Municipality Of Lakeshore Drinking Water System

Inspection Report

Ministry ID Number:	260091507
Inspection Start Date:	10/04/2022
Inspection End Date:	12/15/2022
Inspection By:	Paul TerSteege

(signature)

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Inspection Background

Name:	Municipality Of Lakeshore Drinking Water System
ID Number:	260091507
Entity Inspected:	Lakeshore
Local Ministry Office:	Windsor
Local Supervisor:	Marc Bechard
Date Inspected:	10/4/2022
Review Period:	February 1, 2022 to present

Facility Description

The Municipality of Lakeshore is the owner and operator of the Lakeshore Drinking Water System. The system supplies ~30,000 consumers in Lakeshore Water Service Area, an area in the northwestern portion of the Municipality which lies between Lake St. Clair and Highway 401, and Manning Road and Rochester Townline Road.

The John George Water Treatment Plant, located on Lakeview Drive, draws raw water from Lake St. Clair. Treatment includes chemically assisted filtration, and both UV and chlorine disinfection. The facility includes a diesel generator to provide standby power in the event of a disruption to the electrical grid.

The distribution system includes an elevated tank on Oakwood Avenue, which provides storage and assists to regulate pressure. (It also includes an elevated tank on County Road 22 which was taken out of active duty in 2018.)

In addition to the applicable legislation, operation of the system is governed by Municipal Drinking Water Licence Number 031-101 (the “Licence”) and Drinking Water Works Permit Number 031-201 (the “Permit”).

Inspection Observations

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 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 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.**

  The Officer's reviews typically focus on operational records since the previous inspection, along with a select set of older records, e.g., Ministry approvals, historical laboratory results, etc. The inspection included a physical inspection of the plant on October 4, 2022; a review of operational records; and input from operators.

Source

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

Source

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

  Condition 6.1.2 in Schedule C of the Licence requires,
  The owner to implement a Plan annually during the harmful algal bloom season, during but not limited to the warm seasonal period between June 1 and October 31 each year, or as otherwise directed by the Ministry or the Medical Officer of Health.

  Operators provided a copy of the Certificates of Analysis and Sample Submission forms. Weekly samples of raw and treated water were collected from late May until the end of October. The onset of an algal bloom was reported in July, and microcystin was detectable up until October 1.

Reported by SGS			Reported by Caduceon		
Date	MDL	Result	Date	MDL	Result
29-Oct	0.1	0.1	01-Jul	0.15	0.15
22-Oct	0.1	0.1	25-Jun	0.15	0.15
14-Oct	0.1	0.1	18-Jun	0.15	0.15
09-Oct	0.1	0.1	11-Jun	0.15	0.15
01-Oct	0.1	0.2	03-Jun	0.15	0.15
24-Sep	0.1	0.1	28-May	0.15	0.15
17-Sep	0.1	0.1	20-May	0.15	0.15
10-Sep	0.1	0.1			
05-Sep	0.1	0.2			
26-Aug	0.1	0.1			
20-Aug	0.1	0.1			
13-Aug	0.1	0.2			
06-Aug	0.1	0.1			
29-Jul	0.1	0.4			
23-Jul	0.1	0.1			
16-Jul	0.1	0.4			

  However, as with previous years, the microcystin results for all the treated water samples were below the method detection limit of their laboratories.

Flow/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.**

  Of the devices identified in Schedule A of the Permit; the Office received data for plant influent, filter effluent, UV reactor influent, and plant effluent flows – which includes the flows explicitly identified in Schedule C of the Licence. Each device appears to have been operable during the review period.

  Note: Daily totals of some of the additional flows (e.g., those related to filter backwashing and wastewater flows) are included in internal monthly performance reports.

- **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.**

  As required by Condition 1.1 in Schedule C of the Municipal Drinking Water Licence, daily flows were maintained within (45% of) the Rated Capacity identified in Table 1, e.g., 36,400 m^3/day.

Treatment Processes

- **This Drinking Water System provides for both primary and secondary disinfection and distribution of water.**

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

  Outside of minor alterations, the Ministry expects the equipment described in Schedule A of the Owner's Permit, as may be amended by alterations identified in Schedule C, to be (and to remain) installed.

  Operators advised there had been no significant equipment alterations to the system since the previous inspection, and that the equipment identified within the Permit was, and remains, installed. Some equipment was replaced; however, this is a normal part of replacing aging infrastructure, and it does not result in a functional change.

  With regards to future changes, operators indicated that they anticipate Maidstone Elevated Water Storage Tank, which was taken offline in 2018, will be 2023. Further, they noted consideration is being given to adding a 4th pump to their high lift pumping station.

  With regards to process chemicals, supply chain issues forced the Municipality to change their coagulant from DelPAC 2020 to Sternpac 70 on May 16, 2022. Both coagulants are polyaluminum chloride formulations. To assure themselves that the change in formulation would not significantly alter their operations, operators conducted a monitoring program before and after the transition.

Treatment Processes

- **All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.**

  Various components of water systems can be subject to contamination during alterations. Schedule B of the Permit requires components which may be subject to contamination to be disinfected according to the applicable procedure or AWWA standard.

  Operators provided documents related to repairs and the installation of watermains (in their Union Water Service Area). Amongst the information provided in these documents were details regarding disinfection following repairs, and the results of microbiological samples collected following the installation of the new watermains.

- **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.**

  Regardless of whether owners provide secondary disinfection themselves, Section 1-5 in Ontario Regulation 170/03 requires them to ensure the provision of treatment capable of providing a free chlorine residual of 0.2 mg/L at all locations within the distribution system. Further, Section 1-2 requires the free chlorine residual to be ≥0.05 mg/L.

  Operators have approximately 80 samples stations from which they can monitor the distribution system. No compliance concerns were noted. Frequently the results were above 1.00 mg/L.

  The only anomaly was a reading of 0.38 mg/L for a sample collected on December 13, 2021, from Sample Station 75. The station appears to be at a dead-end in the southwestern extremity of the service area (on Lakeshore Road 101, just above Highway 401). In the absence of demand, maintaining a residual in a dead-end in a rural setting can pose an operational challenge. A street view available from Google Maps indicates the Municipality has installed a hydrant on the south side of the station. If necessary, operators can flush the hydrant. However, it also appears that there may be a low-profile automated flushing system installed on the north side of the station.

Treatment Processes

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under O. Reg. 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.**

  Operators identified critical control points (CCPs) for the system; provided continuous monitoring data; and worksheets for review.

  The CCPs included,
  • Coagulant Feed Rate: < 5 kg/h
  • Turbidity (Filter Effluent): > 0.3 NTU
  • UV Dosage: <50 mJ/cm²
  • Free Chlorine Residual (Treated Water): < 1.00 mg/L OR > 3.00 mg/L
  • Free Chlorine Residual (Distributed Water): ≤ 0.20 mg/L

  Most of the events flagged by the CCPs stemmed from filter turbidity spikes. The Officer noted some additional outliers stemming from communications issues (e.g., Aug 31, Sep 10, Sep 20-21). Despite these outliers, it appears the Municipality had no problem satisfying the applicable Primary Disinfection Credit Criteria in Schedule E of Municipal Drinking Water Licence.

- **The primary disinfection equipment was equipped with alarms or shut-off mechanisms that satisfied the standards described in Section 1-6 (1) of Schedule 1 of O. Reg. 170/03.**

  The system is equipped with two Trojan UV Swift reactors, each of which houses 4 lamps. Sensors monitor the performance lamp and reactor. A dosage below 50 mJ/cm² (i.e., low) will trigger an internal alarm. A loss of power or a dosage below 40 mJ/cm² (i.e., low-low), will result in the lockout of the reactor by means of a motorized valve (that is equipped with a battery backup).

  Alarms are enunciated audibly and visually at the site. Further, the SCADA system relays low-low alarms to a security company who in turn will page the operator on-call.

Treatment Process Monitoring

- **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.**

  Operators confirmed regulatory and operational data is stored on their historian at a frequency greater than required by paragraph 1 of Subsection 6-5 (1) in Schedule 6 of Ontario Regulation 170/03. To facilitate the Ministry review, operators use reporting software to generate CSV files containing 5-minute averages of the data extracted from their historian.

Treatment Process Monitoring

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

  Records indicate that operators are examining continuous monitoring results within 72 hours as required by paragraph 4 of Subsection 6-5 (1) in Schedule 6 of Ontario Regulation 170/03.

  Operators may consult their SCADA system throughout the day, particularly if any irregularity arises. However, as part of their routine operations, and to demonstrate compliance, an operator typically creates a log entry each morning indicating they have reviewed the trending of regulatory parameters for a 24-hour period (e.g., from 7:00am the previous day to 7:00am of the current day). Later in the afternoon, operators typically make a second entry denoting they have reviewed the trending (i.e., for the current shift).

- **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.**

  As with many municipal drinking water systems, alarms are used to safeguard both the system and consumers. Regardless of whether Section 6-5 of Ontario Regulation 170/03 applies, the presence of an alarm enables operators to take prompt and appropriate action to resolve regulatory and/or operational concerns.

  With regards to turbidity and chlorine, the listing of Critical Control Points identifies a high (0.3 NTU) alarm setpoint for turbidity in filter effluent; both low (1.00 mg/L) and high (3.00 mg/L) alarm setpoints for free chlorine in the plant effluent; and a low (50 mJ/cm^2) UV dosage alarm setpoint.

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

  Section 6-5 in Schedule 6 of Ontario Regulation 170/03 requires equipment used to continuously monitor chlorine residuals and turbidity to be calibrated to ensure that test results are within acceptable margins of error.

  The Operating Authority provided worksheets documenting that the accuracy of their handheld analysers was verified each month that the devices were in use. In turn, the handheld instruments are used to assess the continuous monitoring equipment. This activity is scheduled and documented using a work order system. In addition to in-house assessments, an outside contractor comes in on an annual basis (June 2022) to verify the calibration of these and other instruments.

Treatment Process Monitoring

- **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.**

  During inspections, the Officer queries available regulatory and operational data captured by the continuous monitoring equipment. Anomalies are cross-referenced with available log and worksheet entries to determine if there were any regulatory concerns or significant operational abnormalities.

  With respect to (turbidity and chlorine residuals), during the events examined by the Officer, records indicated operators were usually onsite at the onset of the event (i.e., as they were performing maintenance), or they appeared to have acted promptly and appropriately as outlined by Subsection 6-5 (1.1) in Schedule 6 of Ontario Regulation 170/03.

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

  Data provided for review indicated the disinfectant residual in the distribution system is monitored as required by Section 7-2 in Schedule 7 of Ontario Regulation 170/03 by means of weekly testing of grab samples.

- **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.**

  Chlorine residual monitoring continues to be conducted at the location identified by their engineer as being representative of where the intended CT value has been met. Further, as indicated in Schedule A of the Permit, additional chlorine analysers have been installed to facilitate process monitoring and control.

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

  Continuous monitoring data provided for review indicated turbidity monitoring was performed on each filter effluent line while water was being supplied/produced as required by Section 7-2 (3) in Schedule 7 of Ontario Regulation 170/03.

Treatment Process Monitoring

- **The owner and operating authority ensured that the primary disinfection equipment had a recording device that continuously recorded the performance of the disinfection equipment.**

  Where a large municipal residential system relies on something other than chlorine for primary disinfection, Subsection 1-6 (3) in Schedule 1 of Ontario Regulation 170/03 requires continuously monitoring. Further, Schedule C of the License explicitly requires monitoring of the following parameters:
  - Calculated UV dose;
  - Flow rate;
  - UV transmittance; and
  - UV lamp status.

  The available monitoring data confirm the requisite monitoring was taking place.

- **All UV sensors were checked and calibrated as required.**

  If the UV equipment manufacturer has not prescribed alternate measures to ensure the calibration of this equipment, Schedule E of the License requires,
  - Duty UV sensors to be checked monthly against a reference UV sensor; and
  - Reference sensors to be checked every 3 years.

  Calibration checks are performed by the manufacture. The monthly worksheets prepared by their personnel document the performance of the duty sensors relative to the reference sensor. They include a comment stating that the reference sensor was validated on July 24, 2020, and a reminder that they need to send out a reference sensor prior to June 2023 visit.

Operations Manuals

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

  In addition to being readily available, Section 28 of Ontario Regulation 128/04 manuals to be sufficient for the safe and efficient operation of the system.

  With respect to treatment systems, the Ministry expects the availability of process descriptions (related to both treatment and monitoring); and drawings regarding the treatment facilities and equipment/process units, chemical application points, and process monitoring / sampling points. Per previous inspections, operators have ready access at the plant to an Operations Manual, as-built drawings of the plant, process and instrumentation diagrams, and other reference materials.

  With respect to distribution systems, the Ministry expects the availability of drawings that illustrate the location of watermains, valves, hydrants, and other significant appurtenances. In addition to access at the plant, distribution operators have portable access to maps on the Municipality's GIS system, including the location of mains, hydrants, and valves. Hyperlinks in the GIS system allow for additional access to as-built drawings and asset data.

Operations Manuals

- **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.**

  Ontario Regulation 128/04 focuses on the provision of plans, drawings, and process descriptions, whereas Municipal Drinking Water Licences impose requirements related to the provision of procedures. The Officer understands copies of the Licence and Permit are available to operators. A master copy of the standard operating procedures governing routine operations is maintained at the plant, with electronic copies available to operators. Emergency operations are supported by procedures and reference materials as part of a Contingency Plan for the system.

  The Officer did not obtain copies of all the reference materials used to guide day-to-day operations in the drinking water system. For this inspection, he obtained a copy of the Operational Plan prepared as part of Lakeshore's Drinking Water Quality Management System. This document sets out responsibilities, processes, and procedures which Lakeshore has enacted to achieve policies and objectives related to the overall management of the system.

Logbooks

- **Logbooks were properly maintained and contained the required information.**

  Pursuant to Subsection 27 (1) of Ontario Regulation 128/04, logs and other record-keeping mechanisms are available for use by operators to document the operation of the subsystem. As with a growing number of systems, the Municipality has adopted an electronic log.

  Operators provided a tabular activity log consisting of the date/time activity took place, one or more labels for identifying the activity, an entry detailing the activity, the email address of the operator making the entry, and the date/time the entry was made.

  It is understood that the activity log is used to report on activities. Details regarding all the operators on duty, and the party serving as Overall Responsible Operator are stored separately.

  Almost 90% of the ~4,000 entries were made by 5 operators at the plant. Unless expressly stated otherwise (e.g., Bob did X; Joe and I did Y), it is understood that the operating making the entry refers to the operator responsible for completing and/or overseeing the activity.

  To preserve the integrity of the activity log, if any entry is made in error (e.g., a duplicate entry), it can be struck out; however, it remains on the system. Approximately 50 such corrections were noted.

- **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.**

  Pursuant to Section 7-5 in Schedule 7 of Ontario Regulation 170/03, only qualified personnel (e.g., certified operators or water quality analysts) appear to be performing operational tests.

Security

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

  The low lift station is normally locked. The property across the street housing the water treatment plant is fenced. Access to the doors is controlled, and the property is monitored by video surveillance.

  The water towers are sited within fenced enclosures, and the gates and doors are locked when not in attendance.

  Operators did not report any incidents or concerns suggesting a need for additional security measures.

Certification

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

  Ontario Regulation 128/04 prescribes systems for classifying water systems, and for certifying personnel who operate them. Subsection 23 requires an operator, who holds the appropriate type and level of certification, to be designated as the Overall Responsible Operator (ORO). An operator with class III certificates continues to serve in this capacity.

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

  All operators capable of acting independently are eligible to serve as "operator-in-charge" per Subsection 25 (1) of Ontario Regulation 128/04.

Certification

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

  The Municipality's water systems are operated by a pool of operators, each of which has obtained one or more water certificates.

Operator	Type	Class	Certificate	Operator	Type	Class	Certificate
90001550	WT	III	11642	90056701	WT	III	65674
90001550	WD	III	11643	90056960	WT	II	74804
90006058	WT	IV	16882	90062682	WT	II	82668
90006058	WS	II	16885	90068851	WT	II	81319
90008626	WT	IV	12425	90068851	WD	II	89504
90008626	WS	II	13180	90075947	WD	II	105707
90008626	WQA	--	11616	90077030	WT	II	105212
90012701	WD	III	53262	90082169	WD	I	112093
90020231	WD	II	68200	90082173	WT	I	99885
90020233	WD	II	57845	90082173	WS	II	99886
90023075	WD	II	50271	90083165	WT	I	105102
90050039	WD	III	56423	90086232	WT	II	109759
90050816	WD	II	95682	90086232	WS	OIT	OT102891
90051468	WT	I	87947	90086514	WT	II	110156
90051468	WD	II	58006	90086514	WS	OIT	OT103374
90054440	WT	III	67881	90087936	WD	I	113845
90054440	WS	II	67043	90088603	WT	II	116593
90054440	WQA	--	109130	90088603	WS	OIT	OT108302

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

  Log entries reviewed by the Officer indicated that as required by Subsection 1-2 (2) in Schedule 1 of Ontario Regulation 170/03, only certified operators are carrying out adjustments to the water treatment equipment.

Water Quality Monitoring

- **All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met.**

  Reported laboratory results indicate distributed water samples have been collected monthly for microbiological testing per Section 10-2 of Ontario Regulation 170/03. Operators routinely collect 11 samples per week with 44 to 55 samples per month (i.e., depending on the number of weeks in the month).

Water Quality Monitoring

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

  Sample submission forms indicate that during the collection of samples for microbiological testing, operators tested the chlorine residual as required by Section 6-3 of Ontario Regulation 170/03.

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

  Reported laboratory results indicate that over the past several years, at least one distributed sample has been collected every calendar quarter as required by Section 13-6.1 (1) of Ontario Regulation 170/03. During that time, operators have collected samples from several sample stations (i.e., 1049 Lakeshore Park; Belle River Water Tower; and Broadway and Sixth Street).

  In the 2nd quarter of 2022, samples were collected weekly from two locations to assess process (coagulant) changes at the water treatment plant.

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

  Reported laboratory results indicate that over the past several years, at least one distributed sample has been collected every calendar quarter as required by Section 13-6 (1) of Ontario Regulation 170/03. In addition to the required distributed water samples, operators have been collecting treated water samples quarterly for comparison purposes since 2018.

  As with their haloacetic acid monitoring program, operators have collected samples from various stations, and in the 2nd quarter of 2022, samples were collected weekly from two locations to assess process changes at the water treatment plant.

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

  Reported laboratory results indicate that as required by the Licence, monthly effluent samples have been collected for testing total suspended solids.

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

  Reported laboratory results indicate treated water samples have been collected weekly for microbiological testing per Section 10-3 of Ontario Regulation 170/03. Further, the results indicated duplicate samples are submitted for testing.

Water Quality Monitoring

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

  Reported laboratory results indicate that as required by Section 13-2 of Ontario Regulation 170/03 of large municipal systems that treat surface water, at least one treated water sample has been collected every 12 months for testing the inorganic parameters in Schedule 23.

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

  Reported laboratory results indicate treated water samples have been collected quarterly for nitrate and nitrite testing per Section 13-7 of Ontario Regulation 170/03.

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

  Reported laboratory results indicate operators have sampled treated every one or two years, which more than satisfies the testing requirements in Section 13-8 of Ontario Regulation 170/03.

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

  Reported laboratory results indicate treated samples have been collected annually for testing fluoride, which more than satisfies Section 13-9 of Ontario Regulation 170/03.

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

  Reported laboratory results indicate that as required by Section 13-4 of Ontario Regulation 170/03 of large municipal systems that treat surface water, at least one treated water sample has been collected every 12 months for testing the organic parameters in Schedule 24.

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).**

  All the reported laboratory results met the applicable water quality standards (in Ontario Regulation 169/03).

  A standard has not been prescribed for sodium; however, as some consumers may have sensitivities to this parameter, notifications are required when the results are above 20 mg/L. A treated water result of 24.4mg/L was reported on May 10, 2022. The average the treated and two distributed water results for May 10, 2022, was 19.8mg/L. The average a week later was 7.7mg/L.

Reporting & Corrective Actions

- **The owner had evidence that required notifications to all legal owners associated with the Drinking Water System had been made during the inspection period.**

  To satisfy Condition 2.7 in Schedule B of the Drinking Water Works Permit, the Municipality provides developers of major residential developments information on this subject.

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

  Supply chain issues forced the Municipality to seek an alternate coagulant. Operators conducted additional sampling before and after the change to determine what effect it would have on the chemistry of the treated water. The laboratory reported marginally elevated results for a sample collected on May 10, 2022 (e.g., 24.4 mg/L versus the 20 mg/L reporting threshold).

  Operators changed their coagulant from DelPAC 2020 to Sternpac 70 on May 16. The results of two samples the following day were 6.3 and 6.4 mg/L respectively.

  Note: The Municipality did not explicitly request their laboratory test for sodium, rather, the elevated sodium results were identified while performing metal scans to identify the concentration of aluminum. When elevated sodium results were encountered, the laboratory diligently reported their findings.

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

  Paperwork submitted by operators indicated the verbal notifications were made to the local Health Unit and to the Ministry's Spills Action Centre as required by Section 16-6 in Schedule 16 of Ontario Regulation 170/03.

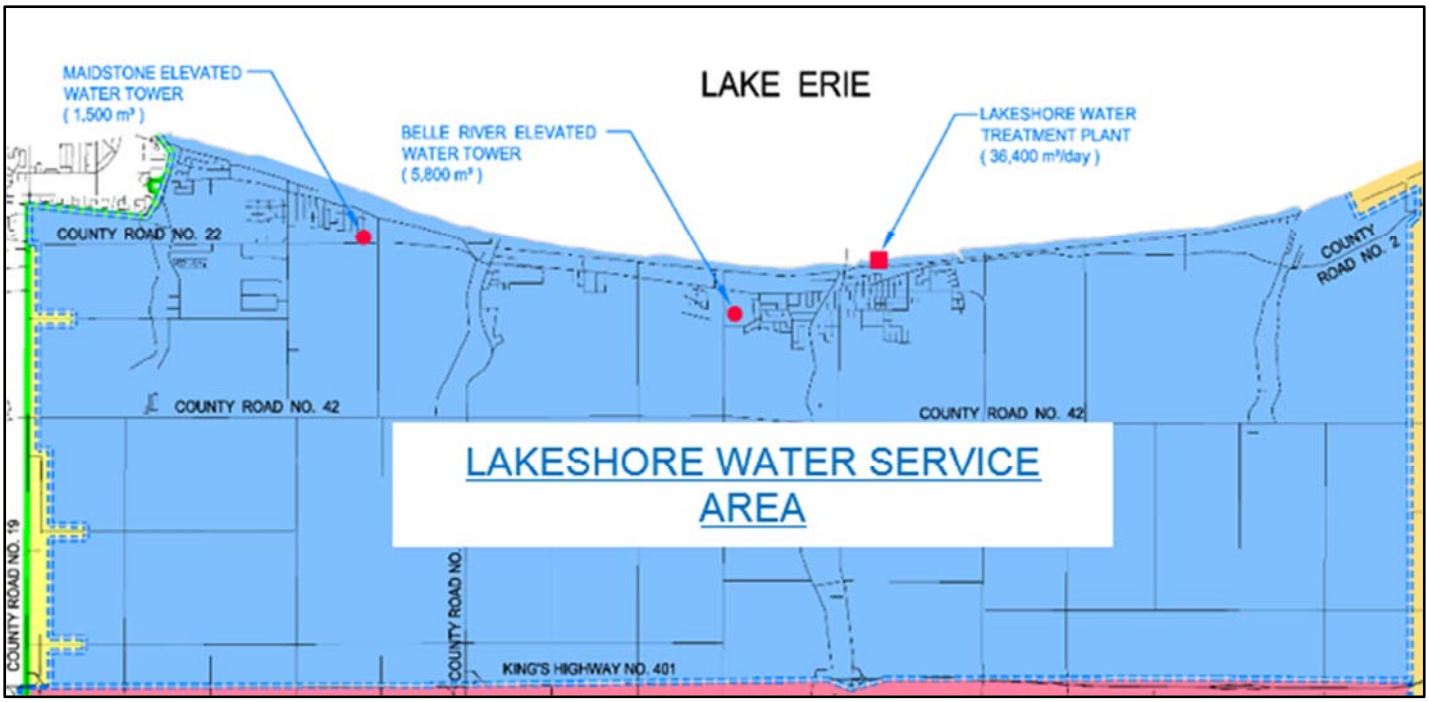
Appendices

Appendix 1 – Area Map and Photographs

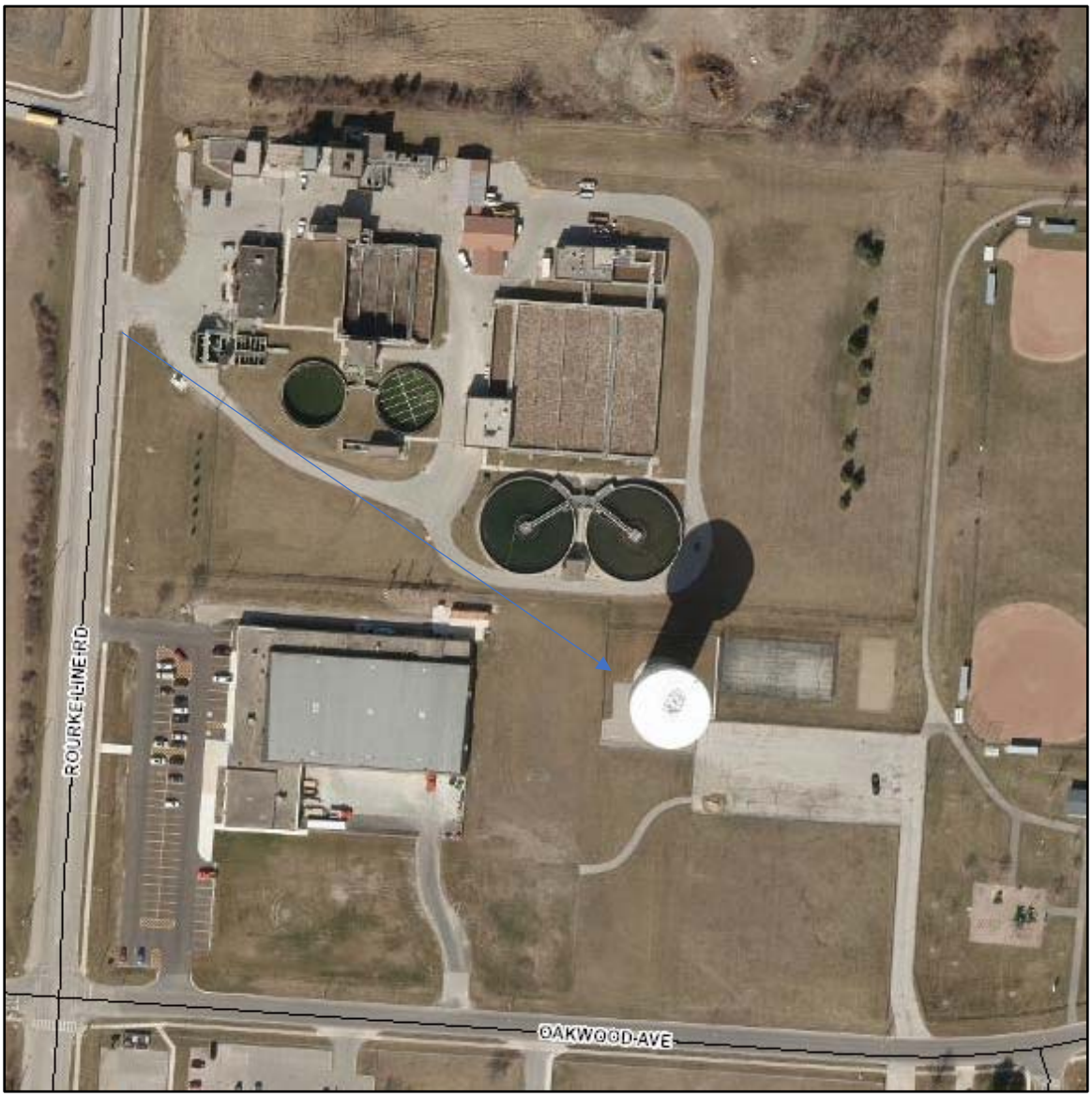
Appendix 2 – Drinking Water System Dossier - Excerpts

Appendix 1

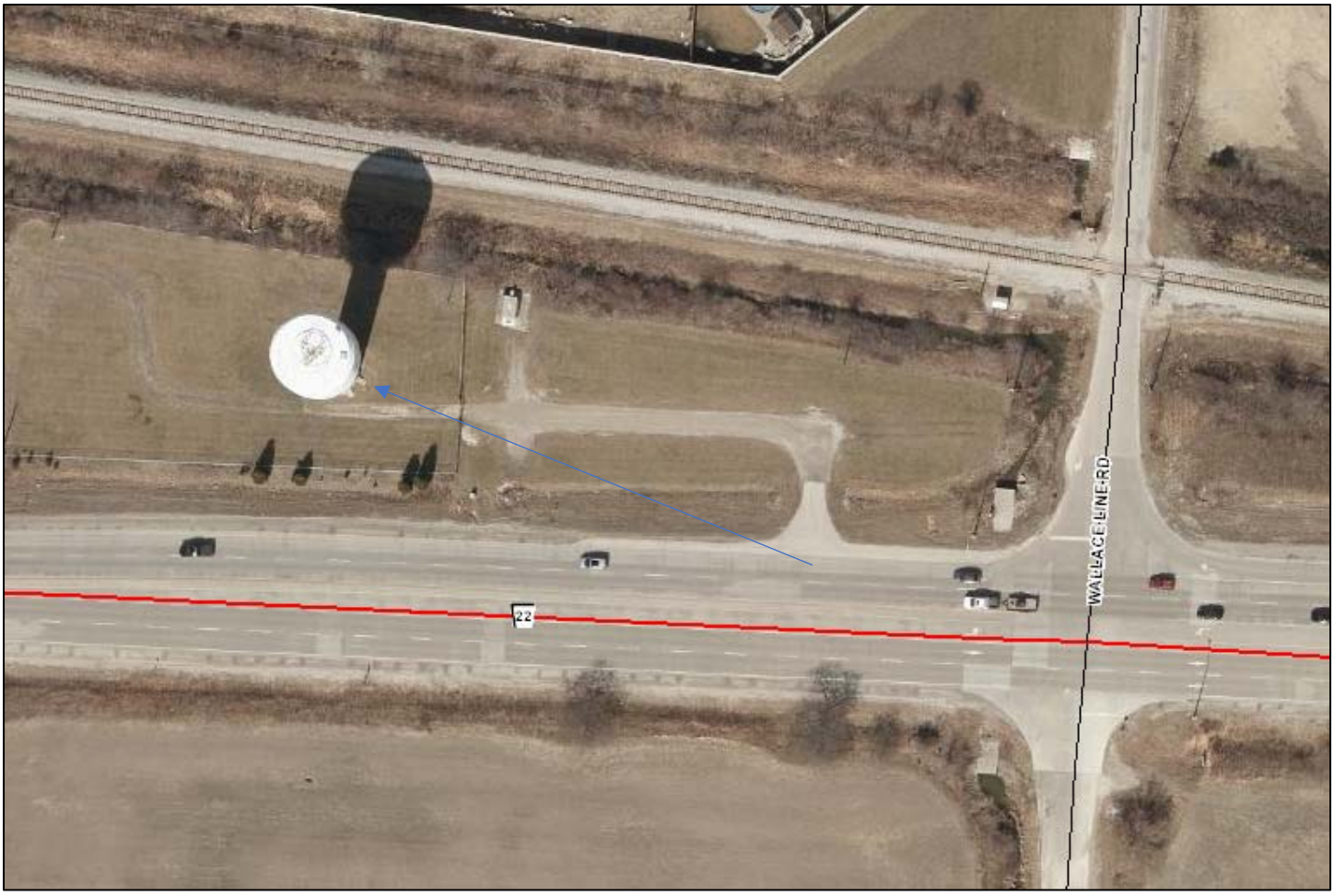
Area Map and Photographs



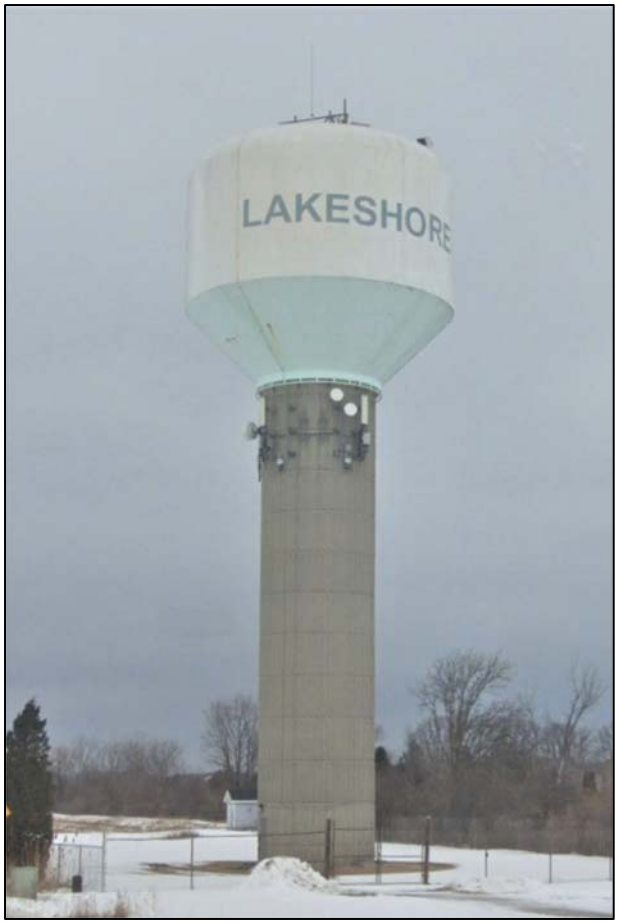
Lakeshore Water Treatment Plant



Belle River Elevated Storage Tank



Maidstone Elevated Storage Tank



Appendix 2

Drinking Water System Dossier - Excerpts

021 - Drinking Water System Dossier for 260091507

Drinking Water System Profile Information

DWS #	260091507
Registration Date (yyyy/mm/dd)	2009/09/15
DWS Status	Active DWS
DWS Expiry Date (yyyy/mm/dd)	
MOE Assigned Name	Municipality Of Lakeshore Drinking Water System
Category	LMRS
Regulation Short Name	O.REG 170/03
DWS Type	Water Treatment Plant
Source Type	Surface Water
Address	492 Lakeview Drive, Belle River, Ontario, N0R 1A0, Canada
Region	Southwestern Region
District	Windsor Area Office
Municipality	Lakeshore
Public Health Unit	Windsor-Essex County Health Unit

DWS OPERATIONAL INFORMATION

Concession Plan Number	
Lot	
Geographic Township	
Population:	30,075
Number of Private Residences:	
Number of Service Connections:	10,741
Rated Daily Capacity (L/S)	421.3
Number of DFs Served:	0
LSN Compliance Status:	*Complete LSN*
24/7 Contact	Garry Punt, Team Leader Of Water Management
24/7 Contact Info	p: (226)2782700 x649, f: (519)7284110, e: gpunt@lakeshore.ca, c: (226)3452079, pg: -

DWS OWNER INFORMATION

Owner Legal Name	Lakeshore, The Municipality Of
Owner Business Name	Lakeshore, The Municipality Of
Owner Address	419 Notre Dame St ,Belle River,ON,N0R 1A0
Owner Contact	Krystal Kalbol, Corporate Leader Of Operations
Owner Contact Info	p: (519)7282700 x655, f: - , e: kkalbol@lakeshore.ca
Owner Alternate Contact	Albert Dionne, Division Leader Of Water Management
Owner Alternate Contact Info	p: (519)7282700 x631, f: - , e: adionne@lakeshore.ca

DWS OPERATING AUTHORITY INFORMATION

Op. Authority Legal Name	Lakeshore, The Municipality Of
Op. Authority Business Name	Lakeshore, The Municipality Of
Op. Authority Address	419 Notre Dame St ,Belle River,ON,N0R 1A0
Op. Authority Contact	Krystal Kalbol, Corporate Leader Of Operations
Op. Authority Contact Info	p: (519)7282700 x655, f: - , e: kkalbol@lakeshore.ca
Op. Authority Alternate Contact	Albert Dionne, Division Leader Of Water Management
Op. Authority Alternate Contact Info	p: (519)7282700 x631, f: - , e: adionne@lakeshore.ca

021 - Drinking Water System Dossier for 260091507

As the intent of these sections was to identify relationships with OTHER systems, the Officer requested the Ministry's registration team remove references to this system.

O. Reg 170 DWS that SUPPLY Water to THIS DWS

Supplying DWS #	Supplying DWS Name	Supplying DWS Category	How is Water Supplied?
~~260091507~~	~~Town Of Lakeshore Drinking Water System~~	~~LMRS~~	~~Unknown~~

O. Reg 170 DWS that RECEIVE Water from THIS DWS

Receiving DWS #	Receiving DWS Name	Receiving DWS Category	How is Water Received?
~~260091507~~	~~Town Of Lakeshore Drinking Water System~~	~~LMRS~~	~~Unknown~~

DWIS Components

Distribution System

DWIS Component Name	GUDI Flag	Seasonal Flag	Treatment Process	Primary Treatment Flag	Secondary Treatment Flag
Distribution:Municipality Of Lakeshore Drinking Water System					

Entry Point

DWIS Component Name	GUDI Flag	Seasonal Flag	Treatment Process	Primary Treatment Flag	Secondary Treatment Flag
Treated: High Lift Pump Building-492 Lakeview Drive			CHLORINATION	Y	Y
			CLARIFIER - SLUDGE BLANKET		
			CLARIFIER - UPFLOW		
			COAGULATION		
			DISSOLVED AIR FLOTATION		
			FILTRATION		
			FLOCCULATION		
			SEDIMENTATION		
			TASTE AND ODOUR CONTROL		
			ULTRAVIOLET IRRADIATION	Y	
			ZEBRA MUSSEL CONTROL		