

Long Sault-Ingleside Regional Water Treatment Plant

Drinking Water Works Permit 186-202
Municipal Drinking Water Licence 186-102

Works No. 260066417

- 2022 Summary Report -

Prepared by:

CANEAU WATER AND SEWAGE OPERATIONS INC.
19740 WELLINGTON ST.
WILLIAMSTOWN, ON K0C 2J0

BILL BRYCE, PRESIDENT

LONG SAULT-INGLESIDE REGIONAL WATER TREATMENT PLANT

2022 SUMMARY REPORT

Facility description:	Ultrafiltration (Zenon membrane filtration), booster station, elevated tank
Capacity:	9,500 m³/day¹
Service area:	Villages of Long Sault and Ingleside
Service population:	3500
In-service date:	2006
Raw water source:	St. Lawrence River
Disinfection method:	Sodium Hypochlorite
Overall Responsible Operator:	Chris Eamon (613) 551-2720

This report is a summary of water quality information for the Long Sault-Ingleside Regional Water Treatment Plant, published in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1 to December 31, 2022. The Long Sault-Ingleside Regional Water Treatment Plant is categorized as a Large Municipal Residential Drinking Water System.

This report is prepared by Caneau Water and Sewage Operations Inc. on behalf of the Corporation of the Township of South Stormont. A copy of the Summary report is to be provided to the members of the municipal council no later than March 31, 2023.

"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 and specify the duration of the failure; and for each failure referred to, describe the measures that were taken to correct the failure." – O. Reg. 170/03 s. 22(2)

"The report must also include the following information for the purpose of enabling the owner of the system to assess the rated capability of their system to meet existing and planned uses of the system:

1. 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 and daily instantaneous peak flow rates.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval."

O. Reg. 170/03 s. 22 (3)

¹ The rated capacity is 9,500m³/day per Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020. However, since the issuance of the licence, it has been indicated to the Township that the true nameplate plant capacity may be 8,575 m³/day. The issue of plant capacity is under review.

System Description

The Long Sault-Ingleside Regional Water Treatment Plant is located on Moulinette Island, south of the town of Long Sault and has a rated capacity of 9,500 m³/day². The water treatment plant is a membrane filtration plant that began producing water in June 2005. The treatment process includes ultrafiltration (ZeeWeed membrane system manufactured by Zenon Environmental Inc.) through one of three membrane cassettes which are housed in large concrete tanks, taste and odour removal through granular activated carbon (GAC) contactors, and primary disinfection provided by sodium hypochlorite, which is injected downstream of the GAC tanks. The water then passes through the chlorine contact chamber and a baffled clearwell into a high lift pumping well, all of which are located beneath the water treatment plant. A 10 km transmission main joins the distribution systems in Long Sault and Ingleside. The original Ingleside Water Treatment Plant was converted into a booster station. The distribution system now services a combined population in Long Sault and Ingleside of approximately 3,500.

Compliance with Terms and Conditions of the Municipal Drinking Water Licence

The Long Sault-Ingleside Regional Water Treatment Plant and distribution system was operated and maintained in accordance with O. Reg. 170/03 dated June 1, 2003 (last amendment – O. Reg. 269/22) and the Municipal Drinking Water Licence.

In accordance with Drinking Water Works Permit No. 186-202, condition 1.1, the drinking water system shall not be operated to exceed the rated capacity for the maximum flow rate into the treatment system of 9,500 m³/day³. (See Appendix I for total flow, average daily flow and maximum daily flow.) The flows into the water treatment plant did not exceed the maximum flow rate at any time.

The Long Sault-Ingleside Regional Water Treatment Plant has a valid Permit to Take Water; number 4278-9XSHHK (issued June 24, 2015 and expiring June 30, 2025), authorizing the taking of no more than 9,500m³/day. The average water taking for the year was 5,501 m³/day, 58% of the authorized water taking. The maximum daily flow into the treatment system for the year was 7,473 m³/day (raw water) on July 17, 2022.

The Long Sault-Ingleside Regional Water Treatment Plant chlorinates at the raw water intake when the water temperature is above 10 degrees Celsius in order to control zebra mussel populations in the intake pipes.

The works and related equipment and appurtenances used to achieve compliance are properly operated and maintained, including effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of the Certificate of Approval and the Act and regulations, adequate laboratory facilities, process controls and alarms, and the use of the process chemical that comes in contact with the water being treated is suitable for the process and appropriate for drinking water.

A flow meter measures the flow rate and daily quantity of water being taken from the source (intake) and conveyed to, and through, the water treatment plant. The raw and treated flows

² See footnote on page 2 relating to plant capacity

³ See footnote on page 2 relating to plant capacity

are recorded in Appendix I. The flow meters were calibrated August 29, 2022, by Endress & Hauser.

Free chlorine residual and turbidity in treated water is continuously monitored at the point of entrance to the distribution system. The Prominent chlorine analyzer is accurate to $\pm 2\%$ of the measured value. A low chlorine alarm calls out at a value that is above the required CT, and the high lift pumps will shut down if the chlorine reaches a level lower than the required CT, or the lowest free chlorine level of 0.20 mg/L, to prevent water below the required CT from being distributed. A high chlorine alarm calls out at 3.50 mg/L. Operators try to keep the chlorine residual at an average of 1.00mg/L. The on-line chlorine analyzer is checked with the hand-held chlorine analyzer and adjusted as required. Calibration of the on-line chlorine analyzers was performed by Endress & Hauser on August 29 and 30, 2022. The Hach turbidimeters are accurate to ± 0.1 NTU (Nephelometric Turbidity Unit). The turbidimeters are checked monthly using a hand-held turbidity analyzer and adjusted accordingly. The turbidity analyzers were calibrated on August 8, 2022, by Hach Canada. If the turbidity reaches 1.00 NTU (Nephelometric Turbidity Units) for a period of 14 minutes, 50 seconds, the affected Zenon train will shut down and alarm out to prevent turbid water from entering the contact chamber. (See Appendix I for maximum turbidity, and minimum, maximum and average chlorine residual.)

Operators keep a daily log book recording raw and treated flow meter readings, free and total chlorine residual (both continuous and grab samples), raw and treated turbidity, pH and temperature.

Samples are collected throughout the year from the treated water to determine whether or not the water is safe for human consumption (in accordance with Regulation 170/03, Schedule 10 and 13, Microbiological and Chemical Sampling and Testing). Bacteriological analysis is performed weekly - 1 sample each per week from the raw and treated water, 12 samples per month from the distribution system. Nitrates, THMs and HAAs are analyzed 4 times a year in the distribution system. Schedule 23 and 24 (treated water) are analyzed annually. Sodium and fluoride (treated water) are analyzed once every 60 months. (See Appendix II.) All samples are analyzed at Caduceon Environmental Labs in Nepean, Ontario. Caduceon and its subcontracted labs are accredited by the Standards Council of Canada. Written procedures have been established for the notification of the Medical Officer of Health and the Ministry of the Environment Spills Action Centre should a sample result indicate an exceedance has occurred.

In the reporting year, a sample collected November 21, 2022, at the WTP and tested for sodium was returned with a result of 20.2 mg/L. Caneau provided notifications of the adverse water quality incident and resampled as required by O. Reg 170. There were no bacteria-related adverse events in the drinking water system during 2022.

Under Ontario Regulation 170/03, Schedule 15, Section 15.1-5 (lead sampling), Long Sault-Ingleside Regional WTP and distribution system is eligible for reduced sampling and reduced frequency (every 3 years). Samples were collected in 2022 and will be collected again in 2025. Alkalinity and pH are required to be collected twice per year.

Effluent discharged from the backwash wastewater facility is analyzed monthly for Total Suspended Solids (annualized average), Total Chlorine Residual, and pH. The results are

summarized in Appendix II – 2022 Annual Report for the Ministry of the Environment, Conservation and Parks.

Free chlorine residual in the distribution system is monitored by 2 alarmed online analyzers with datalogging. The analyzers are checked, at minimum, every 72 hours. These analyzers will alarm out when the chlorine goes below 0.15 mg/L or above 3.50 mg/L for a period greater than 15 minutes. The chlorine analyzers in the distribution system were calibrated on August 30, 2022, by Endress & Hauser.

All records and information relating to, or resulting from the monitoring, sampling and analyzing activities required by the Certificate of Approval are retained for a minimum of 5 years.

The Long Sault-Ingleside Regional Water Treatment Plant is classified Water Treatment 2 and Water Distribution 2 (Certificate Number 2232 and 2233). Operators hold valid licences applicable to this type of water treatment plant.

Following all maintenance or repairs to the water treatment facility, all affected areas are disinfected in accordance with the MOE's "Procedure for Disinfection of Drinking Water in Ontario" dated June 2006. All chemicals used in the treatment process and all materials contacting the water meet both the American Water Works Association (AWWA) quality criteria and the American National Standards Institute (ANSI) safety criteria. All chemicals have been registered by a testing institution accredited under the Standards Council of Canada Act or by ANSI.

A contingency plan has been implemented to ensure adequate equipment and material are available for dealing with emergencies, upset conditions, equipment breakdowns in the works and spill scenarios.

An operating manual incorporates the requirements of the Drinking Water Works Permit. The manual includes monitoring and reporting of the necessary and in-process parameters essential for control of the treatment process and for the assessment of the performance of the works. It also contains procedures that are required for adequate operation and maintenance of the monitoring equipment.

Drawings are prepared and kept up-to-date showing the new works as constructed (record drawings), including timely incorporation of all modifications made to the works throughout its operational life.

A Process and Instrumentation Diagram (PID) for the entire water treatment plant has been prepared and is kept up-to-date, including timely incorporation of all modifications that are made to the works.

All record drawings and diagrams and all existing record drawings which are currently in retention throughout the operational life of the water works are readily available for inspection by Ministry staff.

Procedures have been established and are followed for receiving, responding to, and recording

complaints about any aspect of the works, including recording the steps that were taken to determine the cause of complaint and the corrective measures taken to alleviate the cause and prevent its reoccurrence.

Compliance with Regulatory Requirements and Actions Required

The 2021-2022 Compliance Inspection was conducted on December 14, 2021, by the Ministry of the Environment, Conservation and Parks. The Compliance Inspection Report was received on March 11, 2022, with a final inspection rating of 100%.

The following section is quoted directly from the March 11, 2022, MECP Compliance Inspection Report.

“All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were not being met.

Table 7 of Section 5.0 of Schedule C of the MDWL prescribes monthly manual composite samples and analysis of total suspended solids (TSS), monthly grab monitoring of total chlorine residual and monthly grab monitoring of pH. Section 1.5 of Schedule C of the MDWL prescribes that the average concentration of TSS shall not exceed 25 mg/L, maximum concentration of 0.02 mg/L for total chlorine residual and maximum pH concentration range between 6.5 – 8.5.

A review of records for the inspection period indicates that TSS, total chlorine residuals and pH were monitored in accordance with the MDWL but Subsection 6-1.1(3) of Schedule 6 to O.Reg. 170/03 prescribes that if the regulation of an approval, municipal drinking water licence or order, including an OWRA approval or OWRA order, requires at least one water sample to be taken every month and tested for a parameter, the owner of the drinking water system and the operating authority for the system shall ensure that at least one sample that is taken during a month for the purpose of being tested for that parameter is taken at least 20 days, and not more than 40 days, after a sample was taken for that purpose in the previous month.

The operating authority collect and analyze the above parameters in house which are recorded in the logbook and the pond sampling spreadsheet. Samples were collected for every calendar month during the inspection period but samples collected September 2, 2021 and samples collected August 16, 2021 were sampled and tested 17 days apart.

The inspector has addressed the sampling frequency during the 2020-2021 inspection report and recommended that sampling procedures be reviewed to ensure sampling is taken as per Subsection 6-1.1 of Schedule 6 to O.Reg. 170/03.

ACTIONS REQUIRED:

By no later than March 31, 2022 the operating authority is to provide the inspector with an action plan on how the operating authority will ensure that any water sample to be taken meet the requirements of Subsection 6-1 of Schedule 6 to O.Reg. 170/03.”

A copy of the report is available at the Township office.

MAINTENANCE

January 20 – Genrep on site at Ingleside booster to change batteries in transfer switch.
January 25 – Marleau on site to do seasonal HVAC maintenance and run new conduit and install box for Cl₂ clean pump.
January 27 – Brenntag on site to deliver sodium hypochlorite.
February 7 – Quarterly samples collected at WTP and distribution points.
February 8 – Marleau on site at Ingleside booster to do HVAC maintenance.
February 8 – Pro-Pipe on site to prepare for and begin permeate pipe repair and valve install.
February 9 – Pro-Pipe on site to continue permeate pipe replacement project.
February 10 – Pro-Pipe on site to finish permeate pipe replacement project.
February 28 – Capital Controls on site to work on cooling system of low lift pump #3.
February 28 – Brenntag on site to deliver sodium hypochlorite.
February 28 – FloChem on site to deliver citric acid.
March 4 – Eastern Welding on site to install new air lines for raw water actuator.
March 8 – Marleau on site at Ingleside booster to work on heat exchanger and backflow preventer
March 8 – Pyro Pro on site to conduct fire extinguisher inspections and maintenance.
March 24 – Marleau on site at Ingleside booster to install damper motor.
March 24 – Capital Controls on site to install new fan on low lift pump #1.
March 24 – Capital Controls on site to troubleshoot tower level sensor in Ingleside.
March 25 – Bell on site at Ingleside tower to troubleshoot communications issue between tower and booster station.
March 28 – Marleau on site to troubleshoot high lift pump #2 A/C unit.
March 29 – Marleau on site to repair high lift pump #3 A/C unit.
March 29 – Capital Controls on site to trace the ghost PLC general alarms from the previous week.
March 30 – Capital Controls on site to work on high lift pump #1 and to continue working on ghost PLC alarm issue.
March 31 – Marleau on site to finish A/C unit repair on high lift pump #2.
March 31 – Capital Controls worked remotely to troubleshoot the CP-40 (ghost PLC) alarm issue.
April 6 – Brenntag on site to deliver sodium hypochlorite.
April 11 – Samples for lead testing collected in the distribution system.
April 20 – Marleau on site to conduct seasonal HVAC maintenance at WTP and booster station.
April 25 – Brenntag on site to deliver sodium hypochlorite.
April 27 – Marleau Mechanical on site to install new SureFeed pump control panel.
May 2 – Quarterly samples collected at WTP and distribution points.
May 3 – Marleau Mechanical on site at Ingleside tower to fix outlet and install a float and beacon light for pit high level.
May 9 – Annual samples collected at WTP.
May 11 – Genrep on site at WTP for semi-annual inspection.
May 12 – Genrep on site at Ingleside booster for semi-annual inspection.
May 16 – Annual samples collected at WTP.
May 17 – Capital Controls on site to configure zebra mussel controls, SureFeed and pump.
May 25 – ProPipe on site to repair leak on train #1 drain pipe.
May 26 – ProPipe on site to finish repair of leak on train #1 drain pipe.
May 27 – Marleau Mechanical on site to conduct regular check of backflow preventers.
June 22 – Capital Controls on site to reinstall repaired SCADA computer #1.
July 5 – ODS Marine on site to conduct dive inspection of raw water intake.
July 7 – Marleau Mechanical on site to check cooling unit on HLP #3.
July 11 – Brenntag on site to deliver sodium hypochlorite.
July 21 – Devine on site at WTP and Ingleside booster station to service PRVs/PSVs.

July 27 – Capital Controls on site to check low lift pump #1 VFD issue.
July 27 – Genrep on site to replace block heater hoses.
July 28 – Brenntag on site to deliver sodium hypochlorite.
August 4 – FloChem on site to deliver sodium bisulphite.
August 8 – Quarterly samples collected at WTP and distribution points.
August 8 – Hach on site to conduct annual calibrations.
August 15 – Genrep on site to troubleshoot generator after failed weekly test, and to install rental generator from Way Power.
August 16 – Genrep on site to wire block heater to temporary generator.
August 17 – Genrep on site to quote new controller for generator.
August 19 – Dwyer Glass on site to repair generator door.
August 22 – Brenntag on site to deliver sodium hypochlorite.
August 29 – Endress & Hauser on site to conduct annual calibrations.
August 30 – Endress & Hauser on site to continue annual calibrations at WTP and Ingleside booster.
August 31 – Endress & Hauser on site to continue annual calibrations at WTP and Ingleside booster.
September 13 – Bell on site to repair damaged phone line for alarm system.
September 21 – SAI Global (represented by AET98) on site to conduct DWQMS re-accreditation audit.
September 22 – Marleau on site to replace outlet box for Cl₂ pump #1 at Ingleside booster.
October 3 – Genrep on site to begin install of new generator controller.
October 4 – Genrep on site to continue install of new generator controller.
October 4 – Marleau Mechanical on site to troubleshoot air dryer.
October 6 – Brenntag on site to deliver sodium hypochlorite.
October 11 – Genrep on site to continue install of new generator controller.
October 11 – Marleau Mechanical on site to connect main generator and disconnect temporary generator.
October 12 – Samples for lead testing collected in the distribution system.
October 20 – Marleau Mechanical on site to install new air dryer.
October 25 – Marleau on site to install plug for heater at Ingleside Tower.
October 26 – Brenntag on site to deliver sodium hypochlorite.
November 7 – Township and Township consultants on site to conducting building assessment at Ingleside booster station.
November 14 – Quarterly samples collected at WTP and distribution points.
November 15 – Brenntag on site to deliver sodium hypochlorite.
November 15 – Marleau on site to troubleshoot furnace.
November 17 – Chubb Edwards on site to conduct fire alarm system inspection.
November 17 – Marleau on site to repair furnace.
November 22 – Township and Township consultants on site to conduct building assessment at WTP.
November 23 – Dwyer Glass on site to reinforce doors.
November 30 – Marleau on site to disconnect blower.
November 30 – Capital Controls on site to install VFD on low lift pump #3.
December 1 – Bell on site to troubleshoot Ingleside tower communication line.
December 2 – Marleau Mechanical on site to connect blower following blower service.
December 6 – ProPipe on site to repair leak in backpulse tank.
December 6 – Capital Controls on site to calibrate backpulse level transmitter.
December 7 – Bell on site to troubleshoot Ingleside tower communication line.
December 8 – Genrep on site at Ingleside booster to conduct annual generator maintenance and load test.
December 14 – Brenntag on site to deliver sodium hypochlorite.
December 21 – Michelle Gordon from MECF on site to conduct drinking water system inspection.
December 21 – Stinson on site to deliver diesel for generator.
December 30 – Brenntag on site to deliver sodium hypochlorite.

APPENDIX I
Flow Data

LONG SAULT-INGLESIDE WATER TREATMENT SYSTEM SUMMARY REPORT

Municipality: Township of South Stormont

Year: 2022

Source: St. Lawrence River

Capacity: 9,500m³/day*

Description: Membrane Filtration, GAC, Chlorination

Month	Raw Flow	Treated Flow			Treated Water Physical/Chemical Parameters							HAA ug/L	Bacteria (Number of Samples)				
	Total Flow m ³	Total Flow m ³	Avg. Day m ³ /day	Max. Day m ³ /day	Free Chlorine Residual			Turbidity Max. NTU	NO ₂ mg/L	NO ₃ mg/L	THM ug/l		Raw Water	Total		Unsafe or Poor	
					Avg. mg/L	Min. mg/L	Max. mg/L							Plant	Distribution	Plant	Distribution
January	169,142	142,486	4,596	5,463	1.10	0.98	1.27	0.15					5	5	12		
February	157,678	130,903	4,675	5,982	1.11	0.99	1.29	0.12	<0.1	0.30	38.0	5.4	4	4	12		
March	178,615	142,882	4,609	5,395	1.10	0.99	1.31	0.12					4	4	12		
April	164,689	133,731	4,458	5,365	1.15	0.86	1.27	0.07					4	4	12		
May	179,952	143,157	4,618	5,416	1.12	0.91	1.26	0.08	<0.1	0.30	54.0	15.8	5	5	13		
June	171,982	136,750	4,558	5,491	1.13	0.88	1.39	0.23					4	4	12		
July	196,920	161,196	5,200	5,891	1.19	0.93	1.43	0.19					4	4	12		
August	186,709	158,505	5,113	5,928	1.16	0.99	1.37	0.08	<0.1	0.10	65.0	14.9	5	5	14		
September	164,180	139,899	4,663	5,978	1.17	1.02	1.34	0.06					4	4	12		
October	151,140	128,383	4,141	5,319	1.16	1.00	1.31	0.06					5	5	12		
November	139,517	117,926	3,931	5,170	1.18	1.06	1.47	0.07	<0.1	0.20	54.0	5.3**	4	4	12		
December	147,336	123,568	3,986	4,819	1.21	0.77	1.35	0.07					4	4	12		
Total	2,007,860	1,659,386											52	52	147	0	0
Average			4,546		1.15				<0.1	0.23	52.8	12.0					
Minimum						0.77											
Maximum				5,982			1.47	0.23									
ODWS									1	10	100.0	80.0	52	52	144		

*Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020 specifies plant capacity of 9,500 m³/day. However, it has since been indicated to the Township that the true capacity may be 8,575 m³/day. The issue is under review.

**Total HAAs for November 14, 2022, sample were <5.3 ug/L, but 5.3 ug/L was used in order to report the annual average.

APPENDIX II
2022 Annual Report
Ministry of the Environment, Conservation and Parks



Section 11: ANNUAL REPORT

Drinking-Water System Number:	260066417
Drinking-Water System Name:	Long Sault-Ingleside Regional Water Treatment Plant
Drinking-Water System Owner:	Township of South Stormont
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1 – December 31, 2022

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [x]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [x] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Township of South Stormont 2 Milles Roches Road Long Sault, ON K0C 1P0 Website: southstormont.ca</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <input style="width: 100px; height: 20px;" type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
---	---

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

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?
Yes [] No []



Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the web**
- Public access/notice via Government Office**
- Public access/notice via a newspaper**
- Public access/notice via Public Request**
- Public access/notice via a Public Library**
- Public access/notice via other method** _____

Describe your Drinking-Water System

The Long Sault Regional Water Treatment Plant is located on Moulinette Island, south of the town of Long Sault. The water treatment plant is a membrane filtration plant that began producing water in June 2005. The treatment process includes ultrafiltration (ZeeWeed membrane system manufactured by Zenon Environmental Inc) through one of three membrane cassettes which are housed in large concrete tanks, taste and odour removal through granular activated carbon (GAC) contactors, and primary disinfection provided by sodium hypochlorite, which is injected downstream of the GAC tanks. The water then passes through the chlorine contact chamber and a baffled clearwell into a high lift pumping well, all of which are located beneath the water treatment plant. A 10-km transmission main joins the distribution systems in Long Sault and Ingleside. The original Ingleside Water Treatment Plant was converted into a booster station. The rated capacity is 9,500m³/day per Municipal Drinking Water Licence No. 186-102 (Issue 3) dated December 4, 2020. However, since the issuance of the licence, it has been indicated to the Township that the true nameplate plant capacity may be 8,575 m³/day. The issue of plant capacity is under review. The distribution system now services a combined population in Long Sault and Ingleside of approximately 3500.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite, sodium bisulfite, citric acid and sodium hydroxide

Were any significant expenses incurred to?

- Install required equipment**
- Repair required equipment**
- Replace required equipment**

Please provide a brief description and a breakdown of monetary expenses incurred

Repair section of permeate header - \$110,715
 Suez monitoring system (24/7/365) - \$15,623
 Repair backpulse tank - \$13,600
 Provision of temporary generator - \$13,192
 Replace generator controller - \$12,968
 Replace low lift VFD - \$8,936
 Conduct annual calibrations - \$7,604
 Replace pneumatic valve positioners - \$5,415
 Replace keystone actuators - \$4,840
 Replace air dryer - \$3,321
 Install low lift drive fans - \$2,983

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
November 21, 2022	Sodium	20.2	mg/L	Resampled	November 24, 2022

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-4	0-16		
Treated	52	0-0	0-0	52	<2-8
Distribution	147	0-0	0-0	52	<2-6
Free chlorine residuals tested at the same time as microbiological sample collection: 1.01-1.30 mg/L (Treated samples) and 0.51-1.21 mg/L (Distribution samples)					

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 #)
Raw Turbidity	8760	0.00-9.98 NTU
Permeate Turbidity		
Train #1	8760	0.00-0.12 NTU
Train #2	8760	0.00-0.23 NTU
Train #3	8760	0.02-0.19 NTU
Chlorine	8760	0.77-1.47
Fluoride (If the DWS provides fluoridation)		

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

*NOTE: Record the unit of measure if it is **not** milligrams per litre.*



Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued: Municipal Drinking Water Licence	Parameter	Date Sampled	Result	Unit of Measure		
December 4, 2020	Total Suspended Solids (composite)	January	2.1	mg/L		
		February	3.4			
		March	2.2			
		April	1.8			
		May	2.9			
		June	3.5			
	MDWL criteria: 25mg/L (annual average concentration)	July	4.2	mg/L		
		August	2.9			
		September	3.6			
		October	4.2			
		November	4.3			
		December	4.5			
		Total Annualized Average =			3.3	mg/L
			pH		January	7.89
February	7.94					
March	7.88					
April	8.01					
May	7.97					
June	8.09					
July	7.99					
August	8.13					
September	8.09					
October	8.15					
November	8.03					
December	8.10					
MDWL criteria: 6.5-8.5 (maximum concentration)	January			0.01	mg/L	
	February		0.01			
	March		0.01			
	April		0.02			
	May		0.01			
	June		0.02			
	July		0.01			
	August		0.01			
	September		0.02			
	October		0.02			
	November		0.02			
December	0.02					
Total Chlorine Residual	January	0.01	mg/L			
	February	0.01				
	March	0.01				
	April	0.02				
	May	0.01				
	June	0.02				
	July	0.01				
	August	0.01				
	September	0.02				
	October	0.02				
	November	0.02				
	December	0.02				
MDWL criteria: 0.02mg/L (maximum concentration)	January	0.01	mg/L			
	February	0.01				
	March	0.01				
	April	0.02				
	May	0.01				
	June	0.02				
	July	0.01				
	August	0.01				
	September	0.02				
	October	0.02				
	November	0.02				
	December	0.02				



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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	May 9, 2022	0.0001	mg/L	
Arsenic	May 9, 2022	0.0008	mg/L	
Barium	May 9, 2022	0.022	mg/L	
Boron	May 9, 2022	0.021	mg/L	
Cadmium	May 9, 2022	<0.000015	mg/L	
Chromium	May 9, 2022	<0.002	mg/L	
*Lead				
Mercury	May 9, 2022	<0.00002	mg/L	
Selenium	May 9, 2022	<0.001	mg/L	
Sodium	May 9, 2022	15.7	mg/L	
	Nov 21, 2022	20.2	mg/L	
	Nov 24, 2022	15.2	mg/L	
Uranium	May 9, 2022	0.00033	mg/L	
Fluoride	May 9, 2022	<0.1	mg/L	
Nitrite	February 7, 2022	<0.1	mg/L	
	May 2, 2022	<0.1	mg/L	
	August 8, 2022	<0.1	mg/L	
	November 14, 2022	<0.1	mg/L	
Nitrate	February 7, 2022	0.3	mg/L	
	May 2, 2022	0.3	mg/L	
	August 8, 2022	0.1	mg/L	
	November 14, 2022	0.2	mg/L	

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

Summary of lead testing under Schedule 15.1 during this reporting period

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

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Plumbing	Exempt*		
Distribution	3 winter samples (Apr 11, 2022)	0.00018-0.00188	0
	3 summer samples (Oct 12, 2022)	0.00005-0.00142	0

*Due to historically low concentrations of lead in its drinking water, the Township of South Stormont is exempt from plumbing sampling for lead and is required to sample for lead in the distribution system every three years in both “winter” (Dec-Apr) and “summer”



periods (Jun-Oct). The next distribution lead samples will be collected between Dec 15, 2024 and Apr 15, 2025 and between Jun 15, 2025 and Oct 15, 2025.

Non-Lead Parameter	Winter Period (Dec-Apr)	Summer Period (Jun-Oct)
pH	7.06-7.19 (3 samples on Apr 11, 2022)	7.43-7.47 (3 samples on Oct 12, 2022)
Alkalinity	96-97 mg/L (3 samples on Apr 11, 2022)	88-90 mg/L (3 samples on Oct 12, 2022)

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	May 9, 2022	<0.3	µg/L	
Atrazine + N-dealkylated metabolites	May 9, 2022	<0.5	µg/L	
Azinphos-methyl	May 9, 2022	<1	µg/L	
Benzene	May 16, 2022	<0.5	µg/L	
Benzo(a)pyrene	May 9, 2022	<0.006	µg/L	
Bromoxynil	May 9, 2022	<0.5	µg/L	
Carbaryl	May 9, 2022	<3	µg/L	
Carbofuran	May 9, 2022	<1	µg/L	
Carbon Tetrachloride	May 16, 2022	<0.2	µg/L	
Chlorpyrifos	May 9, 2022	<0.5	µg/L	
Diazinon	May 9, 2022	<1	µg/L	
Dicamba	May 9, 2022	<1	µg/L	
1,2-Dichlorobenzene	May 16, 2022	<0.5	µg/L	
1,4-Dichlorobenzene	May 16, 2022	<0.5	µg/L	
1,2-Dichloroethane	May 16, 2022	<0.5	µg/L	
1,1-Dichloroethylene	May 16, 2022	<0.5	µg/L	
Dichloromethane (methylene chloride)	May 16, 2022	<5	µg/L	
2-4 Dichlorophenol	May 9, 2022	<0.2	µg/L	
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 9, 2022	<1	µg/L	
Diclofop-methyl	May 9, 2022	<0.9	µg/L	
Dimethoate	May 9, 2022	<1	µg/L	
Diquat	May 9, 2022	<5	µg/L	
Diuron	May 9, 2022	<5	µg/L	
Glyphosate	May 9, 2022	<25	µg/L	
Malathion	May 9, 2022	<5	µg/L	
MCPA	May 9, 2022	<10	µg/L	
Metolachlor	May 9, 2022	<3	µg/L	
Metribuzin	May 9, 2022	<3	µg/L	
Monochlorobenzene	May 16, 2022	<0.5	µg/L	
Paraquat	May 9, 2022	<1	µg/L	
Pentachlorophenol	May 9, 2022	<0.2	µg/L	
Phorate	May 9, 2022	<0.3	µg/L	

Picloram	May 9, 2022	<5	µg/L	
Polychlorinated Biphenyls (PCB)	May 9, 2022	<0.05	µg/L	
Prometryne	May 9, 2022	<0.1	µg/L	
Simazine	May 9, 2022	<0.5	µg/L	
THM (NOTE: show latest annual average)		52.8	µg/L	
Haloacetic Acid (HAA) (NOTE: show latest annual average)		12.0	µg/L	
Terbufos	May 9, 2022	<0.5	µg/L	
Tetrachloroethylene	May 16, 2022	<0.5	µg/L	
2,3,4,6-Tetrachlorophenol	May 9, 2022	<0.2	µg/L	
Triallate	May 9, 2022	<10	µg/L	
Trichloroethylene	May 16, 2022	<0.5	µg/L	
2,4,6-Trichlorophenol	May 9, 2022	<0.2	µg/L	
Trifluralin	May 9, 2022	<0.5	µg/L	
Vinyl Chloride	May 16, 2022	<0.2	µg/L	

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
THM	54	µg/L	May 2, 2022
THM	65	µg/L	Aug 8, 2022
THM	54	µg/L	Nov 14, 2022
Sodium	15.7	mg/L	May 9, 2022
Sodium	20.2	mg/L	Nov 21, 2022
Sodium	15.2	mg/L	Nov 24, 2022