

Ministry of the Environment,  
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Ministère de l'Environnement, de la  
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File: SI-ES-TE-540  
Tecumseh DS

March 28, 2019

Town of Tecumseh  
917 Lesperance Road  
Tecumseh, ON N8N 1W9

Attention: Mr. Tony Haddad  
Chief Administrative Officer  
[thaddad@tecumseh.ca](mailto:thaddad@tecumseh.ca)

Dear Mr. Haddad:

**Re: February 28, 2019 Inspection – Tecumseh Distribution System**

Enclosed is a copy of the inspection report prepared for the Tecumseh Distribution System under the Ministry's focused inspection protocol to assess compliance with *Safe Drinking Water Act* legislation. The report is based on conditions encountered at the time of inspection, and subsequent follow-up.

For the items under the heading "**Summary of Recommendations and Best Practice Issues**", the Town of Tecumseh is encouraged to provide a written response stating how this item will be addressed.

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](http://www.ontario.ca/drinkingwater).

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 D of the inspection report, provides the Ministry, the system owner and the local Public Health Unit 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.

Should you note any errors or omissions or have any concerns, please contact me at (519) 383-3785, or Marc Bechard at (519) 383-3778.

Yours truly,



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Provincial Officer  
Drinking Water and Environmental Compliance Division,  
Water Section, Sarnia District Office  
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Brad Dupuis, DWQMS Representative, Town of Tecumseh, [bdupuis@tecumseh.ca](mailto:bdupuis@tecumseh.ca)  
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File: SI-ES-TE 540 Tecumseh Distribution System, Town of Tecumseh (2018/19)



**Ministry of the Environment, Conservation and Parks**

**TECUMSEH DISTRIBUTION SYSTEM**

**Inspection Report**

<b>Site Number:</b>	260004969
<b>Inspection Number:</b>	1-ICTW3
<b>Date of Inspection:</b>	Feb 28, 2019
<b>Inspected By:</b>	Al Petersen

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**OWNER INFORMATION:**

<b>Company Name:</b>	TECUMSEH, THE CORPORATION OF THE TOWN OF		
<b>Street Number:</b>	917	<b>Unit Identifier:</b>	
<b>Street Name:</b>	LESPERANCE Rd		
<b>City:</b>	TECUMSEH		
<b>Province:</b>	ON	<b>Postal Code:</b>	N8N 1W9

**CONTACT INFORMATION**

<b>Type:</b>	Main Contact - ORO	<b>Name:</b>	Denis Berthiaume
<b>Phone:</b>	(519) 735-4225 x141	<b>Fax:</b>	(519) 735-1895
<b>Email:</b>	dberthiaume@tecumseh.ca		
<b>Title:</b>	Manager, Water and Wastewater		

<b>Type:</b>	Operator	<b>Name:</b>	Brad Dupuis
<b>Phone:</b>	(519) 735-4225 x145	<b>Fax:</b>	(519) 735-1895
<b>Email:</b>	bdupuis@tecumseh.ca		
<b>Title:</b>	DWQMS Representative		

**INSPECTION DETAILS:**

<b>Site Name:</b>	TECUMSEH DISTRIBUTION SYSTEM
<b>Site Address:</b>	1189 Lacasse Blvd. TECUMSEH ON N8N 2C7
<b>County/District:</b>	Tecumseh
<b>MECP District/Area Office:</b>	Windsor Area Office
<b>Health Unit:</b>	WINDSOR-ESSEX COUNTY HEALTH UNIT
<b>Conservation Authority:</b>	Essex Region Conservation Authority
<b>MNR Office:</b>	Chatham Regional Office
<b>Category:</b>	Large Municipal Residential
<b>Site Number:</b>	260004969
<b>Inspection Type:</b>	Announced
<b>Inspection Number:</b>	1-ICTW3
<b>Date of Inspection:</b>	Feb 28, 2019
<b>Date of Previous Inspection:</b>	Jan 12, 2018

**COMPONENTS DESCRIPTION**

**Site (Name):** Distribution System

**Type:** **Sub Type:**

**Comments:**

The Tecumseh Distribution System is a standalone distribution system which supplies water to the area of the Town of Tecumseh in two discrete service zones. The zone north of Highway 401 is bounded by the Tecumseh municipal boundaries, south to Baseline Road. The zone south of Highway 401 is bounded by the Tecumseh municipal boundaries generally south of Essex County Road 46. Source water is from the City of Windsor water supply via the Windsor municipal distribution system. One currently unused connection from Windsor is through a short section of transmission main within the Lasalle municipal distribution system. The City of Windsor water supply draws it's

source water from the Detroit River in the vicinity of Belle Isle. According to the drinking water system profile, a population of approximately 24,000 residents is served by the Tecumseh Distribution System. It therefore falls into the "large municipal residential" category under O. Regulation 170/03.

Water mains take treated water from the City of Windsor to the service area through 10 of 12 currently used boundary metered connections points with Tecumseh. The elevated storage tank in the community of Tecumseh maintains distribution system pressure, controlled and monitored from the City of Windsor's A.H. Weeks water treatment plant, operated by the Windsor Utilities Commission (WUC). Secondary disinfection is also provided by the A.H. Weeks water treatment plant.

The Tecumseh Distribution System 2017 annual report, prepared by the Town of Tecumseh, states that:

- Town of Tecumseh, City of Windsor and Windsor Utilities Commission (WUC) entered into a 50-year service agreement in November 2004 (By-law 2004-71). The service agreement was implemented on March 31, 2006.
- Prior to August 1, 2008, WUC provided water to 2400 residents in the former Township of Sandwich South, south of Highway 401 ("South Water Area"). The Town of Tecumseh assumed the responsibility for the operations and maintenance of the water distribution system from WUC in this South Water Area effective August 1, 2008.

## 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 policies and guidelines during the inspection period.

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 an inspection of a "stand alone connected distribution system". This type of system receives treated water from a separately owned "donor" system. This report contains the elements required to assess key compliance and conformance issues associated with a "receiver" system. This report does not contain items associated with the inspection of the donor system, such as source waters, intakes/wells and treatment facilities.

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) with respect to facility certification, operator licensing and operating standards;
- Drinking Water System Licence 040-101, Issue Number 3., issued December 6, 2016, related to selected requirements;
- Drinking Water Works Permit 040-201, Issue Number 3, issued December 6, 2016, and
- Ontario Drinking Water Quality Standards based on water quality data generated since the previous inspection.

The inspection was conducted on February 28, 2019 on an announced basis. Initial activity was conducted at the Water Distribution office, and included collection of relevant compliance records, records pertaining to distribution system maintenance and repairs, and staff interviews. Follow-up components of the inspection consisted of a physical inspection at the Tecumseh water tower, and testing residual disinfectant from the water tower.

Follow-up assessment included a review of the collected sampling results and operational documents. The inspection covers the period from January 1, 2018 to February 28, 2019.

### 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 works inspected, consisting of the Tecumseh water tower, were generally consistent with those identified in the

### Treatment Processes

Drinking Water System Description outlined in Schedule A of the Drinking Water Works Permit.

The Tecumseh tower is operated under SCADA control, with its filling sequenced with the filling of Windsor's Hanna Street water tower and Howard Avenue reservoir to avoid overflowing the Tecumseh tower. The Tecumseh tower is equipped with a motorized butterfly valve for isolating it from distribution system flow during Windsor's off-peak fill operations. The tower's engineering design narrative identifies the operational permissive conditions under which its valve opens, allowing the tower to float on distribution pressures. With the exception of a trending review, a review of the efficacy of tower operations was not included within the scope of this inspection.

By-law 2004-71 includes the following provisions agreed to by Tecumseh and the WUC:

- Tecumseh agrees to permit the Commission to install or have installed monitoring equipment at the Elevated Tank location to permit use of the Elevated Tank for system pressure control.
- The Commission shall deliver peak hourly flow and shall maintain sufficient storage in the Elevated Tank for fire flows in Tecumseh.
- Tecumseh will assume ongoing costs for maintenance and other works required at the Elevated Tank.
- The Commission will be responsible for costs for equipment and maintenance thereof required to monitor the Elevated Tank.
- Tecumseh will allow access to the equipment at all reasonable times by Commission staff in coordination with Tecumseh staff.

During the inspection, the water tower was found to be equipped with operating level and pressure transmitters and a continuous free chlorine analyser.

- **The owner/operating authority was in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.**

A Form 1 "Record of Watermains Authorized as a Future Alteration" document was prepared for a replacement project, consisting of five components:

- (i) Replacement of watermains on Hayes Avenue and Mack Court with 100 mm and 150 mm mains.
  - (ii) Replacement of watermains on Alden Crescent with 100 mm and 150 mm mains.
  - (iii) Replacement of watermains on part of Lacasse Park with 150 mm mains.
  - (iv) Replacement of watermains along an easement from Highway 3 to Roscon Industrial Drive with 150 mm mains.
  - (v) Abandonment of watermains on part of Tecumseh Road, transferring service to the existing 250 mm watermain.
- The document was prepared in March 2018 and the components of the project were commissioned into service from May to September 2018.

### Treatment Process Monitoring

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

Logs show that distribution system free chlorine residuals were taken and measured greater than seven times per week as required; generally 30 to 32 times per week, with the sets of 10 and 20 to 22 measurements taken from different locations on separate days at least 48 hours apart. Continuous measurement and recording of free chlorine via Historian was also conducted at the Tecumseh water tower, although Tecumseh uses its free chlorine grab sampling program for compliance monitoring under O.Regulation 170/03.

If the tower's chlorine analyser were to be used for compliance sampling under the regulation, current specifications and configuration indicate that it has the capabilities to comply with the monitoring requirements prescribed under the regulation:

1. The Prominent analyser CLE probe show that it has a reaction time of 60 seconds as the chlorine concentration rises or falls.
2. The SCADA Historian server can record free chlorine values at a frequency at least as often as that required

### Treatment Process Monitoring

under the regulation (every one hour). Daily report files reviewed confirmed that results were recorded each hour during the inspection review period.

3. As an operational alarm, Tecumseh's SCADA system maintains a low alarm level of 0.21 mg/L free chlorine to alert the ORO's cell phone.

4. Weekly routine distribution free chlorine checks include sampling at the tower. The weekly log sheet for recording these residuals includes a "Chlorine Analyser Work Order" which requires the operator to compare the tower grab sample and the analyser result, and calibrate the analyser if the difference in readings exceeds 0.05 mg/L. An annual instrument verification was completed by instrument supplier representatives on November 1, 2019. A calibration certificate was provided.

### Distribution System

- **Existing parts of the distribution system that are taken out of service for inspection, repair or other activities that may lead to contamination, and all new parts of the distribution system that come in contact with drinking water, were disinfected in accordance with Schedule B, Condition 2.3 of the Drinking Water Works Permit, or an equivalent procedure (i.e. the Watermain Disinfection Procedure).**

Logs, watermain break records and new main commissioning records revealed that distribution repair, replacement and construction activities were undertaken during the period of inspection review; requiring disinfection of new parts and equipment, super-chlorination, flushing and microbiological confirmation sampling.

Twenty-one watermain distribution repairs were determined, from main break reports. The majority were repaired under pressure. A few required cutting out a section of pipe and maintaining an air gap. The disinfection of repair and replacement parts, maintaining an air gap, flushing and testing of disinfection residuals was documented using Tecumseh's "Broken Watermain Report" template, consistent with Ontario's recently adopted Watermain Disinfection Procedure. There were some records where the operator in charge did not record information in the following fields needed to confirm adherence to the Watermain Disinfection Procedure:

"Type of Repair (i.e. clamp, cut out, etc.)"

"Pipe & Repair Parts Disinfected"

Distribution system operators have access to the following standard procedures which provide instructions to operators and briefly describe the purpose and scope of these programs:

1. SOP-009 Watermain Repair Procedure Category 1, Rev. G, February 28, 2018.
2. SOP-010 Watermain Repair Procedure Category 2, Rev. H, February 28, 2018.

### Operations Manuals

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

The distribution system drawing referenced in the Drinking Water Works Permit is entitled "Town of Tecumseh Water Infrastructure System", dated November 2016. The document was prepared and is maintained by the Town of Tecumseh GIS Department, and identify supply connection points to the Windsor supply. The latest updates available are dated January 2019.

Distribution operators have access to maps and distribution construction drawings maintained on the owner's GIS network. Access to the server is gained via the operator field laptops. The GIS maps identify locations of mains, hydrants, valves and curb-stops. As-built drawings are scanned into electronic files and hyperlinks are incorporated onto the GIS distribution maps. Asset information and locate information is also hyperlinked.

Brief descriptions of the distribution system are given in section 6.0 and Appendix 2 of the Tecumseh Water Services Operational Plan. The operators also have a control narrative for the tower, entitled "Process Narrative Tecumseh Water System, Elevated Water Tower", dated November 2009.

### 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.**

Condition 16.2 under Schedule B of the Drinking Water System licence includes the following conditions regarding procedures to be maintained in the operations manual:

- 16.2.1 The requirements of this licence and associated procedures;
- 16.2.2 The requirements of the drinking water works permit for the drinking water system;
- 16.2.3 A description of the processes used to maintain secondary disinfection within the drinking water system;
- 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;

A review of the available operating manual and standard operating procedures suggests that these conditions appear to be satisfied. All secondary disinfection is provided by the WUC at the A.H. Weeks Water Treatment Plant and Tecumseh does not maintain or operate a re-chlorination system.

Copies of the municipal Drinking Water System Licence and Drinking Water Works Permit are located in a separate binder made available to the operators.

Recommendations for review and improvement to the existing standard procedure "SOP-013 SCADA Alarm Procedure- 2012", Rev. D, dated January 4, 2016, are discussed in the "SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS" section of this report.

### Logbooks

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

The operator makes use of work orders and separate records for each aspect of distribution system maintenance and repairs. Separate logs and records are created for annual flushing and hydrant winterizing, watermain breaks and repairs and watermain inspections for new or replacement mains. A recommendation for improved logging of information in Tecumseh's "Broken Watermain Report" is given in the "SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS" section.

- **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.**

Free chlorine residual monitoring, conducted during regular compliance sampling, was done by certified operators from the Town of Tecumseh.

Chlorine residual sampling during flushing, distribution repairs and watermain commissioning is also conducted by Tecumseh's operators.

### Security

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

The Tecumseh elevated water structure is located within a fenced compound with padlocked gate and is equipped with locked steel security doors in its concrete base, and a door contact intrusion alarm. The tower structure is

### Security

equipped with an outdoor security light.

The security camera monitoring and recording system monitors the front of the tower compound and the tower's base inside the entrance doors.

### Certification and Training

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

The current ORO for the distribution system holds class III water distribution and supply certification; matching the class II certification of the Tecumseh distribution system. Tecumseh's Water Services Operational Plan, and the job description of the Manager of Water and Wastewater services, formally designates his position as ORO.

The operating authority maintains a system of log sheets entitled "Daily Operator Activity" which is used as a shift log and identifies operators' distribution system activities. These log sheets identify the overall responsible operator each day.

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

The "Daily Operator Activity" log sheets are used to designate operators in charge and document their hours. The ORO indicated that all operators with class 1 to 4 certification are designated as OIC.

### Water Quality Monitoring

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

O. Regulation 170/03 requires the owner and operating authority to take a minimum of one sample per week, and at least 32 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).

Microbiological water quality monitoring data was reviewed for the period from January 1, 2018 to February 28, 2019. The owner surpassed minimum requirements. The distribution system was sampled at 10 locations every week, from 20 routine sample locations, resulting in a minimum of 40 samples per month. At least 30% of the samples taken were analysed for HPC.

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

Under O. Regulation 170/03 Schedule 13-6.1, samples must be taken and analysed for haloacetic acids in every calendar quarter. Samples must be taken no less than 60 days and no greater than 120 days after the sample taken in the previous three-month period. Samples were taken as required, and within the prescribed time frame.

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

Under O. Regulation 170/03 Schedule 13-6 (1) and (2), samples must be taken and analysed for Trihalomethanes in every calendar quarter. Samples must be taken no less than 60 days and no greater than 120 days after the sample taken in the previous three-month period. Samples were taken as required, and within the prescribed time frame.

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

### Water Quality Assessment

- **Records show that results for water samples taken during the review period met the Ontario Drinking Water Quality Standards (O. Reg. 169/03), with the following exception:**

Available microbiological data from Tecumseh distribution system sampling during the review period show that microbiological quality consistently met the requirements of the Ontario Drinking Water Quality Standards, although one of the 620 routine distribution samples (0.2%) obtained showed an adverse bacteriological total coliform count. The February 20, 2018 result was measured despite an adequate free chlorine residual. Other distribution samples taken that day yielded clear results. Re-sampling yielded no subsequent adverse results.

The following water quality is also noted from the owner's results in samples collected from January 1, 2018 to February 28, 2019:

(i) Trihalomethane samples from the distribution system yielded a running annual average concentration of 0.01775 mg/L for the last four quarters of sampling, below the drinking water standard of 0.100 mg/L (running annual average). The Technical Support Document for Ontario Drinking Water Quality Standards, Objectives and Guidelines indicates that Trihalomethanes in drinking water are primarily produced by the reaction of chlorine and the naturally occurring organics (precursors) in the water.

An audit distribution sample was taken from the Tecumseh tower as part of the inspection and tested for free chlorine disinfectant residual. Operational sample readings are recorded in Appendix B.

### 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.**

Corrective actions for the adverse distribution sample taken February 20, 2018, yielding a total coliform count of 32 cfu/100 mL, were completed. This consisted of flushing, re-sampling and checking the disinfectant residual at the location which gave rise to the adverse result, and upstream and downstream sites. Re-samples taken yielded clear results. A precautionary boil water advisory from the Windsor-Essex County Health Unit was also delivered to one home, and lifted once re-sampling yielded clear results.

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

Required verbal notifications for the February 20, 2018 adverse total coliform result, discussed above, were completed by the owner upon the lab making them aware of the adverse result. Notifications included informing the Windsor-Essex County Health Unit and the Ministry's Spills Action Centre.

### Other Inspection Findings

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

Two additional issues identified are described in detail under the "SUMMARY OF BEST PRACTICE ISSUES AND RECOMMENDATIONS" section.

- **The following items are noted as being relevant to the Drinking Water System:**

Records confirmed that chlorination for secondary disinfection purposes was provided so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free, as prescribed in Section 4 of the Procedure for Disinfection of Drinking Water in Ontario.

Secondary disinfection is supplied entirely by the Windsor A.H. Weeks Water Treatment Plant. No re-chlorination takes place after entering the Tecumseh distribution system. A review of available data from January 1, 2018 to February 28, 2019 revealed that:

1. Samples from the distribution system showed that none of the 620 grab samples taken during routine

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**Other Inspection Findings**

bacteriological sampling had free chlorine residuals less than 0.05 mg/L.

2. Additional available records of chlorine residual monitoring done during weekly checks of the distribution system showed that none of the approximately 1336 extra grab samples taken had free chlorine residuals less than 0.05 mg/L.

3. Available records of continuous trending provided for the distribution free chlorine analyser located at the Tecumseh tower, show adequate residuals at that location. There was an instance noted in trend data February 18, 2019 where measured values dropped lower than normal, and lower than the alarm setting of 0.21 mg/L. Upon checking the site, it was found that the disinfectant residual level was within the normal range and that the drop was attributed to a problem with analyser calibration, prompting replacement of the analyser probe membrane cap and electrolyte.

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## 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:

A. Tecumseh's "Broken Watermain Report" is used to document the following activities undertaken during watermain repairs: disinfection of repair and replacement parts, maintaining an air gap, flushing and testing of disinfection residuals. There were some records where the operator in charge did not record information in the following fields needed to confirm adherence to the "Ontario Watermain Disinfection Procedure":

"Type of Repair (i.e. clamp, cut out, etc.)"

"Pipe & Repair Parts Disinfected"

B. Standard Operating Procedure "SOP-013 SCADA Alarm Procedure" identifies critical SCADA alarms which must be responded to immediately during regular hours and after hours. Page 2 of this SOP includes "failure of free chlorine analyser" in the list of critical alarms, and page 8 of the SOP provides instructions for actions that must be taken in the event of an alarm. The February 18, 2019 instance noted above, where analyser values below 0.21 mg/L triggered an alarm, did not prompt on-site action until the next day to confirm that the actual disinfectant residual level was within the normal range and that the drop was attributed to an analyser calibration problem. Nothing in logs or records provided show that a response was triggered from the WUC as well.

#### **Recommendation:**

With respect to the additional observations noted:

A. Review the "Broken Watermain Report" with operators responsible for overseeing watermain repairs to ensure that relevant fields are completed in order to confirm adherence to the "Ontario Watermain Disinfection Procedure".

B. While the February 18, 2019 analyser event resulted from a calibration issue, it provides an opportunity to review the circumstances of the event and actions taken, in conjunction with the expectations and directions in "SOP-013 SCADA Alarm Procedure". This assessment may result in a change in wording of the SOP and/or a refresher on the response needed, but it should include the verification of roles and responsibilities of the Tecumseh Water Department and the WUC with respect to low chlorine residuals measured at the analyser.

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**SIGNATURES**

Inspected By:

Al Petersen

Signature: (Provincial Officer)



Reviewed &amp; Approved By:

Marc Bechard

Signature: (Supervisor)



2019.03.28 11:49:38 -04'00'

Review &amp; 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.

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**Stakeholder Appendix**

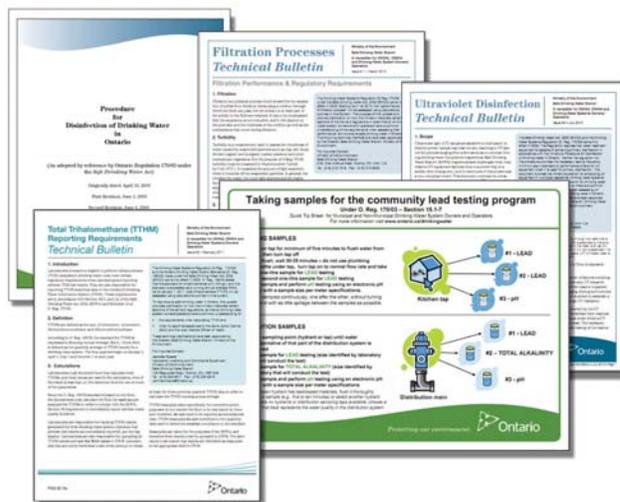
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# Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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 Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or [picemail.moe@ontario.ca](mailto:picemail.moe@ontario.ca).

For more information on Ontario's drinking water visit [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater) and email [drinking.water@ontario.ca](mailto:drinking.water@ontario.ca) to subscribe to drinking water news.



PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking Water in Ontario	4448e01
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids	7152e
Total Trihalomethane (TTHM) Reporting Requirements Technical Bulletin (February 2011)	8215e
Filtration Processes Technical Bulletin	7467
Ultraviolet Disinfection Technical Bulletin	7685
Guide for Applying for Drinking Water Works Permit Amendments, Licence Amendments, Licence Renewals and New System Applications	7014e01
Certification Guide for Operators and Water Quality Analysts	
Guide to Drinking Water Operator Training Requirements	9802e
Taking Samples for the Community Lead Testing Program	6560e01
Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption	7423e
Guide: Requesting Regulatory Relief from Lead Sampling Requirements	6610
Drinking Water System Contact List	7128e
Technical Support Document for Ontario Drinking Water Quality Standards	4449e01

[ontario.ca/drinkingwater](http://ontario.ca/drinkingwater)

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**MECP Audit Sample Results**

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## Tecumseh DS Appendix

### Ministry Audit Samples - Operational Results

Sample Type	Location Tecumseh Distribution System	Date/Time Feb 28, 2019	Bacti Sample	Field Reading		Owner's Sample / Analyser Reading	
				F / T Cl <sub>2</sub> mg/L	turb. NTU	F / T Cl <sub>2</sub> mg/L	turb. NTU
<b>Distribution</b>	1189 Lacasse Blvd – kitchen tap	12:15 pm	N	1.37 free	-	-	-
<b>Distribution</b>	Tecumseh tower (inlet/outlet)	12:45 pm	N	1.46 free	-	1.30 free <sup>1</sup>	-

<sup>1</sup> Continuous analyser reading – observed at 12:26 pm

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**Provincial Officer Report(s) and Order(s)**

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Not applicable

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**Inspection Rating Record**

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Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2018-2019)

<b>DWS Name:</b>	TECUMSEH DISTRIBUTION SYSTEM
<b>DWS Number:</b>	260004969
<b>DWS Owner:</b>	Tecumseh, The Corporation Of The Town Of
<b>Municipal Location:</b>	Tecumseh

**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Adhoc  
**Inspection Date:** February 28, 2019  
**Ministry Office:** Windsor Area Office

Maximum Question Rating: 216

Inspection Module	Non-Compliance Rating
Treatment Processes	0 / 18
Distribution System	0 / 21
Operations Manuals	0 / 28
Logbooks	0 / 18
Certification and Training	0 / 14
Water Quality Monitoring	0 / 51
Reporting & Corrective Actions	0 / 45
Treatment Process Monitoring	0 / 21
<b>TOTAL</b>	<b>0 / 216</b>

<b>Inspection Risk Rating</b>	<b>0.00%</b>
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<b>FINAL INSPECTION RATING:</b>	<b>100.00%</b>
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Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2018-2019)

<b>DWS Name:</b> TECUMSEH DISTRIBUTION SYSTEM
<b>DWS Number:</b> 260004969
<b>DWS Owner:</b> Tecumseh, The Corporation Of The Town Of
<b>Municipal Location:</b> Tecumseh

**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Adhoc  
**Inspection Date:** February 28, 2019  
**Ministry Office:** Windsor Area Office

Maximum Question Rating: 216

Inspection Risk Rating	0.00%
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<b>FINAL INSPECTION RATING:</b>	<b>100.00%</b>
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