

# Sherkston Community Centre Water Supply Annual Drinking Water Quality Report

Prepared on February 28, 2011  
in accordance with O.Reg. 170/03  
January 1, 2010 to December 31, 2010

Prepared by:



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Drinking Water System number: 260092495  
Drinking Water System category: Small Municipal Non-Residential  
Owned and operated by: The Corporation of the City of Port Colborne

# Sherkston Community Centre Water Supply Annual Drinking Water Quality Report

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## Introduction

In September 2009, a risk assessment of the Sherkston Community Centre Water Supply (SCCWS) was conducted by Niagara Region Public Health, in accordance with O.Reg. 319/08 – *Small Drinking Water Systems*. In November 2010 the City was notified of the results of the assessment; at that time, the City was informed that there was a designated facility being served by the system, which caused the SCCWS to fall under O.Reg. 170/03 and under the jurisdiction of the Ministry of Environment.

The City of Port Colborne is required, under O.Reg.170/03 - *Drinking Water Systems*, to prepare an annual report detailing the operation of the SCCWS. The regulation specifies in Section 11 what the report must contain, and sets a February 28 deadline for having the report prepared and made available to the public.

Therefore, to ensure compliance with the regulation, this report is prepared in accordance with Section 11, and is available to the public on the City's website at [www.portcolborne.ca](http://www.portcolborne.ca), under the Water Quality link

## Water Supply and Distribution

The Corporation of the City of Port Colborne (City) is the Owner of the Sherkston Community Centre Water Supply, the drinking water system for the City-owned Sherkston Community Centre (SCC). The City leases the SCC to the Sherkston Neighbourhood Recreation Committee, who leases the facility to the District School Board of Niagara (DSBN). The DSBN operates the "Sherkston BRIDGE" program at the facility; during the 2010-11 school year, there were twelve (12) grade 7 and 8 students and two (2) teachers at the facility on normal school days and times.

The SCCWS system consists of the following:

- One (1) dug well of unknown age, depth and construction, located outside and to the north of the building
- One (1) Star ½ HP jet pump (model 940105) and pressure tank (75 L) assembly located in the utilities room inside the building
- One (1) "Big Blue" cartridge sediment filter housing containing a nominal 5 micron element of unknown construction

- One (1) ultraviolet disinfection reactor (believed to be an older version of the current C4 series Trojan UV Max system) and,
- Miscellaneous metallic and non-metallic pipe sections and fittings.

The SCCWS obtains raw water from a single dug well located in a flat area to the north of the building, which is classified as a GUDI well (Ground Water Under the Direct Influence of surface water - refers to a well which may be subject to surface water contamination). The well hatch is padlocked to prevent unauthorized access; however, there is no gasket on the lid to seal it against infiltration. The raw water supply pipe from the well crosses under the floor of the SCC and enters the utility room from beneath the floor slab via a 25 mm (1 inch) carbon steel or iron pipe. The pipe connects to the jet pump via a combination of steel, copper and galvanized fittings.

The jet pump is rated for 0.49 L/sec against a TDH of 50 psig, and system pressure is around 23 psig. Water is pumped into the pressure tank or into the plumbing, dependant upon pressure requirements. Prior to entering the plumbing, the raw water is filtered to remove suspended organic and inorganic particles to ensure efficient operation of the UV disinfection system by reducing the potential for pathogen “shielding” by foreign matter in the water. The water then enters the UV unit, which is operated with an automatic alarm provision that indicates if/when the lamp requires replacement. The audible and visual alarm also annunciate when the power supply fails, or when the lamp is not operating; however, the system does not monitor critical failure, ballast failure or low UV transmittance. The system also does not have a remote alarm to notify City staff that a failure has occurred, nor does it stop untreated water from entering the plumbing system in the event an alarm situation occurs.

ASI Group Ltd. (ASI) evaluated the existing system in December 2010 and issued a report entitled “Assessment of the Existing Drinking Water Treatment System for the Sherkston Community Centre” on December 22, 2010. ASI determined that the current system does not comply with the requirements of O.Reg. 170/03.

## **Water Quality Monitoring**

The City of Port Colborne is required to supply safe drinking water that meets the requirements of the Safe Drinking Water Act and associated regulations. To ensure the City meet these requirements, the City has assigned the following individuals as responsible persons for the SCCWS:

Table 1: Sherkston Community Centre Water Supply Responsible Persons

Position	Name	Phone number
Director of Engineering and Operations	Ron Hanson	905-835-2901 ext. 222
Utilities Supervisor	Doug Cressey	905-835-5079
Water/Wastewater Compliance Coordinator	Darlene Suddard	905-835-2901 ext. 212

The City has identified the Engineering and Operations Department as being responsible for the operation and maintenance of the Sherkston Community Centre Water Supply (SCCWS). The Public Works, Water Department operates under the Engineering and Operations Department, and is specifically responsible for the daily operation of the SCCWS. As such, the Water Department is responsible for assigning Certified Water Operators to conduct both the routine water quality sampling and testing and to conduct non-routine sampling (i.e., responding to adverse water quality incidents (AWQI)). These activities ensure the water quality meets the Ontario Drinking Water Quality Standards (O.Reg. 169/03) at all times and under all conditions. The Water Department also ensures that the Operational Checks, Sampling and Testing requirements specified in the Drinking Water Systems Regulation (O.Reg. 170/03) are conducted and recorded. If it is determined that the water quality or an operational parameter does not meet the regulated requirements or exceeds the regulated limits, Certified Operators immediately implement corrective action to ensure the continued supply of safe drinking water. The operational checks, sampling and testing requirements which the City must conduct are outlined in Table 3.

## Water Quality Test Results

As per the sampling and testing requirements detailed in Table 3, the City conducted the following sampling in the period of January 1, 2010 to December 31, 2010:

### Microbiological Analysis

A total of 28 samples (26 treated samples and 2 raw samples) were collected and analyzed for the presence of *E.coli* and Total Coliforms (Table 4). *E.coli* and Total Coliforms were not detected in any of the treated water samples (collected from the kitchen sink); however Total Coliforms were detected in both samples collected from the untreated, raw well water (1 and 177 cfu/100 mL), indicating that surface water is entering the well.

### **Operational Checks**

On a twice-weekly basis, the City performs a site visit to monitor the system and ensure there are no issues. The well hatch is checked to ensure it is secure, the UV system is checked to ensure the alarm is not on, the system pressure is recorded and the pump status (idle vs. running) is noted.

### **Lead Testing (Schedule 15.1) Results**

The City is not required to test for lead, as the designated facility falls under the requirements of O.Reg. 243/07; as such, the DSBN is responsible for all lead testing activities at the facility.

### **Chemical Parameters**

Prior to determining that the system fell under O.Reg. 170/03, the City was not required to sample and test for any chemical parameters. However, once it was established that the SCCWS fell under O.Reg. 170/03, the City was required to comply with the sampling requirements specified for a water system using a GUDI water source.

Samples for all organic and inorganic parameters listed in Schedules 23 and 24 of O.Reg. 170/03, sodium and fluoride were scheduled to be sampled in January 2011. These parameters are required to be sampled at least every 60 months. Additionally, nitrate and nitrite were scheduled to be sampled in January 2011, and every 3 months thereafter. Once the cistern system is in operation, chemical monitoring will no longer be required.

In 2010, the City is pleased to report that there were no reportable adverse water quality incidents. All samples collected and analyzed in 2010 complied with the regulated requirements, as illustrated in Table 4.

### **Regulatory Non-Compliances**

As indicated above, it was determined in December 2010 that the Sherkston Community Center Water Supply system did not comply with O. Reg. 170/03. The City was required to submit a timeline to the local Ministry of the Environment (MOE) by January 7, 2011, detailing the steps the City would be taking to bring the system into Compliance.

## Our Commitment to Providing Safe Drinking Water

To ensure that users of the Sherkston Community Centre are protected until the system upgrades are completed, the City has implemented the following interim measures:

- Licensed Water Operators will continue to collect samples from the raw water (well) once (1) per month, and treated water from the kitchen twice (2) per month. These samples will be submitted for *E.coli* and Total Coliform analysis;
- Raw water samples will be collected, as required by the regulation, and analyzed for the following parameters:
  - All organic and inorganic parameters listed in Schedule 23 and 24 of O.Reg. 170/03 (once every 60 months)
  - Fluoride and sodium (once every 60 months)
  - Nitrates and nitrites (once every 3 months);
- Licensed Water Operators will continue to visit and inspect the facility twice (2) weekly to ensure there are no operational issues with the system;
- Letters will be provided to the designated facility (District School Board of Niagara) and the Sherkston Neighbourhood Recreation Committee, indicating they are not to consume the water and provide a contact list in the event there are any issues with the drinking water system;
- Warning notices will be posted near every tap, and at every entrance to the building stating “Public Notice: Do Not Drink This Water”, and providing City contact information. *(Note: The Sherkston Neighbourhood Recreational Committee has historically provided bottled water to the users of the facility, and did so throughout 2010, and has committed to continuing to provide bottled water until the system upgrades are complete)*

The City has the following plans for 2011 to upgrade the system:

- Issue a tender to provide the following:
  - One (1) potable water cistern with locking metal access lid complete with sufficient quantity of risers as required to provide positive assurance of protection from 100 year flood elevation; supply pipe and electrical conduit from the cistern to the building;
  - One (1) NSF certified ultraviolet (UV) disinfectant system, complete with an ANSI/NSF certified 5 micron sediment and grit removal filter to protect the quartz sleeve from abrasion and to ensure high transmissivity of the water. System shall include: continuous UV intensity monitor; fail-safe solenoid valve (emergency shut-off valve) (alarm condition); thermal protection to prevent nuisance alarms and overheated water supply and ; local display indicating status with audible alarm;
  - One (1) submersible water supply pump and pressure tank to be mated with existing plumbing and pneumatic pressure tank

Once the system has been upgraded, the City will continue to sample, monitor and maintain the system in accordance with the requirements of O.Reg. 170/03

In 2010, the City spent \$5,600 on an Engineering Evaluation of the current water system. Council approved the expenditure of \$25,000 on December 13, 2010 to fund the necessary upgrades in 2011.

### Where to Obtain Additional Information

Copies of this annual report are available, free of charge, at the Engineering and Operations Department, 2<sup>nd</sup> Floor, City Hall - 66 Charlotte Street. It can also be downloaded from the internet at [www.portcolborne.ca](http://www.portcolborne.ca), under the "Water Quality" link. Copies may also be obtained by contacting the City numbers listed below.

Additionally, all laboratory test results are available either at the Engineering and Operations Department or at the Public Works office at 11 King Street. Copies may also be obtained by contacting the City numbers listed below.

Table 2: Contact Information for the City

Organization	Department	Phone Number
City of Port Colborne	Engineering and Operations Department	905-835-2901
	Public Works	905-835-5079

Table 3: Sherkston Community Centre Water Supply - Water Quality Sampling and Testing Requirements

Parameter	Sampling and Analysis*	Water Quality Standards	Comments
Microbiological	<p>Minimum of 2 samples of treated water per month collected and tested for total coliforms and/or <i>E.coli</i>.</p> <p>Minimum of 1 sample of raw water per month collected and tested for total coliforms and <i>E.coli</i></p>	<ul style="list-style-type: none"> <li>• <i>E.coli</i> – NONE detected</li> <li>• Total Coliforms – NONE detected</li> </ul>	<ul style="list-style-type: none"> <li>• 2 samples per month</li> <li>• Samples sent to an accredited laboratory for analysis</li> <li>• Adverse results are immediately reported by the lab to the City</li> <li>• Once the cistern system is installed, City will no longer be required to test the raw water, and the sampling frequency for treated water will decline to 1 per month.</li> </ul>
Chemical (Schedule 23 & 24; sodium, fluoride, nitrate and nitrite)	<p>Schedule 23 &amp; 24 parameters, sodium and fluoride required to be sampled at least every 60 months.</p> <p>Nitrate and Nitrite required to be sampled every 3 months</p>	<ul style="list-style-type: none"> <li>• maximum acceptable concentrations stated in O.Reg. 169/03 – <i>Ontario Drinking Water Quality Standards</i></li> </ul>	<ul style="list-style-type: none"> <li>• Samples sent to an accredited laboratory for analysis</li> <li>• Adverse results are immediately reported by the lab to the City</li> <li>• Once the cistern system is installed, City will not longer be required to monitor these parameters</li> </ul>

*\*these sampling requirements began on November 24, 2010 when the system was determined to fall under O.Reg 170/03 – sampling activities prior to this date were conducted under O.Reg. 318/08*

Table 4: Sherkston Community Centre Water Supply - Water Quality Sampling and Testing Results  
January 1 to December 31, 2010

Parameter	Requirement	Number of samples	Results			Comments	
			Range	Unit	Exceedances		
<b>Microbiological Analysis</b>							
Raw	<i>E. coli</i>	N/A	2	ND	cfu/ 100 mL	N/A	Presence of <i>E.coli</i> indicates presence of fecal matter
	Total Coliforms	N/A	2	1-177	cfu/ 100 mL	N/A	Presence of Total Coliforms indicates possible presence of pathogenic bacteria
Treated	<i>E. coli</i>	ND	26	ND	cfu/ 100 mL	0	Presence of <i>E.coli</i> indicates presence of fecal matter
	Total Coliforms	ND	26	ND	cfu/ 100 mL	0	Presence of Total Coliforms indicates possible presence of pathogenic bacteria
<b>Chemical Parameters</b>							
Schedule 23 & 24 parameters, sodium and fluoride	< Maximum Allowable Concentration	N/A	N/A	N/A	N/A	N/A	Samples were not collected in 2010
Nitrate and Nitrite							

*ND = non-detectable*

*NTU = nephelometric turbidity unit*