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STORMONT

## Long Sault-Ingleside Regional Water Treatment Plant

Certificate of Approval No. 3103-6SVP2M (Aug. 2006)

Works No. 260066417

- 2010 Summary Report -

Prepared by:

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distribution systems in Long Sault and Ingleside. The original Ingleside Water Treatment Plant was converted into a booster station. The rated capacity is 148 l/s. The distribution system now services a combined population in Long Sault, Ingleside and Osnabruck Centre of approximately 3,500.

**Compliance with Terms and Conditions of the Certificate of Approval** (No. 3103-6SVP2M dated August 22, 2006)

The Long Sault-Ingleside Water Treatment Plant and distribution system was operated and maintained in accordance with O. Reg. 170/03 (as amended) and Certificate of Approval (No. 3103-6SVP2M dated August 22, 2006).

In accordance with Certificate of Approval No. 3103-6SVP2M, condition 4.1, the drinking water system shall not be operated to exceed the rated capacity for the maximum flow rate into the treatment system of 148 L/s. (See Appendix I for total flow, average daily flow and maximum daily flow.) The flows into the water treatment plant exceeded the maximum flow rate of 148L/s on 9 occasions. The maximum flow rate into the treatment plant was 158.05 L/s and a peak (maximum) treated flow rate of 139.03 L/s.

The Long Sault-Ingleside Water Treatment Plant has a valid Permit to Take Water, Number 7485-6E2NCT, (issued July 7, 2005 and expiring July 6, 2015), authorizing the taking of no more than 9,500m<sup>3</sup>/day. The average water taking for the year was 4,395 m<sup>3</sup>/day, 46% of the authorized water taking. The maximum daily flow into the treatment system for the year was 6,212 m<sup>3</sup>/day.

The Long Sault-Ingleside Water Treatment Plant chlorinates at the raw water intake when the water temperature is above 10 degrees Celsius 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 flow rate of treated water supplied to the distribution system is recorded as total daily flow. (See Appendix I). The flow meters were calibrated June 15, 2010 by Ken Harris Instrumentation.

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. Alarm set points are adjusted according to the facility's CT (contact time). Temperature and pH (seasonal variations) and flow are the key variables in the CT calculation providing the alarmed set points. Calibration of the on-line chlorine and turbidity analyzers was done June 15, 2010 by Ken Harris Instrumentation. The Hach 1720C turbidimeter is accurate to  $\pm 0.1$  NTU (Nephelometric Turbidity Unit). The turbidimeter is checked monthly using a hand-held turbidity analyzer and adjusted accordingly. 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

Ontario". 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 Certificate of Approval. 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.

Caneau Water and Sewage Operations Inc. was granted "Accreditation - Limited Scope – Entire Drinking Water Quality Management System" from the Canadian General Standards Board (CGSB) on October 5, 2010. The CGSB, a federal government organization under Public Works and Government Services Canada has entered into agreement with the Ministry of the Environment (MOE) to provide accreditation services for the purposes of the Municipal Drinking Water Licencing Program. The accreditation of operating authorities is a mandatory requirement of the *Safe Drinking Water Act, 2002*. The MOE requires owners of municipal residential drinking water systems to have an accredited operating authority in place. Full scope accreditation must be applied for within 12 months of the certificate issuance date.

#### **Non-Compliance with Regulatory Requirements and Actions Required**

There were no non-compliance issues identified in the 2010-2011 compliance inspection report dated November 9, 2010 from the Ministry of the Environment.

- Removed faulty waterfall submersible pumps – 2 new pumps on order
- Installed new thermostat at low lift building
- Replaced auto drain valve in air dryer
- Nov. 16 – Capital Controls on site to troubleshoot SCADA data logging issue – replaced external hard drive – previous hard drive to be sent for repair
- Nov. 23 – Marleau Mechanical on site to service faulty gas heater – fan motor burnt out – removed fan and motor – new motor on order
- Dec. 1 – installed new fan and motor for overhead gas fired heater in maintenance shop room (Marleau Mechanical)

# LONG SAULT-INGLESIDE WATER TREATMENT SUBSYSTEM SUMMARY REPORT

**Municipality:** Township of South Stormont  
**Year:** 2010  
**Source:** St. Lawrence River  
**Capacity:** 148 l/s

**Description:** Membrane Filtration, GAC, Chlorination

Month	Raw Flow		Treated Flow			Treated Water Physical/Chemical Parameters						Bacteria (Number of Samples)						
	Total Flow m <sup>3</sup>	Flow m <sup>3</sup>	Total Flow m <sup>3</sup>	Avg. Day		Max. Day	Free Chlorine Residual			Turbidity Max. NTU	NO <sub>2</sub> mg/L	NO <sub>3</sub> mg/L	THM mg/L	Raw Water	Safe			Unsafe or Poor Distribution
				Avg. m <sup>3</sup> /day	Max. m <sup>3</sup> /day		Avg. mg/L	Min. mg/L	Max. mg/L						Plant	Distribution	Plant	
January	129,657		110,670	3,570	4,108		1.02	0.69	1.47	0.04				5	4	13		
February	114,633		98,978	3,535	4,154		1.04	0.67	1.85	0.02	<0.1	0.40	0.061	4	4	13		
March	126,651		110,162	3,554	4,191		1.00	0.52	2.84	1.00				5	5	13		
April	123,921		108,183	3,606	4,265		1.03	0.74	1.54	0.02				4	4	13		
May	144,565		125,210	4,039	5,072		1.13	0.52	2.41	0.06				5	5	14		
June	136,249		114,189	3,806	4,441		1.07	0.61	2.77	0.04	<0.1	0.40	0.044	4	4	13		
July	156,935		132,393	4,271	5,205		0.94	0.51	1.09	0.04				4	4	13		
August	142,914		119,109	3,842	4,959		1.17	0.74	1.84	0.03	<0.1	0.20	0.040	5	5	13		
September	141,905		119,695	3,990	4,987		1.14	0.62	1.54	0.04				4	5	14	1	
October	135,629		114,684	3,699	5,013		1.20	0.45	1.90	0.04				4	4	13		
November	122,051		101,772	3,392	4,429		0.99	0.55	1.52	0.04	<0.1	0.30	0.046	5	5	13		
December	129,424		109,646	3,537	5,016		1.18	0.51	2.35	0.05				4	4	13		
<b>Total</b>	<b>1,604,434</b>		<b>1,364,691</b>											<b>53</b>	<b>53</b>	<b>158</b>	<b>1</b>	
<b>Average</b>				<b>3,737</b>			<b>1.08</b>				<b>&lt;0.1</b>	<b>0.33</b>	<b>0.053</b>					
<b>Minimum</b>							<b>0.45</b>											
<b>Maximum</b>					<b>5,205</b>			<b>2.84</b>										
<b>ODWS</b>											<b>1</b>	<b>10</b>	<b>0.100</b>	<b>52</b>	<b>52</b>	<b>156</b>		

**APPENDIX II**  
**2010 Annual Report**  
**Ministry of the Environment**



**Section 11: ANNUAL REPORT**

<b>Drinking-Water System Number:</b>	<b>260066417</b>
<b>Drinking-Water System Name:</b>	Long Sault-Ingleside Regional Water Treatment Plant
<b>Drinking-Water System Owner:</b>	Township of South Stormont
<b>Drinking-Water System Category:</b>	Large Municipal Residential
<b>Period being reported:</b>	January 1 – December 31, 2010

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></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</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</p>
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**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

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

Drinking Water System Name	Drinking Water System Number

**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 9,500m<sup>3</sup>/day. 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 - No
- Repair required equipment - No
- Replace required equipment - No

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

Pressure sustaining valve repair - \$5,900.00  
 Check valve replacement - \$2,200.00  
 Communication repair - \$3,000.00  
 Replaced engine interface control board in generator cabinet - \$2,100.00  
 CIP Tank level transmitter - \$3,250.00  
 Zenon repairs - \$9,500.00  
 Rebuilt motor on permeate pump - \$2,350.00

**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
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09/09/10	Total Coliform	4	CFU	Resampled	09/09/10
09/09/10	E.Coli	3	CFU	Resampled	09/09/10

**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	53	0-3	0-100		
Treated	53	0	0	53	<2-48
Distribution	159	0-3	0-4	51	<2->500

**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	0.13-9.99 NTU
Permeate Turbidity		
Train #1	8760	0.01-0.05 NTU
Train #2	8760	0.01-0.04 NTU
Train #3	8760	0.01-1.00 NTU
Chlorine	8760	0.45-2.84 mg/L
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: Certificate of Approval	Parameter	Date Sampled (2010)	Result	Unit of Measure (mg/L)
August 22, 2006	Total Suspended Solids (composite)	Jan. 7/10	0	
		Feb. 4/10	0	
		Mar. 8/10	0	
		Apr. 6/10	0	
		May 5/10	0	
		June 9/10	10	
		July 5/10	0	
		Aug. 5/10	0	
		Sept. 8/10	0	
		Oct. 12/10	0	



		Nov. 9/10	0		
		Dec. 9/10	0		
	Total Annualized Average =		0.83	mg/L	
	pH	Jan. 7/10	7.31		
		Feb. 4/10	7.41		
		Mar. 8/10	7.2		
		Apr. 6/10	7.64		
		May 5/10	7.61		
		June 9/10	7.6		
		July 5/10	7.69		
		Aug. 5/10	7.74		
		Sept. 8/10	7.68		
		Oct. 12/10	7.57		
		Nov. 9/10	7.66		
		Dec. 9/10	6.78		
		Total Chlorine Residual	Jan. 7/10	0.00	mg/L*
			Feb. 4/10	0.00	
			Mar. 8/10	0.01	
			Apr. 6/10	0.00	
			May 5/10	0.02	
			June 9/10	0.00	
			July 5/10	0.00	
			Aug. 5/10	0.01	
		Sept. 8/10	0.00		
		Oct. 12/10	0.01		
		Nov. 9/10	0.00		
		Dec. 9/10	0.01		

\*Certificate of Approval discharge criteria is 0.2ug/L, however, the instrument used is only capable of measuring in mg/L.

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	03/05/10	0.0001	mg/L	
Arsenic	03/05/10	0.0012	mg/L	
Barium	03/05/10	0.024	mg/L	
Boron	03/05/10	0.025	mg/L	
Cadmium	03/05/10	<0.00002	mg/L	
Chromium	03/05/10	<0.002	mg/L	
*Lead				
Mercury	03/05/10	<0.00002	mg/L	
Selenium	03/05/10	<0.001	mg/L	
Sodium	04/06/07	13.4	mg/L	



Uranium	03/05/10	0.00033	mg/L	
Fluoride	04/06/07	0.20	mg/L	
Nitrite	02/02/10	<0.1	mg/L	
	03/05/10	<0.1	mg/L	
	09/08/10	<0.1	mg/L	
	01/11/10	<0.1	mg/L	
Nitrate	02/02/10	0.4	mg/L	
	03/05/10	0.4	mg/L	
	09/08/10	0.2	mg/L	
	01/11/10	0.3	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			
Distribution	6	<0.00002-0.00031mg/L	0

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	03/05/10	<0.3	ug/L	
Aldicarb	03/05/10	<3	ug/L	
Aldrin + Dieldrin	03/05/10	<0.02	ug/L	
Atrazine + N-dealkylated metabolites	03/05/10	<0.5	ug/L	
Azinphos-methyl	03/05/10	<1	ug/L	
Bendiocarb	03/05/10	<3	ug/L	
Benzene	03/05/10	<0.5	ug/L	
Benzo(a)pyrene	03/05/10	<0.005	ug/L	
Bromoxynil	03/05/10	<0.3	ug/L	
Carbaryl	03/05/10	<3	ug/L	
Carbofuran	03/05/10	<1	ug/L	
Carbon Tetrachloride	03/05/10	<0.2	ug/L	
Chlordane (Total)	03/05/10	<0.04	ug/L	
Chlorpyrifos	03/05/10	<0.5	ug/L	
Cyanazine	03/05/10	<0.5	ug/L	
Diazinon	03/05/10	<1	ug/L	
Dicamba	03/05/10	<5	ug/L	
1,2-Dichlorobenzene	03/05/10	<0.1	ug/L	
1,4-Dichlorobenzene	03/05/10	<0.2	ug/L	



Dichlorodiphenyltrichloroethane (DDT) + metabolites	03/05/10	<0.1	ug/L	
1,2-Dichloroethane	03/05/10	<0.1	ug/L	
1,1-Dichloroethylene (vinylidene chloride)	03/05/10	<0.1	ug/L	
Dichloromethane	03/05/10	<0.3	ug/L	
2-4 Dichlorophenol	03/05/10	<0.1	ug/L	
2,4-Dichlorophenoxy acetic acid (2,4-D)	03/05/10	<5	ug/L	
Diclofop-methyl	03/05/10	<0.5	ug/L	
Dimethoate	03/05/10	<1	ug/L	
Dinoseb	03/05/10	<0.5	ug/L	
Diquat	03/05/10	<5	ug/L	
Diuron	03/05/10	<5	ug/L	
Glyphosate	03/05/10	<25	ug/L	
Heptachlor + Heptachlor Epoxide	03/05/10	<0.1	ug/L	
Lindane (Total)	03/05/10	<0.1	ug/L	
Malathion	03/05/10	<5	ug/L	
Methoxychlor	03/05/10	<0.1	ug/L	
Metolachlor	03/05/10	<3	ug/L	
Metribuzin	03/05/10	<3	ug/L	
Monochlorobenzene	03/05/10	<0.2	ug/L	
Paraquat	03/05/10	<1	ug/L	
Parathion	03/05/10	<3	ug/L	
Pentachlorophenol	03/05/10	<0.1	ug/L	
Phorate	03/05/10	<0.3	ug/L	
Picloram	03/05/10	<5	ug/L	
Polychlorinated Biphenyls(PCB)	03/05/10	<0.05	ug/L	
Prometryne	03/05/10	<0.1	ug/L	
Simazine	03/05/10	<0.5	ug/L	
THM (NOTE: show latest annual average)		52.5	ug/L	
Temephos	03/05/10	<10	ug/L	
Terbufos	03/05/10	<0.3	ug/L	
Tetrachloroethylene	03/05/10	<0.2	ug/L	
2,3,4,6-Tetrachlorophenol	03/05/10	<0.1	ug/L	
Triallate	03/05/10	<10	ug/L	
Trichloroethylene	03/05/10	<0.1	ug/L	
2,4,6-Trichlorophenol	03/05/10	<0.1	ug/L	
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	03/05/10	<10	ug/L	
Trifluralin	03/05/10	<0.5	ug/L	
Vinyl Chloride	03/05/10	<0.2	ug/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
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N/A			

