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Ontario

September 16, 2020

The Corporation of the Town of Cobourg
55 King St. W,
Cobourg, Ontario K9A 2M2

Attention: Ian Davey, Director of Corporate Services

RE: Cobourg Drinking Water System (220000825)
Drinking Water Inspection Report 1-O374X
File: SI NO CO KI 540

Please find attached the Ministry of the Environment Conservation and Parks inspection report for the above facility. The report details the findings of the inspection that began on July 22, 2020.

In the inspection report, any *"Actions Required"* are linked to incidents of non-compliance with regulatory requirements contained within the Act, a regulation, or site-specific approvals, licenses, permits, orders or instructions. Such violations could result in the issuance of mandatory abatement instruments including Orders, tickets, penalties, or referrals to the ministry's Environmental and Enforcement Compliance Office.

"Recommended Actions" convey information that the owner or operating authority should consider implementing in order to advance efforts already in place to address such issues as emergency preparedness, the availability of information to consumers, and conformance with existing and emerging industrial standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

Section 19 of the Safe Drinking Water Act (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in *"Taking Care of Your Drinking Water: A guide for members of municipal council"* found under "Resources" on the Drinking Water Ontario website at www.ontario.ca/drinkingwater.

I would like to thank the staff for the assistance afforded to me during this compliance assessment. If you have any questions or concerns please contact myself or Jacqueline Fuller, Water Compliance Supervisor, at 705-768-0436.

Yours truly,

Brittney Wielgos
Water Inspector
Ministry of the Environment, Conservation and Parks
Drinking Water and Environmental Compliance Division
300 Water Street, 2nd Floor South
Peterborough, ON K9J 3C7
705-768-8195

cc:
Larry Spyrka, Manager of Capital Projects, Lakefront Utility Services
Shawn Bolender, Manager of Water Operations, Lakefront Utility Services
Sarah Whitton, Water Compliance Coordinator, Lakefront Utility Services
Dr. Lynn Noseworthy, Medical Officer of Health, Haliburton, Kawartha, Pine Ridge District Health Unit
Linda Laliberte, CAO/Secretary – Treasurer, Ganaraska Region Conservation Authority
Jacqueline Fuller, Water Compliance Supervisor, Peterborough District Office, MECP

Ontario

Ministry of the Environment, Conservation and Parks

COBOURG DRINKING WATER SYSTEM

Inspection Report

Site Number:	220000825
Inspection Number:	1-O374X
Date of Inspection:	Jul 22, 2020
Inspected By:	Brittney Wielgos

TABLE OF CONTENTS

OWNER INFORMATION:

Company Name:	COBOURG, THE CORPORATION OF THE TOWN OF		
Street Number:	55	**Unit Identifier:**	
Street Name:	KING St W		
City:	COBOURG		
Province:	ON	**Postal Code:**	K9A 2M2

CONTACT INFORMATION

Type:	Owner	**Name:**	Ian Davey
Phone:	(905) 372-4301 x4201	**Fax:**	
Email:	idavey@coubourg.ca		
Title:	Director of Corporate Services		

Type:	Operating Authority	**Name:**	Larry Spyrka
Phone:	(905) 372-2193	**Fax:**	(905) 372-2581
Email:	lspyrka@lusi.on.ca		
Title:	Manager of Water Capital Projects, Lakefront Utility Services Inc.		

Type:	Operating Authority	**Name:**	Shawn Bolender
Phone:	(905) 372-2193 x5239	**Fax:**	
Email:	sbolender@lusi.on.ca		
Title:	Manager of Water Operations		

Type:	Operating Authority	**Name:**	Sarah Whitton
Phone:	(905) 372-2193 x5228	**Fax:**	
Email:	swhitton@lusi.on.ca		
Title:	Water Compliance Coordinator		

INSPECTION DETAILS:

Site Name:	COBOURG DRINKING WATER SYSTEM
Site Address:	6 D'ARCY Street COBOURG ON K9A 3Z4
County/District:	COBOURG
MECP District/Area Office:	Peterborough District
Health Unit:	HALIBURTON, KAWARTHA, PINE RIDGE DISTRICT HEALTH UNIT
Conservation Authority:	
MNR Office:	
Category:	Large Municipal Residential
Site Number:	220000825
Inspection Type:	Announced
Inspection Number:	1-O374X
Date of Inspection:	Jul 22, 2020
Date of Previous Inspection:	Aug 20, 2019

COMPONENTS DESCRIPTION

Site (Name): MOE DWS Mapping
Type: DWS Mapping Point **Sub Type:**

Site (Name): RAW WATER - LAKE ONTARIO
Type: Source **Sub Type:** Surface Water
Comments:
The Cobourg Water Treatment Plant obtains its raw water from Lake Ontario. The raw water inlet structure consists of a 1050 mm diameter steel intake pipe located approximately 850 metres south of the Water Treat Plant. It is protected by an outer hexagonal timber crib with additional protection provided through an inner hexagonal wall constructed of concrete that surrounds the intake pipe. Coarse screening is provided by timbers that form a grid with 1525 mm x 200 mm openings. A zebra mussel control system is in place which consists of a 50 mm, schedule 80 PVC chlorine diffuser mounted at the mouth of the intake pipe. A 50 mm PE pipe contained within the raw water conduit allows chlorine gas to be pumped from the water treatment plant to the intake. Raw water flows by gravity through 856 metres of 1050 mm conduit from the intake structue to the plant's inlet well. The entire length of the raw water conduit is buried from the shore to the crib. The intake structure terminates with a 1050 mm gate valve that is manually operated from the low-lift pumping area of the Plant. The raw water passes through a stationary coarse screen constructed of 25 mm openings of #12 stainless steel mesh before entering the inlet well. Raw water then passes through a travelling screen consisting of 600 mm x 1524 mm 12 gauge wire screen with 9.5 mm openings at the entrance to the low lift well.

Site (Name): TREATED WATER – WATER TREATMENT PLANT
Type: Treated Water POE **Sub Type:** Treatment Facility
Comments:
The Cobourg Water Treatment Plant is a conventional treatment facility consisting of coagulation (alum), flocculation, clarification, filtration (activated carbon and silica) and disinfection (chlorination). Disinfection at the plant is provided through the injection of chlorine gas which is delivered to the plant in one ton cylinders and injected through one of four Wallace & Tiernan chlorinators. Chlorine may be added to the raw water at the intake (during the zebra mussel season) or at the influent wet well (17,500 L) during the rest of the year. Water from the influent wet well passes through a travelling screen before entering the low lift wet well (393,000 L). One of four vertical turbine pumps directs the water through a common 500 mm discharge header that leads to the solids contact clarifier. The discharge header incorporates a 300 mm magnetic flow meter, an aluminum sulphate injection point, as well as temperature, turbidity, and chlorine residual monitoring points. The Graver 'Reactivator' Upflow Clarifier consists of a circular tank (24.5 m diameter x 6.0 m deep) equipped with tube settlers, variable speed mixer, fixed weir, and automated sludge removal system. The Engineer's Report by KMK Consultants (Brampton, ON) reports the clarifier provides 112 minutes of detention time at the rated capacity of 36,368 m3/day. A 600 mm conduit directs the clarified water past a second on-line turbidity analyzer to a common inlet trough that leads to two rapid gravity filter units. The dual media filters contain 600 mm of granular activated carbon and 150 mm of silica sand media with a surface area of 53.1 m2. Both filters are equipped with air scour assisted backwash that may be initiated automatically by preset head-loss, turbidity, or run-time parameters. Backwash cycles may also be manually initiated by the operators. Backwashes are provided on an alternating basis through one of two filter backwash pumps rated at 433 L/s at 9.1 m TDH. Filtered water is directed via separate 600 mm conduits (equipped with continuously operating turbidimeters) into the former chlorine contact chamber. Upgrades in 2003, converted the 566.4 m3 contact chamber into a backwash well, thus permitting use of unchlorinated water for backwashes (extending the life of the filter media and eliminating the requirement to dechlorinate backwash wastewater). Chlorine gas is injected into the filtered water at the outlet of the backwash well, prior to entering the dual celled, in-ground concrete contact tank. All in-plant chlorination is provided through chlorine gas delivered in one ton cylinders and discharged through a 32 mm line via one of four Wallace & Tiernan model V2000 chlorinators. The 34 m3 inlet chamber directs filtered water into two baffled contact cells (with a baffle factor of 0.7 and detention time of 51.0 minutes) via separate 750 mm inlet conduits. An overflow weir located on the centre partition connects the two 916 m3 cells, allowing a total contact volume of 1,840 m3. The flow from both cells passes over separate weirs and connects with a common 900 mm stainless steel conduit leading to the treated water reservoir. Each cell of the treated water reservoir measures 27.4 m x 24.4 m x 4.67 m providing a total volume of 6,244 m3. The two cells are interconnected with a 600 mm sluice gate permitting treated water to

pass through both cells before entering the high lift wet well. An overflow weir permits excessive volumes of treated water to be directed into a sewer connection which leads to the supernatant pond, prior to discharge to Lake Ontario. Water passes from the clearwell through a 600 mm conduit to the 502.8 m3 concrete high lift wet well. Four vertical turbine high lift pumps connect to a 600 mm discharge header directing treated water into the distribution system. The high lift pumping gallery consists of: • one constant speed pump rated at 121 L/s at 67 m TDH, • one constant speed pump rated at 223 L/s at 67 m TDH, and • two VFD pumps rated at 227 L/s at 67 m TDH

Site (Name): DISTRIBUTION SYSTEM – PRESSURE ZONE 1 TOWER
Type: Other **Sub Type:** Reservoir
Comments:
The Cobourg Water Treatment Plant was constructed in 1971 to supply treated water to the Town of Cobourg. Treated water from the Cobourg WTP is also supplied to private residences of a "Stand Alone Distribution System" located in the southeastern portion of Hamilton Township. The distribution system serves two separate pressure zones and consists of 130 km of varying size and type of pipe, two elevated storage tanks and one pressure booster station. The elevated storage tank serving Pressure Zone 1 is located at 665 Victoria Street. It was constructed in 1985 and is comprised of steel and concrete. The tank has a useable storage volume of 1,360 m3. Upgrades completed upon the elevated storage tower in 2005, included installation of a rechlorination system, 300 mm bi-directional magnetic flow meter, pressure relief valve, overflow detection sensor and continuously operating chlorine residual analyzer. The rechlorination system (installed in a dedicated chemical storage/chlorination room) consists of a 60 L sodium hypochlorite storage tank, two duty and standby chemical metering pumps (each rated at 7.5 L/hr at a backpressure of 1,000 kPa) and a chlorine residual analyzer provided with SCADA output. The Zone 1 Tower is also equipped with a 20 kw standby generator which is tied into the alarm system and SCADA systems at the Cobroug Drinking Water System.

Site (Name): DISTRIBUTION SYSTEM – PRESSURE ZONE 2 TOWER
Type: Other **Sub Type:** Reservoir
Comments:
A second elevated storage tank serving Pressure Zone 2 (north and western portions of the Town of Cobourg) is located at 60 Strathy Road. The steel and concrete reservoir and rechlorination structure was constructed in 2000. The tank provides a useable storage volume of 3,734 m3 and includes a circulation pump (rated at 8.2 L/s at 8.2 m TDH) and an overflow conduit. The rechlorination system consists of a 200 L chemical storage tank, two chemical metering pumps (one duty and one standby) each rated at 5.3 L/hr at a backpressure of 500 kPa and a continuously operating free chlorine residual analyzer complete with SCADA output. The Zone 2 Tower is also equipped with a 35 kw standby generator which is tied into the alarm system and SCADA systems at the Cobroug Drinking Water System.

Site (Name): DISTRIBUTION SYSTEM – BOOSTER PUMPING STATION
Type: Other **Sub Type:** Pumphouse
Comments:
A pressure boosting station located at 9 Ewart Street is employed to draw treated water from Zone 1, boost distribution pressure and maintain water levels in the Zone 2 elevated storage tank. The pressure boosting station consists of a below grade flow meter chamber with a 200 mm magnetic flow meter and three split-case horizontal centrifugal pumps that connect to a common 450 mm diameter forcemain. Pump No.1 is rated at 152.0 L/s at 48.8 m TDH and Pumps No. 2 and 3 are rated at 76 L/s at 48.8 m TDH. The pumping station is equipped with a rechlorination system that consists of a 110 L day tank, two chemical metering pumps, and a continuously operating free chlorine residual analyzer complete with SCADA output. The two chemical feed pumps (one duty and one standby) have a rated capacity of 7.6 L/hr at a backpressure of 500 kPa. The pressure boosting station is provided with standby power that is delivered through a 230 kW diesel standby generator and connected to a 4,260 litre fuel tank that is located outside of the pumping station.

INSPECTION SUMMARY:

Introduction

- **The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water related policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment and distribution components as well as management practices.**

  This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

  This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

  This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

  On July 22, 2020, Provincial Officer Brittney Wielgos began an announced focused inspection of the Cobourg Drinking Water System.

  The Cobourg Drinking Water System (the System) is owned by the Corporation of the Town of Cobourg and operated by Lakefront Utility Services Inc. (LUSI). The System consists of a convention water treatment plant; two (2) elevated storage tanks with rechlorination; and a booster pumping station with rechlorination. Raw water is obtained from Lake Ontario via a single 1,050 mm diameter intake pipe located approximately 850 m south of the water treatment plant and at a depth of 8.8 m.

  The System delivers treated water through two (2) pressure zones and consists of approximately 126 kilometers of distribution watermain and 6,350 residential and non-residential service connections. The System serves approximately 19,544 people. The System operates under Drinking Water System No. 220000825 and is classified as a Class 3 Water Treatment Subsystem and Class 3 Water Distribution Subsystem.

  The inspection included a compliance assessment of applicable Ministry of Environment, Conservation and Parks (MECP) legislation, an inspection of the procedures within the treatment and distribution system, and a review of records.

  Records reviewed in conjunction with this inspection include:
  -Drinking Water Works Licence No. 137-101 Issue Number 3 (The Licence); and,
  -Drinking Water Works Permit No. 137-201 Issue Number 2 (The Permit)
  -Permit to Take Water (PTTW) No. 6423-8XHF2

  This inspection was conducted pursuant to section 81 of the Safe Drinking Water Act in order to assess compliance with the requirements of Ontario Regulation 170/03. The drinking water inspection included: physical inspections of the equipment and facilities; interviews with operating authority staff; and, a review of relevant documents from the period of August 20, 2019 to July 22, 2020 (hereafter referred to as the "inspection review period").

Introduction

Source

- **The owner had a harmful algal bloom monitoring plan in place.**

Capacity Assessment

- **There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.**

  At the time of the inspection sufficient flow meters were installed to permit the continuous measurement of the flow rates and daily volume of treated water that flows from the treatment subsystem into the distribution system in accordance with Condition 2 of Schedule C of the Licence.

- **The owner was in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the Municipal Drinking Water Licence issued under Part V of the SDWA.**

  Condition 1.1 of Schedule C of the Licence requires that the System not be operated to exceed the rated capacity of:

  Cobourg Drinking Water System: 36,368 m³/day

  The rated capacity was not exceeded during the inspection review period. The maximum treated flow for the inspection review period was 11,556.8 m³/day in July 2020.

Treatment Processes

- **The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.**

  The Drinking Water Works Permit 137-201 outlines the equipment installed throughout the Cobourg Drinking Water System which includes the drinking water treatment plant, two elevated storage tanks with rechlorination and a booster pumping station.

  During the physical inspection, a comparison between the equipment described in the permit and the equipment installed on site was performed.

- **The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period.**

  During the inspection review period a Form 2 - Record of Minor Modifications or Replacements to the Drinking Water System was prepared, dated May 26, 2020.

  The Form 2 describes the installation of a hydrodynamic mixing system installed in the Cobourg Zone 2 Water Tower. The mixing system consists of a 300 mm diameter, carbon steel pipe header and four (4) 150mm duckbill check valves installed at an elevation of 152.52 m and 153.43 m within the storage cell.

  The Form 2 documents reviewed suggests that the documents were prepared in accordance with the Drinking Water Works Permit.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**

Treatment Processes

The Procedure for Disinfection of Drinking Water in Ontario requires a drinking water system that obtains water from a raw water supply which is surface water, have a treatment process that is capable of producing water of equal or better quality than a combination of well-operated chemically assisted filtration and disinfection process would provide. This treatment must provide and overall performance with a minimum 2-log (99%) removal or inactivation of Cryptosporidium oocysts, a 3-log (99.9%) removal or inactivation of Giardia cysts and a 4-log (99.99%) removal or inactivation of viruses before water is delivered to the first consumer.

The log removal attributed to specific treatment processes at the Cobourg Drinking Water System are stated in the MDWL 137-101under Schedule E: conventional filtration and chlorination. Operational requirements are listed for each process in order to meet the log removal/inactivation stipulated.

The conventional filtration component requires: a chemical coagulant to be used at all times when the treatment plant is in operation; effective backwash procedures and continuous monitoring of the filtrate turbidity.

Primary disinfection is achieved using chlorine gas. Chlorine is injected into filtered water as it leaves the backwash well. The contact chamber is comprised of two cells that are designed to provide appropriate baffling. The contact tank outlet chlorine residual is used to calculate contact time.

A review of records, including backwash procedures; review of continuous monitoring data of the filtrate turbidity; logbook entries and maintenance records, suggest that the System was operated in a manner that achieved the deign capabilities required under the Procedure for Disinfection of Drinking Water in Ontario and O.Reg.170/03.

- **Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.**

  A review of records confirmed that water treatment equipment that provides chlorination for secondary disinfection purposes was operated in a manner to fulfill the requirements under clause 1-2 (2) 4 of Schedule 1, O. Reg. 170/03.

  The chlorine residual is continuously monitored by SCADA at the booster station, water tower #1 and water tower #2. If additional disinfection is necessary, sodium hypochlorite can be added via an on-line pump.

  A review of free chlorine residual grab samples taken form the Cobourg distribution system indicate that the free chlorine residual was greater than 0.05 mg/L at all times during the inspection review period.

- **Where an activity has occurred that could introduce contamination, all parts of the drinking water system were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit.**

Treatment Process Monitoring

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**

  Primary disinfection chlorine monitoring is conducted at the end of the chlorine contact chamber via an online chlorine analyser.

- **Continuous monitoring of each filter effluent line was being performed for turbidity.**

  The Cobourg Drinking Water System consists of two dual-media gravity filters. The filters consist of a 600 mm layer of granular activated carbon (GAC), on top of a 150 mm thick layer of silica sand. Filter time and turbidity are monitored by SCADA, filter backwash is initiated based on run time and effluent water turbidity.

Treatment Process Monitoring

- **The secondary disinfectant residual was measured as required for the distribution system.**

  LUSI operators collect an average of eight free chlorine and total chlorine residual samples each week within the distribution system.

  Furthermore, secondary disinfection residual is measured using three continuous analysers located at the Ewart Street Booster Pumping Station, Zone 1 and Zone 2 Elevated tanks and recorded and reviewed on SCADA.

- **Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.**

  The System is inspected on a daily basis by a licenced operator to monitor the process, perform operational duties, maintenance and respond to customer concerns. The System is equipped with a SCADA system that continuously monitors process parameters. Daily checks include reviewing the previous 24 hour SCADA trending.

  The SCADA system is equipped with an auto-dialler that has been programmed to contact the answering service or LUSI personnel whenever conditions deviate from the program setting.

- **All continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

  At the time of the inspection, the continuous analyser alarms provided were:

  Contact Chamber Effluent:
  Upper limit - 3.5 mg/L
  Lower Limit - 1.0 mg/L

  Filter Effluent Turbidity: 0.3 NTU

- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.**

- **All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.**

  LUSI staff utilize procedure 'QMS-D08-Instrument Calibration' which contains a lit of instruments that are calibrated in-house by LUSI operators and externally by a third-party contractor.

  Review of records indicate that turbidity readings from online turbidimeters at the Treatment Plant are verified monthly and online chlorine analysers are verified against portable chlorine analysers on a regular basis.

  Calibration and verification of continuous analysers was completed in June 2020 by Nichol Water Services. Calibration and verification of flow meters was completed in May 2020 by Franklin Empire.

Operations Manuals

- **The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.**

- **The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.**

Logbooks

- **Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5.**

  Based on the review of records during the inspection review period, it appears that only certified operators performed operational tests.

Security

- **The owner had provided security measures to protect components of the drinking water system.**

Certification and Training

- **The overall responsible operator had been designated for each subsystem.**

  Subsection 23(1) of O. Reg. 128/04 "Certification of Drinking-Water System Operators and Water Quality Analysts" states that a municipal residential drinking water system must have a designated overall responsible operator (ORO). The ORO shall be an operator who holds a certificate for that type of subsystem (e.g. water distribution subsystem) and that is of the same class or higher than the class of that subsystem.

  The Operational Plan for Cobourg and Hamilton Distribution contains Appendix E 'Responsibilities and Authorities', the appendix identifies competencies required and responsibilities for all individuals whose duties directly affect drinking water quality. LUSI appoints the Manager of Capital Water Projects as the ORO for the Cobourg Drinking Water System. Operators identify the ORO in the logbook each day of the year during daily system checks.

  The Cobourg Drinking Water Treatment Plant is classified as a Water Treatment Subsystem Class 3 and Water Distribution Subsystem Class 3. During the inspection review period, Larry Spyrka, Manager of Water Capital Projects possessed a Water Distribution and Supply Subsystem Class 3 certification that expires on May 31, 2023 and a Water Treatment Subsystem Class 3 certificate that expires on October 31, 2020.

  During the inspection review period, the ORO and alternates possessed the appropriate operator certificates to serve in this capacity.

- **Operators-in-charge had been designated for all subsystems which comprised the drinking water system.**

  LUSI designates all operators with the exception of Operators in Training as Operator in Charge (OIC). The OIC is identified each day in the daily logbook.

- **All operators possessed the required certification.**

- **Only certified operators made adjustments to the treatment equipment.**

Water Quality Monitoring

- **All microbiological water quality monitoring requirements for distribution samples were being met.**

  Schedule 10, Section 10-2 of O.Reg.170/03 indicates that at least eight distribution samples plus one additional distribution sample for every 1,000 people served by the system are to be taken each month with at least one sample being taken each week.

  The population served, based on service connections, is approximately 19,544, indicating twenty-seven (27) samples are to be taken each month and tested for E.coli and total coliform, with at least 25% of those also being tested for heterotrophic plate count (HPC).

Water Quality Monitoring

Distribution sample results reviewed for the inspection review period indicated that eight (8) samples were collected each week.

- **All microbiological water quality monitoring requirements for treated samples were being met.**

  Section 10-3 of Schedule 10 of O. Reg. 170/03 requires that the Owner of a drinking water system and the Operating Authority for the system ensure that a water sample is taken at least once every week and tested for E. coli, total coliforms and general bacteria population expressed as colony counts on a heterotrophic plate count.

  A review of sample records provided during the inspection period indicates that one treated water sample was collected from the System each week.

- **All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-2 (1) of Schedule 13 of O. Reg. 170/03 states that the owner of a large municipal drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every 36 months, if the system obtains water from a raw water supply that is ground water. The owner shall ensure that each of the samples taken is tested for every parameter set out in Schedule 23.

  Samples for Schedule 23 inorganic parameters were analyzed on January 13, 2020.

- **All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-4 (1) of Schedule 13 of O. Reg. 170/03 states that the owner of a large municipal drinking water system and the operating authority for the system shall ensure that at least one water sample is taken every 36 months, if the system obtains water from a raw water supply that is ground water. The owner shall ensure that each of the samples taken is tested for every parameter set out in Schedule 24.

  Samples for Schedule 24 organic parameters were analyzed on January 13, 2020.

- **All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.**

  Schedule 13-11 of O. Reg. 170/03 requires the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system shall ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids.

  Results provided by LUSI indicate that sampling was conducted every three months as required.

- **All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.**

  Section 13-6 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system that provides chlorination and the operating authority for the system ensure that at least one distribution sample is taken every three months, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of trihalomethanes. Each sample shall be tested for trihalomethanes.

  Results provided by LUSI indicate that sampling was conducted every three months as required.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the**

Water Quality Monitoring

required frequency for the DWS.

Section 13-7 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system ensure that at least one water sample is taken every three months and tested for nitrate and nitrite.

Results provided by LUSI indicate that sampling was conducted a minimum of every three months.

- **All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-8 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system ensure that at least one water sample is taken every 60 months and tested for sodium.

  Results provided by LUSI indicate that sampling was last completed September 16, 2019.

- **All fluoride water quality monitoring requirements prescribed by legislation were conducted within the required frequency.**

  Section 13-9 of Schedule 13 of O. Reg. 170/03 requires that the owner of a drinking water system and the operating authority for the system ensure that at least one water sample is taken every 60 months and tested for fluoride.

  Results provided by the LUSI indicate that sampling was last completed September 16, 2019.

- **All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met.**

  Section 4.2, 4.3 and 4.4 of Schedule C of the MDWL 137-101prescribes that the collection and analysis of process wastewater discharged to Lake Ontario.

  Table 7 of Section 4.4 of Schedule C of the MDWL prescribes monthly composite samples of wastewater and analysis of suspended solids (TSS). Section 1.5 of Schedule C prescribes that the annual average concentration of Total Suspended Solids shall not exceed 25 mg/L.

  Records provided for the inspection review period indicate that the System monitors TSS using monthly composite grab samples.

  The annual average concentration (mg/L) of TSS in 2019 was <2.5 mg/L MDL. A parameter below the method detection limit indicated by (<), cannot be detected as the concentration is lower than the minimum concentration that can be measured and reported with 99% certainty.

- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.**

Reporting & Corrective Actions

- **Corrective actions (as per Schedule 17) had been taken to address adverse conditions, including any other steps that were directed by the Medical Officer of Health.**

  On July 17, 2020, an adverse water quality incident (AWQI) was reported due to a Category 2 watermain break that occurred resulted in a loss of pressure and a loss of service to four private residences. LUSI staff immediately contacted the Haliburton Kawartha Pine Ridge (HKPR) Health Unit and Spills Action Centre to report the watermain break.

Reporting & Corrective Actions

The HKPR Health Unit issued a boil water advisory to the four residences. Corrective actions were followed and the watermain break was repaired. The boil water advisory for the four private residences was rescinded on July 23, 2020.

- **All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.**

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

  A review of continuous monitoring records and logbooks suggest that when an alarm or automatic shut-off devices was triggered that a certified operator responded and took appropriate actions.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

This section provides a summary of all non-compliance with regulatory requirements identified during the inspection period, as well as actions required to address these issues. Further details pertaining to these items can be found in the body of the inspection report.

Not Applicable

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

This section provides a summary of all recommendations and best practice issues identified during the inspection period. Details pertaining to these items can be found in the body of the inspection report. In the interest of continuous improvement in the interim, it is recommended that owners and operators develop an awareness of the following issues and consider measures to address them.

Not Applicable

SIGNATURES

Inspected By: Brittney Wielgos

Signature: (Provincial Officer)

Reviewed & Approved By: Jackie Fuller

Signature: (Supervisor)

Review & Approval Date: 16/09/2020

Note: This inspection does not in any way suggest that there is or has been compliance with applicable legislation and regulations as they apply or may apply to this facility. It is, and remains, the responsibility of the owner and/or operating authority to ensure compliance with all applicable legislative and regulatory requirements.

Ontario

APPENDIX A

STAKEHOLDER APPENDIX

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or waterforms@ontario.ca.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater

PUBLICATION TITLE	PUBLICATION NUMBER
FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification	 012-2149E 012-2148E 012-4444E
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	Website
Procedure for Disinfection of Drinking Water in Ontario	Website
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	Website
Filtration Processes Technical Bulletin	Website
Ultraviolet Disinfection Technical Bulletin	Website
Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments	Website
Certification Guide for Operators and Water Quality Analysts	Website
Guide to Drinking Water Operator Training Requirements	9802E
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	Website
Drinking Water System Contact List	7128E01
Ontario's Drinking Water Quality Management Standard - Pocket Guide	Website
Watermain Disinfection Procedure	Website
List of Licensed Laboratories	Website

Ontario

Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à waterforms@ontario.ca si vous avez des questions ou besoin d'aide.

Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Renseignements sur le profil du réseau d'eau potable Avis de demande de services de laboratoire Avis de résultats d'analyse insatisfaisants et de règlement des problèmes	012-2149F 012-2148F 012-4444F
Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux	Site Web
Marche à suivre pour désinfecter l'eau portable en Ontario	Site Web
Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection	Site Web
Filtration Processes Technical Bulletin (en anglais seulement)	Site Web
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	Site Web
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable	Site Web
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	Site Web
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802F
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	Site Web
Liste des personnes-ressources du réseau d'eau potable	Site Web
L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche	Site Web
Procédure de désinfection des conduites principales	Site Web
Laboratoires autorisés	Site Web

Ontario

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APPENDIX B

INSPECTION RATING RECORD

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2020-2021)

DWS Name:	COBOURG DRINKING WATER SYSTEM
DWS Number:	220000825
DWS Owner:	Cobourg, The Corporation Of The Town Of
Municipal Location:	Cobourg
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	July 22, 2020
Ministry Office:	Peterborough District

Maximum Question Rating: 506

Inspection Module	Non-Compliance Rating
Capacity Assessment	0 / 30
Treatment Processes	0 / 81
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 112
Reporting & Corrective Actions	0 / 66
Treatment Process Monitoring	0 / 133
TOTAL	**0 / 506**

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 16-SEP-20 (Inspection ID: 1-O374X).

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name:	COBOURG DRINKING WATER SYSTEM
DWS Number:	220000825
DWS Owner:	Cobourg, The Corporation Of The Town Of
Municipal Location:	Cobourg
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	July 22, 2020
Ministry Office:	Peterborough District

Maximum Question Rating: 506

Inspection Risk Rating	**0.00%**

FINAL INSPECTION RATING:	**100.00%**

Inspection Rating Record Generated On 16-SEP-20 (Inspection ID: 1-O374X).