2018

ANNUAL SUMMARY REPORT

THE TOWNSHIP OF CRAMAHE – VILLAGE OF COLBORNE

COLBORNE WATER TREATMENT PLANT



SYSTEM INFORMATION

Appendix 1

MUNICIPAL DRINKING WATER LICENSE NO. 138-101

Appendix 2

DRINKING WATER WORKS PERMIT NO. 138-201

Appendix 3

PERMIT TO TAKE WATER NO. 2363-8VMR6M

Appendix 4

2018 ANNUAL REPORT

CONTENTS

1.	PURPOSE		
2.	COLBORNE DRINKING WATER SYSTEM OVERVIEW		
3.	2018 COMPLIANCE		5
	3.1	Colborne Water Treatment Plant	5
	3.2	Colborne Distribution System	5
	3.3	Continual Improvement	6
	3.4	PTTW Compliance	7
	3.5	Sampling and Analysis	8
	3.6	Lead Sampling	9
	3.7	MECP Inspections	9
	3.8	Drinking Water Quality Management System Conformity	9
4.	CON	ICLUSION	10

APPENDICES

- 1 Colborne Drinking Water Works Permit
- 2 Colborne Municipal Drinking Water License
- 3 Colborne Permit to Take Water
- 4 2018 Annual Report
- 5 2018 Water Taking and Consumption Data
- 6 ANSI/NSF 60 Certification
- 7 Flowmeter Calibration Reports
- 8 2018 O. Reg 170/03 Sampling Data
- 9 2018 MECP Compliance Inspection Report
- 10 NSF Audit Report
- 11 Resolution of Council

1. PURPOSE

The purpose of the Annual Water Quality Summary Report is to provide information to residents and stakeholders of the Village of Colborne, as well as satisfying the regulatory requirements of the *Safe Drinking Water Act*, 2002 including the Drinking Water Quality Management Standard (DWQMS) reports to owner, and regulatory reporting required under *Ontario Regulation* 170/03.

Scope

This annual water quality summary report includes information pertaining to the Village of Colborne's Drinking Water System for the period of January 1, 2018 to December 31, 2018. *Ontario Regulation* 170/03 requires reported information be provided to:

- Drinking Water System Owners (Mayor and Council)
- Owner and Operating Authority Top Management
- The Public

2. COLBORNE DRINKING WATER SYSTEM OVERVIEW

The Colborne Water Treatment Plant (WTP) takes water from two wells, Well #1 and Well #2, located approximately 25m apart from each other. Historically, Well #1 has had high turbidity due to sand at pumping rates above 10.0 L/s. For this reason, Well #2 is the duty well, and Well #1 is only used for sampling purposes and emergencies. Sodium hypochlorite and sodium silicate are added to the raw water within the process piping of the WTP. Primary disinfection is achieved as the chlorinated water achieves appropriate contact time in the 215m serpentine (buried east of the plant). Sodium silicate is added to prevent soluble iron from precipitating out of solution and depositing on the inner walls of the pipes. Sodium silicate also offers the benefit of protecting distribution pipes from corroding, in turn casing red colored water and associated staining. Water is conveyed to the distribution system and the elevated storage tank, which has a capacity of 2,342m³.

The distribution system is split into two pressure zones that are regulated by two pressure reducing valves that maintain the pressure between 20 and 90 PSI. As of December 31, 2018, there are 900 residential water meters and 109 commercial meters. Water is conveyed to customers by approximately 27km of watermain ranging from 25mm to 250mm, made of PVC, ductile iron and cast iron. There are 130 fire hydrants located within the system.

3. 2018 COMPLIANCE

3.1 COLBORNE WATER TREATMENT PLANT

The Colborne Drinking Water System (DWS) maintained compliance with all applicable legislation, and all terms and conditions of the Municipal Drinking Water License, Drinking Water Works Permit and Permit to Take Water in 2018.

On average 99.8% of the total volume of water from Well #1 and Well #2 is discharged to the distribution system for consumption. Appendix 5 details monthly takings from Well #1 and Well #2, as well as a monthly discharge report.

All chemicals and materials used in the operation of the drinking water system that came into contact with water met all applicable standards set by American Water Works Association (AWWA) and the American National Standard Institute (ANSI) safety criteria standards NSF/60, NSF/61 and NSF/372. Proof of compliance is attached in *Appendix 6*.

Flow measurement equipment required by LUSI to record the volume of water taken from the wells, and the volume discharged to the distribution system are calibrated on an annual basis. Calibration reports for the 2018 operating year are attached in *Appendix 7*. Other instrumentation, such as chlorine and turbidity analyzers, are calibrated in-house on a predetermined schedule based on the manufacturer's recommendations.

3.2 COLBORNE DISTRIBUTION SYSTEM

Best management practices were employed in the distribution system to ensure quality drinking water was provided to consumers. This included, but was not limited to the following activities:

- Annual Hydrant Flushing
- Watermain Break Repair 3 Repairs
- Response to Water Quality Complaints

In 2018, LUSI continued implementing programs in the distribution system from the previous operating year, including

 Remote application tools to collect system information in a real-time format, to enhance the asset management system

As of November 26, 2018, Colborne approved the installation of RF meters on all new builds and problem areas.

While LUSI strives to minimize reportable incidents, there *two notifications* submitted to the MECP as a result of an observation other than an adverse test result. Details of the incidents are outlined below:

Incident #1 - June 11, 2018

During the extension of a dead-end water main, a loss of positive pressure occurred during construction. There were three residential homes downstream of the failure, resulting in the Public Health Unit issued a boil water advisory. The watermain was repaired and flushed, a bacti sample (with HPC) was collected and results came back clear. The Public Health Unit rescinded the boil water advisory on June 19, 2018.

Incident #1 - August 9, 2018

During the connection of a newly commissioned watermain to an existing watermain, a construction error occurred allowing dirt/gravel to enter the watermain. The Public Health Unit issued a boil water advisory, flushing was completed and two consecutive bacti samples, with HPC, were taken. When the results of the tests came back clear the Public Health Unit rescinded the boil water advisory.

3.3 CONTINUAL IMPROVEMENT

LUSI's commitment to continual improvement requires investigating and investing in, where appropriate, methods and technologies to improve

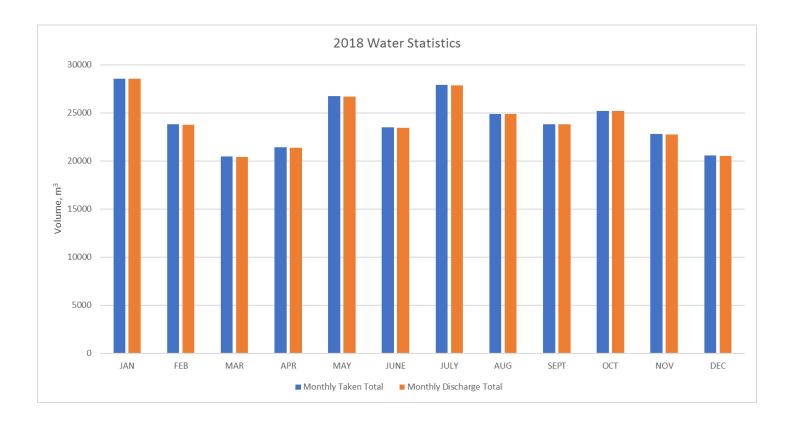
- The quality of processes used to ensure production of ample clean water, and
- The quality and effectiveness of the distribution system.

During the 2018 reporting year, LUSI demonstrated this commitment by completing all the activities listed in Table 1. Table 1 also satisfies O. Reg 170/03's requirement to describe major expenses occurred during the reporting period.

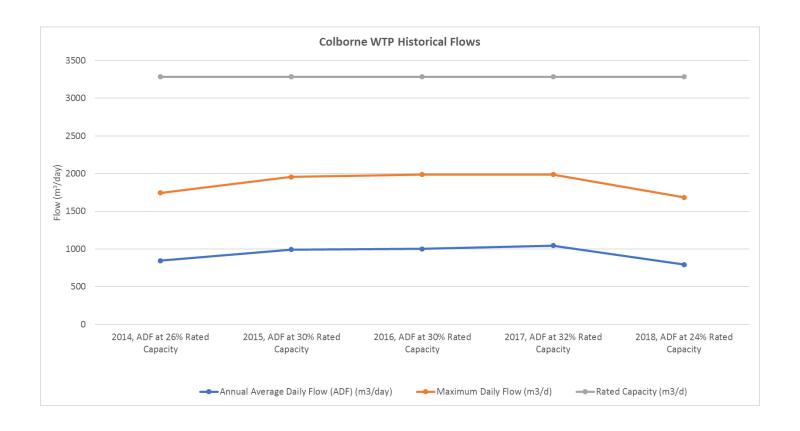
Table 1 - 2018 Colborne WTP and Distribution System			
Colborne	General Maintenance		
Water	Well #2 Flowmeter Replacement		
Treatment	Chlorine Injection Pump Replacement		
Plant			
Colborne	Elgin St South Watermain Replacement		
Distribution	Watermain Replacement on Park St, Burnham St and Cedar St		
System	Hydrant Flow Testing & NFPA Colour Coding		

3.4 PTTW COMPLIANCE

The Colborne Drinking Water System was issued the current Permit to Take Water July 6, 2012, No. 2363-8VMR6M, and is valid until June 30, 2022. The permit allows LUSI to take 3,283 m³ of water each well per day at a rate of 2,280 L/min. The 2018 Water Statistics graph below outlines the total monthly volumes taken from the wells. In 2018 there were no incidents related to surpassing the maximum volume of water permitted to take.



Historical flow rates at the Colborne WTP, illustrated below, indicate that the WTP has operated at 31% (average) of its rated capacity over the past 5 years.



3.5 SAMPLING AND ANALYSIS

The Colborne DWS exhibited compliance with all sampling and testing as required by Ontario Regulation 170/03 in the 2018 calendar year. *Appendix 8* outlines all microbiological sampling and testing conducted at the Colborne WTP and within the Colborne distribution system. All testing outlined in *Appendix 8* was conducted by SGS Canada Inc., a third-party laboratory, with zero notifications submitted as a result of a parameter exceeding its respective maximum acceptable concentration.

In addition to the microbiological sampling and testing requirements, sampling and testing is required for chemical, inorganic and organic parameters. *Appendix 8* tabulates the SGS Canada Inc. testing results of required in Schedule 13, 23 and 24 of O. Reg 170/03. All the parameters tested for are below the maximum acceptable concentration (MAC), with a large majority being below the method detection limit (MDL). A parameter below the method detection limit indicated by (<), cannot be detected as the concentration is lower than minimum concentration that can be measured and reported with 99% certainty.

Note: The MDL is always higher than the standard of a given parameter.

3.6 LEAD SAMPLING

Lead sampling was conducted as required by O. Reg 170/03 Schedule 15.1. In the 2018 reporting period the Colborne Drinking Water System conducted reduced sampling in sampling period 1, with plumbing relief granted in sampling period 2. A summary of the 2018 sampling periods is shown below,

PERIOD 1			
	Residential	Commercial	Distribution
# of Samples Taken	10	1	2
Concentration Range, μg/L	0.01 <mdl -="" 2.07<="" th=""><th>0.04 – 0.15</th><th>0.25 - 0.31</th></mdl>	0.04 – 0.15	0.25 - 0.31
PERIOD 2			
	Residential	Commercial	Distribution
# of Samples Taken	0	0	2
Concentration Range, μg/L	N/A	N/A	0.01 <mdl -="" 0.02<="" th=""></mdl>

^{*}The MAC for lead is 10µg/L

All samples taken in the 2018 reporting period were significantly lower than then MAC.

3.7 MECP INSPECTIONS

The Colborne Drinking Water System did not have an inspection in the 2018 operating year. An inspection is expected to be completed in the first quarter of 2019.

3.8 DRINKING WATER QUALITY MANAGEMENT SYSTEM CONFORMITY

The Drinking Water Quality Management System (DWQMS) is audited by a 3rd party auditor, NSF, in December of every operating year. In February 2018, NSF reissued accreditation for conformance with the Drinking Water Quality Management Standard.

The 2018 annual audit was conducted in December and is done to ensure continual conformity to the Drinking Water Quality Management Standard. The final audit report identified three minor non-conformities, see *Appendix 9*. Corrective actions shall be implemented for the non-conformities during the 2019 operating year.

4. CONCLUSION

The Colborne DWS was operated in compliance with the terms and conditions of the Drinking Water Works Permit, Municipal Drinking Water License, Permit to Take Water and all other applicable regulations.

Based on all assessments of the DWS, LUSI is confident the water system shall continue to provide quality drinking water to all consumers.

As per the terms and conditions of Ontario Regulation 170/03, Schedule 22, this 2018 Summary Report is duly signed and submitted to the Mayor and Council of the Township of Cramahe.

Larry Spyrka

Manager of Water Systems

Lakefront Utility Services Inc.

APPENDIX 1

Drinking Water Works Permit



DRINKING WATER WORKS PERMIT

Permit Number: 138-201 Issue Number: 2

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this drinking water works permit is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Cramahe

1 Toronto St., P.O. Box 357 Colborne ON K0K 1S0

For the following municipal residential drinking water system:

COLBORNE DRINKING WATER SYSTEM

Description

This drinking water works permit includes the following:

Combadio	2000 11ptt011
Schedule A	Drinking Water System Description
Schedule B	General
Schedule C	All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system
Schedule D	Process Flow Diagrams

DATED at TORONTO this 23rd day of June, 2016

Signature

Aziz Ahmed, P.Eng.

Director

Part V, Safe Drinking Water Act, 2002

Hhned

Schedule

Schedule A: Drinking Water System Description

System Owner	The Corporation of the Township of Cramahe
Permit Number	138-201
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule A Issue Date	June 23, 2016

1.0 System Description

1.1 The following is a summary description of the works comprising the above drinking water system:

Overview

The **COLBORNE DRINKING WATER SYSTEM** consists of two (2) wells (production and standby), two (2) pumphouses with one (1) treatment facility, one (1) storage reservoirs and approximately 27 kilometers of distribution watermains.

Ground Water Supply

Well No. 1 (standby well)

Description	150 mm dia., 71.3 m deep drilled well
Location	NAD 83: UTM Zone 18, 268564.00 m E., 4878563.00 m N.
Well Pump	Submersible well pump rated at 13.2 L/s at a TDH of 83.3 m
Notes	Located within Well Pumphouse No. 1 Building

Well No. 2 (production well)

Description	500 mm dia., 72.5 m deep drilled well
Location	NAD 83: UTM Zone 18, 268550.00 m E., 4878536.00 m N.
Well Pump	Vertical Turbine well pump with variable frequency drive rated at 38.0 L/s at a TDH of 91.5 m
Notes	Located within Well Pumphouse No. 2 Building

Well Pumphouse No.1

Street Address	321 Purdy Road
UTM Coordinates	NAD 83: UTM Zone 18, 268564.00 m E., 4878563.00 m N.
System Type	Groundwater with disinfection
Notes	Building is approximately 6.0 m X 6.7 m and houses iron sequestering and disinfection facilities

Well Pumphouse No.2

Street Address	321 Purdy Road
UTM Coordinates	NAD 83: UTM Zone 18, 268550.00 m E., 4878536.00 m N.
System Type	Groundwater
Notes	Building is approximately 4.6 m X 3.0 m

Chemical Addition

Sodium Hypochlorite

Description	A primary disinfection system
Equipment	Well Pumphouse No 1. – two (2) (duty and standby) metering pumps each capable of delivering at a rate of 6.0 L/hr and two (2) 115 L chemical solution tanks
Feed Points	Well No. 1 & No 2 pump common discharge header
Notes	Continuous chlorine analyzer sampling from sample line at end of chlorine contact pipe

Sodium Silicate

Description	An iron sequestering system
Equipment	Well Pumphouse No 1. – two (2) (duty and standby) metering pumps each capable of delivering at a rate of 6.0 L/hr and one (1) 115 L chemical solution tank
Feed Points	Well No. 1 & No. 2 well pump common discharge header
Notes	

Chlorine Contact

Storage Reservoir

Description	Oversized pipe located east of Well Pumphouse No. 1
Dimensions	215 m long 450 mm diameter pipe
Notes	Contact pipe positioned underground between the 200 mm diameter well pump common discharge header and the 250 mm diameter drinking water feedermain

Instrumentation and Control

Control System

Description	One Programmable Logic Controller (PLC) with data recording device	
Notes		

Storage Reservoir

Colborne Treated Water Storage Tank

Location	220 Herley Road, Colborne
UTM Coordinates	NAD 83: UTM Zone 18, 265250.00 m E., 4878750.00 m N.
Description	Standpipe with total storage volume of 2,342 m³ and useable volume of 2,282 m³
Dimensions	16.0 m diameter and 11.7 m height
Notes	

Watermains

- **1.2** Watermains within the distribution system comprise:
 - 1.2.1 Watermains that have been set out in each document or file identified in column 1 of Table 1.

Table 1: Watermains		
Column 1	Column 2	
Document or File Name	Date	
Colborne Water System	May 2016	

- 1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
- 1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

Schedule B: General

System Owner	The Corporation of the Township of Cramahe
Permit Number	138-201
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule B Issue Date	June 23, 2016

1.0 Applicability

- 1.1 In addition to any other requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence.
- **1.2** The definitions and conditions of the licence shall also apply to this drinking water works permit.

2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director as a Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance, where applicable, with the conditions of this drinking water works permit and the licence.
- 2.2 All Schedule C documents issued by the Director for the drinking water system shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water which are:
 - 2.3.1 Added, modified, replaced, extended; or
 - 2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination.

shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

- a) The ministry's Watermain Disinfection Procedure, effective December 23, 2016;
- b) AWWA C652 Standard for Disinfection of Water-Storage Facilities;
- c) AWWA C653 Standard for Disinfection of Water Treatment Plants; and
- d) AWWA C654 Standard for Disinfection of Wells.
- 2.4 The owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement or extension of the drinking water system which had been authorized through:
 - 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;

150526 Treatment&Distribution

- 2.4.2 Any Schedule C to this drinking water works permit respecting works other than watermains; or
- 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
 - 2.5.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
 - 2.5.2 Constitutes maintenance or repair of the drinking water system; or
 - 2.5.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.6 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.7 For greater certainty, any alteration to the drinking water system made in accordance with this drinking water works permit may only be carried out after other legal obligations have been complied with including those arising from the *Environmental Assessment Act*, Niagara Escarpment Planning and Development Act, Oak Ridges Moraine Conservation Act, 2001 and Greenbelt Act, 2005.

3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The drinking water system may be altered by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
 - 3.1.1 The design of the watermain addition, modification, replacement or extension:
 - a) Has been prepared by a Professional Engineer;
 - b) Has been designed only to transmit water and has not been designed to treat water:
 - c) Satisfies the design criteria set out in the Ministry of the Environment and Climate Change publication "Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012", as amended from time to time; and
 - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry of the Environment and Climate Change publication "Design Guidelines for Drinking Water Systems, 2008", as amended from time to time.

- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system's ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
- 3.1.7 A Professional Engineer has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
 - 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used:
 - 3.2.2 Has a nominal diameter greater than 750 mm;
 - 3.2.3 Results in the fragmentation of the drinking water system; or
 - 3.2.4 Connects to another drinking water system, unless:
 - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner's delegate of the drinking water system being connected to; and
 - b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.

- **3.3** The verifications required in conditions 3.1.7 and 3.1.8 shall be:
 - 3.3.1 Recorded on "Form 1 Record of Watermains Authorized as a Future Alteration", as published by the Ministry of the Environment and Climate Change, prior to the watermain addition, modification, replacement or extension being placed into service; and
 - 3.3.2 Retained for a period of ten (10) years by the owner.
- **3.4** For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
 - 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.

4.0 Minor Modifications to the Drinking Water System

- The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
 - 4.1.1 Raw water pumps and treatment process pumps in the treatment system;
 - 4.1.2 Coagulant feed systems in the treatment system, including the location and number of dosing points;
 - 4.1.3 Valves:
 - 4.1.4 Instrumentation and controls, including SCADA systems, and software associated with these devices;
 - 4.1.5 Filter media, backwashing equipment and under-drains in the treatment system; or.
 - 4.1.6 Spill containment works.
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
 - 4.2.1 Treated water pumps and associated equipment;
 - 4.2.2 Re-circulation devices within distribution system storage facilities;

138-201 Schedule B June 23, 2016

- 4.2.3 In-line mixing equipment;
- 4.2.4 Chemical metering pumps and chemical handling pumps;
- 4.2.5 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,
- 4.2.6 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry of the Environment and Climate Change.
- **4.3** The drinking water system may be altered by replacing the following:
 - 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
 - 4.3.2 Fuel storage tanks and spill containment works, and associated equipment; or
 - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;
 - a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
 - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
 - 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
 - 4.4.2 The bypassing of any unit process within a treatment subsystem;
 - 4.4.3 A deterioration in the quality of drinking water provided to consumers;
 - 4.4.4 A reduction in the reliability or redundancy of any component of the drinking water system;
 - 4.4.5 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
 - 4.4.6 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.

- **4.6** The verifications and documentation required in condition 4.5 shall be:
 - 4.6.1 Recorded on "Form 2 Record of Minor Modifications or Replacements to the Drinking Water System", as published by the Ministry of the Environment and Climate Change, prior to the modified or replaced components being placed into service; and
 - 4.6.2 Retained for a period of ten (10) years by the owner.
- **4.7** For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
 - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 4.7.2 Constitutes maintenance or repair of the drinking water system.
- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the atmosphere:
 - 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
 - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
 - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
 - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
 - 5.1.5 Maintenance welding stations;
 - 5.1.6 Minor painting operations used for maintenance purposes;
 - 5.1.7 Parts washers for maintenance shops;
 - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
 - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
 - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
 - 5.1.11 Venting for an ozone treatment unit;

- 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
- 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not add, modify or replace a drinking water system component set out in condition 5.1 for an activity that is not directly related to the treatment and/or distribution of drinking water.
- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for nonemergency purposes including the generation of electricity for sale or for peak shaving purposes.
- 5.4 The owner shall prepare an emission summary table for nitrogen oxide emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.13.

Performance Limits

- The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
 - 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
 - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive populations shall not exceed the applicable point of impingement limit, and at non-sensitive populations shall not exceed the Ministry of the Environment and Climate Change half-hourly screening level of 1880 ug/m³ as amended; and
 - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.
- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
 - 5.8.1 Recorded on "Form 3 Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere", as published by the Ministry of the Environment and Climate Change, prior to the additional, modified or replacement equipment being placed into service; and

- 5.8.2 Retained for a period of ten (10) years by the owner.
- **5.9** For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
 - 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
 - 5.9.2 Constitutes maintenance or repair of the drinking water system.
- **5.10** The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

6.0 Previously Approved Works

- **6.1** The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
 - 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
 - 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
 - 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

7.0 System-Specific Conditions

Not Applicable

8.0 Source Protection

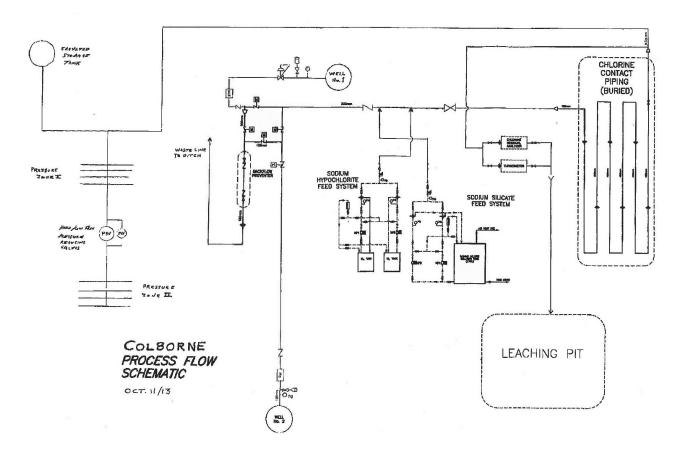
Not Applicable

Schedule D: Process Flow Diagrams

System Owner	The Corporation of the Township of Cramahe	
Permit Number	138-201	
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM	
Schedule D Issue Date	June 23, 2016	

1.0 Process Flow Diagrams

Colborne Drinking Water System



[Source: Operational Plan, Revision 8, November 12, 2015]

APPENDIX 2

Municipal Drinking Water License



MUNICIPAL DRINKING WATER LICENCE

Licence Number: 138-101 Issue Number: 2

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

The Corporation of the Township of Cramahe

1 Toronto St., P.O. Box 357 Colborne ON K0K 1S0

For the following municipal residential drinking water system:

COLBORNE DRINKING WATER SYSTEM

This municipal drinking water licence includes the following:

Schedule	Description
Schedule A	Drinking Water System Information
Schedule B	General Conditions
Schedule C	System-Specific Conditions
Schedule D	Conditions for Relief from Regulatory Requirements
Schedule E	Pathogen Log Removal/Inactivation Credits

DATED at TORONTO this 23rd day of June, 2016

Signature

Aziz Ahmed, P.Eng.

Director

Part V, Safe Drinking Water Act, 2002

Thread

Schedule A: Drinking Water System Information

System Owner	The Corporation of the Township of Cramahe	
Licence Number	138-101	
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM	
Schedule A Issue Date	June 23, 2016	

The following information is applicable to the above drinking water system and forms part of this licence:

Licence

Licence Issue Date	June 23, 2016
Licence Expiry Date	June 22, 2021
Application for Licence Renewal Date	December 22, 2020

Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
COLBORNE DRINKING WATER SYSTEM	138-201	June 23, 2016

Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Well No. 1 & Well No 2	2363-8VMR6M	July 6, 2012

Financial Plans

The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be:	138-301
Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:	138-301A

Accredited Operating Authority

Drinking Water System or Operational Subsystems	Accredited Operating Authority	Operational Plan No.	Operating Authority No.
Colborne Drinking Water System	Lakefront Utility Services Inc.	138-401	138-OA1

150526 Treatment&Distribution AF2, EA2, DWWP2, OS Page 2 of 17

Schedule B: General Conditions

System Owner	The Corporation of the Township of Cramahe
Licence Number	138-101
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule B Issue Date	June 23, 2016

1.0 Definitions

- 1.1 Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.
- 1.2 In this licence and the associated drinking water works permit:

"adverse effect", "contaminant" and "natural environment" shall have the same meanings as in the EPA;

"alteration" may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

"compound of concern" means a contaminant that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

"Director" means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

"drinking water works permit" means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"emission summary table" means the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

"EPA" means the Environmental Protection Act, R.S.O. 1990, c. E.19;

"financial plan" means the financial plan required by O. Reg. 453/07;

"licence" means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

"operational plan" means an operational plan developed in accordance with the Director's Directions - Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

"owner" means the owner of the drinking water system as identified in Schedule A of this licence:

"permit to take water" means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

"point of impingement" means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

"point of impingement limit" means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment and Climate Change publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended;

"procedure document" means the Ministry of the Environment and Climate Change procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated July 2005, as amended;

"Professional Engineer" means a Professional Engineer who has been licenced to practice in the Province of Ontario;

"provincial officer" means a provincial officer appointed pursuant to section 8 of the SDWA:

"publication NPC-300" means the Ministry of the Environment and Climate Change publication titled "Environmental Noise Guideline: Stationary and Transportation Sources Approval and Planning" dated August 2013, as amended;

"**SDWA**" means the *Safe Drinking Water* Act, 2002, S.O. 2002, c. 32;

"sensitive populations" means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generators shall be considered using the point of impingement limit instead of the Ministry of the Environment and Climate Change screening level for emergency generators:

- (a) health care units (e.g., hospitals and nursing homes),
- (b) primary/junior public schools,
- (c) day-care facilities, and
- (d) playgrounds;

"subsystem" has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts);

"surface water" means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

2.0 Applicability

2.1 In addition to any other requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

3.0 Licence Expiry

3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

4.0 Licence Renewal

4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

5.0 Compliance

5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

6.0 Licence and Drinking Water Works Permit Availability

6.1 At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

7.0 Permit to Take Water and Drinking Water Works Permit

- **7.1** A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.
- 7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.

8.0 Financial Plan

- **8.1** For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
 - 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
 - 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

9.0 Interpretation

- **9.1** Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
 - 9.1.1 The SDWA;
 - 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
 - 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
 - 9.1.4 Any regulation made under the SDWA;
 - 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
 - 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
 - 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and
 - 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.2 If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.

- **9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
 - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
 - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry of the Environment and Climate Change to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- **9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

10.0 Adverse Effects

- **10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
 - 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
 - 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- **10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

11.0 Change of Owner or Operating Authority

- 11.1 This licence is not transferable without the prior written consent of the Director.
- 11.2 The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
 - 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

12.0 Information to be Provided

Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

13.0 Records Retention

13.1 Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

14.0 Chemicals and Materials

- All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
 - 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
 - 14.1.2 The requirement for the owner to comply with NSF/372 shall come into force no later than June 23, 2018.
- 14.2 The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- **14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
 - 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
 - 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;
 - 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
 - 14.3.4 Gaskets that are made from NSF approved materials;
 - 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use; or

14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment and Climate Change is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the substantial completion of the alteration.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

16.0 Operations and Maintenance Manual

- An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference by all persons responsible for all or part of the operation or maintenance of the drinking water system.
- **16.2** The operations and maintenance manual or manuals, shall include at a minimum:
 - 16.2.1 The requirements of this licence and associated procedures;
 - 16.2.2 The requirements of the drinking water works permit for the drinking water system;
 - 16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system, including where applicable:
 - a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions; and
 - b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
 - 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;

- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.2.8 An inspection schedule for all wells associated with the drinking water system, including all production wells, standby wells, test wells and monitoring wells;
- 16.2.9 Well inspection and maintenance procedures for the entire well structure of each well including all above and below grade well components; and
- 16.2.10 Remedial action plans for situations where an inspection indicates noncompliance with respect to regulatory requirements and/or risk to raw well water quality.
- 16.3 Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- **16.4** The requirement for the owner to comply with condition 16.2.3 shall come into force on December 23, 2016.

Schedule C: System-Specific Conditions

System Owner	The Corporation of the Township of Cramahe
Licence Number	138-101
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule C Issue Date	June 23, 2016

1.0 System Performance

Rated Capacity

1.1 For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

Table 1: Rated Capacity				
Column 1	Column 2			
Treatment Subsystem Name	Rated Capacity (m³/day)			
Colborne Water Treatment Plant	3,283			

Maximum Flow Rates

1.2 For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

Table 2: Maximum Flow Rates			
Column 1 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 Maximum Flow Rate (L/s)	
Not Applicable	Not Applicable	Not Applicable	

- 1.3 Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4 Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

Residue Management

- 1.5 In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
 - 1.5.1 The annual average concentration of a test parameter identified in column 2 shall not exceed the value in column 3 of the same row; and
 - 1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

	Table 3: Residue M	anagement	
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Not Applicable	Not Applicable	Not Applicable	Not Applicable

UV Disinfection Equipment Performance

- 1.6 For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system:
 - 1.6.1 The UV disinfection equipment shall be operated such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row at the maximum design flow rate for the equipment;
 - 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;
 - 1.6.3 If there is a UV disinfection equipment alarm, the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
 - 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

138-101 Schedule C June 23, 2016

	Table 4: UV Disinfect	ion Equipment	
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Minimum Continuous Pass-Through UV Dose (mJ/cm²)	Column 3 Control Strategy	Column 4 Test Parameter
Not Applicable	Not Applicable	Not Applicable	Not Applicable

2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
 - 2.1.1 The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system.
 - 2.1.2 The flow rate and daily volume of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
- 2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
 - 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
 - 2.3.2 The time and date of the measurement;
 - 2.3.3 The reason for the exceedance; and
 - 2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

3.0 Calibration of Flow Measuring Devices

3.1 All flow measuring devices that are required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry of the Environment and Climate Change, shall be checked and calibrated in accordance with the manufacturer's instructions.

- 3.2 If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and calibrated at least once every 12 months during which the drinking water system is in operation.
 - 3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

4.0 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

Table 5: Drinking Water Health Related Parameters				
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	ent Subsystem or Test Parameter nent Subsystem		Column 4 Monitoring Location	
Not Applicable	Not Applicable	Not Applicable	Not Applicable	

Table 6: Drinking Water Non-Health Related Parameters				
Column 1 Treatment Subsystem or Treatment Subsystem Component Name	nent Subsystem or Test Parameter tment Subsystem		Column 4 Monitoring Location	
Not Applicable	Not Applicable	Not Applicable	Not Applicable	

Environmental Discharge Parameters

- 4.2 For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.
- **4.3** For the purposes of Table 7:
 - 4.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately

- at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and
- 4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.
- 4.4 Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters					
Column 1 Column 2 Treatment Subsystem or Treatment Subsystem Component Name		Column 3 Sample Type Sampling Frequency		Column 5 Monitoring Location	
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	

- **4.5** Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:
 - 4.5.1 The discharge of potable water from a watermain to a road or storm sewer;
 - 4.5.2 The discharge of potable water from a water storage facility or pumping station:
 - 4.5.2.1 To a road or storm sewer; or
 - 4.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.
 - 4.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;
 - 4.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and
 - 4.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.0 Studies Required

5.1 Not Applicable

6.0 Source Protection

6.1 Not Applicable

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	The Corporation of the Township of Cramahe
Licence Number	138-101
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule D Issue Date	June 23, 2016

1.0 **Lead Regulatory Relief**

1.1 Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

Other Regulatory Relief 2.0

Not applicable

150526 Treatment&Distribution AF2, EA2, DWWP2, OS Page 16 of 17

Schedule E: Pathogen Log Removal/Inactivation Credits

System Owner	The Corporation of the Township of Cramahe
Licence Number	138-101
Drinking Water System Name	COLBORNE DRINKING WATER SYSTEM
Schedule E Issue Date	June 23, 2016

Primary Disinfection Pathogen Log Removal/Inactivation Credits 1.0

Well Pumphouse No.1

Well No.1, Well No.2 [GROUNDWATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Well Pumphouse No.1	0	0	2

Log Removal/Inactivation Credits Assigned ^a	Cryptosporidium Oocysts	Giardia Cysts	Viruses
Chlorination [CT:215 m length,	-	-	2+
450 mm diameter Chlorine Contact Pipe]			

Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

Treatment Component	Log Removal/Inactivation Credit Assignment Criteria	
Chlorination	 Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned. 	
Primary Disinfection Notes		

AF2, EA2, DWWP2, OS 150526 Treatment&Distribution Page 17 of 17

APPENDIX 3

Permit to Take Water



PERMIT TO TAKE WATER

Ground Water NUMBER 2363-8VMR6M

Pursuant to Section 34 of the <u>Ontario Water Resources Act</u>, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Township of Cramahe 1 Toronto Street Colborne, Ontario K0K 1S0

For the water

taking from: Well 1 (Standby Well), Well 2 (Production Well)

Located at: Lot 30, Concession 2, Geographic Township of Cramahe

Cramahe, County of Northumberland

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Peterborough District Office.
- (e) "Permit" means this Permit to Take Water No. 2363-8VMR6M including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Township of Cramahe.
- (g) "OWRA" means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated February 17, 2012 and signed by Christie Alexander, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or
- (b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 **Expiry**

This Permit expires on **June 30, 2022**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:		Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Well 1 (Standby Well)	Well Drilled	Municipal	Water Supply	2,280	24	3,283,200	365	18 268551 4878553
2	Well 2 (Production Well)	Well Drilled	Municipal	Water Supply	2,280	24	3,283,200	365	18 268550 4878530
						Total Taking:	6,566,400		

4. Monitoring

- 4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. A separate record shall be maintained for each source. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request.
- 4.2 The total amounts of water pumped shall be measured using a calibrated flow meter and totalizer.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Groundwater Takings

If the taking of water is observed to cause any negative impact to other water supplies obtained from any adequate sources that were in use prior to initial issuance of a Permit for this water taking, the Permit Holder shall take such action necessary to make available to those affected, a supply of water equivalent in quantity and quality to their normal takings, or shall compensate such persons for their reasonable costs of so doing, or shall reduce the rate and amount of taking to prevent or alleviate the observed negative impact. Pending permanent restoration of the affected supplies, the Permit Holder shall provide, to those affected, temporary water supplies adequate to meet their normal requirements, or shall compensate such persons for their reasonable costs of doing so.

If permanent interference is caused by the water taking, the Permit Holder shall restore the water supplies of those permanently affected.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

- 1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
- 2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
- 3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written notice served upon me, the Environmental Review Tribunal and the Environmental Commissioner, Environmental Bill of Rights, R.S.O. 1993, Chapter 28, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 101 of the Ontario Water Resources Act, as amended provides that the Notice requiring a hearing shall state:

- The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
- The grounds on which you intend to rely at the hearing in relation to each portion appealed. 2.

In addition to these legal requirements, the Notice should also include:

- The name of the appellant; 3.
- 4. The address of the appellant;
- 5. The Permit to Take Water number:
- 6. The date of the Permit to Take Water;
- 7. The name of the Director:
- 8. The municipality within which the works are located;

<u>AND</u>

This notice must be served upon:

The Secretary Environmental Review Tribunal 655 Bay Street, 15th Floor Toronto ON M5G 1E5 Fax: (416) 314-4506

Email:

ERTTribunalsecretary@ontario.ca

The Environmental Commissioner 1075 Bay Street 6th Floor, Suite 605 Toronto, Ontario M5S 2W5

The Director, Section 34 Ministry of the Environment 1259 Gardiners Rd, PO Box 22032 Kingston, ON K7P 3J6

AND

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

This instrument is subject to Section 38 of the Environmental Bill of Rights that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek to appeal for 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry, you can determine when the leave to appeal period ends.

Dated at Kingston this 6th day of July, 2012.

eter Tayla

Peter Taylor

Director, Section 34

Ontario Water Resources Act, R.S.O. 1990

Schedule A

This Schedule "A" forms part of Permit To Take Water 2363-8VMR6M, dated July 6, 2012.

APPENDIX 4

2018 Annual Report

COLBORNE DRINKING WATER SYSTEM ANNUAL REPORT

Drinking-Water System Number: Drinking-Water System Name: Drinking-Water System Owner: Drinking-Water System Category: Period being reported: 220000790
Colborne Drinking Water System
Corporation of The Township of Cramahe
Large Municipal Residential
January 1, 2018 to December 31, 2018

Complete if your Category is Large Municipal Residential or Small Municipal Residential	Complete for all other Categories.
Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]	Number of Designated Facilities served:
Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []	Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	Number of Interested Authorities you report to: Did you provide a copy of your annual report
Lakefront Utility Services Inc. Office 207 Division St., Cobourg Ontario	to all Interested Authorities you report to for each Designated Facility? Yes [] No []
https://www.lakefrontutilities.on.ca/regul atory/water/	

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		
N/A	N/A		

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.

···O-··
[] Public access/notice via the web
[X] Public access/notice via Government Office
[] Public access/notice via a newspaper
[X] 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 Colborne Well Supply delivers water to approximately 2000 residents. Water is taken from 2 wells located at the water plant on Purdy Road. The water is disinfected with sodium hypochlorite, and sodium silicate is added to sequester iron. After meeting the required contact time, the treated water reaches the distribution system, satisfying consumer demand and refilling the water tower located at the top end of the system north of Hwy. 401. A pressure sensor at the water tower determines the tower's water level and turns the well pumps on and off as required.

List all water treatment chemicals used over this reporting period

	 • .
Sodium Hypochlorite	
Sodium Silicate	

Were any significant expenses incurred to?

- [] Install required equipment
- [X] Repair required equipment
- [X] Replace required equipment

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

PROJECT	ESTIMATED COST
Elgin St South Watermain Extension	\$105,000
Watermain Replacement on Park St, Burnham St and Cedar St	\$810,000
Well #2 Flowmeter Replacement at Colborne WTP	\$4,000
Chlorine Injection Pump Replacement at Colborne WTP	\$12,600

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 #1 – June 11, 2018

During the extension of a dead-end water main, a loss of positive pressure occurred during construction. There were three residential homes downstream of the failure, resulting in the Public Health Unit issued a boil water advisory. The watermain was repaired and flushed, a bacti sample (with HPC) was collected and results came back clear. The Public Health Unit rescinded the boil water advisory on June 19, 2018.

Incident #2 - August 9, 2018

During the connection of a newly commissioned watermain to an existing watermain, a construction error occurred allowing dirt/gravel to enter the watermain. The Public Health Unit issued a boil water advisory, flushing was completed and two consecutive bacti samples, with HPC, were taken. When the results of the tests came back clear the Public Health Unit rescinded the boil water advisory.

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	104	0 - 0	0-0	N/A	N/A
Treated	52	0 - 0	0-0	52	0-3
Distribution	156	0 - 0	0-0	104	0 – 14

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 (Treated)	12	0.08 – 0.58 NTU
Turbidity (Raw)	12	0.04 – 0.89 NTU
Chlorine	8760	0.00 – 5.00 mg/L

Note: 0.50 mg/L chlorine shuts the plant down and chlorine residual restored as per MOECC approved procedure. The numbers shown in the range represent instantaneous events in the system caused by power flickers, calibrations, and other operational anomalies. These numbers are not representative of normal operating conditions.

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
		N/A		



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

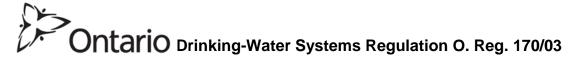
Note: These samples are required once every three years for the Colborne Water System. They are due to be sampled again in 2019. Sodium and Fluoride are sampled every 5 years.

Parameter	Result Value	Standard	Unit of Measure	Exceedance	Sample Date
Antimony	0.02 <mdl< td=""><td>6</td><td>ug/l</td><td>NO</td><td>5-Jan-2016</td></mdl<>	6	ug/l	NO	5-Jan-2016
Arsenic	.08	25	ug/l	NO	5-Jan-2016
Barium	141	1000	ug/l	NO	5-Jan-2016
Boron	8.1	5000	ug/l	NO	5-Jan-2016
Cadmium	0.003	5	ug/l	NO	5-Jan-2016
Chromium	0.30	50	ug/l	NO	5-Jan-2016
Mercury	0.01 < MDL	1	ug/l	NO	5-Jan-2016
Selenium	0.09	10	ug/l	NO	5-Jan-2016
Uranium	3.49	20	ug/l	NO	5-Jan-2016
Nitrite	<0.003	1.0	mg/l	NO	19-Nov-2018
Nitrate	1.48	10	mg/l	NO	13-Nov-2018
Sodium	6.86	20.0	mg/l	NO	26-Jan-2015
Fluoride	0.08	1.5	mg/l	NO	26-Jan-2015

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	11	0.01 <mdl -="" 2.07="" l<="" th="" ug=""><th>0</th></mdl>	0
Distribution	4	0.01 <mdl -="" 0.31="" l<="" th="" ug=""><th>0</th></mdl>	0



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

Note: These samples are required once every three years for the Colborne Water System. They are due to be sampled again in 2019.

Parameter	Sample Date	Result Value	Standard	Unit of Measure	Exceedance
Benzene [ug/L]	5-Jan-2016	0.32 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Carbon tetrachloride [ug/L]	5-Jan-2016	0.16 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
2-Dichlorobenzene [ug/L]	5-Jan-2016	0.41 <mdl< td=""><td>200</td><td>ug/l</td><td>NO</td></mdl<>	200	ug/l	NO
4-Dichlorobenzene [ug/L]	5-Jan-2016	0.36 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
1-Dichloroethylene (vinylidene chloride) [ug/L]	5-Jan-2016	0.33 <mdl< td=""><td>14</td><td>ug/l</td><td>NO</td></mdl<>	14	ug/l	NO
2-Dichloroethane [ug/L]	5-Jan-2016	0.35 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Dichloromethane [ug/L]	5-Jan-2016	0.35 <mdl< td=""><td>50</td><td>ug/l</td><td>NO</td></mdl<>	50	ug/l	NO
Monochlorobenzene `[ug/L]	5-Jan-2016	0.3 <mdl< td=""><td>80</td><td>ug/l</td><td>NO</td></mdl<>	80	ug/l	NO
Tetrachloroethylene (perchloroethylene) [ug/L]	5-Jan-2016	0.35 <mdl< td=""><td>30</td><td>ug/l</td><td>NO</td></mdl<>	30	ug/l	NO
Trichloroethylene [ug/L]	5-Jan-2016	0.44 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Vinyl Chloride [ug/L]	5-Jan-2016	0.17 <mdl< td=""><td>2</td><td>ug/l</td><td>NO</td></mdl<>	2	ug/l	NO
Diquat [ug/L]	5-Jan-2016	1 <mdl< td=""><td>70</td><td>ug/l</td><td>NO</td></mdl<>	70	ug/l	NO
Paraquat [ug/L]	5-Jan-2016	1 <mdl< td=""><td>10</td><td>ug/l</td><td>NO</td></mdl<>	10	ug/l	NO
Glyphosate [ug/L]	5-Jan-2016	1 <mdl< td=""><td>280</td><td>ug/l</td><td>NO</td></mdl<>	280	ug/l	NO
Polychlorinated Biphenyls (PCBs) - Total [ug/L]	5-Jan-2016	0.04 <mdl< td=""><td>3</td><td>ug/l</td><td>NO</td></mdl<>	3	ug/l	NO
Benzo(a)pyrene [ug/L]	5-Jan-2016	0.004 <mdl< td=""><td>0.01</td><td>ug/l</td><td>NO</td></mdl<>	0.01	ug/l	NO
Alachlor [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Atrazine + N-dealkylated metabolites [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Atrazine [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>-</td><td>ug/l</td><td>NO</td></mdl<>	-	ug/l	NO
Desethyl atrazine [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>-</td><td>ug/l</td><td>NO</td></mdl<>	-	ug/l	NO
Azinphos-methyl [ug/L]	5-Jan-2016	0.05 <mdl< td=""><td>20</td><td>ug/l</td><td>NO</td></mdl<>	20	ug/l	NO
Carbaryl [ug/L]	5-Jan-2016	0.05 <mdl< td=""><td>90</td><td>ug/l</td><td>NO</td></mdl<>	90	ug/l	NO
Carbofuran [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>90</td><td>ug/l</td><td>NO</td></mdl<>	90	ug/l	NO
Chlorpyrifos [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>90</td><td>ug/l</td><td>NO</td></mdl<>	90	ug/l	NO
Diazinon [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>20</td><td>ug/l</td><td>NO</td></mdl<>	20	ug/l	NO
Dimethoate [ug/L]	5-Jan-2016	0.03 <mdl< td=""><td>20</td><td>ug/l</td><td>NO</td></mdl<>	20	ug/l	NO
Diuron [ug/L]	5-Jan-2016	0.03 <mdl< td=""><td>150</td><td>ug/l</td><td>NO</td></mdl<>	150	ug/l	NO
Malathion [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>190</td><td>ug/l</td><td>NO</td></mdl<>	190	ug/l	NO
Metolachlor [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>50</td><td>ug/l</td><td>NO</td></mdl<>	50	ug/l	NO
Metribuzin [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>80</td><td>ug/l</td><td>NO</td></mdl<>	80	ug/l	NO
Phorate [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>2</td><td>ug/l</td><td>NO</td></mdl<>	2	ug/l	NO
Prometryne [ug/L]	5-Jan-2016	0.03 <mdl< td=""><td>1</td><td>ug/l</td><td>NO</td></mdl<>	1	ug/l	NO
Simazine [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>10</td><td>ug/l</td><td>NO</td></mdl<>	10	ug/l	NO
Terbufos [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>1</td><td>ug/l</td><td>NO</td></mdl<>	1	ug/l	NO
Triallate [ug/L]	5-Jan-2016	0.01 <mdl< td=""><td>230</td><td>ug/l</td><td>NO</td></mdl<>	230	ug/l	NO
Trifluralin [ug/L]	5-Jan-2016	0.02 <mdl< td=""><td>45</td><td>ug/l</td><td>NO</td></mdl<>	45	ug/l	NO
4-dichlorophenoxyacetic acid (24-D) [ug/L]	5-Jan-2016	0.19 <mdl< td=""><td>100</td><td>ug/l</td><td>NO</td></mdl<>	100	ug/l	NO
Bromoxynil [ug/L]	5-Jan-2016	0.33 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
Dicamba [ug/L]	5-Jan-2016	0.20 <mdl< td=""><td>120</td><td>ug/l</td><td>NO</td></mdl<>	120	ug/l	NO
Diclofop-methyl [ug/L]	5-Jan-2016	0.40 <mdl< td=""><td>9</td><td>ug/l</td><td>NO</td></mdl<>	9	ug/l	NO
MCPA [mg/L]	5-Jan-2016	0.00012 <mdl< td=""><td>_</td><td>ug/l</td><td>NO</td></mdl<>	_	ug/l	NO
Picloram [ug/L]	5-Jan-2016	1 <mdl< td=""><td>190</td><td>ug/l</td><td>NO</td></mdl<>	190	ug/l	NO



4-dichlorophenol [ug/L]	5-Jan-2016	0.15 <mdl< th=""><th>900</th><th>ug/l</th><th>NO</th></mdl<>	900	ug/l	NO
6-trichlorophenol [ug/L]	5-Jan-2016	0.25 <mdl< td=""><td>5</td><td>ug/l</td><td>NO</td></mdl<>	5	ug/l	NO
6-tetrachlorophenol [ug/L]	5-Jan-2016	0.20 <mdl< td=""><td>100</td><td>ug/l</td><td>NO</td></mdl<>	100	ug/l	NO
Pentachlorophenol [ug/L]	5-Jan-2016	0.15 <mdl< td=""><td>60</td><td>ug/l</td><td>NO</td></mdl<>	60	ug/l	NO
THM: Annual Average	19-Nov-2018	3.82	100	ug/l	NO
HAA: Annual Average	19-Nov-2018	5.3 <mdl< td=""><td>80</td><td>ug/l</td><td>NO</td></mdl<>	80	ug/l	NO

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
N/A			

APPENDIX 5

2018 Water Taking and Consumption Data

Colborne Water Treatment Plant - Daily Water Takings

PTTW No. 2363-8VMR6M 2018



JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Date Well #1 Well #2	Date Well #1 Well #2	Date Well #1 Well #2	Date Well #1 Well #2	Date Well #1 Well #2	Date Well #1 Well #2
1 800.6	1 828.5	1 680.6	1 1,132.7	1 578.8	1 617.0
2 5.8 1,493.8	2 784.6	2 464.1	2 512.7	2 716.8	2 946.0
3 938.9	3 1,198.0	3 1,004.3	3 8.3 921.7	3 1,212.8	3 388.7
4 792.5	4 362.1	4 405.6	4 843.8	4 565.3	4 16.51,407.1
5 775.7	5 10.0 1,078.6	5 10.0 785.1	5 619.8	5 443.0	5 895.3
6 1,237.7	6 1,046.9	6 798.1	6 599.2	6 685.3	6 781.2
7 522.3	7 1,019.5	7 626.1	7 509.1	7 3.5 = 602.4	7 730.9
8 6.4 1,157.2	8 856.1	8 461.7	8 0.6 321.6	8 1,218.1	8 337.7
9 1,271.0	9 660.4	9 606.4	9 4.4 1,260.3	9 17.1 1,003.1	9 513.9
10 742.2	10 827.5	10 933.7	10 228.3	10 952.5	10 1,034.2
11 1,143.1	11 513.9	11 77.6	11 712.8	11 437.0	11 15.5 1,137.6
12 696.5	12 6.0 894.8	12 6.8 863.4	12 722.2	12 917.3	12 952.4
13 1,235.8	13 1,346.0	13 1,078.2	13 1,204.2	13 739.2	13 1,172.3
14 554.5	14 665.0	14 426.2	14 0.5 0.2	14 6.5 1,185.9	14 228.7
15 11.5 947.4	15 10.5 951.4	15 1,009.2	15 1,082.2	15 960.6	15 0.5 734.5
16 917.0	16 932.7	16 369.5	16 16.8 630.6	16 1,291.7	16 1,266.2
17 1,080.1	17 625.0	17 914.2	17 646.9	17 632.8	17 467.1
18 1,133.1	18 550.9	18 364.7	18 435.7	18 1,198.6	18 5.5 802.6
19 578.1	19 120.7	19 15.2 938.8	19 654.9	19 808.4	19 1,090.4
20 946.2	20 5.0 1,330.3	20 867.6	20 1,198.3	20 827.1	20 343.1
21 000.0	21 304.7	21 559.2 22 851.3	21 - 1,053.5	21 010.0	21 033.4
22 6.4 990.5	22 726.8	22 851.3	22 1,053.5 23 7.3 760.8	22 14.6 828.9	22 973.8
24 7,250.9	24 1,265.4	24 766.4	24 465.8	24 851.2	24 382.3
25 1.075.3	25 437.9	25 295.7	25 2.1 771.8	25 733.2	25 7.5 752.3
26 57.6	26 2.4 986.2	26 4.1 738.1	26 0.5 1.074.6	26 843.1	26 7.5 732.5
27 528.2	27 1.098.8	27 961.0	27 0.6 486.9	27 744.7	27 321.1
28 687.7	28 396.6	28 787.9	28 0.6 663.9	28 13.9 1,050.8	28 805.0
29 6.2 1,195.8	29	29 495.8	29 228.2	29 928.6	29 1,078.1
30 1,167.7	30	30 517.4	30 16.7 1,621.5	30 1,288.1	30 237.2
31 760.6	31	31 333.6	31	31 832.5	31
Totals 38.5 28,514.8	Totals 33.86 23,779.9	Totals 36.2 20,403.1	Totals 58.4 21,364.1	Totals 55.6 26,680.7	Totals 45.5 23,436.5
20,0 : 110	20,110.0	101.00	21,00	20,000	70.0
Min 522.3	Min 362.1	Min 77.6	Min 0.00	Min 437.00	Min 228.71
Average 919.8	Average 849.3	Average 658.2	Average 712.14	Average 860.67	Average 781.22
Max 1,493.8	Max 1,346.0	Max 1,078.2	Max 1,621.50	Max 1,291.67	Max 1,407.14
Total 28,553.3	Total 23,813.7	Total 20,439.3	Total 21,422.54	Total 26,736.33	Total 23,482.06

^{*}All volumes are represented in cubic meters (m³)

Colborne Water Treatment Plant - Daily Water Takings PTTW No. 2363-8VMR6M 2018



JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

Date	Well #1	Well #2
1		1,055.2
2		784.7
3	4.2	858.2
		1,232.3
4 5		613.5
6		812.3
7		858.5
8		727.8
9	24.1	933.8
10		1,333.4
11		525.8
12		1,147.8
13		1,247.9
14		446.3
15		849.8
16	19.9	936.9
17		1,212.1
18		687.2
19		1,183.1
20		764.5
21		831.2
22		519.3
23	21.8	1,053.6
24		1,058.5
25		518.6
26		1,081.2
27		707.4
28	0.2	1,028.3
29	0.2	846.9
30	5.9	824.3
31		1,162.2
Totals	76.3	27,842.3
	Min	446.30

898.14 1,333.43 27,918.65

Date	Well #1	W	lell #2
1			565.0
2			750.9
3			1,461.9
4			677.8
5			951.6
6			935.9
7	6.0	I	787.9
8			1,172.7
9			355.6
10			764.1
11			1,095.0
12			479.5
13	6.2		725.8
14			1,214.1
15	9.8		557.5
16	6.1		1,014.3
17	2.3		584.4
18			481.7
19			760.9
20	7.1		964.6
21			1,134.6
22			514.8
23			745.8
24		1	859.9
25			545.9
26			435.9
27	5.1		1,136.2
28			1,083.4
29			428.8
30			1,122.0
31			535.4
Totals	42.7		24,843.8
	Min	355.62	

Min	355.62
Average	801.41
Max	1,461.95
Total	24 886 49

Date	Well #1	Well #2
1		635.4
2		601.3
3		972.0
4	13.4	1,194.1
5		406.4
6		561.3
7		930.5
8		1,132.3
9	0.2	370.5
10	14.2	724.8
11	0.2	1,023.6
12		474.4
13		1,016.5
14		441.6
15		1,011.7
16		511.7
17	7.0	1,061.0
18		413.4
19		456.6
20	0.4	982.7
21	0.2	1,058.4
22		484.6
23		564.0
24	4.6	1,683.7
25		1,134.4
26		1,094.9
27		730.9
28		698.7
29	0.2	1,057.8
30		361.1
31		
Totals	40.33	23790.39

Min	361.11
Average	793.01
Max	1,683.73
Total	23.830.72

Date	Well #1	Well #2	
1	4.5	806.1	
2		1,130.4	
3		487.2	
4		1,054.8	
5		529.1	
6		1,061.9	
7		432.2	
8		785.4	
9	2.3	792.4	
10		1,155.8	
11		457.6	
12		493.0	
13		1,178.8	
14		954.1	
15	1.2	895.1	
16		879.1	
17		1,062.2	
18		829.7	
19		639.2	
20		937.2	
21		757.5	
22	2.4	663.6	
23		933.2	
24		533.1	
25		954.0	
26		750.9	
27		912.7	
28		655.7	
29	4.9	804.5	
30		1,178.1	
31		492.7	
Totals	15.21	25197.33	

Min	432.20
Average	812.82
Max	1,178.84
Total	25,212.54

Date	Well #1	W	/ell #2
1			1,028.2
2			471.7
3		I	1,051.2
4		I	609.5
5	8.8		1,123.9
6		ı	532.6
7			834.1
8			1,205.7
9		I	660.5
10		I	1,020.6
11		I	882.4
12	15.2		551.5
13		Ī	708.7
14		I	635.1
15		I	770.6
16			541.5
17			802.6
18		I	587.8
19	5.3	Ī	696.1
20		ı	539.1
21		Ī	723.6
22	0.8	I	974.0
23	0.2	Ī	640.3
24	0.4	I	772.9
25		I	511.3
26	17.0		982.5
27	0.1	Ī	466.1
28			995.5
29		_	383.3
30	1.3		1,019.2
31			
Totals	49.02	22	721.97

Min	383.25
Average	757.40
Max	1,205.70
Total	22,770.99

Date	Well #1	Well #2
1	1.4	216.1
2	0.4	618.6
3	8.8	1,024.4
4		905.6
5		418.5
6	0.6	963.2
7		399.0
8		827.1
9		719.2
10	4.3	639.5
11		796.9
12		446.8
13		904.6
14		410.5
15		848.3
16		236.8
17	5.9	830.2
18		941.9
19		648.8
20	0.2	612.4
21		608.8
22		803.8
23		750.2
24		101.0
25		705.9
26		1,065.1
27	7.1	536.9
28	0.6	649.8
29		663.8
30	0.2	820.7
31		394.8
Totals	29.6	20509.4

Min	100.98
Average	661.59
Max	1,065.06
Total	20,538.96

Colborne Water Treatment Plant

PLANT DISCHARGE VOLUME 2018



JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

Date	Plant Discharge (m³)
1	800.6
2	1,493.8
3	938.9
4	792.5
5	775.7
6	1,237.7
7	522.3
8	1,157.2
9	1,271.0
10	742.2
11	1,143.1
12	696.5
13	1,235.8
14	554.5
15	947.4
16	917.0
17	1,080.1
18	1,133.1
19	578.1
20	946.2
21	565.3
22	990.5
23	1,250.9
24	671.5
25	1,075.3
26	657.6
27	528.2
28	687.7
29	1,195.8
30	1,167.7
31	760.6
Totals	28,514.8
	·

31	760.6
Totals	28,514.8
Min	522.3
Average	919.8
Max	1,493.8
Total	28 51/18

FEBRUARY		
Date	Plant Discharge (m ³)	
1	828.5	
2	784.6	
3	1198.0	
4	362.1	
5	1078.6	
6	1046.9	
7	1019.5	
8	856.1	
9	660.4	
10	827.5	
11	513.9	
12	894.8	
13	1346.0	
14	665.0	
15	951.4	
16	932.7	
17	625.0	
18	550.9	
19	720.7	
20	1330.3	
21	934.7	
22	726.8	
23	740.5	
24	1265.4	
25	437.9	
26	986.2	
27	1098.8	
28	396.6	
29		
30		
31	20772	
Totals	23779.9	

	Min	362.1
	Average	849.3
	Max	1,346.0
	Total	23,779.9

WARCH		
Date	Plant Discharge (m ³)	
1	680.6	
2	464.1	
3	1004.3	
4	405.6	
5	785.1	
6	798.1	
7	626.1	
8	461.7	
9	606.4	
10	933.7	
11	77.6	
12	863.4	
13	1078.2	
14	426.2	
15	1009.2	
16	369.5	
17	914.2	
18	364.7	
19	938.8	
20	867.6	
21	559.2	
22	851.3	
23	421.8	
24	766.4	
25	295.7	
26	738.1	
27	961.0	
28	787.9	
29	495.8	
30	517.4	
31	333.6	
Totals	20403.1	

Min	77.6
Average	658.2
Max	1,078.2
Total	20,403.1

Date	Plant Discharge (m³)
1	1132.7
2	512.7
3	921.7
4	843.8
5	619.8
6	599.2
7	509.1
8	321.6
9	1260.3
10	228.3
11	712.8
12	722.2
13	1204.2
14	0.2
15	1082.2
16	630.6
17	646.9
18	435.7
19	654.9
20	1198.3
21	0.0
22	1053.5
23	760.8
24	465.8
25	771.8
26	1074.6
27	486.9
28	663.9
29	228.2
30	1621.5
31	
Totals	21364.1

Min	0.0
Average	712.1
Max	1,621.5
Total	21,422.5

Date	Plant Discharge (m³)
1	578.8
2	716.8
3	1212.8
4	565.3
5	443.0
6	685.3
7	602.4
8	1218.1
9	1003.1
10	952.5
11	437.0
12	917.3
13	739.2
14	1185.9
15	960.6
16	1291.7
17	632.8
18	1198.6
19	808.4
20	827.1
21	816.0
22	828.9
23	786.9
24	851.2
25	733.2
26	843.1
27	744.7
28	1050.8
29	928.6
30	1288.1
31	832.5
Totals	26680.7

Min	437.0
Average	860.7
Max	1,291.7
Total	26,680.7

Dete	Dient Diecheung (3)
Date	Plant Discharge (m³)
1	617.0
2	946.0
3	388.7
4	1407.1
5	895.3
6	781.2
7	730.9
8	337.7
9	513.9
10	1034.2
11	1137.6
12	952.4
13	1172.3
14	228.7
15	734.5
16	1266.2
17	467.1
18	802.6
19	1090.4
20	343.1
21	633.4
22	973.8
23	1131.4
24	382.3
25	752.3
26	1275.0
27	321.1
28	805.0
29	1078.1
30	237.2
31	
Totals	23436.5

Min	228.7
Average	781.2
Max	1,407.1
Total	23,436.5

^{*}All volumes are represented in cubic meters (m³)

Colborne Water Treatment Plant

PLANT DISCHARGE VOLUME 2018



JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

Date	Plant Discharge (m ³)
1	1,055.2
2	784.7
3	858.2
1 2 3 4 5	1,232.3
5	613.5
6	812.3
7	858.5
8	727.8
9	933.8
10	1,333.4
11	525.8
12	1,147.8
13	1,247.9
14	446.3
15	849.8
16	936.9
17	1,212.1
18	687.2
19	1,183.1
20	764.5
21	831.2
22	519.3
23	1,053.6
24	1,058.5
25	518.6
26	1,081.2
27	707.4
28	1,028.3
29	846.9
29 30	824.3
31	1,162.2
Totals	27,842.3
Min	446.3

Totals	27,842.3
Min	446.3
Average	898.1
Max	1,333.4
Total	27.842.3

	AUGUST
Date	Plant Discharge (m³)
1	565.0
2	750.9
3	1461.9
4	677.8
5	951.6
6	935.9
7	787.9
8	1172.7
9	355.6
10	764.1
11	1095.0
12	479.5
13	725.8
14	1214.1
15	557.5
16	1014.3
17	584.4
18	481.7
19	760.9
20	964.6
21	1134.6
22	514.8
23	745.8
24	859.9
25	545.9
26	435.9
27	1136.2
28	1083.4
29	428.8
30	1122.0
31	535.4
Totals	24843.8

Min	355.6
Average	801.4
Max	1,461.9
Total	24.843.8

JEF I EMBER		
Date	Plant Discharge (m³)	
1	635.4	
2	601.3	
3	972.0	
4	1194.1	
5	406.4	
6	561.3	
7	930.5	
8	1132.3	
9	370.5	
10	724.8	
11	1023.6	
12	474.4	
13	1016.5	
14	441.6	
15	1011.7	
16	511.7	
17	1061.0	
18	413.4	
19	456.6	
20	982.7	
21	1058.4	
22	484.6	
23	564.0	
24	1683.7	
25	1134.4	
26	1094.9	
27	730.9	
28	698.7	
29	1057.8	
30	361.1	
31		
Totals	23790.4	

Min	361.1
Average	793.0
Max	1,683.7
Total	23.790.4

Date	Plant Discharge (m ³)
1	806.1
2	1130.4
3	487.2
4	1054.8
5	529.1
6	1061.9
7	432.2
8	785.4
9	792.4
10	1155.8
11	457.6
12	493.0
13	1178.8
14	954.1
15	895.1
16	879.1
17	1062.2
18	829.7
19	639.2
20	937.2
21	757.5
22	663.6
23	933.2
24	533.1
25	954.0
26	750.9
27	912.7
28	655.7
29	804.5
30	1178.1
31	492.7
Totals	25197.3

Min	432.2
Average	812.8
Max	1,178.8
Total	25,197.3

Date	Plant Discharge (m ³)
1	1028.2
2	471.7
3	1051.2
4	609.5
5	1123.9
6	532.6
7	834.1
8	1205.7
9	660.5
10	1020.6
11	882.4
12	551.5
13	708.7
14	635.1
15	770.6
16	541.5
17	802.6
18	587.8
19	696.1
20	539.1
21	723.6
22	974.0
23	640.3
24	772.9
25	511.3
26	982.5
27	466.1
28	995.5
29	383.3
30	1019.2
31	
Totals	22722.0

Min	383.3
Average	757.4
Max	1,205.7
Total	22,722.0

	Diant Diaghanas (3)
Date	Plant Discharge (m³)
11	216.1
2	618.6
3	1024.4
4	905.6
5	418.5
6	963.2
7	399.0
8	827.1
9	719.2
10	639.5
11	796.9
12	446.8
13	904.6
14	410.5
15	848.3
16	236.8
17	830.2
18	941.9
19	648.8
20	612.4
21	608.8
22	803.8
23	750.2
24	101.0
25	705.9
26	1065.1
27	536.9
28	649.8
29	663.8
30	820.7
31	394.8
Totals	20509.4

Min	101.0
Average	661.6
Max	1,065.1
Total	20.509.4

^{*}All volumes are represented in cubic meters (m³)

APPENDIX 6

ANSI/NSF 60 Certification





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BRENNTAG CANADA INC

MH26042

43 JUTLAND RD TORONTO, ON M8Z 2G6 CANADA

NSF/ANSI 60

Plant at: Beauhanrois, ON

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)		
Ferric Sulfate					
Brennfloc CC1000 -		Coagulation and Flocculation Chemicals	600		

Plant at: Beauharnois, ON

Conditions of Trade Dsg Acceptability		Category	Max Use Level (mg/L)
Ferric Sulfate	-	Coagulation and Flocculation Chemicals	600
Hydrochloric Acid			
HCI 32%	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
HCI 35%	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
Phosphoric Acid	*		
Phosphoric Acid 75% -		Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	13
Phosphoric Acid 85%	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	12
Polyaluminum Chloride	*		
Poly Aluminum Chloride	-	Coagulation and Flocculation Chemicals	250
Sodium Hydroxide	*		
25% Sodium Hydroxide	-	Miscellaneous Treatment Chemicals	200
50% Sodium Hydroxide -		Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	100
Aluminum Sulfate [*Al]	-	Coagulation and Flocculation Chemicals	150
Chlorine -		Disinfection and Oxidation Chemicals	30
Sodium Hypochlorite 12% [*HPH]		Disinfection and Oxidation Chemicals	87
	-	Disinfection and Oxidation Chemicals	70

50% Sodium	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale	100
Hydroxide		Control Chemicals	

Plant at: Lachine (3000), ON

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Hydrogen Peroxide			
Hydrogen Peroxide 35% [A] [D]	-	Disinfection and Oxidation Chemicals	23
Hydrogen Peroxide 50% [B] [E]	-	Disinfection and Oxidation Chemicals	16
Hydrogen Peroxide 70% [C] [F]	-	Disinfection and Oxidation Chemicals	11.5

Plant at: Lachine (3100), ON

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Citric Acid			
Citric Acid 50% [*OL]	-	Miscellaneous Water Supply Chemicals	-

Plant at: Lachine (3100), ON

Trade Dsg	Conditions of Acceptability	Category	Max Use Level (mg/L)
Citric Acid [*OL]	-	Miscellaneous Water Supply Chemicals	-
Watercare DP05	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
Sodium Silicate	-	Coagulation and Flocculation Chemicals	42

Plant at: Langley, BC

Conditions of Trade Dsg Acceptability		Category	Max Use Level (mg/L)
Citric Acid	,		(3,)
Citric Acid 50% [*OL] -		Miscellaneous Water Supply Chemicals	-
Citric Acid [*OL]	-	Miscellaneous Water Supply Chemicals	-
Watercare DP05	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
Ferric Sulfate	•		•
Brennfloc CC1000	-	Coagulation and Flocculation Chemicals	600
Ferric Sulfate	-	Coagulation and Flocculation Chemicals	600
Hydrochloric Acid			,
HCI 32% -		Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
HCI 35%	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	-
Phosphoric Acid		•	-
Phosphoric Acid 75% -		Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	13
Phosphoric Acid 85%	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	12
Polyaluminum Chloride			,
EnviroPac Plus -		Coagulation and Flocculation Chemicals	250
Sodium Hydroxide			
25% Sodium Hydroxide	-	Miscellaneous Treatment Chemicals	200
50% Sodium Hydroxide	-	Softening, Precipitation, Sequestering, pH adjustment, and Corrosion/Scale Control Chemicals	100

APPENDIX 7

Flowmeter Calibration Reports



E-mail:

service@measuremax.ca Website: www.measuremax.ca

Lakefront Utilities

2018 Grafton & Colborne



Report No.: LUCI 18

FIT-01

Date: May, 16 2018

Colborne WTP SITE:

PROCESS AREA: Well #1 FIT-01 INSTR. TAG: MANUFACTURER: ABB

MODEL: Mag Master V/42378/1/1 SERIAL No.:

INSTR. RANGE:

TECHNICIAN:

SERVICE DATE:

Mitch Manley

May, 16 2018

JOB REFERENCE: LUCI 18

Input	(Test)	Output	(Signa
Type:	ABB Simulator	Type or EGU:	mA
Min:	0.00	Min:	4.00
Max:	3.6734	Max:	20.00
DN (mm):	150		
Velocity Range:	5.658829		

Constant:	0.0007854					
Sensor Factor 1:	1.5405		Before Calibration		After Calibration	
Input (m/s nominal)	Input %	Calc. O/P	Output	%Error	Output	%Error
0.00	0.00%	4.00	4.00	0.00%	4.00	0.00%
0.20	5.44%	4.87	4.87	0.00%	4.87	0.00%
0.50	13.61%	6.18	6.17	-0.16%	6.17	-0.16%
1.00	27.22%	8.36	8.35	-0.12%	8.35	-0.12%
2.00	54.45%	12.71	12.68	-0.24%	12.68	-0.24%

Calibration Equipment							
Туре:	Type: DMM Simulator						
Manufacturer:	Fluke	ABB					
Model:	Model 87	MagMaster					
Serial No.:	Serial No.: 134409128 3K220000120586						
Last Cal. Date:	Mar. 20, 2018	Apr. 20, 2018					

Comments:



Report No.: LUCI 18

FIT-02

Date:

May, 16 2018

Colborne WTP SITE:

PROCESS AREA: Well 2 FIT-02 INSTR. TAG: MANUFACTURER: ABB

MODEL: Mag Master

v/300002/181/1 SERIAL No.:

INSTR. RANGE:

SERVICE DATE:

May, 16 2018

TECHNICIAN:

Mitch Manley

JOB REFERENCE: LUCI 18

Input Type: Min: Max: DN (mm): Velocity Range: Constant:	(Test) ABB Simulator 0.00 1.9118 150 2.829415 0.0007854		Output Type or EGU: Min: Max:	(Signal) mA 4.00 20.00	(Process) Liter/Sec 0.00 50.00	
Sensor Factor 1:	1.47999	Colo O/D		alibration %Error		alibration %Error
Input (m/s nominal)		Calc. O/P	Output	%EITOF	Output	70EITUI
0.00	0.00%	4.00	-		-	
0.20	10.46%	5.67	-		-	
0.50	26.15%	8.18	-		-	
1.00	52.31%	12.37	-		-	

Calibration Equipment				
Type:	DMM	Simulator		
Manufacturer:	Fluke	ABB		
Model:	Model 87	MagMaster		
Serial No.:	134409128	3K220000120586		
Last Cal. Date:	Mar. 20, 2018	Apr. 20, 2018		

Comments:

Noisy signal, could not be calibrated, wouldn't boot up correctly with ABB Simulator connected.



Report No.: LUCI 18

PIT

Date:

May, 16 2018

Colborne WTP SITE: PROCESS AREA: Treated pressure

PIT INSTR. TAG:

MANUFACTURER: Rosemount 1151GP MODEL: C00137038 SERIAL No.:

SERVICE DATE:

May, 16 2018

TECHNICIAN:

Mitch Manley

JOB REFERENCE: LUCI 18

Input	(Test)	
Type:	kpa	
Min:	0.00	
Max:	1034.00	

Output	(Signal)	(Process)	
Type or EGU:	mA	kpa	
Min:	4.00	0.00	
Max:	20.00	1034.00	

			Before Calibration After Calibratio		alibration	
0.0	0.00%	4.00	4.00	0.00%	4.00	0.00%
258.5	25.00%	8.00	8.01	0.12%	8.01	0.12%
517.0	50.00%	12.00	12.03	0.25%	12.03	0.25%
700.0	67.70%	14.83	14.89	0.40%	14.89	0.40%

Calibration Equipment				
Type:	Pressure Calibrator	DMM		
Manufacturer:	Crystal	Fluke		
Model:	XP2i 300 PSI	Model 87		
Serial No.:	153455	134409128		
Last Cal. Date:	Nov. 13, 2018	Mar. 20, 2018		

Teste to 700 KPA only, due to pressure gauge in line **Comments:**



Report No.: LUCI 18

Date:

May, 16 2018

PIT

Colborne Tower SITE: PROCESS AREA: Tower Level

PIT INSTR. TAG: **MANUFACTURER:** Siemens

MODEL:

SERIAL No.:

IX-B831-9996968

SERVICE DATE: May, 16 2018

TECHNICIAN:

Mitch Manley

JOB REFERENCE: LUCI 18

Input	(Test)		Output	(Signal)	(Process)	
Type:			Type or EGU:	mA	PSI	
Min:	0.00		Min:	4.00	0.00	
Max:	14.60		Max:	20.00	14.60	
			Rat	fore	A.1	fter
test	%	calc mA	mA		mA	
0.00	0.00%	4.00	3.98	-	3.98	-
3.65	25.00%	8.00	7.91	-1.13%	7.91	-1.13%
7.30	50.00%	12.00	11.94	-0.50%	11.94	-0.50%
10.95	75.00%	16.00	15.97	-0.19%	15.97	-0.19%
14.60	100.00%	20.00	20.01	0.05%	20.01	0.05%

Calibration Equipment				
Туре:	Pressure Calibrator	DMM		
Manufacturer:	Crystal	Fluke		
Model:	XP2i 300 PSI	Model 87		
Serial No.:	153455	134409128		
Last Cal. Date:	Nov. 13, 2018	Mar. 20, 2018		

Comments:

AS LEFT: PASS **AS FOUND:** PASS

CERTIFIED BY:

SIEMENS MAGFLO® Verification Certificate

Customer	<u>.</u> <u>-</u>
Name	Lakefront Utilities
Address	
Phone	
Email	

MAGFLO® Identification:					
TAG No./Name	0				
Sensor Code No.	7ME658				
Sensor Serial No.	PBD-K5234819				
Converter Code No.	7ME691				
Converter Serial No.	N1JD010175				
Location	Colborne Well 2				

Results:	Verificati Converte	on file name or No.	File #12 Passed
	Sensor	Insulation	Passed
		Magnetic Circuit	Passed

Velocity		Current Outp	out		Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation	
0.5m/s	4.800mA	4.802mA	0.21%	0.500kHz	0.500kHz	0.03%	
1.0m/s	5.600mA	5.601mA	0.08%	1.000kHz	1.000kHz	0.03%	
3.0m/s	8.800mA	8.807mA	0.15%	3.000kHz	3.005kHz	0.17%	
	Current Outpu	+ 1 20m A	Eroguoney Ou	ithuit 0 10kHz			

Current Output 4-20mA Frequency Output 0-10kHz

Converte	r Settings:	
Basic		
	Qmax.	50.0 l/s
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	ON
Output		
	Current Output	OFF
	Time Constant	N/A
	Relay Output	Error Level
	Digital Output	Pulse
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	0.9999953 US G/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1	1 value before test	1.07508683 m³
Totalizer 1	1 value after test	1.10568345 m³
Totalizer 2	2 value before test	0.00113869 m ³
Totalizer 2	2 value after test	0.00797889 m³

Sensor Details:	
Size	DN 150 6 IN
Cal. Factor	17.31505775
Correction Factor	1.0
Excitation Freq.	7.5Hz

Verificator Details (083F5060)							
Serial No.	000115N060						
Device No.	90529						
Software Version	1.40						
PC-Software Version	4.02						
Cal. date	2017.10.19						
ReCal. date	2018.10.19						

Comments

Current output ON and functional after test.

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

APPENDIX 8

2018 O. Reg 170/03 Sampling Data

Colborne Water Supply - Bacteriological Testing - 2018



								Chlorine Residual (mg/L)		
	We	l No. 1	Well	No. 2	Treated Water					
Date	Tot. Colifo	rm E. Coli	Tot. Coliforn	E. Coli	Tot. Coliform	E. Coli	HPC	Free	Total	
Jan 2	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.59	1.70	
Jan 8	√ 0	√ 0	√ 0	✓ 0	√ 0	√ 0	0	1.59	1.67	
Jan 16	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.48	1.54	
Jan 22	√ 0	√ 0	√ 0	✓ 0	√ 0	√ 0	0	1.50	1.59	
Jan 29	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.62	1.74	
Feb 5	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.55	1.65	
Feb 12	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.33	1.41	
Feb 20	√ 0	√ 0	√ 0	✓ 0	√ 0	√ 0	1	1.58	1.67	
Feb 26	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.49	1.57	
Mar 5	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.54	1.70	
Mar 12	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.73	2.01	
Mar 19	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.57	1.70	
Mar 26	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.35	1.44	
Apr 3	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.37	1.46	
Apr 9	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.29	1.35	
Apr 16	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.22	1.31	
Apr 23	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.28	1.38	
Apr 30	√ 0	√ 0	✓ 0	√ 0	√ 0	√ 0	0	1.39	1.47	
May 7	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.27	1.30	
May 14	✓ 0	√ 0	✓ 0	✓ 0	√ 0	√ 0	0	1.23	1.29	
May 22	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.58	1.76	
May 28	✓ 0	√ 0	✓ 0	✓ 0	√ 0	√ 0	0	1.20	1.32	
Jun 4	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.28	1.36	
Jun 11	√ 0	√ 0	✓ 0	✓ 0	√ 0	√ 0	0	1.30	1.35	
Jun18	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.36	1.48	
Jun 25	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.32	1.40	
Jul 3	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.24	1.29	
Jul 9	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.23	1.34	
Jul 16	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.09	1.21	
Jul 23	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.33	1.43	
Jul 30	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.22	1.31	
Aug 7	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.62	1.75	
Aug 13	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.30	1.40	
Aug 20	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.35	1.45	
Aug 27	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.40	1.49	
Sept 4	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.47	1.75	
Sept 10	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.43	1.47	
Sept 17	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	3	1.56	1.67	
Sept 24	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.55	1.59	
Oct 1	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.23	1.33	
Oct 9	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.49	1.60	
Oct 15	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.47	1.57	
Oct 22	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.32	1.38	
Oct 29	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.43	1.51	
Nov 5	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.56	1.64	
Nov 12	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.06	1.16	
Nov 19	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.56	1.66	
Nov 26	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.48	1.60	
Dec 3	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.41	1.48	
Dec 10	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	0	1.03	1.12	
Dec 17	√ 0	√ 0	√ 0	√ 0	√ 0	√ 0	1	1.14	1.27	
Dec 27	√ 0	√ 0	✓ 0		√ 0	√ 0	0	1.42	1.54	

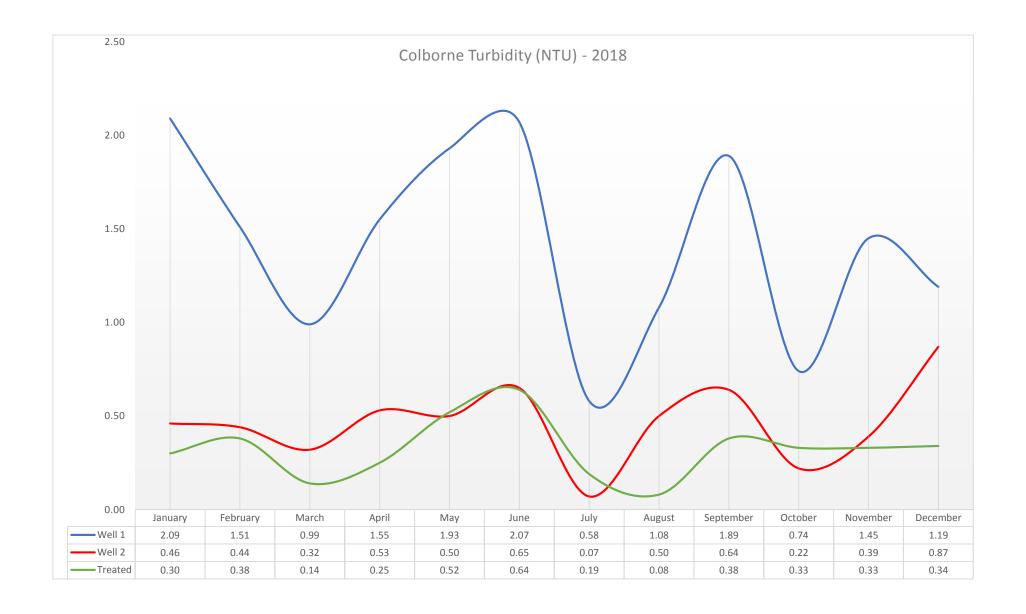


Colborne Distribution System - Bacteriological Testing - 2018

							Chlorine Resid	dual (mg/L)
Date	Location	To	t. Coliform		E.Coli	HPC	Free	Total
Jan 2	Water Tower	V	0	V	0	0	1.58	1.68
	Colborne Arena	√	0	V	0	1	1.43	1.54
	Colborne Town Hall	√	0	V	0	-	1.46	1.56
Jan 8	Water Tower	~	0	V	0	0	1.56	1.64
	Colborne Arena	~	0	V	0	0	1.43	1.53
	Colborne Town Hall	✓	0	V	0	-	1.57	1.63
Jan 16	Water Tower	V	0	V	0	0	1.37	1.56
	Colborne Arena	V	0	V	0	0	1.50	1.55
	Colborne Town Hall	V	0	1	0	-	1.49	1.57
Jan 22	Water Tower	V	0	V	0	0	1.46	1.59
	Colborne Arena	<i>y</i>	0	1	0	0	1.51	1.62
	Colborne Town Hall	<i>J</i>	0		0	_	1.46	1.55
Jan 29	Water Tower	J	0	V	0	0	1.45	1.57
Jul. 20	Colborne Arena	J	0		0	0	1.40	1.52
	Colborne Town Hall	J	0		0	-	1.47	1.58
Feb 5	Water Tower		0	V	0	0	1.54	1.68
1 00 0	Colborne Arena	.,	0		0	0	1.45	1.61
	Colborne Town Hall		0		0	-	1.62	1.75
Feb 12	Water Tower		0		0	0	1.42	1.52
reb 12		~		~				
	Colborne Arena	~	0	~	0	0	1.42	1.52
F 1 00	Colborne Town Hall	V	0	V	0	-	1.53	1.59
Feb 20	Water Tower	Y .	0	~	0	0	1.47	1.58
	Colborne Arena	~	0	\	0	0	1.25	1.31
	Colborne Town Hall	· ·	0	V	0	-	1.39	1.50
Feb 26	Water Tower	~	0	V	0	0	1.47	1.60
	Colborne Arena	~	0	V	0	0	1.41	1.47
	Colborne Town Hall	V	0	V	0	-	1.49	1.52
Mar 5	Water Tower	~	0	~	0	0	1.51	1.65
	Colborne Arena	~	0	~	0	0	1.48	1.58
	Colborne Town Hall	✓	0	V	0	-	1.55	1.63
Mar 12	Water Tower	✓	0	V	0	0	1.48	1.56
	Colborne Arena	✓	0	V	0	0	1.53	1.60
	Colborne Town Hall	✓	0	V	0	-	1.52	1.60
Mar 19	Water Tower	✓	0	V	0	0	1.54	1.64
	Colborne Arena	✓	0	V	0	0	1.56	1.66
	Colborne Town Hall	✓	0	V	0	-	1.42	1.53
Mar 26	Water Tower	✓	0	V	0	0	1.39	1.49
	Colborne Arena	√	0	V	0	0	1.33	1.49
	Colborne Town Hall	√	0	V	0	-	1.33	1.69
Apr 3	Water Tower	~	0	V	0	0	1.39	1.48
	Colborne Arena	~	0	V	0	0	1.29	1.46
	Colborne Town Hall	~	0	V	0	-	1.34	1.43
Apr 9	Water Tower	√	0	V	0	0	1.33	1.37
	Colborne Arena	V	0	1	0	1	1.34	1.38
	Colborne Town Hall	J	0	1	0	_	1.34	1.41
Apr 16	Water Tower	1	0	V	0	0	1.15	1.22
	Colborne Arena		0		0	1	1.17	1.29
	COIDOTTIC ATCHA	_	U		U	1	1.17	1.23

	l						
Apr 23	Water Tower	~	0	0	1	1.21	1.31
	Colborne Arena	~	0	V 0	0	1.20	1.28
	Colborne Town Hall	✓	0	√ 0	-	1.23	1.32
Apr 30	Water Tower	~	0	V 0	0	1.30	1.38
	Colborne Arena	Y .	0	✓ 0	0	1.18	1.29
	Colborne Town Hall	~	0	√ 0	-	1.24	1.33
May 7	Water Tower	✓	0	✓ 0	0	1.19	1.26
	Colborne Arena	✓	0	√ 0	4	1.14	1.19
	Colborne Town Hall	✓	0	√ 0	-	1.27	1.30
May 14	Water Tower	~	0	√ 0	0	1.19	1.27
	Colborne Arena	~	0	√ 0	1	1.14	1.23
	Colborne Town Hall	✓	0	✓ 0	-	1.24	1.32
May 22	Water Tower	✓	0	√ 0	0	1.37	1.47
	Colborne Arena	✓	0	√ 0	0	1.17	1.28
	Colborne Town Hall	✓	0	√ 0	-	1.45	1.52
May 28	Water Tower	~	0	√ 0	0	1.18	1.29
	Colborne Arena	~	0	√ 0	0	1.26	1.35
	Colborne Town Hall	~	0	√ 0	-	1.22	1.30
Jun 4	Water Tower	V	0	√ 0	0	1.36	1.43
	Colborne Arena	V	0	V 0	1	1.18	1.26
	Colborne Town Hall	V	0	V 0	_	1.30	1.38
Jun 11	Water Tower	J	0	√ 0	0	1.39	1.46
oun ii	Colborne Arena	Ž	0	v 0	3	1.26	1.35
	Colborne Town Hall		0	V 0	-	1.35	1.46
Jun 18	Water Tower		0	V 0	0	1.25	1.36
Juli 10	Colborne Arena		0	V 0	4	1.22	1.27
				T.		1.32	
L O.F.	Colborne Town Hall	V	0	0	-		1.38
Jun 25	Water Tower	Y ,	0	0	0	1.40	1.45
	Colborne Arena	Y	0	0	4	1.16	1.21
	Colborne Town Hall	Y	0	V 0	-	1.23	1.31
Jul 3	Water Tower	~	0	0	0	1.15	1.26
	Colborne Arena	~	0	0	2	1.17	1.27
	Colborne Town Hall	~	0	0	-	1.25	1.32
Jul 9	Water Tower	~	0	0	0	1.15	1.26
	Colborne Arena	Y .	0	V 0	7	1.17	1.27
	Colborne Town Hall	V	0	✓ 0		1.25	1.32
Jul 16	Water Tower	✓.	0	√ 0	0	1.14	1.20
	Colborne Arena	~	0	✓ 0	0	1.10	1.19
	Colborne Town Hall	✓	0	√ 0	-	1.11	1.18
Jul 23	Water Tower	✓	0	✓ 0	1	1.33	1.43
	Colborne Arena	~	0	✓ 0	1	1.44	1.52
	Colborne Town Hall	✓	0	√ 0	-	1.14	1.20
Jul 30	Water Tower	✓	0	√ 0	0	1.20	1.26
	Colborne Arena	✓	0	√ 0	2	1.08	1.17
	Colborne Town Hall	✓	0	√ 0	-	1.21	1.27
Aug 7	Water Tower	~	0	√ 0	0	1.62	1.75
	Colborne Arena	~	0	√ 0	2	1.06	1.14
	Colborne Town Hall	~	0	√ 0	-	1.67	1.88
Aug 13	Water Tower	~	0	√ 0	0	1.41	1.44
	Colborne Arena	V	0	✓ 0	6	1.34	1.38
	Colborne Town Hall	V	0	√ 0		1.43	1.48
Aug 20	Water Tower	V	0	√ 0	0	1.34	1.43
. 5 – -	Colborne Arena	J	0	v 0	0	1.31	1.39
	Colborne Town Hall	Š	0	V 0	_	1.30	1.44
Aug 27	Water Tower	4	0	√ 0	0	1.37	1.47
rug 21	Colborne Arena	4	0	√ 0	1	1.24	1.35
	Colborne Town Hall		0	√ 0	-		1.46
	Colborne Town Hall	✓	U	W U	-	1.31	1.40

Sept 4	Water Tower	~	0	∨ 0	l 0	1.56	1.77
	Colborne Arena	1	0	V 0	10	1.51	1.63
	Colborne Town Hall		0	v 0		1.47	1.63
Sept 10	Water Tower		0	√ 0	0	1.50	1.54
Зері 10	Colborne Arena		0	√ 0	0	1.24	1.31
		~		T.	U		
0	Colborne Town Hall	~	0	√ 0	-	1.31	1.37
Sept 17	Water Tower	~	0	0	4	1.31	1.48
	Colborne Arena	~	0	V 0	4	1.09	1.20
	Colborne Town Hall	~	0	√ 0	-	1.26	1.39
Sept 24	Water Tower	~	0	✓ 0	1	1.43	1.52
	Colborne Arena	~	0	✓ 0	1	1.28	1.43
	Colborne Town Hall	~	0	✓ 0	-	1.32	1.40
Oct 1	Water Tower	~	0	✓ 0	0	1.32	1.40
	Colborne Arena	~	0	✓ 0	1	1.38	1.45
	Colborne Town Hall	~	0	√ 0	-	1.28	1.33
Oct 9	Water Tower	~	0	√ 0	14	1.40	1.48
	Colborne Arena	~	0	√ 0	5	1.33	1.39
	Colborne Town Hall	V	0	√ 0	-	1.46	1.55
Oct 15	Water Tower	~	0	√ 0	0	1.48	1.62
	Colborne Arena	~	0	√ 0	0	1.37	1.47
	Colborne Town Hall	~	0	√ 0	-	1.46	1.57
Oct 22	Water Tower	V	0	√ 0	0	1.41	1.62
	Colborne Arena	V	0	√ 0	0	1.40	1.49
	Colborne Town Hall	V	0	√ 0	-	1.42	1.49
Oct 29	Water Tower	~	0	√ 0	1	1.43	1.48
	Colborne Arena	~	0	√ 0	1	1.16	1.29
	Colborne Town Hall	~	0	√ 0	-	1.17	1.29
Nov 5	Water Tower	V	0	√ 0	0	1.51	1.59
	Colborne Arena	V	0	√ 0	1	1.61	1.70
	Colborne Town Hall	V	0	√ 0	_	1.53	1.59
Nov 12	Water Tower	V	0	√ 0	0	1.10	1.20
	Colborne Arena	1	0	v 0	1	1.20	1.33
	Colborne Home Hardware	J	0	V 0	_	1.10	1.18
Nov 19	Water Tower	V	0	√ 0	0	1.51	1.60
	Colborne Arena	J	0	√ 0	0	1.37	1.45
	Colborne Town Hall	J	0	√ 0	_	1.45	1.54
Nov 26	Water Tower	1	0	√ 0	0	1.53	1.65
	Colborne Arena	1	0	√ 0	0	1.49	1.58
	Colborne Town Hall	~/	0	0		1.45	1.55
Dec 3	Water Tower	~	0	√ 0	0	1.42	1.47
Dec 3	Colborne Arena		0		0	1.42	1.50
	Colborne Town Hall		0	✓ 0		1.46	1.56
Doc 10				· ·	-		
Dec 10	Water Tower	~	0	0	0	1.06	1.16
	Colborne Arena	~	0	0	0	1.06	1.12
Dag 47	Colborne Town Hall	· /	0	√ 0	-	1.13	1.23
Dec 17	Water Tower	~	0	√ 0	0	1.20	1.32
	Colborne Arena	*	0	√ 0	0	1.21	1.35
	Colborne Town Hall	V	0	√ 0	-	1.24	1.48
Dec 27	Water Tower	Y	0	V 0	0	1.48	1.56
	Colborne Arena	\	0	V 0	0	1.46	1.39
i	36 Burnham Street	~	0	√ 0	-	1.46	1.51



Colborne WTP, Colborne Distribution 2018 - Schedule 15 - Chemical Sampling and Testing



SAMPLE LOCATION: Colborne WTP - TREATED WATER

NITRATES	SAMPLE DATE	Q1 16-Jan-2018	Q2 16-Apr-2018	Q3 30-Jul-2018	Q4 19-Nov-2018			
	MAC (μg/L)	ANALYSIS RESULT (µg/L)						
Nitrite	100	0.003 <mdl< td=""><td>0.003 <mdl< td=""><td>0.003 <mdl< td=""><td>0.003 <mdl< td=""></mdl<></td></mdl<></td></mdl<></td></mdl<>	0.003 <mdl< td=""><td>0.003 <mdl< td=""><td>0.003 <mdl< td=""></mdl<></td></mdl<></td></mdl<>	0.003 <mdl< td=""><td>0.003 <mdl< td=""></mdl<></td></mdl<>	0.003 <mdl< td=""></mdl<>			
Nitrate	N/A	1.37	1.47	1.33	1.48			
Nitrite + Nitrate	N/A	1.37	1.47	1.33	1.48			

SAMPLE LOCATION: Colborne WTP - TREATED WATER

NITRATES	SAMPLE DATE	05-Jan-2016	
141161120	MAC (μg/L)	ANALYSIS RESULT (Mg/L)	
FLOURIDE	1.5	0.08	
SODIUM	20	6.86	

SAMPLE LOCATION: Colborne Distribution System - Colborne Arena

TRIHALOMETHANES	SAMPLE DATE	Q1 15-Jan-2018	Q2 16-Apr-2018	Q3 30-Jul-2018	Q4 19-Nov-2018	ANNUAL AVERAGE
(тнм)	ANNUAL AVERAGE MAC (μg/L)	ANALYSIS RESULT (μg/L)				
Total Trihalomethanes	100	2.6	3.3	5.9	3.5	3.83
Bromodichloromethane		0.86	1.2	1.8	1.1	
Bromoform	N/A	0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>N/A</td></mdl<></td></mdl<></td></mdl<></td></mdl<>	0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>N/A</td></mdl<></td></mdl<></td></mdl<>	0.34 <mdl< td=""><td>0.34 <mdl< td=""><td>N/A</td></mdl<></td></mdl<>	0.34 <mdl< td=""><td>N/A</td></mdl<>	N/A
Chloroform		1.2	1.7	2.9	1.8	IN/A
Dibromochloromethane		0.53	0.7	1.1	0.66	

SAMPLE LOCATION: Colborne Distribution System - Colborne Arena

SAMPLE DATE		Q1 15-Jan-2018	Q2 16-Apr-2018	Q3 30-Jul-2018	Q4 19-Nov-2018	ANNUAL AVERAGE
HALOACETIC ACID (HAA)	ANNUAL AVERAGE MAC (μg/L)	ANALYSIS RESULT (μg/L)				
Haloacetic Acids (HAA5)	80	5.3 <mdl< td=""><td>5.3 < MDL</td><td>5.3 < MDL</td><td>5.3 <mdl< td=""><td>5.3 <mdl< td=""></mdl<></td></mdl<></td></mdl<>	5.3 < MDL	5.3 < MDL	5.3 <mdl< td=""><td>5.3 <mdl< td=""></mdl<></td></mdl<>	5.3 <mdl< td=""></mdl<>
Bromoacetic Acid		2.9 <mdl< td=""><td>2.9 <mdl< td=""><td>2.9 <mdl< td=""><td>2.9 <mdl< td=""><td></td></mdl<></td></mdl<></td></mdl<></td></mdl<>	2.9 <mdl< td=""><td>2.9 <mdl< td=""><td>2.9 <mdl< td=""><td></td></mdl<></td></mdl<></td></mdl<>	2.9 <mdl< td=""><td>2.9 <mdl< td=""><td></td></mdl<></td></mdl<>	2.9 <mdl< td=""><td></td></mdl<>	
Chloracetic Acid		4.7 < MDL	4.7 < MDL	4.7 < MDL	4.7 < MDL	
Dichloroacetic Acid	N/A	2.6 <mdl< td=""><td>2.6 < MDL</td><td>2.6 < MDL</td><td>2.6 <mdl< td=""><td>N/A</td></mdl<></td></mdl<>	2.6 < MDL	2.6 < MDL	2.6 <mdl< td=""><td>N/A</td></mdl<>	N/A
Dibromoacetic Acid		2.0 < MDL	2.0 < MDL	2.0 < MDL	2.0 <mdl< td=""><td>]</td></mdl<>]
Trichloroacetic Acid		5.3 <mdl< td=""><td>5.3 <mdl< td=""><td>5.3 <mdl< td=""><td>5.3 <mdl< td=""><td></td></mdl<></td></mdl<></td></mdl<></td></mdl<>	5.3 <mdl< td=""><td>5.3 <mdl< td=""><td>5.3 <mdl< td=""><td></td></mdl<></td></mdl<></td></mdl<>	5.3 <mdl< td=""><td>5.3 <mdl< td=""><td></td></mdl<></td></mdl<>	5.3 <mdl< td=""><td></td></mdl<>	

Note: < denotes less than method detection limit (MDL)

Colborne WTP - Treated Water 2016 - Schedule 23 - Organic Parameters



PARAMETER	STANDARD (μg/L)	SAMPLE RESULT (μg/L) 05-JAN-16
Antimony	6	0.02 <mdl< td=""></mdl<>
Arsenic	25	0.08
Barium	1000	141
Boron	5000	8.1
Cadmium	5	0.003
Chromium	50	0.3
Mercury	1	0.01 <mdl< td=""></mdl<>
Selenium	10	0.09
Uranium	20	3.49

Note 1: < denotes less than method detection limit (MDL)

Note 2: The next sampling period for Schedule 23 parameters is 2019

Colborne WTP - Treated Water 2016 - Schedule 24 - Organic Parameters



PARAMETER	STANDARD (μg/L)	AO/OG (μg/L)	SAMPLE RESULT (µg/l) 05-JAN-16
Benzene [ug/L]	5		0.32 <mdl< td=""></mdl<>
Carbon tetrachloride [ug/L]	5		0.16 <mdl< td=""></mdl<>
2-Dichlorobenzene [ug/L]	200	3	0.41 <mdl< td=""></mdl<>
4-Dichlorobenzene [ug/L]	5	1	0.36 <mdl< td=""></mdl<>
1-Dichloroethylene (vinylidene chloride) [ug/L]	14		0.33 <mdl< td=""></mdl<>
2-Dichloroethane [ug/L]	5		0.35 <mdl< td=""></mdl<>
Dichloromethane [ug/L]	50		0.35 <mdl< td=""></mdl<>
Monochlorobenzene `[ug/L]	80	30	0.3 <mdl< td=""></mdl<>
Tetrachloroethylene (perchloroethylene) [ug/L]	30		0.35 <mdl< td=""></mdl<>
Trichloroethylene [ug/L]	5		0.44 <mdl< td=""></mdl<>
Vinyl Chloride [ug/L]	2		0.17 <mdl< td=""></mdl<>
Diquat [ug/L]	70		1 <mdl< td=""></mdl<>
Paraquat [ug/L]	10		1 <mdl< td=""></mdl<>
Glyphosate [ug/L]	280		1 <mdl< td=""></mdl<>
Polychlorinated Biphenyls (PCBs) - Total [ug/L]	3		0.04 <mdl< td=""></mdl<>
Benzo(a)pyrene [ug/L]	0.01		0.004 <mdl< td=""></mdl<>
Alachlor [ug/L]	5		0.02 <mdl< td=""></mdl<>
Atrazine + N-dealkylated metabolites [ug/L]	5		0.01 <mdl< td=""></mdl<>
Atrazine [ug/L]	-		0.01 <mdl< td=""></mdl<>
Desethyl atrazine [ug/L]	-		0.01 <mdl< td=""></mdl<>
Azinphos-methyl [ug/L]	20		0.05 <mdl< td=""></mdl<>
Carbaryl [ug/L]	90		0.05 <mdl< td=""></mdl<>
Carbofuran [ug/L]	90		0.01 <mdl< td=""></mdl<>
Chlorpyrifos [ug/L]	90		0.02 <mdl< td=""></mdl<>
Diazinon [ug/L]	20		0.02 <mdl< td=""></mdl<>
Dimethoate [ug/L]	20		0.03 <mdl< td=""></mdl<>
Diuron [ug/L]	150		0.03 <mdl< td=""></mdl<>
Malathion [ug/L]	190		0.02 <mdl< td=""></mdl<>
Metolachlor [ug/L]	50		0.01 <mdl< td=""></mdl<>
Metribuzin [ug/L]	80		0.02 <mdl< td=""></mdl<>
Phorate [ug/L]	2		0.01 <mdl< td=""></mdl<>
Prometryne [ug/L]	1		0.03 <mdl< td=""></mdl<>
Simazine [ug/L]	10		0.01 <mdl< td=""></mdl<>
Terbufos [ug/L]	1		0.01 <mdl< td=""></mdl<>
Triallate [ug/L]	230		0.01 <mdl< td=""></mdl<>
Trifluralin [ug/L]	45		0.02 <mdl< td=""></mdl<>
4-dichlorophenoxyacetic acid (24-D) [ug/L]	100		0.19 <mdl< td=""></mdl<>
Bromoxynil [ug/L]	5		0.33 <mdl< td=""></mdl<>
Dicamba [ug/L]	120		0.20 <mdl< td=""></mdl<>
Diclofop-methyl [ug/L]	9		0.40 <mdl< td=""></mdl<>
MCPA [mg/L]	-		0.00012 <mdl< td=""></mdl<>
Picloram [ug/L]	190		1 <mdl< td=""></mdl<>
4-dichlorophenol [ug/L]	900	0.3	0.15 <mdl< td=""></mdl<>
6-trichlorophenol [ug/L]	5	2	0.25 <mdl< td=""></mdl<>
6-tetrachlorophenol [ug/L]	100	1	0.20 <mdl< td=""></mdl<>
Pentachlorophenol [ug/L]	60	30	0.15 <mdl< td=""></mdl<>

Note 1: < denotes less than method detection limit (MDL)

Note 2: The next sampling period for Schedule 23 parameters is 2019

APPENDIX 9

NSF Audit Report











NSF International Strategic Registrations Audit Report

Lakefront Utility Services Inc.

207 Division Street Cobourg, Ontario K9A 4L3 CAN

C0128650

Audit Type

DWQMS System Audit

Auditor

Kishor Desai

Standard

Ontario's Drinking Water Quality Management Standard (Exp Date: 08-FEB-2021)

Audit Date(s):

12/04/2018 - 12/04/2018

Recommendation

Ontario's Drinking Water Quality Management Standard : DWQMS System Audit Complete No Change to Certificate











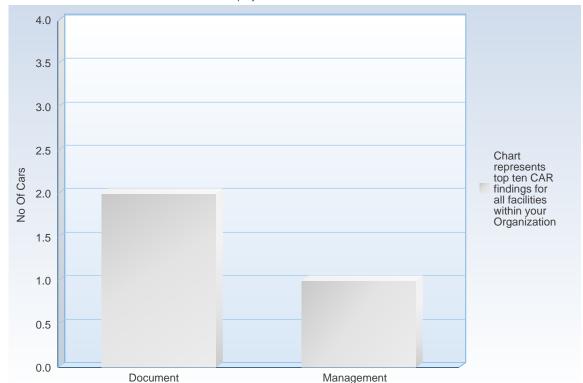
Executive Summary

Ontario's Drinking Water Quality Management Standard LUSI, as an Operating Authority, has successfully implemented corrective actions as committed at the conclusion of On Site Audit in Dec. 2017. All corrective actions were verified and closed. Internal audit, management review and amended risk analysis requirements were completed within the calendar year 2018 and judged in conformance (except a minor non conformance raised for management review input) with the amended version (April 2017) of Drinking Water Quality Management System standard. Amended requirements of the element #21, though, remains outstanding at this stage and must be was incorporated into Ops. Plans and other documents with execution evidence for the 2019 audit. This is part of the implementation time line for all the amendments to the standard.

Three minor non conformance were issued through this system audit. Two related to document and records control (element #5). One is for record table not incorporated with a number of records committed through the procedures but not carried into the table with required record control characteristics. The other is for having obsolete Ops. Plan on OA website. The third non conformance is for one input requirement not considered in recently competed management review and improper review concerning CCP's.

OA strengths are finitely defined documentation, drinking water system description, risk assessment, responsibility and authority descriptions, competence and training process, review and provision of infrastructure, sampling, testing and monitoring and calibration of measurement equipment.

Top 10 Non Compliant Standard Clauses
CAR Chart Displays Current and Previous Years Data



Lakefront Utility Services Inc.

Standard Clause Description

Document & Records Control Management Review











Opportunities	
Ontario's Drinking Water Quality	See OFI section of the report for OFI's issued. OA to consider these and take
Management Standard	action as appropriate.

Corrective Action Request Summary By Type		
Car Type	Car Count	
MINOR	3	

Corrective Action Request Summary By Standard Clause		
Standard Clause	Car Count	
Document & Records Control	2	
Management Review	1	

Corrective Action Req	uests			
CAR No	J1508403-1	Туре	MINOR	
Standard & Clause	DWQMS, Document & Records Control	Discussed with	None	
Auditor Name	Kishor Desai			
Statement of Requirement	PLAN – The Operational Plan shall document a procedure for Document and Records control that describes how: a) Documents required by the Quality Management System are: i. kept current, legible and readily identifiable ii. retrievable iii. stored, protected, retained and disposed of, and b) Records required by the Quality Management System are: i. kept legible, and readily identifiable ii. retrievable iii. stored, protected, retained and disposed of. DO – The Operating Authority shall implement and conform to the procedure for Document and Records control and shall ensure that the Quality Management System documentation for the Subject System includes: a) the Operational Plan and its associated policies and procedures, b) Documents and Records determined by the Operating Authority as being needed to ensure the effective planning, operation and control of its operations, and			
Statement of Nonconformity	Records Table (part of procedure P02) is incomplete in general.			
Objective Evidence	The following records are claimed within the Ops. plan documents as required by the OA but not included in the records table. (a) some internal communication (OA management vs. OA personnel) (b) supplier communication (as claimed in the related procedures) (c) Essential supply and service records (PO's, contracts, tender documents, Certificate of analysis, Bill of lading and listing/certification records provided by suppliers, if required by the OA) (d) Capital and operating budgets (e) maintenance and repair records (f) emergency testing records and post testing/event evaluation records, if performed.			
Location of Finding	Records table - Procedure P-02.			

CAR No	J1508403-2	Туре	MINOR
Standard & Clause	DWQMS, Document & Records Control	Discussed with	None
Auditor Name	Kishor Desai		
Statement of Requirement	PLAN – The Operational Plan shall decontrol that describes how: a) Documare: i. kept current, legible and readily retained and disposed of, and b) Recci. kept legible, and readily identifiable disposed of. DO – The Operating Authority shall imand Records control and shall ensure for the Subject System includes: a) the Operational Plan and its associable Documents and Records determine ensure the effective planning, operation internal and external Audits and manal	nents required by identifiable ii. retriords required by the ii. retrievable iii. supplement and confithat the Quality Mated policies and ad by the Operating and control of it	the Quality Management System ievable iii. stored, protected, se Quality Management System are: stored, protected, retained and stored orm to the procedure for Document lanagement System documentation procedures, g Authority as being needed to











Ops. Plan available on LUSI website, as a part of communication commitment to the public
is not current.
Current Ops. Plan version is Rev. #13 dated 8/27/18 where as one available to public
through LUSI website is rev. #12 dated 4/12/18.
LUSI Website- Ops. Plan Document.

CAR No	J1508403-3	Туре	MINOR		
Standard & Clause	DWQMS, Management Review	Discussed with	None.		
Auditor Name	Kishor Desai				
Statement of Requirement	PLAN – The Operational Plan shall document a procedure for management review that evaluates the continuing suitability, adequacy and effectiveness of the Quality Management System and that includes consideration of: a) incidents of regulatory non-compliance,				
	limits and response actions,				
	d) report the results of the management review, the identified deficiencies, decisions and action items to the Owner.				
Statement of Nonconformity	Latest management review in part is not effective and in complete.				
	(a) input item 20 c) deviations from critical control point limits and response action did not receive intended review as review limited to what are the planned CCP's and respective limit. Execution (DO) requirement is to review all incidences of CCP violation and effectiveness of the response procedure employed for each incident and identify improvement action, if any. (b) input item 20 J), according to the agenda and minutes of the meeting, was not management reviewed.				
Location of Finding	Latest Management Review Record.				

Corrective Action Information and Instructions

See NSF-ISR Policies for Accredited Registration Services for corrective action information and instructions. (Available in the "Standards and Policies" section of NSFOnline)

Also, submit all corrective actions through <u>NSFOnline</u>. For instructions on how to use <u>NSFOnline</u>, please click "Help" in the upper right-hand corner. If you require any assistance in accessing your <u>NSFOnline</u> account, please contact your Registration Specialist (Elizabeth Haney email: ehaney@nsf.org).

Site Information

The audit was based on a sampling of the company's management system.

Industry Codes

NACE:E 41

Scope of Registration

Ontario's Drinking Water Quality Management Standard : Colborne Drinking Water System, 138-OA1, Entire Full Scope Accreditation











Opportunities for Improvements
Ontario's Drinking Water Quality Management Standard

Opportunity	Observations / Auditor Notes
Opportunities for Improvements (DWQMS)-01	Location of OFI Internal Audit Report- classification of findings; Discussed With None; Description The statement of OFI (for #2 and 3- record not available and incomplete risk assessment) suggest a requirement is not met yet the finding is classified as OFI. There is an opportunity for internal auditor (s); to adhere strictly to the definition of findings (major, minor or OFI) as defined in the DWQMS standard.
Opportunities for Improvements (DWQMS)-02	Location of OFI Procedure P2- section 5; Discussed With None; Description There are several references to "documents". Opportunity exist to amend them to "records" as the procedure P2 is for records not document control.;
Opportunities for Improvements (DWQMS)-03	Location of OFI Procedure P08 section 5.1 and Ops. Plan element #13; Discussed With None; Description Opportunity exist to (a) amend the reference to NSF International as the permit requires conformance to ANSI/NSF std. 60 and 61 for chemicals and components respectively not listing/certification from a; particular agency. Moreover there are other accredited agencies (such as UL) who certifies products under the same standards (b) OA may ask (through PO's or tender documents as applicable) listing agency's current document for the products shipped to OA for a purchase order issued, as evidence of listing/certification. (c) include P08 as reference within the element #13 of the Ops. Plan document.
Opportunities for Improvements (DWQMS)-04	Location of OFI Procedure P09- Review & Provision of Infrastructure; Discussed With None; Description While risk assessment as an input is included in Infra Structure monitoring procedure (P10) opportunity exists to include the same an additional input for review and provision infrastructure. (section 1.2 of the; P09 procedure).
Opportunities for Improvements (DWQMS)-05	Location of OFI Element #21; Procedure P-019; Discussed With None; Description Update and execute procedures for substantial changes in element 321 requirements (for v #2 of the std.) before any audit (most likely internal audit) taking place in 2019.;

General Information		
Operating Authority: Legal Name & Address	Lakefront Utility Services Inc. 207 Division Street Cobourg, Ont. K9A 4L3	
Language Preference: Correspondence	English	
Language Preference: Audit	English	











Owner: Legal Name and Address	Corporation of the Township of Cramahe, 1 Toronto, Colborne, ON K0K 1S0
Owner Language Preference: Correspondence	English
Owner Language Preference: Audit	English
Applicant Representative Information; Include Name, Title, Phone, Fax, Email & Website	Larry Spyrka Manager, Water Services Phone = 905-372-2193 X 5258 Fax= 905-372-2581 E mail= Lspyrka@lusi.on.ca www.lusi.ca
Accreditation Option	Full Scope - Entire DWQMS
Date of Previous Systems Audit:	Nov. 23, 2016
Date of Previous On-Site Verification Audit:	Dec. 4 to 8, 2017

Processes











Summary of Findings			
Requirement			
1. Quality Management System			
2. Quality Management System Policy			
3. Commitment and Endorsement			
4. Quality Management System Representative			
5. Document and Record Control	Mn		
6. Drinking-Water System	C		
7. Risk Assessment			
8. Risk Assessment Outcomes			
9. Organizational Structure, Roles, Responsibilities, and Authorities			
10. Competencies			
11. Personnel Coverage			
12. Communications			
13. Essential Supplies and Services			
14. Review and Provision of Infrastructure			
15. Infrastructure Maintenance, Rehabilitation & Renewal			
16. Sampling, Testing & Monitoring			
17. Measurement & Recording Equipment, Calibration & Maintenance			
18. Emergency Management			
19. Internal Audits			
20. Management Review			
21. Continual Improvement			
Major Non-Conformity. The auditor has determined one of the following: (a) a required element of the DWQMS has not been incorporated into a QMS: (b) a systemic problem with a QMS is evidenced by two or more minor conformities; or (c) a minor non-conformity identified in a corrective action request has not been remedied.			
Minor Non-Conformity. In the opinion of the auditor, part of a required element of the DWQMS has not been incorporated satisfactorily into a QMS.			
	Opportunity for Improvement. Conforms to requirement, but there is opportunity for improvement.		
C Conforms to requirement.			
Not Applicable to this audit			
* Additional Comment added by auditor in the body of the report.	Additional Comment added by auditor in the body of the report.		











Audit Summary Matrix











Verification of CARs For Ontario's Drinking Water Quality Management Standard

Have you verified the effectiveness of all previous CARs? (List all new CAR's that you initiated in this report because you did not verify effective implementation of a previous CAR)

Yes.

See notes below

Discuss your evaluation in detail.

(1) J1508405--01: Operations plan is provided on LUSI website. Other communications claimed for capital works contractor (RFP, Tender documents, purchase orders etc.) claimed in the corrective.

action is incorporated in to communications procedures (2) J1508405--02:

OA is not claiming detailed procedure on revision history. To ensure documents being current commitment is made in the procedure to remove obsolete documents from use as well as making personnel knowledgeable about the concept of document control so that obsolete document are detected by the users and removed from use. (3)J1508405--03: After hour call taking contractor is now included in the essential supply and services list. Their performance is monitored like other essential suppliers and report filed annually, at minimum (procedural claim). Procedure incorporate need for delivery monitoring for ANSI/NSF std. 60 and 61 requirements upon receipt as well need for suppliers to provide listing along with other paper work that arrives with the delivery. Execution evidence of these procedural claims will be verified at the on site audit. (4) J1508405--04: Frequency of hydrant and main flushing is once annually and all vales are turned within three (3) years. This is now the procedural claimed. Execution will be verified through next on site audit. (5) J1508405-05: Training is logged into a matrix (separate for each operator) as claimed in the revised procedure. Training matrix for Scott Prins, Shawn Neilsen and Tim Clarey were reviewed and considered current.

APPENDIX 10

Resolution of Council