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**TOWNSHIP OF SOUTH
STORMONT**

Newington Water Treatment Plant

Certificate of Approval No. 0941-5SSJU4 (June 2004)

Works No. 220008051

- 2010 Summary Report -

Prepared by:


Caneau Water and Sewage Operations Inc.

15005 Parkway Drive

RR#3 Ingleside, ON

K0C 1M0

Operations Manager:


Chris Eamon

In dry periods, when the water level hits a minimum depth in the Kraft Well, the pump in the second well, the "Fairgrounds" well, is activated to pump water to the Kraft Well. The Fairgrounds Well is a drilled well originally installed in 1979.

Compliance with Terms and Conditions of the Certificate of Approval

The Newington Water Treatment Plant and distribution system is operated and maintained in accordance with O. Reg. 170/03 (as amended) and Certificate of Approval No. 0941-5SSJU4 dated June 14, 2004.

A valid Permit to Take Water was issued May 16, 2005 (No. 7850-6B2PSS) and permits the taking of water from two wells – the Kraft Well (326.9 m³/day) and the Fairground Well (65.5 m³/day). The permit expires April 30, 2015.

The water treatment plant is operated to treat water at a rate not exceeding the maximum flow rate of 328m³/day. The average water taking for the year was 80 m³/day, 24% of the authorized water taking. (See Appendix I for total flow, average monthly flow and maximum monthly flow.) The flows into the water treatment plant did not exceed the maximum flow rate of 328m³/day at any time.

The works and related equipment and appurtenances used to achieve compliance with Certificate of Approval No.0941-5SSJU4 are properly operated and maintained, including effective performance, adequate funding, adequate operator staffing and training, including training in all procedures and other requirements of this certificate 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 mechanical meter measures the flow rate and daily quantity of water taken from each well and conveyed to, and through, the water treatment plant. The flow rate of treated water supplied to the distribution system is recorded as total flow (See Appendix I). The flow meter was calibrated June 17, 2010 by Ken Harris Instrumentation.

Free chlorine residual and turbidity in treated water is continuously monitored at the point of entrance into the distribution system. The Prominent chlorine analyzer is accurate to ±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. Operators at the Newington Water Treatment Plant try to keep the chlorine residual at around 1.00 mg/L. The on-line chlorine analyzer is checked with the hand-held chlorine analyzer and adjusted as required. Turbidity is accurate to ±0.1 NTU (Nephelometric Turbidity Unit). The turbidity analyzer is checked monthly using a hand-held turbidity analyzer and adjusted accordingly. Raw water turbidity is analyzed monthly. The turbidimeter alarms out when the turbidity reaches 1.00 NTU for a period greater than 14 minutes, 50 seconds and will shut the system down to prevent turbid water from entering the contact pipe. (See Appendix I for monthly minimum, maximum and average turbidity and chlorine residual.) The chlorine and turbidity analyzers were calibrated June 17, 2010 by Ken Harris Instrumentation.

Operators in charge of the Newington Water Treatment Plant keep a daily log book recording flow meter readings, free and total chlorine residual (both continuous and grab samples),

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 ensures adequate equipment and material are available for dealing with emergencies, upset conditions and equipment breakdowns in the works.

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 made to the works throughout its operational life.

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 report dated September 29, 2010 from the Ministry of the Environment.

MAINTENANCE

- Mar. 2 – repaired leak in discharge hose connector – replaced connector
- Mar. 4 – well pump 2B seized – called Marleau Mechanical
- Mar. 5 – Marleau Mechanical on site – ordered new well pump and electrical control box (Surgeson Electric)
- Mar. 12 – ordered new well pump and electrical control box (Surgeson Electric)
- Mar. 23 – installed new well pump and motor (Marleau Mechanical and Alguire Crane)
- Apr. 6 – annual generator maintenance (GAL Power)

APPENDIX I
Flow Data

APPENDIX II
2010 Annual Report
Ministry of the Environment



OPTIONAL ANNUAL REPORT TEMPLATE

| | |
|--|---------------------------------|
| Drinking-Water System Number: | 220008051 |
| Drinking-Water System Name: | Newington 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, 2010 |

| | |
|--|---|
| <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</p> </div> | <p><u>Complete for all other Categories.</u></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> |
|--|---|

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 Newington water works draws groundwater from two wells located within the Newington Fairgrounds. The supply/treatment and storage works (STSW) consists of the two wells and disinfection by sodium hypochlorite. The wells are operated in series. The first well, known as the "Kraft" well is the primary source of water. It is a dug well which was originally installed in 1937. In dry periods, when the water level hits a minimum depth in the Kraft Well, the pump in the second well, the "Fairgrounds" well, is activated to pump water to the Kraft Well. The Fairgrounds Well is a drilled well originally installed in 1979.

Treatment

Two series (duty and standby) of 10 micron, 5 micron, and 1 micron "absolute" filters are run in parallel. Each filter train has a differential pressure transmitter and switch connected to a three way solenoid valve. Should the differential pressure exceed 14 m of water (20 psi), the water will be direct to the standby water filter train. An on-line turbidity analyzer monitors the turbidity from the cartridge filter effluent. As water exits the plant, it enters a 600 mm x 73 m chlorine contact pipe. At the end of the contact pipe, the chlorine is continuously monitored by an online chlorine analyzer. The treated water is monitored for free chlorine residual and turbidity by online analyzers.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite

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

New well pump - \$6,500.00
Communication system repair - \$8,000.00



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

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 |
|---------------|-----------|--------|-----------------|-------------------|------------------------|
| | | | | | |
| | | | | | |
| | | | | | |

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 | 0-20 | | |
| Treated | 52 | 0 | 0 | 52 | <2->500 |
| Distribution | 96 | 0 | 0 | 31 | <2 |

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 | 8760 | 0.05-2.04 NTU |
| Chlorine | 8760 | 0.43-2.89 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 | Parameter | Date Sampled | Result | Unit of Measure |
|---------------------------------|-----------|------------------|--------------|-----------------|
| March 26, 2009 | PHC | January 4, 2010 | Not detected | |
| March 26, 2009 | VOC | January 4, 2010 | Not detected | |
| March 26, 2009 | PHC | February 1, 2010 | Not detected | |
| March 26, 2009 | VOC | February 1, 2010 | Not detected | |
| March 26, 2009 | PHC | March 1, 2010 | Not detected | |
| March 26, 2009 | VOC | March 1, 2010 | Not detected | |

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 | 0.0004 | mg/L | |
| Barium | 03/05/10 | 0.031 | mg/L | |
| Boron | 03/05/10 | 0.005 | 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 | 2.8 | mg/L | |
| Uranium | 03/05/10 | 0.00032 | mg/L | |
| Fluoride | 04/06/07 | 0.2 | mg/L | |
| Nitrite | 02/02/10 | 0.2 | 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 | 1.0 | mg/L | |
| | 03/05/10 | 0.8 | mg/L | |
| | 09/08/10 | 0.8 | mg/L | |
| | 01/11/10 | 0.9 | 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 | 2 | 0.00039-0.00074 mg/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 | |
| Dicofop-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) | | 6.8 | ug/L | |
| Temphos | 03/05/10 | <10 | ug/L | |



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

| | | | | |
|--|----------|------|------|--|
| 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 |
|-----------|--------------|-----------------|----------------|
| | | | |
| | | | |