

Sherkston Community Centre Cistern System Annual Drinking Water Quality Report

Prepared on February 9, 2015
in accordance with O.Reg. 170/03
January 1, 2014 to December 31, 2014

Prepared by:



Casey Sharpe
Water/Wastewater Operator

Reviewed by:



Darlene Suddard
Environmental Compliance Supervisor

Approved by:



Doug Cressey
Utilities Supervisor

Approved by:



Ron Hanson
Director of Engineering and Operations

Drinking Water System number: 260092963
Drinking Water System category: Small Municipal Non-Residential
Owned and operated by: The Corporation of the City of Port Colborne

Sherkston Community Centre Cistern System Annual Drinking Water Quality Report

Introduction

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 Sherkston Community Centre Cistern System (SCCCS). 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, 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 Cistern System, which is the drinking water system for the City-owned Sherkston Community Centre (SCC). Previously, a designated facility was serviced by this system; however, as of June 30, 2013 the District School Board of Niagara (DSBN) discontinued the "Sherkston Bridge" program at the SCC and the system no longer serves a designated facility. However, the City decided to maintain the Small Municipal Non-Residential System registration as it provides the Centre the flexibility to facilitate a variety of children/youth based leisure/recreation programs without restriction. This enhances the Centre's opportunity to bring more activities in to the Centre helping them increase their revenue potential.

The SCCC system consists of the following:

- One (1) Wilkinson Heavy PreCast Ltd. 9.7 m³ (3,500 USG) pre-cast concrete potable water cistern with stainless steel locking access hatch complete with perimeter gasket to provide positive seal against infiltration; a sufficient quantity of risers to provide positive assurance of protection from 100 year flood elevation; 1¼" 100 psi CSA Poly Pipe (ANSI/NSF 61) water supply line from the cistern to the building; 1½" PVC electrical conduit from the electrical panel to the cistern;
- One (1) NSF certified ultraviolet (UV) disinfectant system (Trojan UVMaXPro10 with "cool touch fan" with optional solenoid valve), 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 includes: 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 pump, ¾ HP, 10 gpm, 8 stage, 230 volt complete with cradle and with pressure switch suitable for use with hydro pneumatic pressure tanks for pump operational control;
- One (1) 35 gallon capacity hydro pneumatic pressure tank
- One (1) electrical powered autodialler that monitors the water level in the cistern, the UV system status, power supply etc. and automatically dials key City contacts in the event of an alarm.

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 SCCCS:

Table 1: Sherkston Community Centre Cistern System Responsible Persons

| Position | Name | Phone number |
|--|-----------------|-----------------------|
| Director of Engineering and Operations | Ron Hanson | 905-835-2900 ext. 222 |
| Utilities Supervisor | Doug Cressey | 905-835-5079 |
| Environmental Compliance Supervisor | Darlene Suddard | 905-835-5079 |

The City has identified the Engineering and Operations Department as being responsible for the operation and maintenance of the Sherkston Community Centre Cistern System (SCCCS). The Public Works, Water Department operates under the Engineering and Operations Department, and is specifically responsible for the daily operation of the SCCCS. As such, the Water Department is responsible for assigning Certified Water Operators or MOE Trained Persons 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 or MOECC Trained Persons 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, 2014 to December 31, 2014:

Microbiological Analysis

A total of 29 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. To verify that the UV system was functioning properly, untreated water samples were collected from the pre filter tap on three separate occasions (Table 4). Total coliforms were detected on one occasion (30 counts/100ml). On all three occasions, the results from the treated water samples collected at the same time indicated that the UV system was operating effectively, as the samples showed that *E.coli* and total coliforms were non-detectable.

Operational Checks

On a twice-weekly basis, the City performed a site visit to monitor the system and ensure there were no issues. The cistern hatch was checked to ensure it was secure, the UV system was checked and UV statistics (lamp hours etc.) was recorded, the system pressure was recorded and the pump status (idle vs. running) was noted.

Lead Testing (Schedule 15.2) Results

Prior to June 2013, all lead testing activities were conducted by the District School Board of Niagara, under O.Reg. 243/07, with the final sample collected by the DSNB May 13, 2013. The City under O.Reg. 170/03 is required to collect one sample every 36 months from the plumbing and analyze for lead. Next sample will be collected by May 13, 2016

Regulatory Non-Compliances

There were no instances of regulatory non-compliance in 2014.

Water System Upgrades

There were no upgrades or significant expenditures made during 2014; however, installation of a recirculating cooling line is planned in 2015. As the facility is not used on a daily basis, not enough water is moving through the UV system to adequately cool the UV bulb, which must remain on at all times to effectively treat the drinking water. Installation of a recirculating cooling water loop to ensure the UV bulb is cooled will lengthen the bulb life, resulting in long term operational cost savings.

Where to Obtain Additional Information

Copies of this annual report are available, free of charge, at the Engineering and Operations Department, 2nd Floor, City Hall - 66 Charlotte Street. It can also be downloaded from the internet at 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 | 905-835-2900 |
| | Public Works | 905-835-5079 |

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

| Parameter | Sampling and Analysis | Water Quality Standards | Comments |
|-----------------|---|--|---|
| Microbiological | As this system is supplied by transported water, that is stored in a sealed cistern, there is no regulatory requirement to collect samples for microbiological analysis. However, the City continues to collect a minimum of 2 samples of water per month after the UV treatment system, and one sample quarterly from the untreated water before the UV system and test for total coliforms and/or <i>E.coli</i> . | <ul style="list-style-type: none"> • <i>E.coli</i> – NONE detected • Total Coliforms – NONE detected | <ul style="list-style-type: none"> • An average of 2 samples per month • Samples sent to an accredited laboratory for analysis • Adverse results are immediately reported by the lab to the City • Simultaneous quarterly sampling of the untreated water and of the treated water after the UV treatment verifies the effectiveness of the UV treatment at disinfecting the water. |
| Lead | Under O.Reg. 170/03 we are required to collect one sample every 36 months from the plumbing and analyze for lead | <ul style="list-style-type: none"> • Maximum acceptable concentration for lead is 0.010 mg/L | <ul style="list-style-type: none"> • Next sample to be collected by May 13/16 |

Table 4: Sherkston Community Centre Cistern System - Water Quality Sampling and Testing Results
January 1, 2014 – December 31, 2014

| Parameter | Requirement | Number of samples | Results | | | Comments |
|---|-------------|-------------------|---------|----------------|-------------|--|
| | | | Range | Unit | Exceedances | |
| Microbiological Analysis – Treated Water | | | | | | |
| <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 |
| Microbiological Analysis – Raw Water | | | | | | |
| <i>E. coli</i> | N/A | 3 | ND | cfu/ 100 mL | N/A | Presence of <i>E.coli</i> indicates presence of fecal matter |
| Total Coliforms | N/A | 3 | ND - 30 | cfu/ 100 mL | 1 | Presence of Total Coliforms indicates possible presence of pathogenic bacteria |

ND = non-detectable

N/A = Not applicable

NDOGN = No Data-Total Coliform/ *E.coli* Plate Overgrown with Non-Target Bacteria (Adverse)