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Ministère de l'Environnement, de la
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March 26, 2021

File: SI-ES-LA-540

Town of Lakeshore
419 Notre Dame St.
Belle River, ON N0R 1A0

Attention: Mr. Truper McBride, CAO

Re: Municipality of Lakeshore Drinking Water System – Stoney Point Inspection Report

Please find enclosed the Inspection Report for the inspection of the Stoney Point facility (DWS#220003396) on Feb 02, 2021.

A **Summary of Recommendations and Best Practice Issues** are found on page 14 in the attached inspection report.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix B of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspectors' Annual Report. If you have any questions or concerns regarding the rating, please contact Marc Bechard, Water Compliance Supervisor, at 519-383-3778.

If you have any questions or concerns regarding this report, please call me at (226) 280-1406.

Yours truly,

Emily Awad
Water Inspector, Provincial Officer #1823
Drinking Water and Environmental Compliance Division
Sarnia/Windsor District

Encl.

cc: Garry Punt, Supervisor, Water Operations, Darryl Dunsby, Compliance Coordinator, Krystal Kalbol, Director of Engineering & IS, Albert Dionne, Manager Environmental Services, Town of Lakeshore;
Dr. Wajid Ahmed, Medical Officer of Health (A), Theresa Marentette, Director of Health Protection, Kristy McBeth, Director of Health Protection, Phil Wong, Manager, Health Inspection Department, Victoria Peczulis, Manager, Environmental Health, Windsor-Essex County Health Unit;
Katie Stammmer, Source Water Protection Manager, ERCA;
Marc Bechard, Supervisor, Ministry of the Environment, Conservation and Parks.



Ministry of the Environment, Conservation and Parks

MUNICIPALITY OF LAKESHORE DRINKING WATER SYSTEM - STONEY POINT
Inspection Report

Site Number:	220003396
Inspection Number:	1-NXSMZ
Date of Inspection:	Feb 02, 2021
Inspected By:	Emily Awad

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Appendix A: Key Reference and Guidance Material

Appendix B: Inspection Summary Rating Record

OWNER INFORMATION:

Company Name:	LAKESHORE, THE CORPORATION OF THE TOWN OF	Unit Identifier:	
Street Number:	419		
Street Name:	NOTRE DAME St		
City:	BELLE RIVER		
Province:	ON	Postal Code:	N0R 1A0

CONTACT INFORMATION

Type:	Operating Authority	Name:	Darryl Dunsby
Phone:	(519) 796-6780	Fax:	(519) 728-4110
Email:	ddunsby@lakeshore.ca		
Title:	Compliance Coordinator		

Type:	Operating Authority	Name:	John Merritt
Phone:	(519) 728-1975 x341	Fax:	(519) 728-4110
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Title:	Operator		

Type:	Operating Authority	Name:	Darrin Johnston
Phone:	(519) 728-9142	Fax:	(519) 728-4110
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Title:	Water Treatment Working Foreman - ORO		

Type:	Operating Authority	Name:	Garry Punt
Phone:	(226) 345-2079	Fax:	(519) 728-4110
Email:	gpunt@lakeshore.ca		
Title:	Water Operations Supervisor		

INSPECTION DETAILS:

Site Name:	MUNICIPALITY OF LAKESHORE DRINKING WATER SYSTEM - STONEY POINT
Site Address:	6011 ST. CLAIR Road STONEY POINT ON N0R 1N0
County/District:	LAKESHORE
MECP District/Area Office:	Windsor Area Office
Health Unit:	WINDSOR-ESSEX COUNTY HEALTH UNIT
Conservation Authority:	
MNR Office:	
Category:	Large Municipal Residential
Site Number:	220003396
Inspection Type:	Unannounced
Inspection Number:	1-NXSMZ
Date of Inspection:	Feb 02, 2021
Date of Previous Inspection:	Feb 05, 2020

COMPONENTS DESCRIPTION

Site (Name): Distribution System

Type: Other

Sub Type:

Comments:

The Town of Lakeshore Stoney Point Drinking Water System is located in Stoney Point, Ontario. The drinking water system is owned by the Town of Lakeshore, and supplies water to the north-eastern portion of the Town of Lakeshore, roughly bounded by Rochester Townline Road to the west, Big Creek to the east, Lake St. Clair to the north, and Essex County Road 8 to the south. The communities of Stoney Point, Comber, Staples, Lighthouse Cove and rural areas within the boundaries are included in the service area. According to the drinking water system registration profile, this results in a total serviced population of approximately 6,516 persons in 2,327 service connections. The system is considered a "large municipal residential system" under O. Regulation 170/03. Other than the storage located at the treatment plant site, reservoir booster pumping and re-chlorination stations are located in the village of Comber (1018 m3 storage volume) and hamlet of Haycroft (425 m3 storage volume). Since there are no towers or elevated tanks located on the system, plant high-lifts and booster station pumps supply the system's pressure by continually operating pumps. Consequently, the service area consists of four pressure zones:

- Stoney Point Pressure Zone - Stoney Point urban area and adjacent lakefront areas; maintained by water plant high-lift pumping
- Haycroft Pressure Zone - rural areas south of lakefront and generally north of Highway 401; which can be maintained by the Stoney Point water plant high-lift pumping or the Haycroft booster station high-lift pumping
- Comber Pressure Zone - Comber urban area; maintained by the Comber booster station high-lift pumping (Comber header)
- South Pressure Zone - Staples and rural areas South of Highway 401; maintained by the Comber booster station high-lift pumping (Tilbury West header).

Site (Name): Source Water

Type: Source

Sub Type:

Comments:

The treatment facility in Stoney Point, receives water from Lake St. Clair via a low lift pumping station. Two low lift pumps draw water through a 1219 m long, 600 mm diameter intake pipe, located in approximately 2.5 m of water. The intake is equipped with a zebra mussel chemical control system consisting of a prechlorination line, feeding from the water treatment plant chlorine room to the low lift pumping station. The chlorine solution pipe is installed through the intake pipe at the low lift station and terminates at the intake crib. The low lift pumping station consists of a 79 m3 single chamber raw water intake well, equipped with float controls for low level shutoff/alarming.

Site (Name): Treatment Plant

Type: Treated Water POE

Sub Type:

Comments:

The treatment plant is currently rated at 4,546 m3/day approved capacity. It is a conventional water treatment plant consisting of contact clarification via a single upflow solids clarifier, after alum coagulant addition. A polymer coagulant aid system is present but the equipment has been dismantled and has not been used for some time. Powdered activated carbon slurry feed is added seasonally. The chemical addition systems are located within the low lift structure; within the same compound as the contact clarifier. Clarified water is collected in an intermediate wet well located in the filtration/high-lift building. This wet well is equipped with three vertical turbine pumps (two duty/one standby) which deliver the clarified effluent into the filter influent channel for feeding into two dual media-type filters (450 mm anthracite and 300 mm silica sand). The filters are equipped with backwash facilities via one air scour blower and one backwash pump. Sedimentation sludge and backwash flows from the filters are directed to residue management pump basins; one adjacent to the clarifier and one outside the filtration building. Both waste flows are transferred from the main basin to one of two available wastewater lagoons. Lagoon supernatant overflow is discharged to an on-site drainage ditch which flows to Lake St. Clair.

Filtered water is received into a two-cell filter clearwell operated in series; having a combined capacity of 1380 m3 total volume. Primary disinfection is provided by addition of gas chlorine solution which is normally added into the

intermediate wet well pump discharge header ahead of the filter inlet channel and ahead of the filtered water reservoir. An alternate pre-chlorine injection point is also available at the inlet of the intermediate wet well. Chlorine contact time is achieved within the clearwell. Post-contact trim chlorine can also be added at either the inlet of the high-lift well or into the high-lift pump discharge. Free chlorine is monitored ahead of the filter clearwell (from each filter effluent) and after the contact time in the clearwell prior to trim chlorine addition in the high-lift pumpwell. Free and total chlorine is also monitored from the point of entry to the distribution system. The high-lift well is a two-cell structure equipped with three vertical turbine high-lift pumps (two duty/one standby) which supply pressure to the distribution system and supply the Haycroft and Comber reservoir booster pumping stations. Each of the reservoirs at Haycroft and Comber are equipped with gas chlorine re-chlorination facilities to maintain secondary disinfectant levels in the distribution system.

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.

Specifically, this review includes an assessment of compliance/conformance in relation to the following:

- Drinking Water Systems Regulation (O. Reg. 170/03)
- Drinking Water Operator and Water Quality Analyst Certification Regulation (O. Reg. 128/04)
- Drinking Water System Licence 031-101, Issue Number 2, issued June 6, 2016
- Drinking Water Works Permit 031-201, Issue Number 4, issued June 6, 2016
- Permit to Take Water #3123-BLQKBM, issued April 17, 2020
- Ontario Drinking Water Quality Standards (ODWQS; O. Reg. 169/03) based on water quality data generated since the previous inspection, and
- Required actions and recommendations from the previous ministry inspection report (February 5, 2019).

The inspection was conducted on an un-announced basis on February 1, 2021 and included a telephone interview due to the Stay-at-Home-Order (O. Reg. 11/21) in Ontario. The inspection covers the period from February 1, 2020 to January 31, 2021.

Source

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

Standard Operating Procedure (SOP) #2000661 indicates the monitoring schedule for blue-green algae and procedures for notification. During the warmer season, raw and treated samples are collected weekly. Sampling goes from June 1 to October 1 each year.

The operating authority was notified that in the new Licence/Permit to be issued in 2021, there will be a requirement to continue sampling until October 31st each season.

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.**

Condition 2.1, Schedule C of the Licence for the Town of Lakeshore Drinking Water System requires the continuous flow measurement and recording to be undertaken for:

- The flow rate and daily volume of treated water that flows from the treatment subsystem to the distribution system
- The flow rate and daily volume of water that flows into the treatment subsystem

An ABB Magmaster magnetic type meter is installed at the discharge from the intermediate wet well feeding the filter inlet channel. ABB Watermaster magnetic type meters are installed on the following: the raw water discharge, the filter 1 and 2 effluent lines, the high-lift discharge header to the north, Comber line to the south, and the discharge headers of the booster/re-chlorination stations at Haycroft and Comber.

- **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 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system at the Stoney Point Water Treatment Plant shall not exceed 4,546 m³/day.

During the inspection period the maximum day flow of treated water, which occurred in August 2020, was 2,611 m³/d, or approximately 57% of the approved rated capacity. The peak flow of 71.9 L/s occurred in May 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 owner stated that there have been no changes to the plant during the inspection period, with the exception of the rehabilitation work on the clarifier.

A Schedule C Authorization to Alter the Drinking Water System, dated August 27, 2019, approved the installation of a temporary SUEZ Ultrafiltration membrane rental trailer unit into the bypass facility to act as a substitute to the existing clarifier, and to allow for rehabilitation of the existing clarifier. This trailer was placed into service on June 16, 2020 and remained in service until December 11, 2020. On August 28, 2020, a site visit and tour of the temporary treatment trailer was conducted. Besides some initial delays due to the power supply requirements, the SUEZ trailer performed very well, and was instrumental in enabling the existing clarifier facility to be bypassed and rehabilitated, while maintaining the water treatment process.

- **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.**

A Form 2 - Record of Minor Modifications or Replacements to the Drinking Water System, was completed for the following:

1. Installation of new intermediate Hach turbidity analyzer, controller, and automatic cleaning module. Date: March 2, 2020.
2. Removal of a total chlorine analyzer from low lift building. Date: March 3, 2020.
3. Addition of conductivity analyzer, pH analyzer and temperature sensor to the low lift building. Old prominent chlorine analyzer replaced with new prominent analyzer. March 3, 2020.
4. Installation of new filter #1 Hach turbidity analyzer, controller, and automatic cleaning module. Date: March 6, 2020.
5. Installation of new filter #2 Hach turbidity analyzer, controller, and automatic cleaning module. Date: March 6, 2020.
6. Installation of new plant effluent Hach turbidity analyzer, controller, and automatic cleaning module. Date: March

Treatment Processes

6, 2020.

7. Installation of new HMI and PLC at Comber Pump Station. Date: May 6, 2020.

8. Installation of new HMI and PLC at Haycroft Pump Station. Date: May 20, 2020.

- **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.**

Schedule E of the Licence stipulates that the Stoney Point facility must utilize chemically assisted filtration and primary disinfection using chlorination to meet log removal credits.

In order to claim applicable *Cryptosporidium* oocyst and *Giardia* cyst removal credits, the Procedure for Disinfection of Drinking Water Supplies in Ontario states that performance must meet filtered water turbidity of less than or equal to 0.3 NTU in 95% of the turbidity measurements each month. Filter turbidity reports show that 98.65 to 100% of the time, turbidity values were less than 0.3 NTU. The criteria was met at each filter in each month. On December 11, 2020, the clarifier was placed back online and caused some prolonged increased turbidity. The operator monitored the turbidity and any results over 0.3 NTU were included in the monthly calculation for the filter performance (98.65%).

The Disinfection Procedure requires that in order to be considered conventional filtration and meet or exceed the 2.5 log *Giardia* cyst removal, the 2.0 log *Cryptosporidium* oocyst removal and 2.0 log virus removal credits, the filtration process must use a chemical coagulant at all times when the treatment plant is in operation. Regular jar testing (once per week or as required) is conducted to determine the optimum coagulant dosage. Coagulant flow is metered to directly alert the operator to flow interruptions and the system is equipped with flow/pressure regulating valves to eliminate dosing rate variability caused by the head pressure (level) in the bulk alum tank. During the clarifier rehabilitation, coagulant was not required for the SUEZ ultrafiltration membrane. Review of alum flow data (in 5 minute intervals) indicated that alum was flowing at all times otherwise. In the 2018 inspection, an issue with the coagulant flow data (SCADA) was identified and has since been resolved.

Primary disinfection using chlorine accounted for at least 0.5 log inactivation credits for *Giardia* and 2 log inactivation credits for viruses. To meet inactivation credits, CT must be achieved at all times. Records demonstrated that CT was achieved for the duration of the review period.

- **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.**

Available chlorine residual measurements taken during routine microbiological sampling and the weekly residual checks showed that free chlorine residuals in the distribution system ranged from 0.10 to 1.86 mg/L, never falling below 0.05mg/L.

- **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.**

According to the Watermain Break Repair Standard Operating Procedure (SOP #2000397), all parts of the drinking water system are disinfected in accordance with the ministry's Watermain Disinfection Procedure and the other required procedures.

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.**

Treatment Process Monitoring

ProMinent D1C continuous chlorine monitor/controllers with CLE probes measure free chlorine on both the reservoir outlet (CRA-4) and the high-lift outlet (CRA-6). Depending on the use of the post-chlorination system for providing free chlorine top-up/trim, results from one or the other analyser can be used for measuring primary disinfection CT, consistent with the Ministry's "Procedure for Disinfection of Drinking Water in Ontario". Free chlorine top-up/trim can be employed to boost the concentration of secondary disinfectant directed to the distribution system at either the inlet to the high-lift well or into the high-lift discharge header. Pre-chlorination prior to the filters provides the majority of the disinfection.

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

Filter effluent turbidity values are measured by Hach TU5300sc turbidity sensors with a SC200 controller on filters 1 and 2. Results are recorded by SCADA Historian.

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

Logs show that weekly distribution system free chlorine residuals were taken and measured from at least four and three stations on separate days, at least 48 hours apart.

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

In accordance with the operating authority's Routine Plant Rounds standard operating procedure (PEN-292), and as reflected in the project logs, reviews of continuous monitoring results are completed once per day and recorded in the operational logbook.

- **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.**

The low chlorine alarm setting for the CT analyser (CRA4) is 1.4 mg/L. A low alarm for secondary disinfection free chlorine level leaving the plant is also set at 1.4 mg/L. High turbidity operational alarms of 0.25 NTU are set for each filter effluent turbidimeter. Additionally, high turbidity operational set points are used to establish filter to waste controls during the filter backwash sequence and filter shutdown in response to elevated readings. Filter shutdown is currently set at 0.70 NTU. An adjustable operational alarm for clarifier effluent turbidity prior to filtration can also be set. It is currently set at 3 NTU.

While the facility is staffed, operators are made aware of alarms through the SCADA system and audible sounds. Critical alarms that occur after hours are routed to a security company who will notify the on-call operator.

- **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.**

O. Regulation 170 sub-section 6-5(1), paragraph 1 requires the continuous monitoring equipment to record the date, time, sampling location and result of every test for the parameter with at least the minimum frequency prescribed as follows:

1. Free chlorine residual required to achieve primary disinfection: 5 minutes
2. Filter effluent turbidity: 15 minutes

The Historian data recording system records these values at a frequency at least as often as that required under the Regulation.

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

Calibration records provided showed that Flowmetrix calibrated all level meters on July 28, 2020 and all flow meters

Treatment Process Monitoring

and continuous chlorine analyzers on September 2, 2020. Hach calibrated the four turbidity analyzers on March 10, 2020. Internal checks/verifications against standards were performed on the Hach handheld meters (chlorine, turbidity, pH and the lab spectrophotometer) approximately once per month. Operators also checked/verified continuous turbidity and pH analyzers approximately once per month; chlorine analyzers were verified more frequently: ranging from several times per month to once per day.

As recommended in the last inspection, all continuous meters that measure the parameters used to calculate CT were calibrated, with the exception of plant effluent temperature. The operating authority is reminded to include this temperature meter in their annual calibration schedule.

Operations Manuals

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

Distribution system manuals contain general and specific procedures and directions related to distribution maintenance and repair activities, and contingencies. Distribution operators have access to maps produced on the owner's GIS system. The GIS maps identify locations of watermains, water services, hydrants, valves, blow-offs, and curb-stops as well as archived drawings/maps. Water distribution operators access this system via tablets or the garage computer.

- **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.**

The master copy of the standard operating procedures is maintained at the Stoney Point water plant. Selected procedures are included in the "Lakeshore Water Supply System - Operations & Maintenance/Contingency Plan Manual" binder maintained for the distribution group. Copies of the Municipal Drinking Water System Licence and Drinking Water Works Permit are also kept in a the Contingency binder. Current electronic versions of the standard operating procedures are available in the Compliance Science Programme.

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.**

Operational testing is conducted daily and recorded on the Daily Plant Lab Analysis logsheets.

Security

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

All components of the drinking water system are fully fenced and doors are locked. The plant is staffed between 7am and 3:30pm during the week and for four hour shifts on the weekends. Video monitoring of the main plant and lowlift station is conducted. Recently, lighting was increased around the plant and a keycard access security system was installed.

Certification and Training

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

The overall responsible operator (ORO) for the treatment and distribution system has class 3 water treatment certification and class 3 water distribution certification.

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

Certification and Training

Any certified operator on shift is designated the OIC and is identified in the sign-in 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.

O. Regulation 170/03, Sch.10-2 requires the owner and operating authority to take a minimum of one sample per week, and at least 15 samples per month from the distribution system. All samples must be analysed for E. coli and total coliforms. In addition, at least 25% of the distribution microbiological samples must be analysed for heterotrophic plate count (HPC).

The owner/operating authority collected 20-25 samples per month from 27 sample stations throughout the distribution system. Samples were analyzed for E.coli, total coliform, and more than 25% of the samples (8-10 samples/month) were tested for HPC.

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

O. Regulation 170/03, Sch. 10-3 requires the owner and operating authority to sample treated water once per week and analyse them for E. coli, total coliforms and heterotrophic plate count (HPC).

For the period reviewed, treated water microbiological samples were taken each week. For each sampling event, two treated water samples were collected.

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

Provided that previous sample results haven't exceeded one-half maximum acceptable concentration (MAC) for any parameter under Schedule 23, O. Regulation 170/03, Sch. 13-2 requires that samples must be taken and analysed for Schedule 23 parameters every 12 months for a surface water supply. The required samples were taken December 7, 2020. No parameters exceeded one-half the MAC listed in O. Reg. 169/03.

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

Provided that previous sample results haven't exceeded one-half MAC for any parameter under Schedule 24, O. Regulation 170/03, Sch. 13-4 requires that samples must be taken and analysed for Schedule 24 parameters every 12 months for a surface water supply. The required samples were taken December 7, 2020. No parameters exceeded one-half the MAC listed in O.Reg. 169/03.

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

As required under O. Regulation 170/03, Sch. 13-6 (2), samples must be taken and analysed for haloacetic acids (HAAs) quarterly. The Ontario drinking water quality limit for HAAs is 0.080 mg/L; calculated as a running annual average of quarterly test results.

Samples were taken within the prescribed time frame. The running annual average (RAA) was 0.0375 mg/L.

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

As required under O. Regulation 170/03, Sch. 13-6(2), samples must be taken and analysed for trihalomethanes

Water Quality Monitoring

(THMs) quarterly. The Ontario drinking water quality limit for THMs is 0.100 mg/L; calculated as a running annual average of quarterly test results.

Samples were taken within the prescribed time frame. The RAA was 0.041 mg/L. Samples were also taken from treated water at the high lift pump station quarterly and the RAA was 0.027 mg/L.

- **All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS.**

During the inspection review period, one sample was collected quarterly (from the high lift pump station) for nitrate and nitrite, as prescribed in Sch. 13-7 of O.Reg. 170/03. Nitrate concentrations ranged from 0.174 to 1.56 mg/L, well below the standard of 10 mg/L, and nitrite concentrations were all below the method detection limit (0.01 mg/L) and well below the standard of 1 mg/L.

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

O. Regulation 170/03, Sch. 13-8 requires sampling and analysis of sodium every 60 months. The sample for sodium was last taken on December 1, 2020 and the result was 8.98 mg/L.

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

O. Regulation 170/03, Sch. 13-9 requires sampling and analysis of fluoride every 60 months. The sample for fluoride was last taken on December 1, 2020 and the result was below detection (<0.10mg/L). A sample was also taken from treated water at the high lift pump station and the result was below detection.

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

Solids removed from the clarifier and filters were pumped to a residue management facility that consisted of two (2) settling ponds. Condition 1.5 under Schedule C of the Licence requires monthly sampling of composite samples of total suspended solids (TSS) from the point of discharge. The annual average cannot exceed 25mg/L. For the inspection period, TSS ranged from below method detection to 52.2mg/L. These results are much higher than in recent years, due to the SUEZ ultrafiltration membrane system, which required much more frequent backwashing. The annual average TSS for 2020 was 12.4 mg/L.

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

Free chlorine residuals taken at the same time of the microbiological samples ranged from 0.53 to 1.76 mg/L.

Water Quality Assessment

- **Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

Reporting & Corrective Actions

- **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.**

Water plant operating logs reviewed indicate that certified operators responded to alarms in a timely manner and took appropriate actions. Critical alarms are documented in the Critical Control Limit Exceedances Binder. There were 8 critical alarms during the inspection period, including high clarifier well turbidity, intermediate well turbidity, filter effluent turbidity, and plant effluent turbidity, as well as low free chlorine at Haycroft Water Pumping Station.

Reporting & Corrective Actions

Appropriate actions were documented in logbooks.

Other Inspection Findings

- **The following issues were also noted during the inspection:**

On May 2, 2020, a watermain break affected flow from the plant to Haycroft booster pumping station. The high-lift pumps at the plant supply pressure to the distribution system via the Haycroft and Comber reservoir booster pumping stations. At 6:45am, an operator was paged due to alarms for high plant flow and low Haycroft pressure. The watermain break was preventing water flow into Haycroft reservoir. As repair work on the watermain continued, the operator called in a water hauling company to transport treated water from the Lakeshore Water Treatment Plant to Haycroft station reservoir to maintain pressure in the distribution system. This manual transfer of treated water began at 1:15pm and lasted until approximately 4:30pm. The free chlorine residual was measured in each hauled load of treated water and ranged from 1.52 to 1.93 mg/L.

The operating authority indicated that there is no Standard Operating Procedure for the transfer of treated water from the Stoney Point reservoir to Haycroft Pumping Station. Since this procedure is outside normal operations and could significantly impact the water quality and pressure in the distribution system, it is important to have a clear procedure for operators to follow. By May 3, 2021, the operating authority shall develop and submit to the undersigned officer an SOP for this procedure. This procedure should include, at minimum, the following steps:

- Confirm the water hauling truck you retain is only used for transporting treated drinking water
- Ensure connections from the truck to the line are disinfected
- Measure and record the date, time, delivery agent and the free chlorine residual upon delivery.

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.

1. The following issues were also noted during the inspection:

1. The operating authority indicated that there is no Standard Operating Procedure for the transfer of treated water from the Stoney Point reservoir to Haycroft Pumping Station. Since this procedure is outside normal operations and could significantly impact the water quality and pressure in the distribution system, it is important to have a clear procedure for operators to follow.

2. As recommended in the last inspection, all continuous meters that measure the parameters used to calculate CT were calibrated, with the exception of plant effluent temperature.

Recommendation:

1. By May 3, 2021, the operating authority shall develop and submit to the undersigned officer an SOP for this procedure. This procedure should include, at minimum, the following steps:

- Confirm the water hauling truck you retain is only used for transporting treated drinking water
- Ensure connections from the truck to the line are disinfected
- Measure and record the date, time, delivery agent and the free chlorine residual upon delivery.

2. The operating authority is reminded to include the continuous meter that measures plant effluent temperature in their annual calibration schedule.

SIGNATURES

Inspected By:

Emily Awad

Signature: (Provincial Officer)

Reviewed & Approved By:

Marc Bechard

Signature: (Supervisor)

Review & Approval Date:

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.



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



Inspection Rating Record

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

DWS Name: TOWN OF LAKESHORE DRINKING WATER SYSTEM - STONEY POINT
DWS Number: 220003396
DWS Owner: Lakeshore, The Corporation Of The Town Of
Municipal Location: Lakeshore

Regulation: O.REG 170/03

Category: Large Municipal Residential System

Type Of Inspection: Focused

Inspection Date: February 2, 2021

Ministry Office: Windsor Area Office

Maximum Question Rating: 461

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 / 21
Treatment Process Monitoring	0 / 133
TOTAL	0 / 461

Inspection Risk Rating	0.00%
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FINAL INSPECTION RATING:	100.00%
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2020-2021)

DWS Name: TOWN OF LAKESHORE DRINKING WATER SYSTEM - STONEY POINT
DWS Number: 220003396
DWS Owner: Lakeshore, The Corporation Of The Town Of
Municipal Location: Lakeshore

Regulation: O.REG 170/03

Category: Large Municipal Residential System

Type Of Inspection: Focused

Inspection Date: February 2, 2021

Ministry Office: Windsor Area Office

Maximum Question Rating: 461

Inspection Risk Rating	0.00%
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FINAL INSPECTION RATING:	100.00%
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