item	Non-Compliance Identified	Compliance Date yyyy/mm/dd	Action Being Taken to Address item	Status

Adverse Water Quality Incidents (AWQIs)


In the reporting year of [2024](#), there were [four](#) adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date yyyy/mm/dd	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date yyyy/mm/dd
2024/03/03	Loss of Pressure due to water main break			repair main break	2024/03/07
2024/03/23	TC exceedance in Distribution sample	Present		resample at site and upstream and downstream	2024/03/28
2024/09/05	TC exceedance in Distribution sample	Present		resample at site and upstream and downstream	2024/09/09
2024/12/02	Loss of Pressure due to water main break			Repair main , Flush and MOH Request 2 sets of bacti 24 hr apart	2024/12/06



SECTION 5: RAW WATER SUBMISSIONS

The raw water flows were submitted to the Ministry on [February 18, 2025](#).

Ontario 

Location: [WTRS](#) / [WT DATA](#) / [Input WT Record](#) WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 8630-CTXLS6
Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF GREENSTONE.
Received on: Feb 18, 2025 2:17 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

[Return to Main Page](#)

SECTION 6: CONCLUSION

For the operating year of [2024](#), the Longlac Drinking-Water System delivered water that, in all its treated and distribution samples, indicates the water to be [free of bacteriological contamination except for the two incidents as noted in the Adverse Water Quality table](#).

In addition, the system was able to meet the demand of water use within the town [without exceeding](#) the Permit to Take Water or the Municipal Drinking Water Licence and Permit.



List of Acronyms and Definitions	
Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m³/d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks
NDOGN	No Data: Overgrown with Non Target Bacteria
NDOGT	No Data: Overgrown with Target Bacteria
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A – Annual Water Taking Data

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: LONGLAC DRINKING WATER SYSTEM - 5768
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Water

Permit#: 8630-CTXLS6	Coordinate Zone:
Source Name: Long Lake	Easting:
Source: Lake	Northing:
Type:	Method deter:
Purpose: Municipal	

Date Measured	Value (m³/d)	Value(Liters)
01/01/2024	1054.0000	1054000.0000
02/01/2024	909.0000	909000.0000
03/01/2024	890.0000	890000.0000
04/01/2024	967.0000	967000.0000
05/01/2024	1005.0000	1005000.0000
06/01/2024	953.0000	953000.0000
07/01/2024	948.0000	948000.0000
08/01/2024	957.0000	957000.0000
09/01/2024	886.0000	886000.0000
10/01/2024	970.0000	970000.0000
11/01/2024	884.0000	884000.0000
12/01/2024	926.0000	926000.0000
13/01/2024	1067.0000	1067000.0000
14/01/2024	1216.0000	1216000.0000
15/01/2024	1078.0000	1078000.0000
16/01/2024	995.0000	995000.0000
17/01/2024	1022.0000	1022000.0000
18/01/2024	1025.0000	1025000.0000
19/01/2024	803.0000	803000.0000
20/01/2024	1134.0000	1134000.0000
21/01/2024	1042.0000	1042000.0000
22/01/2024	1078.0000	1078000.0000
23/01/2024	1159.0000	1159000.0000
24/01/2024	1011.0000	1011000.0000
25/01/2024	1043.0000	1043000.0000
26/01/2024	1070.0000	1070000.0000
27/01/2024	952.0000	952000.0000
28/01/2024	926.0000	926000.0000

29/01/2024	1346.0000	1346000.0000
30/01/2024	1020.0000	1020000.0000
31/01/2024	1044.0000	1044000.0000
01/02/2024	1034.0000	1034000.0000
02/02/2024	1014.0000	1014000.0000
03/02/2024	1001.0000	1001000.0000
04/02/2024	1079.0000	1079000.0000
05/02/2024	971.0000	971000.0000
06/02/2024	947.0000	947000.0000
07/02/2024	899.0000	899000.0000
08/02/2024	967.0000	967000.0000
09/02/2024	998.0000	998000.0000
10/02/2024	988.0000	988000.0000
11/02/2024	957.0000	957000.0000
12/02/2024	970.0000	970000.0000
13/02/2024	927.0000	927000.0000
14/02/2024	939.0000	939000.0000
15/02/2024	1024.0000	1024000.0000
16/02/2024	974.0000	974000.0000
17/02/2024	1008.0000	1008000.0000
18/02/2024	1119.0000	1119000.0000
19/02/2024	1074.0000	1074000.0000
20/02/2024	982.0000	982000.0000
21/02/2024	974.0000	974000.0000
22/02/2024	930.0000	930000.0000
23/02/2024	897.0000	897000.0000
24/02/2024	947.0000	947000.0000
25/02/2024	1024.0000	1024000.0000
26/02/2024	1031.0000	1031000.0000
27/02/2024	1084.0000	1084000.0000
28/02/2024	871.0000	871000.0000
29/02/2024	949.0000	949000.0000
01/03/2024	1055.0000	1055000.0000
02/03/2024	934.0000	934000.0000
03/03/2024	962.0000	962000.0000
04/03/2024	882.0000	882000.0000
05/03/2024	974.0000	974000.0000
06/03/2024	999.0000	999000.0000
07/03/2024	1007.0000	1007000.0000
08/03/2024	984.0000	984000.0000
09/03/2024	844.0000	844000.0000
10/03/2024	854.0000	854000.0000
11/03/2024	854.0000	854000.0000
12/03/2024	835.0000	835000.0000

13/03/2024	895.0000	895000.0000
14/03/2024	839.0000	839000.0000
15/03/2024	872.0000	872000.0000
16/03/2024	890.0000	890000.0000
17/03/2024	967.0000	967000.0000
18/03/2024	936.0000	936000.0000
19/03/2024	933.0000	933000.0000
20/03/2024	929.0000	929000.0000
21/03/2024	975.0000	975000.0000
22/03/2024	893.0000	893000.0000
23/03/2024	1001.0000	1001000.0000
24/03/2024	973.0000	973000.0000
25/03/2024	956.0000	956000.0000
26/03/2024	978.0000	978000.0000
27/03/2024	985.0000	985000.0000
28/03/2024	944.0000	944000.0000
29/03/2024	994.0000	994000.0000
30/03/2024	1013.0000	1013000.0000
31/03/2024	1015.0000	1015000.0000
01/04/2024	1019.0000	1019000.0000
02/04/2024	940.0000	940000.0000
03/04/2024	944.0000	944000.0000
04/04/2024	911.0000	911000.0000
05/04/2024	936.0000	936000.0000
06/04/2024	951.0000	951000.0000
07/04/2024	1021.0000	1021000.0000
08/04/2024	916.0000	916000.0000
09/04/2024	927.0000	927000.0000
10/04/2024	956.0000	956000.0000
11/04/2024	951.0000	951000.0000
12/04/2024	961.0000	961000.0000
13/04/2024	974.0000	974000.0000
14/04/2024	991.0000	991000.0000
15/04/2024	928.0000	928000.0000
16/04/2024	887.0000	887000.0000
17/04/2024	886.0000	886000.0000
18/04/2024	939.0000	939000.0000
19/04/2024	898.0000	898000.0000
20/04/2024	907.0000	907000.0000
21/04/2024	917.0000	917000.0000
22/04/2024	925.0000	925000.0000
23/04/2024	899.0000	899000.0000
24/04/2024	965.0000	965000.0000
25/04/2024	812.0000	812000.0000

26/04/2024	818.0000	818000.0000
27/04/2024	984.0000	984000.0000
28/04/2024	908.0000	908000.0000
29/04/2024	900.0000	900000.0000
30/04/2024	904.0000	904000.0000
01/05/2024	933.0000	933000.0000
02/05/2024	891.0000	891000.0000
03/05/2024	844.0000	844000.0000
04/05/2024	838.0000	838000.0000
05/05/2024	908.0000	908000.0000
06/05/2024	912.0000	912000.0000
07/05/2024	979.0000	979000.0000
08/05/2024	839.0000	839000.0000
09/05/2024	843.0000	843000.0000
10/05/2024	942.0000	942000.0000
11/05/2024	925.0000	925000.0000
12/05/2024	929.0000	929000.0000
13/05/2024	748.0000	748000.0000
14/05/2024	1046.0000	1046000.0000
15/05/2024	897.0000	897000.0000
16/05/2024	864.0000	864000.0000
17/05/2024	972.0000	972000.0000
18/05/2024	876.0000	876000.0000
19/05/2024	1012.0000	1012000.0000
20/05/2024	964.0000	964000.0000
21/05/2024	902.0000	902000.0000
22/05/2024	972.0000	972000.0000
23/05/2024	811.0000	811000.0000
24/05/2024	995.0000	995000.0000
25/05/2024	878.0000	878000.0000
26/05/2024	971.0000	971000.0000
27/05/2024	1087.0000	1087000.0000
28/05/2024	1138.0000	1138000.0000
29/05/2024	1145.0000	1145000.0000
30/05/2024	1179.0000	1179000.0000
31/05/2024	1316.0000	1316000.0000
01/06/2024	1175.0000	1175000.0000
02/06/2024	1364.0000	1364000.0000
03/06/2024	1230.0000	1230000.0000
04/06/2024	1276.0000	1276000.0000
05/06/2024	941.0000	941000.0000
06/06/2024	946.0000	946000.0000
07/06/2024	1028.0000	1028000.0000
08/06/2024	1045.0000	1045000.0000

09/06/2024	852.0000	852000.0000
10/06/2024	1136.0000	1136000.0000
11/06/2024	631.0000	631000.0000
12/06/2024	862.0000	862000.0000
13/06/2024	1270.0000	1270000.0000
14/06/2024	1182.0000	1182000.0000
15/06/2024	1073.0000	1073000.0000
16/06/2024	995.0000	995000.0000
17/06/2024	874.0000	874000.0000
18/06/2024	1187.0000	1187000.0000
19/06/2024	946.0000	946000.0000
20/06/2024	1006.0000	1006000.0000
21/06/2024	1003.0000	1003000.0000
22/06/2024	1007.0000	1007000.0000
23/06/2024	1072.0000	1072000.0000
24/06/2024	1073.0000	1073000.0000
25/06/2024	854.0000	854000.0000
26/06/2024	901.0000	901000.0000
27/06/2024	840.0000	840000.0000
28/06/2024	870.0000	870000.0000
29/06/2024	943.0000	943000.0000
30/06/2024	907.0000	907000.0000
01/07/2024	857.0000	857000.0000
02/07/2024	806.0000	806000.0000
03/07/2024	536.0000	536000.0000
04/07/2024	451.0000	451000.0000
05/07/2024	948.0000	948000.0000
06/07/2024	971.0000	971000.0000
07/07/2024	1035.0000	1035000.0000
08/07/2024	973.0000	973000.0000
09/07/2024	1000.0000	1000000.0000
10/07/2024	1029.0000	1029000.0000
11/07/2024	1030.0000	1030000.0000
12/07/2024	1116.0000	1116000.0000
13/07/2024	985.0000	985000.0000
14/07/2024	929.0000	929000.0000
15/07/2024	1100.0000	1100000.0000
16/07/2024	960.0000	960000.0000
17/07/2024	976.0000	976000.0000
18/07/2024	993.0000	993000.0000
19/07/2024	1006.0000	1006000.0000
20/07/2024	953.0000	953000.0000
21/07/2024	970.0000	970000.0000
22/07/2024	945.0000	945000.0000

23/07/2024	942.0000	942000.0000
24/07/2024	943.0000	943000.0000
25/07/2024	1103.0000	1103000.0000
26/07/2024	1059.0000	1059000.0000
27/07/2024	1037.0000	1037000.0000
28/07/2024	1162.0000	1162000.0000
29/07/2024	971.0000	971000.0000
30/07/2024	973.0000	973000.0000
31/07/2024	1147.0000	1147000.0000
01/08/2024	990.0000	990000.0000
02/08/2024	1029.0000	1029000.0000
03/08/2024	970.0000	970000.0000
04/08/2024	994.0000	994000.0000
05/08/2024	1000.0000	1000000.0000
06/08/2024	1018.0000	1018000.0000
07/08/2024	943.0000	943000.0000
08/08/2024	924.0000	924000.0000
09/08/2024	891.0000	891000.0000
10/08/2024	855.0000	855000.0000
11/08/2024	979.0000	979000.0000
12/08/2024	994.0000	994000.0000
13/08/2024	1088.0000	1088000.0000
14/08/2024	1032.0000	1032000.0000
15/08/2024	1189.0000	1189000.0000
16/08/2024	962.0000	962000.0000
17/08/2024	916.0000	916000.0000
18/08/2024	987.0000	987000.0000
19/08/2024	1154.0000	1154000.0000
20/08/2024	959.0000	959000.0000
21/08/2024	1084.0000	1084000.0000
22/08/2024	1040.0000	1040000.0000
23/08/2024	1037.0000	1037000.0000
24/08/2024	998.0000	998000.0000
25/08/2024	1071.0000	1071000.0000
26/08/2024	1163.0000	1163000.0000
27/08/2024	1368.0000	1368000.0000
28/08/2024	1201.0000	1201000.0000
29/08/2024	1016.0000	1016000.0000
30/08/2024	1224.0000	1224000.0000
31/08/2024	978.0000	978000.0000
01/09/2024	917.0000	917000.0000
02/09/2024	1089.0000	1089000.0000
03/09/2024	990.0000	990000.0000
04/09/2024	1097.0000	1097000.0000

05/09/2024	1026.0000	1026000.0000
06/09/2024	1306.0000	1306000.0000
07/09/2024	1433.0000	1433000.0000
08/09/2024	1513.0000	1513000.0000
09/09/2024	1590.0000	1590000.0000
10/09/2024	1589.0000	1589000.0000
11/09/2024	1660.0000	1660000.0000
12/09/2024	1257.0000	1257000.0000
13/09/2024	1081.0000	1081000.0000
14/09/2024	1026.0000	1026000.0000
15/09/2024	1148.0000	1148000.0000
16/09/2024	1163.0000	1163000.0000
17/09/2024	1223.0000	1223000.0000
18/09/2024	1040.0000	1040000.0000
19/09/2024	1055.0000	1055000.0000
20/09/2024	1013.0000	1013000.0000
21/09/2024	931.0000	931000.0000
22/09/2024	818.0000	818000.0000
23/09/2024	998.0000	998000.0000
24/09/2024	1051.0000	1051000.0000
25/09/2024	937.0000	937000.0000
26/09/2024	1007.0000	1007000.0000
27/09/2024	941.0000	941000.0000
28/09/2024	926.0000	926000.0000
29/09/2024	964.0000	964000.0000
30/09/2024	940.0000	940000.0000
01/10/2024	892.0000	892000.0000
02/10/2024	1107.0000	1107000.0000
03/10/2024	1039.0000	1039000.0000
04/10/2024	1169.0000	1169000.0000
05/10/2024	872.0000	872000.0000
06/10/2024	943.0000	943000.0000
07/10/2024	941.0000	941000.0000
08/10/2024	1162.0000	1162000.0000
09/10/2024	1002.0000	1002000.0000
10/10/2024	1051.0000	1051000.0000
11/10/2024	992.0000	992000.0000
12/10/2024	968.0000	968000.0000
13/10/2024	897.0000	897000.0000
14/10/2024	962.0000	962000.0000
15/10/2024	957.0000	957000.0000
16/10/2024	996.0000	996000.0000
17/10/2024	1023.0000	1023000.0000
18/10/2024	979.0000	979000.0000

19/10/2024	953.0000	953000.0000
20/10/2024	974.0000	974000.0000
21/10/2024	1054.0000	1054000.0000
22/10/2024	1051.0000	1051000.0000
23/10/2024	958.0000	958000.0000
24/10/2024	948.0000	948000.0000
25/10/2024	949.0000	949000.0000
26/10/2024	845.0000	845000.0000
27/10/2024	840.0000	840000.0000
28/10/2024	840.0000	840000.0000
29/10/2024	971.0000	971000.0000
30/10/2024	858.0000	858000.0000
31/10/2024	936.0000	936000.0000
01/11/2024	870.0000	870000.0000
02/11/2024	862.0000	862000.0000
03/11/2024	997.0000	997000.0000
04/11/2024	915.0000	915000.0000
05/11/2024	1175.0000	1175000.0000
06/11/2024	858.0000	858000.0000
07/11/2024	889.0000	889000.0000
08/11/2024	840.0000	840000.0000
09/11/2024	825.0000	825000.0000
10/11/2024	851.0000	851000.0000
11/11/2024	874.0000	874000.0000
12/11/2024	799.0000	799000.0000
13/11/2024	977.0000	977000.0000
14/11/2024	910.0000	910000.0000
15/11/2024	847.0000	847000.0000
16/11/2024	918.0000	918000.0000
17/11/2024	993.0000	993000.0000
18/11/2024	836.0000	836000.0000
19/11/2024	868.0000	868000.0000
20/11/2024	969.0000	969000.0000
21/11/2024	889.0000	889000.0000
22/11/2024	817.0000	817000.0000
23/11/2024	896.0000	896000.0000
24/11/2024	901.0000	901000.0000
25/11/2024	840.0000	840000.0000
26/11/2024	871.0000	871000.0000
27/11/2024	950.0000	950000.0000
28/11/2024	815.0000	815000.0000
29/11/2024	859.0000	859000.0000
30/11/2024	835.0000	835000.0000
01/12/2024	1140.0000	1140000.0000

02/12/2024	1331.0000	1331000.0000
03/12/2024	1406.0000	1406000.0000
04/12/2024	1085.0000	1085000.0000
05/12/2024	914.0000	914000.0000
06/12/2024	1002.0000	1002000.0000
07/12/2024	841.0000	841000.0000
08/12/2024	978.0000	978000.0000
09/12/2024	920.0000	920000.0000
10/12/2024	896.0000	896000.0000
11/12/2024	966.0000	966000.0000
12/12/2024	856.0000	856000.0000
13/12/2024	923.0000	923000.0000
14/12/2024	845.0000	845000.0000
15/12/2024	1003.0000	1003000.0000
16/12/2024	760.0000	760000.0000
17/12/2024	1004.0000	1004000.0000
18/12/2024	873.0000	873000.0000
19/12/2024	963.0000	963000.0000
20/12/2024	917.0000	917000.0000
21/12/2024	892.0000	892000.0000
22/12/2024	903.0000	903000.0000
23/12/2024	843.0000	843000.0000
24/12/2024	942.0000	942000.0000
25/12/2024	997.0000	997000.0000
26/12/2024	1179.0000	1179000.0000
27/12/2024	1061.0000	1061000.0000
28/12/2024	973.0000	973000.0000
29/12/2024	1044.0000	1044000.0000
30/12/2024	963.0000	963000.0000
31/12/2024	1119.0000	1119000.0000

16

532413

5513371

Metered

Nakina Drinking Water System

Large Municipal Residential Drinking Water System

January 1 – December 31, 2024

*O.Reg 170/03 Schedule 22 Summary Report
O.Reg 170/03 Section 11 Annual Report
&
O.Reg 387/04 Annual Record of Water Taking*

Issued: **February 2025**

Prepared by the



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



Drinking-Water System Number: 220000200
Drinking-Water System Name: Nakina Drinking Water System
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, 2024](#)

SECTION 1: INTRODUCTION

This document is prepared in accordance with Section 11 and Schedule 22 of O.Reg.170/03 under the Safe Drinking Water Act and with Section 9 of O.Reg.387/04 under the Ontario Water Resources Act.

The reports are prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone. Acronyms and definitions can be found at the end of the report.

A copy of the Summary Report must be provided to the members of the municipal council by [March 31, 2025](#).

SECTION 2: REQUIREMENTS OF THE REPORTS

Schedule 22 Report

The report must list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report. It must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

For the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and future planned water uses, the following information is required to be included in this report:

- A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
- A comparison of the summary to the rated capacity and flow rates approved in the systems approval.

Section 11 Report

The annual report must contain the following:

- A brief description of the drinking water system and a list of chemicals used by the system.
- A description of any major expenses incurred during the period covered by the report to install, repair or replace required equipment.
- A summary of all adverse water quality incidents (AWQI) reported to the Ministry



- A summary of corrective actions taken in response all AWQIs
- A summary of all test results required under the regulation, under an approval, municipal drinking water license or order, including an OWRA order.
- A statement of where a Schedule 22 report will be available for inspection.

The report must be prepared not later than February 28 of the following year.

Regulation 387 Report

On or before March 31 in every year, every holder of a permit to take water (PTTW) shall submit to a Director the data collected and recorded for the previous year.

A record of annual water taking can be found in [Appendix A. –Annual Water Taking Data](#)

SECTION 3: SECTION 11 REPORT

Information	
Population Served	575
Does your Drinking-Water System serve more than 10,000 people?	Yes [] No [X]
Is your annual report available to the public at no charge on a web site on the Internet?	Yes [X] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Geraldton Ward Office (Administration) 1800 Main Street Geraldton, ON P0T 1M0 Nakina Ward Office 200 Centre Avenue Nakina, ON P0T 2H0
Number of Designated Facilities served:	N/A
Did you provide a copy of your annual report to all Designated Facilities you serve?	
Number of Interested Authorities you report to:	N/A
Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?	
List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:	
DWS Name:	DWS: #
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.	
<input checked="" type="checkbox"/> Public access/notice via the web <input checked="" type="checkbox"/> Public access/notice via Government Office (Municipal) <input checked="" type="checkbox"/> Public access/notice via a newspaper <input checked="" type="checkbox"/> Public access/notice via Public Request <input type="checkbox"/> Public access/notice via a Public Library	



Public access/notice via other method – Community Television Channel

Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

Facility Description

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 200 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.

Chemicals Used During Reporting Period

- Sodium Hypochlorite

Significant Expenses

Significant expenses were incurred to:

- Install Required Equipment
- X Repair Required Equipment
- X Replace Required Equipment

Install	Repair	Replace	Description	Expense
	X		Well Inspections non-intrusive	\$50000
		X	Chemical Dosing Pump/Panel	\$40000



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 (yyyy/mm/dd)	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date (yyyy/mm/dd)
Dec 23 2024	Sodium Exceedance	35.7	mg/L	Resample	Jan 7 2025

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	<1 – <1	<1 – <1	N/A	N/A
Raw Well 2	52	<1 – <1	<1 – <1	N/A	N/A
Treated	52	0 – 0	0 – 0	52	0 – 2
Distribution	104	0 – 0	0 – 0	52	0 – 12

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 1 Raw 2	71 158	0.06 – 0.18 NTU 0.07 – 0.49 NTU
Chlorine Treated Distribution	8760 373	0.00 – 2.54 mg/L 0.29 – 1.31 mg/L
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.

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 (yyyy/mm/dd)	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 (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Antimony	2024/04/03	< MDL 0.6	µg/L	6	No	No
Arsenic	2024/04/03	< MDL 1	µg/L	10	No	No
Barium	2024/04/03	19	µg/L	1000	No	No



Boron	2024/04/03	< MDL 50	µg/L	5000	No	No
Cadmium	2024/04/03	< MDL 0.1	µg/L	5	No	No
Chromium	2024/04/03	< MDL 1	µg/L	50	No	No
Mercury	2024/04/03	< MDL 0.1	µg/L	1	No	No
Selenium	2024/04/03	< MDL 1	µg/L	50	No	No
Uranium	2024/04/03	< MDL 2	µg/L	20	No	No
Fluoride	2024/12/16	< MDL 0.04	mg/L	1.5	No	No
Nitrate	2024/01/02	0.114	mg/L	10	No	No
	2024/04/02	0.136	mg/L	10	No	No
	2024/07/02	0.127	mg/L	10	No	No
	2024/10/01	0.121	mg/L	10	No	No
Nitrite	2024/01/02	< MDL 0.01	mg/L	1	No	No
	2024/04/02	< MDL 0.01	mg/L	1	No	No
	2024/07/02	< MDL 0.01	mg/L	1	No	No
	2024/10/01	< MDL 0.01	mg/L	1	No	No
Sodium	2024/12/16	35.7	mg/L	20**	Yes	Yes
*Lead	<i>Refer to Summary Table Below</i>					
*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						
**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.						

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
Distribution	N/A	N/A	N/A
Distribution - Alkalinity_CaCO3:(mg/L)	4	245 – 306	N/A

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

Parameter	Sample Date (yyyy/mm/dd)	Result Value	Unit of Measure	MAC	Exceedance	
					MAC	½ MAC
Treated Water						
1,1-Dichloroethylene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	14	No	No
1,2-Dichlorobenzene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	200	No	No
1,2-Dichloroethane (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	5	No	No
1,4-Dichlorobenzene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	5	No	No
2,3,4,6-Tetrachlorophenol (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	100	No	No
2,4,6-Trichlorophenol (ug/L)-TW	2024/04/03	< MDL 0.2	µg/L	5	No	No
2,4-Dichlorophenol (ug/L)-TW	2024/04/03	< MDL 0.2	µg/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	100	No	No



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Nakina Water Treatment

Alachlor (ug/L) -TW	2024/04/03	< MDL 0.05	µg/L	5	No	No
Atrazine + N-dealkylated metabolites (ug/L)-TW	2024/04/03	< MDL 0.14	µg/L	5	No	No
Azinphos-methyl (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	20	No	No
Benzene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	1	No	No
Benzo(a)pyrene (ug/L)-TW	2024/04/03	< MDL 0.005	µg/L	0.01	No	Yes
Bromoxynil (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	5	No	No
Carbaryl (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	90	No	No
Carbofuran (ug/L) -TW	2024/04/03	< MDL 0.025	µg/L	90	No	No
Carbon Tetrachloride (ug/L) -TW	2024/04/03	< MDL 0.2	µg/L	2	No	No
Chlorpyrifos (ug/L) -TW	2024/04/03	< MDL 0.1	µg/L	90	No	No
Diazinon (ug/L)-TW	2024/04/03	< MDL 0.025	µg/L	20	No	No
Dicamba (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	120	No	No
Dichloromethane (Methylene Chloride) (ug/L)-TW	2024/04/03	< MDL 1	µg/L	50	No	No
Diclofop-methyl (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	9	No	No
Dimethoate (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	20	No	No
Diquat (ug/L)-TW	2024/04/03	< MDL 1	µg/L	70	No	No
Diuron (ug/L)-TW	2024/04/03	< MDL 0.05	µg/L	150	No	No
Glyphosate (ug/L)-TW	2024/04/03	< MDL 0.2	µg/L	280	No	No
Malathion (ug/L)-TW	2024/04/03	< MDL 0.025	µg/L	190	No	No
Metolachlor (ug/L)-TW	2024/04/03	< MDL 0.025	µg/L	50	No	No
Metribuzin (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	80	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	80	No	No
Paraquat (ug/L)-TW	2024/04/03	< MDL 1	µg/L	10	No	No
PCB (ug/L)-TW	2024/04/03	< MDL 0.03	µg/L	3	No	No
Pentachlorophenol (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	60	No	No
Phorate (ug/L)-TW	2024/04/03	< MDL 0.25	µg/L	2	No	No
Picloram (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	190	No	No
Prometryne (ug/L)-TW	2024/04/03	< MDL 0.025	µg/L	1	No	No
Simazine (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	10	No	No
Terbufos (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	1	No	No
Tetrachloroethylene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	10	No	No
Triallate (ug/L) -TW	2024/04/03	< MDL 0.1	µg/L	230	No	No
Trichloroethylene (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	5	No	No
Trifluralin (ug/L)-TW	2024/04/03	< MDL 0.1	µg/L	45	No	No
Vinyl Chloride (ug/L)-TW	2024/04/03	< MDL 0.5	µg/L	1	No	No
Distribution Water						
THM (NOTE: show latest annual average)	2024/10/01	19.4	µg/L		N/A	
	2024 Average	14.43	µg/L	100	No	No
Haloacetic acids (HAA) (NOTE: show latest annual average)	2024/10/01	7.84	µg/L		N/A	
	2024 Average	7.58	µg/L	80	No	No



SECTION 4: SCHEDULE 22 REPORT

Flows – Treated

In accordance with the ***Municipal Drinking Water Licence 225-103 Schedule C: System – Specific Conditions 1.0 Performance Limits***, the Nakina drinking-water system shall not be operated to exceed the rated capacity for maximum flow rate from the treatment subsystem to the distribution system of **2000 m³ / day**.

The drinking-water system may be operated temporarily at a rate above the rated capacity where necessary for

- i. The purposes of fighting a large fire or,
- ii. The maintenance of the drinking-water system

In 2024, the average monthly treated flow rate was 5266.4 m³; the average daily treated flow rate was 172.4 m³; and the maximum daily treated flow rate for the year was 240 m³ representing 12% of the allowable daily volume.

The Nakina Drinking-Water facility operated below the rated capacity in 2024.

Flows – Raw

The daily raw maximum flow for each well is stated in the PTTW as a maximum rate of flow of **1386 L/min (23.1 L/s)** and a maximum daily volume of **1995.84m³/d**. The total daily flow for both wells is **1995.84m³/d**.

The average monthly raw flow rate was 5161.6 m³; the average raw daily flow rate was 169.25 m³, with a maximum raw daily flow rate of 323.0 m³.

The quantity of raw water supplied during the reporting period did not exceed the terms and conditions of the *Permit to Take Water*.



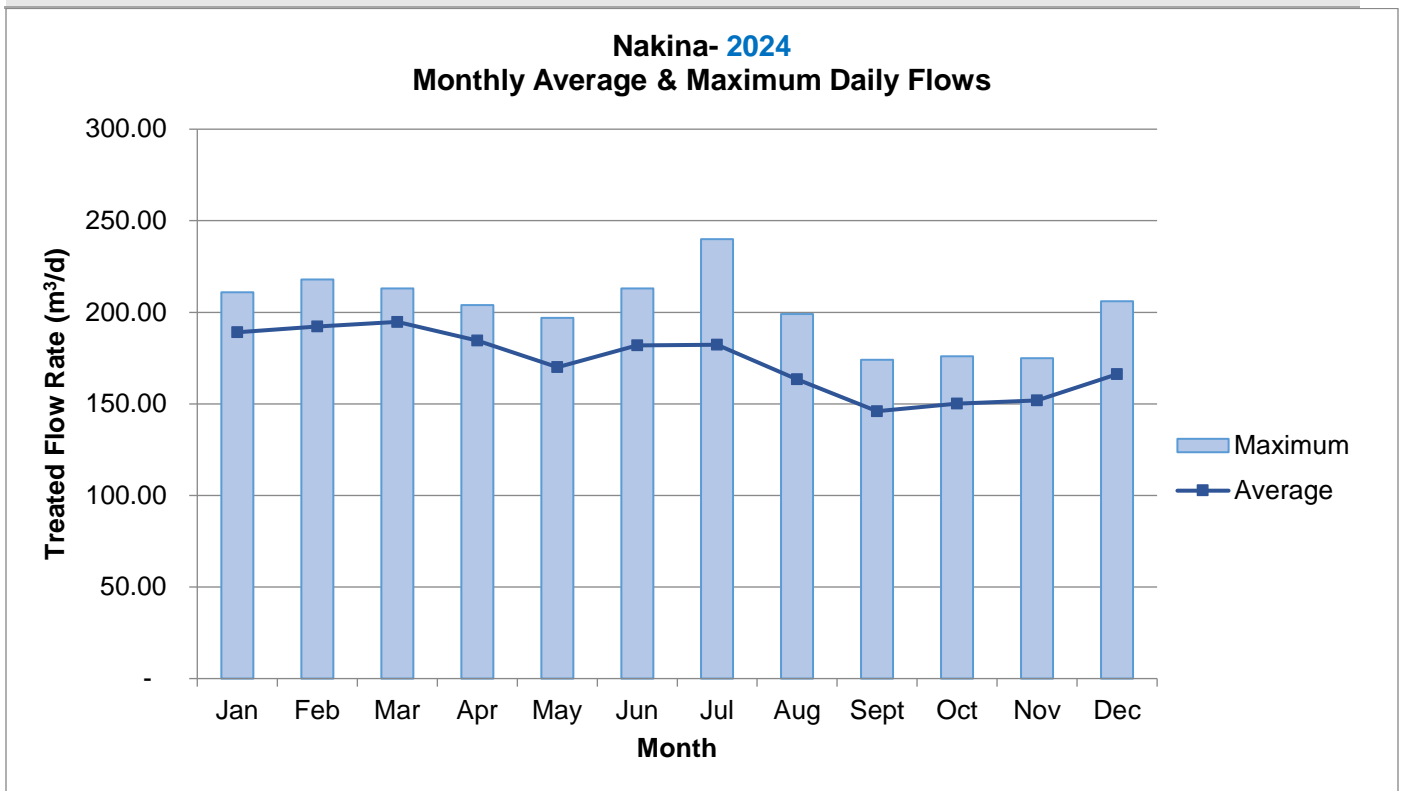
Summary of Flows

A summary of raw and treated flows are included in the tables/graphs below.

Monthly Raw & Treated Flow Rates for 2024

Month	Average Daily Flow Rate	Maximum Daily Flow Rate	Average Daily Flow Rate	Maximum Daily Flow Rate	Total Monthly Flow Rate
	Raw (m ³ /d)	Raw (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /d)	Treated (m ³ /month)
January	190.42	323.00	189.06	211.00	5861.00
February	186.55	261.00	192.21	218.00	5574.00
March	189.42	256.00	194.77	213.00	6038.00
April	180.77	255.00	184.57	204.00	5537.00
May	159.68	254.00	169.97	197.00	5269.00
June	186.63	262.00	181.97	213.00	5459.00
July	181.45	256.00	182.29	240.00	5651.00
August	159.03	262.00	163.45	199.00	5067.00
September	138.20	254.00	146.00	174.00	4380.00
October	149.03	244.00	150.16	176.00	4655.00
November	144.13	247.00	151.83	175.00	4555.00
December	165.74	250.00	166.16	206.00	5151.00

2024 Total Treated Flows (m³) 63197.00





System Failures & Corrective Actions

The Ministry of Environment did not conduct an inspection of the Nakina Drinking Water System 1n 2024.

Item	Non-Compliance Identified	Compliance Date yyyy/mm/dd	Action Being Taken to Address item	Status
1				

Adverse Water Quality Incidents (AWQIs)

In the reporting year of 2024, there were one adverse water quality incident (AWQI) reports filed as summarized in the table below.

Incident Date yyyy/mm/dd	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date yyyy/mm/dd
2024/12/23	Sodium	35.7	mg/l	Resample	2025/01/07

SECTION 5: RAW WATER SUBMISSIONS

The raw water flows were submitted to the Ministry on February 18, 2025.



Location: WTRS / WT DATA / Input WT Record

WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 8838-CUKPWE
 Permit Holder: THE CORPORATION OF THE MUNICIPALITY OF GREENSTONE.
 Received on: Feb 18, 2025 2:20 PM

This confirmation indicates that your data has been received by the Ministry, but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.



SECTION 6: CONCLUSION

For the operating year of 2024, the Nakina Drinking-Water System delivered water that, in all its treated and distribution samples, indicates the water to be free of bacteriological contamination.

In addition, the system was able to meet the demand of water use within the town without exceeding the Permit to Take Water or the Municipal Drinking Water Licence and Permit.



List of Acronyms and Definitions	
Alkalinity	The capacity of water for neutralizing an acid solution
AWQI	Adverse Water Quality Incident- when a water sample test result exceeds the Ontario Drinking Water Quality Standards
Backwash	Water pumped backwards to clean filters
BWA	Boil Water Advisory; Issued when risk of contamination is possible in drinking water
CFU	Colony Forming Units
Chlorine Residual	A low level of chlorine remaining in water after disinfection occurs
DW	Distribution Water
DWA	Drinking Water Advisory; Issued when water cannot be consumed by any means
DWWP	Drinking Water Works Permit - provides a description of the overall system
E.Coli	Bacteria used as indicators to measure the degree of pollution and sanitary quality of water
GUDI	Groundwater Under Direct Influence – Considered to be surface water under O.Reg 170/03
HPC	Heterotrophic Plant Count
L/s	Litres per Second
m³/d	Cubic Metres per Day
MAC	Maximum Acceptable Concentration
MDL	Minimum Detection Level
MDWL	Municipal Drinking Water Licence - relates to the operation and performance requirements
mg/L	Miligrams per Litre
Ministry	Ministry of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks
NDOGN	No Data: Overgrown with Non Target Bacteria
NDOGT	No Data: Overgrown with Target Bacteria
O.Reg	Ontario Regulation
PTTW	Permit to Take Water – Permit which allows water taking from groundwater or surface water
RW	Raw Water
TC	Total Coliforms
TSS	Total Suspended Solids
Turbidity	Cloudiness or haziness of water
TW	Treated Water



Appendix A – Annual Water Taking Data

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: NAKINA DRINKING WATER SYSTEM - 5914
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Well 1

Permit#: 8838-CUKPWE	Coordinate Zone:
Source Name: PW1	Easting:
Source: Well	Northing:
Type: Drilled	Method deter:
Purpose: Municipal	

Date Measured	Value (m³/d)	Value(Liters)
03/01/2024	3.0000	3000.0000
08/01/2024	10.0000	10000.0000
09/01/2024	239.0000	239000.0000
10/01/2024	243.0000	243000.0000
11/01/2024	13.0000	13000.0000
12/01/2024	238.0000	238000.0000
13/01/2024	244.0000	244000.0000
14/01/2024	206.0000	206000.0000
15/01/2024	3.0000	3000.0000
22/01/2024	4.0000	4000.0000
29/01/2024	12.0000	12000.0000
30/01/2024	239.0000	239000.0000
31/01/2024	246.0000	246000.0000
01/02/2024	5.0000	5000.0000
02/02/2024	241.0000	241000.0000
03/02/2024	242.0000	242000.0000
04/02/2024	243.0000	243000.0000
05/02/2024	3.0000	3000.0000
12/02/2024	4.0000	4000.0000
20/02/2024	243.0000	243000.0000
21/02/2024	252.0000	252000.0000
22/02/2024	141.0000	141000.0000
23/02/2024	97.0000	97000.0000
24/02/2024	243.0000	243000.0000
25/02/2024	249.0000	249000.0000
26/02/2024	3.0000	3000.0000
04/03/2024	2.0000	2000.0000
05/03/2024	2.0000	2000.0000

11/03/2024	149.0000	149000.0000
12/03/2024	199.0000	199000.0000
13/03/2024	191.0000	191000.0000
14/03/2024	210.0000	210000.0000
15/03/2024	192.0000	192000.0000
16/03/2024	154.0000	154000.0000
17/03/2024	206.0000	206000.0000
18/03/2024	3.0000	3000.0000
25/03/2024	3.0000	3000.0000
02/04/2024	255.0000	255000.0000
03/04/2024	241.0000	241000.0000
04/04/2024	6.0000	6000.0000
05/04/2024	242.0000	242000.0000
06/04/2024	245.0000	245000.0000
07/04/2024	243.0000	243000.0000
08/04/2024	3.0000	3000.0000
15/04/2024	3.0000	3000.0000
22/04/2024	249.0000	249000.0000
23/04/2024	82.0000	82000.0000
24/04/2024	160.0000	160000.0000
25/04/2024	244.0000	244000.0000
26/04/2024	234.0000	234000.0000
27/04/2024	15.0000	15000.0000
28/04/2024	245.0000	245000.0000
29/04/2024	3.0000	3000.0000
06/05/2024	3.0000	3000.0000
13/05/2024	14.0000	14000.0000
14/05/2024	244.0000	244000.0000
15/05/2024	222.0000	222000.0000
16/05/2024	22.0000	22000.0000
17/05/2024	245.0000	245000.0000
18/05/2024	47.0000	47000.0000
19/05/2024	182.0000	182000.0000
21/05/2024	3.0000	3000.0000
27/05/2024	3.0000	3000.0000
03/06/2024	252.0000	252000.0000
04/06/2024	88.0000	88000.0000
05/06/2024	243.0000	243000.0000
06/06/2024	250.0000	250000.0000
07/06/2024	122.0000	122000.0000
08/06/2024	121.0000	121000.0000
09/06/2024	241.0000	241000.0000
10/06/2024	4.0000	4000.0000
17/06/2024	3.0000	3000.0000

24/06/2024	259.0000	259000.0000
25/06/2024	257.0000	257000.0000
26/06/2024	6.0000	6000.0000
27/06/2024	246.0000	246000.0000
28/06/2024	223.0000	223000.0000
29/06/2024	22.0000	22000.0000
30/06/2024	246.0000	246000.0000
02/07/2024	4.0000	4000.0000
08/07/2024	3.0000	3000.0000
22/07/2024	3.0000	3000.0000
29/07/2024	19.0000	19000.0000
30/07/2024	249.0000	249000.0000
31/07/2024	226.0000	226000.0000
01/08/2024	32.0000	32000.0000
02/08/2024	247.0000	247000.0000
03/08/2024	183.0000	183000.0000
04/08/2024	48.0000	48000.0000
05/08/2024	241.0000	241000.0000
06/08/2024	3.0000	3000.0000
12/08/2024	3.0000	3000.0000
19/08/2024	17.0000	17000.0000
20/08/2024	233.0000	233000.0000
21/08/2024	257.0000	257000.0000
22/08/2024	71.0000	71000.0000
23/08/2024	182.0000	182000.0000
03/09/2024	3.0000	3000.0000
09/09/2024	10.0000	10000.0000
10/09/2024	254.0000	254000.0000
11/09/2024	6.0000	6000.0000
12/09/2024	233.0000	233000.0000
13/09/2024	88.0000	88000.0000
14/09/2024	147.0000	147000.0000
15/09/2024	237.0000	237000.0000
16/09/2024	3.0000	3000.0000
23/09/2024	3.0000	3000.0000
01/10/2024	13.0000	13000.0000
02/10/2024	240.0000	240000.0000
03/10/2024	9.0000	9000.0000
04/10/2024	243.0000	243000.0000
06/10/2024	240.0000	240000.0000
07/10/2024	3.0000	3000.0000
15/10/2024	3.0000	3000.0000
21/10/2024	13.0000	13000.0000
22/10/2024	242.0000	242000.0000

24/10/2024	233.0000	233000.0000
25/10/2024	11.0000	11000.0000
26/10/2024	225.0000	225000.0000
27/10/2024	241.0000	241000.0000
28/10/2024	3.0000	3000.0000
04/11/2024	2.0000	2000.0000
12/11/2024	245.0000	245000.0000
13/11/2024	7.0000	7000.0000
14/11/2024	236.0000	236000.0000
15/11/2024	228.0000	228000.0000
17/11/2024	242.0000	242000.0000
18/11/2024	2.0000	2000.0000
25/11/2024	3.0000	3000.0000
02/12/2024	22.0000	22000.0000
03/12/2024	223.0000	223000.0000
04/12/2024	241.0000	241000.0000
05/12/2024	7.0000	7000.0000
06/12/2024	233.0000	233000.0000
07/12/2024	234.0000	234000.0000
09/12/2024	232.0000	232000.0000
18/12/2024	3.0000	3000.0000
27/12/2024	3.0000	3000.0000

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Metered

Ontario Clean Water Agency Annual Water Taking and Transfer Report

From 1/1/2024 To 12/31/2024

Facility: NAKINA DRINKING WATER SYSTEM - 5914
 Tag: Flow: Sum(m³/d)
 Tag Group: Raw Well 2

Permit#: 8838-CUKPWE	Coordinate Zone:
Source Name: PW2	Easting:
Source: Well	Northing:
Type: Drilled	Method deter:
Purpose: Municipal	

Date Measured	Value (m³/d)	Value(Liters)
01/01/2024	234.0000	234000.0000
02/01/2024	250.0000	250000.0000
03/01/2024	243.0000	243000.0000
04/01/2024	6.0000	6000.0000
05/01/2024	239.0000	239000.0000
06/01/2024	247.0000	247000.0000
07/01/2024	244.0000	244000.0000
08/01/2024	3.0000	3000.0000
15/01/2024	203.0000	203000.0000
16/01/2024	239.0000	239000.0000
17/01/2024	10.0000	10000.0000
18/01/2024	323.0000	323000.0000
19/01/2024	250.0000	250000.0000
20/01/2024	159.0000	159000.0000
21/01/2024	75.0000	75000.0000
22/01/2024	247.0000	247000.0000
23/01/2024	245.0000	245000.0000
24/01/2024	245.0000	245000.0000
25/01/2024	6.0000	6000.0000
26/01/2024	242.0000	242000.0000
27/01/2024	246.0000	246000.0000
28/01/2024	243.0000	243000.0000
29/01/2024	4.0000	4000.0000
05/02/2024	12.0000	12000.0000
06/02/2024	241.0000	241000.0000
07/02/2024	245.0000	245000.0000
08/02/2024	248.0000	248000.0000
09/02/2024	6.0000	6000.0000

10/02/2024	232.0000	232000.0000
11/02/2024	246.0000	246000.0000
12/02/2024	257.0000	257000.0000
13/02/2024	6.0000	6000.0000
14/02/2024	236.0000	236000.0000
15/02/2024	245.0000	245000.0000
16/02/2024	247.0000	247000.0000
18/02/2024	233.0000	233000.0000
19/02/2024	246.0000	246000.0000
26/02/2024	256.0000	256000.0000
27/02/2024	6.0000	6000.0000
28/02/2024	237.0000	237000.0000
29/02/2024	245.0000	245000.0000
01/03/2024	245.0000	245000.0000
02/03/2024	239.0000	239000.0000
04/03/2024	242.0000	242000.0000
05/03/2024	251.0000	251000.0000
06/03/2024	247.0000	247000.0000
07/03/2024	8.0000	8000.0000
08/03/2024	244.0000	244000.0000
09/03/2024	245.0000	245000.0000
10/03/2024	252.0000	252000.0000
11/03/2024	3.0000	3000.0000
18/03/2024	203.0000	203000.0000
19/03/2024	206.0000	206000.0000
20/03/2024	208.0000	208000.0000
21/03/2024	253.0000	253000.0000
22/03/2024	8.0000	8000.0000
23/03/2024	231.0000	231000.0000
24/03/2024	249.0000	249000.0000
25/03/2024	253.0000	253000.0000
26/03/2024	221.0000	221000.0000
27/03/2024	26.0000	26000.0000
28/03/2024	240.0000	240000.0000
29/03/2024	246.0000	246000.0000
30/03/2024	241.0000	241000.0000
01/04/2024	233.0000	233000.0000
03/04/2024	3.0000	3000.0000
08/04/2024	12.0000	12000.0000
09/04/2024	239.0000	239000.0000
10/04/2024	240.0000	240000.0000
11/04/2024	250.0000	250000.0000
12/04/2024	13.0000	13000.0000
13/04/2024	229.0000	229000.0000

14/04/2024	247.0000	247000.0000
15/04/2024	250.0000	250000.0000
16/04/2024	127.0000	127000.0000
17/04/2024	119.0000	119000.0000
18/04/2024	241.0000	241000.0000
19/04/2024	250.0000	250000.0000
21/04/2024	238.0000	238000.0000
23/04/2024	4.0000	4000.0000
29/04/2024	252.0000	252000.0000
30/04/2024	6.0000	6000.0000
01/05/2024	239.0000	239000.0000
02/05/2024	238.0000	238000.0000
03/05/2024	9.0000	9000.0000
04/05/2024	228.0000	228000.0000
06/05/2024	175.0000	175000.0000
07/05/2024	74.0000	74000.0000
08/05/2024	243.0000	243000.0000
09/05/2024	242.0000	242000.0000
10/05/2024	7.0000	7000.0000
11/05/2024	245.0000	245000.0000
12/05/2024	238.0000	238000.0000
13/05/2024	3.0000	3000.0000
20/05/2024	241.0000	241000.0000
21/05/2024	50.0000	50000.0000
22/05/2024	254.0000	254000.0000
23/05/2024	245.0000	245000.0000
24/05/2024	6.0000	6000.0000
25/05/2024	238.0000	238000.0000
26/05/2024	240.0000	240000.0000
27/05/2024	202.0000	202000.0000
28/05/2024	52.0000	52000.0000
29/05/2024	243.0000	243000.0000
30/05/2024	244.0000	244000.0000
31/05/2024	9.0000	9000.0000
01/06/2024	232.0000	232000.0000
02/06/2024	248.0000	248000.0000
03/06/2024	3.0000	3000.0000
04/06/2024	71.0000	71000.0000
10/06/2024	258.0000	258000.0000
11/06/2024	7.0000	7000.0000
12/06/2024	240.0000	240000.0000
13/06/2024	244.0000	244000.0000
14/06/2024	232.0000	232000.0000
16/06/2024	237.0000	237000.0000

17/06/2024	256.0000	256000.0000
18/06/2024	8.0000	8000.0000
19/06/2024	242.0000	242000.0000
20/06/2024	249.0000	249000.0000
21/06/2024	203.0000	203000.0000
22/06/2024	44.0000	44000.0000
23/06/2024	239.0000	239000.0000
24/06/2024	3.0000	3000.0000
01/07/2024	243.0000	243000.0000
02/07/2024	13.0000	13000.0000
03/07/2024	237.0000	237000.0000
04/07/2024	250.0000	250000.0000
05/07/2024	52.0000	52000.0000
06/07/2024	191.0000	191000.0000
07/07/2024	249.0000	249000.0000
08/07/2024	226.0000	226000.0000
09/07/2024	25.0000	25000.0000
10/07/2024	252.0000	252000.0000
11/07/2024	242.0000	242000.0000
12/07/2024	16.0000	16000.0000
13/07/2024	232.0000	232000.0000
14/07/2024	240.0000	240000.0000
15/07/2024	242.0000	242000.0000
17/07/2024	228.0000	228000.0000
18/07/2024	244.0000	244000.0000
19/07/2024	238.0000	238000.0000
21/07/2024	249.0000	249000.0000
22/07/2024	241.0000	241000.0000
24/07/2024	229.0000	229000.0000
25/07/2024	247.0000	247000.0000
26/07/2024	256.0000	256000.0000
27/07/2024	251.0000	251000.0000
28/07/2024	51.0000	51000.0000
29/07/2024	177.0000	177000.0000
06/08/2024	259.0000	259000.0000
07/08/2024	9.0000	9000.0000
08/08/2024	246.0000	246000.0000
09/08/2024	9.0000	9000.0000
10/08/2024	236.0000	236000.0000
11/08/2024	188.0000	188000.0000
12/08/2024	56.0000	56000.0000
13/08/2024	244.0000	244000.0000
14/08/2024	16.0000	16000.0000
15/08/2024	243.0000	243000.0000

16/08/2024	98.0000	98000.0000
17/08/2024	140.0000	140000.0000
18/08/2024	235.0000	235000.0000
19/08/2024	8.0000	8000.0000
24/08/2024	239.0000	239000.0000
25/08/2024	252.0000	252000.0000
26/08/2024	3.0000	3000.0000
27/08/2024	230.0000	230000.0000
28/08/2024	235.0000	235000.0000
30/08/2024	229.0000	229000.0000
31/08/2024	238.0000	238000.0000
02/09/2024	243.0000	243000.0000
03/09/2024	12.0000	12000.0000
04/09/2024	235.0000	235000.0000
05/09/2024	243.0000	243000.0000
06/09/2024	10.0000	10000.0000
07/09/2024	234.0000	234000.0000
09/09/2024	227.0000	227000.0000
16/09/2024	15.0000	15000.0000
17/09/2024	241.0000	241000.0000
19/09/2024	234.0000	234000.0000
20/09/2024	14.0000	14000.0000
21/09/2024	228.0000	228000.0000
22/09/2024	237.0000	237000.0000
23/09/2024	12.0000	12000.0000
24/09/2024	254.0000	254000.0000
25/09/2024	7.0000	7000.0000
26/09/2024	234.0000	234000.0000
27/09/2024	238.0000	238000.0000
29/09/2024	244.0000	244000.0000
01/10/2024	228.0000	228000.0000
07/10/2024	14.0000	14000.0000
08/10/2024	234.0000	234000.0000
09/10/2024	244.0000	244000.0000
10/10/2024	8.0000	8000.0000
11/10/2024	232.0000	232000.0000
12/10/2024	238.0000	238000.0000
14/10/2024	235.0000	235000.0000
15/10/2024	208.0000	208000.0000
16/10/2024	41.0000	41000.0000
17/10/2024	244.0000	244000.0000
19/10/2024	242.0000	242000.0000
20/10/2024	29.0000	29000.0000
21/10/2024	203.0000	203000.0000

28/10/2024	220.0000	220000.0000
29/10/2024	34.0000	34000.0000
30/10/2024	240.0000	240000.0000
31/10/2024	7.0000	7000.0000
01/11/2024	243.0000	243000.0000
02/11/2024	79.0000	79000.0000
04/11/2024	245.0000	245000.0000
05/11/2024	20.0000	20000.0000
06/11/2024	225.0000	225000.0000
07/11/2024	241.0000	241000.0000
08/11/2024	21.0000	21000.0000
09/11/2024	237.0000	237000.0000
10/11/2024	232.0000	232000.0000
13/11/2024	3.0000	3000.0000
18/11/2024	192.0000	192000.0000
19/11/2024	111.0000	111000.0000
20/11/2024	177.0000	177000.0000
21/11/2024	132.0000	132000.0000
22/11/2024	148.0000	148000.0000
23/11/2024	90.0000	90000.0000
24/11/2024	234.0000	234000.0000
25/11/2024	13.0000	13000.0000
26/11/2024	231.0000	231000.0000
27/11/2024	47.0000	47000.0000
28/11/2024	193.0000	193000.0000
29/11/2024	245.0000	245000.0000
01/12/2024	241.0000	241000.0000
02/12/2024	3.0000	3000.0000
09/12/2024	10.0000	10000.0000
10/12/2024	242.0000	242000.0000
11/12/2024	6.0000	6000.0000
12/12/2024	234.0000	234000.0000
13/12/2024	240.0000	240000.0000
15/12/2024	243.0000	243000.0000
16/12/2024	245.0000	245000.0000
17/12/2024	7.0000	7000.0000
18/12/2024	244.0000	244000.0000
19/12/2024	244.0000	244000.0000
20/12/2024	250.0000	250000.0000
21/12/2024	235.0000	235000.0000
23/12/2024	239.0000	239000.0000
24/12/2024	238.0000	238000.0000
26/12/2024	240.0000	240000.0000
27/12/2024	168.0000	168000.0000

28/12/2024	8.0000	8000.0000
29/12/2024	229.0000	229000.0000
30/12/2024	244.0000	244000.0000
31/12/2024	130.0000	130000.0000

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