

11681

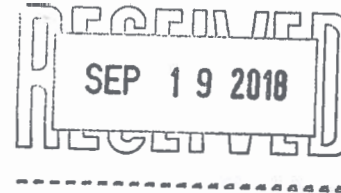
## Tammy Lepage

**From:** craig.d  
**Sent:** September 19, 2018 3:24 PM  
**To:** Tammy Lepage  
**Subject:** Fwd: Temagami North Drinking Water System Inspection Report  
**Attachments:** Temagami North Drinking Water System Inspection Report # 1-I2EJR.pdf; ATT00001.htm; Risk Methodology sheet EN July 2011.pdf; ATT00002.htm; Risk Methodology sheet FR juillet 2011 V2.pdf; ATT00003.htm

Council information - and pw staff and committee I am guessing

Sent from my iPhone

Begin forwarded message:



**From:** "Duquette, Lori (MECP)" <[Lori.Duquette@ontario.ca](mailto:Lori.Duquette@ontario.ca)>  
**To:** "craig.d" <[craig.d@temagami.ca](mailto:craig.d@temagami.ca)>  
**Cc:** "Victor Legault" <[VLegault@ocwa.com](mailto:VLegault@ocwa.com)>, "Bryce Logan ([blogan@ocwa.com](mailto:blogan@ocwa.com))" <[blogan@ocwa.com](mailto:blogan@ocwa.com)>, "Barry Turcotte" <[pwsuper@temagami.ca](mailto:pwsuper@temagami.ca)>, "Rebecca Marshall" <[RMarshall@ocwa.com](mailto:RMarshall@ocwa.com)>, "Ilersich, Sherry (MECP)" <[Sherry.ilersich@ontario.ca](mailto:Sherry.ilersich@ontario.ca)>, "Baldwin, Mitch (MNR)" <[mitch.baldwin@ontario.ca](mailto:mitch.baldwin@ontario.ca)>, "Ryan Peters ([petersr@timiskaminghu.com](mailto:petersr@timiskaminghu.com))" <[petersr@timiskaminghu.com](mailto:petersr@timiskaminghu.com)>, "Yvan Rondeau" <[YRondeau@ocwa.com](mailto:YRondeau@ocwa.com)>  
**Subject:** Temagami North Drinking Water System Inspection Report

Craig,

Attached is the Temagami North Drinking Water System Inspection Report for the focused inspection conducted on August 1, 2018. Also attached is the Inspection Risk Rating methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report.

In an attempt to reduce the amount of paper used in distributing inspection reports the Ministry of the Environment is now sending electronic copies of the inspection reports. Please contact me if you wish to receive a paper copy.

Please let me know if you have any problems opening the attachments or questions regarding the inspection.

Regards,

**Lori Duquette, Water Inspector/Provincial Officer Badge # 812 | Drinking Water and Environmental Compliance Division – North Bay Office | Ontario Ministry of the Environment, Conservation and Parks | 191 Booth Road, Unit 16 & 17, North Bay, Ontario, P1A 4K3 | ph: 705-495-3804 or 1-800-569-5553 | fax: 705-497-6866 | [lori.duquette@ontario.ca](mailto:lori.duquette@ontario.ca)**

File ☒ Incoming ☐ Other ☐  
Mayor ☐  
Council ☒ ☐ ☐  
CAO ☐  
Building ☐  
Finance ☐ ☐ ☐ ☐  
Ec Dev ☐ ☐ ☐ ☐  
Parks & Rec ☐ ☐ ☐ ☐  
Planning ☐ ☐ ☐ ☐  
Public Wks ☒ ☒ ☒ ☒  
PPP ☐  
Social Services ☐  
☐ \_\_\_\_\_  
☐ \_\_\_\_\_

Ministry of the Environment,  
Conservation and Parks  
Timmins District  
North Bay Area Office  
191 Booth Road  
Unit 16 & 17  
North Bay, ON P1A 4K3  
Telephone: 705-497-6865  
Facsimile: 705-497-6866

Ministère de l'Environnement, de la  
Protection de la nature et des Parcs  
District de Timmins  
Bureau du Secteur de North Bay  
191 rue Booth  
Unité 16 et 17  
North Bay ON P1A 4K3  
Téléphone: 705-497-6865  
Télécopieur: 705-497-6866



September 18, 2018

Mr. Craig Davidson  
Treasurer/ Administrator  
The Corporation of the Municipality of Temagami  
P.O. Box 220  
Temagami, Ontario  
P0H 2H0

Dear Mr. Davidson:

Re: Inspection Report for the Temagami North Drinking Water System - Inspection #1-I2EJR

On August 1, 2018, I conducted the annual inspection of the Temagami North Drinking Water System. The focused inspection included a physical assessment of the water treatment plant as well as a document review for the period of November 23, 2017 to July 31, 2018. The resulting inspection report is attached.


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).

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 A of the inspection report, provides a summarized, quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. Please review the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in the inspection report.

In accordance with the Ministry's Drinking Water Inspection Protocol, electronic copies of this report have been forwarded to the Timiskaming Health Unit and the Ministry of Natural Resources North Bay Office.

If you have any questions or comments regarding this inspection, please feel free to contact me at (705) 495-3804.

Yours truly,



---

Lori Duquette  
Water Inspector/Provincial Officer  
Ministry of the Environment, Conservation and Parks  
Drinking Water and Environmental Compliance Division  
North Bay Area Office

Cc: Barry Turcotte, Municipality of Temagami, Public Works Superintendent  
Victor Legault, OCWA Northeastern Region, Operations Manager  
Bryce Logan, OCWA Northeastern Region, ORO Temagami North and South WTP  
Rebecca Marshall, OCWA Northeastern Region, Process & Compliance Technician (PCT)  
Yvan Rondeau, OCWA Northeastern Region, PCT Manager  
Ryan Peters, Timiskaming Health Unit, Program Manager  
Mitch Baldwin, Ministry of Natural Resources, District Manager of North Bay District Office  
Sherry Ilersich, Supervisor, Safe Drinking Water Branch – Timmins/North Bay, MECP



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

**TEMAGAMI NORTH DRINKING WATER SYSTEM**

**Inspection Report**

|                            |               |
|----------------------------|---------------|
| <b>Site Number:</b>        | 220000433     |
| <b>Inspection Number:</b>  | 1-I2EJR       |
| <b>Date of Inspection:</b> | Aug 01, 2018  |
| <b>Inspected By:</b>       | Lori Duquette |

## **Table of Contents**

---

|   |    |
|---|----|
| Owner & Contact Information                                       | 2  |
| Inspection Details & Drinking Water System Components Description | 3  |
| Inspection Summary  | 4  |
| ▪ Introduction  | 4  |
| ▪ Capacity Assessment   | 4  |
| ▪ Treatment Processes   | 4  |
| ▪ Treatment Process Monitoring                                    | 7  |
| ▪ Operations Manuals  | 7  |
| ▪ Logbooks  | 7  |
| ▪ Security  | 7  |
| ▪ Certificate and Training  | 8  |
| ▪ Water Quality Monitoring  | 8  |
| ▪ Water Quality Assessment  | 9  |
| ▪ Reporting and Corrective Actions                                | 9  |
| Non-Compliance with Regulatory Requirements and Actions Required  | 11 |
| Summary of Best Practice Issues and Recommendations               | 12 |
| Signatures  | 13 |

## **Appendices**

- A. Ministry Inspection Rating Record (IRR)
- B. Key Reference and Guidance Material for Municipal Residential DWS

## OWNER INFORMATION:

|                       |  |                         |              |
|-----------------------|--|-------------------------|--------------|
| <b>Company Name:</b>  | TEMAGAMI, THE CORPORATION OF THE MUNICIPALITY OF |                         |              |
| <b>Street Number:</b> | 7  | <b>Unit Identifier:</b> | P.O. Box 220 |
| <b>Street Name:</b>   | LAKESHORE Dr                                     |                         |              |
| <b>City:</b>          | TEMAGAMI   |                         |              |
| <b>Province:</b>      | ON   | <b>Postal Code:</b>     | P0H 2H0      |

## CONTACT INFORMATION

|               |  |              |                |
|---------------|--|--------------|----------------|
| <b>Type:</b>  | Owner  | <b>Name:</b> | Craig Davidson |
| <b>Phone:</b> | (705) 569-3421   | <b>Fax:</b>  |                |
| <b>Email:</b> | craig.d@temagami.ca                                      |              |                |
| <b>Title:</b> | Treasurer/Administrator for the Municipality of Temagami |              |                |

|               |  |              |                |
|---------------|--|--------------|----------------|
| <b>Type:</b>  | Operating Authority                                  | <b>Name:</b> | Victor Legault |
| <b>Phone:</b> | (705) 672-5549                                       | <b>Fax:</b>  | (705) 672-2534 |
| <b>Email:</b> | vlegault@ocwa.com                                    |              |                |
| <b>Title:</b> | Senior Operations Manager, OCWA, Northeastern Region |              |                |

|               |  |              |             |
|---------------|--|--------------|-------------|
| <b>Type:</b>  | Operating Authority                        | <b>Name:</b> | Bryce Logan |
| <b>Phone:</b> | (705) 672-5549                             | <b>Fax:</b>  |             |
| <b>Email:</b> | blogan@ocwa.com                            |              |             |
| <b>Title:</b> | Operator with Overall Responsibility, OCWA |              |             |

|               |  |              |                  |
|---------------|--|--------------|------------------|
| <b>Type:</b>  | Operating Authority                      | <b>Name:</b> | Rebecca Marshall |
| <b>Phone:</b> | (705) 672-5549                           | <b>Fax:</b>  | (705) 672-2534   |
| <b>Email:</b> | rmarshall@ocwa.com                       |              |                  |
| <b>Title:</b> | Process and Compliance Technician - OCWA |              |                  |

|               |  |              |                |
|---------------|--|--------------|----------------|
| <b>Type:</b>  | Owner  | <b>Name:</b> | Barry Turcotte |
| <b>Phone:</b> | (705) 569-3272   | <b>Fax:</b>  | (705) 569-2834 |
| <b>Email:</b> | publicworks@temagami.ca                                |              |                |
| <b>Title:</b> | Superintendent, Public Works, Municipality of Temagami |              |                |

|               |   |              |                 |
|---------------|---|--------------|-----------------|
| <b>Type:</b>  | MECP  | <b>Name:</b> | Sherry Ilersich |
| <b>Phone:</b> | (705) 495-3834  | <b>Fax:</b>  | (705) 497-6866  |
| <b>Email:</b> | sherry.ilersich@ontario.ca  |              |                 |
| <b>Title:</b> | Water Compliance Supervisor, Ministry of the Environment, Conservation and Parks, Drinking Water and Environmental Compliance Division, Northern Region, Timmins/North Bay District |              |                 |

|               |  |              |                |
|---------------|--|--------------|----------------|
| <b>Type:</b>  | Timiskaming Health Unit                  | <b>Name:</b> | Ryan Peters    |
| <b>Phone:</b> | (705) 647-4305 x2250                     | <b>Fax:</b>  | (705) 647-5779 |
| <b>Email:</b> | petersr@timiskaminghu.com                |              |                |
| <b>Title:</b> | Program Manager, Timiskaming Health Unit |              |                |

|               |                         |              |                |
|---------------|-------------------------|--------------|----------------|
| <b>Type:</b>  | MNRF North Bay District | <b>Name:</b> | Mitch Baldwin  |
| <b>Phone:</b> | (705) 475-5550          | <b>Fax:</b>  | (705) 475-5550 |

**Email:** mitch.baldwin@ontario.ca  
**Title:** District Manager, Ministry of Natural Resources and Forestry - North Bay District

## INSPECTION DETAILS:

**Site Name:** TEMAGAMI NORTH DRINKING WATER SYSTEM  
**Site Address:** 5 CEDAR AVE S TEMAGAMI ON P0H 2H0  
**County/District:** Temagami  
**MECP District/Area Office:** North Bay Area Office  
**Health Unit:** TIMISKAMING HEALTH UNIT  
**Conservation Authority:**  
**MNR Office:** North Bay Regional Office  
**Category:** Large Municipal Residential  
**Site Number:** 220000433  
**Inspection Type:** Announced  
**Inspection Number:** 1-12EJR  
**Date of Inspection:** Aug 01, 2018  
**Date of Previous Inspection:** Nov 23, 2017

## COMPONENTS DESCRIPTION

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

**Site (Name):** Net Lake  
**Type:** Source  
**Sub Type:** Surface Water

**Comments:**

The intake facility for the Temagami North Water Treatment Plant (WTP) is located approximately 165 m off the west shore of Net Lake at 10 m below the low water level of the lake. The raw water is directed by gravity via a 222 metre 250 mm diameter intake pipe to a low lift pumping station consisting of a wet well and two submersible low lift pumps, each rated at 3.8 L/second (328 m³/day). These pumps are controlled by the system PLC (Programmable Logic Controller) and discharge to the two "BCA" water treatment package plants located within the WTP.

**Site (Name):** Treatment Plant  
**Type:** Treated Water POE  
**Sub Type:** Treatment Facility

**Comments:**

The system is centred on two "BCA" Pre-Fabricated Water Treatment Plants and their associated treatment and process control components. These treatment trains, their controls and chemical dosing equipment produce filtered water which is directed to three clear wells which have a combined working volume of 259.6 m³. Further chemical treatment for disinfection and pH adjustment is undertaken as the filtered water enters the clear wells and is pumped by the high lift pumps to the distribution subsystem. The plant is equipped with an automated monitoring system which records various component operations, system flows and chemical treatment dosages. The plant operates on a distribution demand basis controlled by water level signals fed back from the water tower. All process and floor drain wastes are directed to waste sumps for pumping to the municipal sewage collection system.

**Site (Name):** Distribution  
**Type:** Other  
**Sub Type:** Other

**Comments:**

Temagami North is classified as a Large Municipal Residential Drinking Water System and has 218 service

connections serving an estimated population of 300 residents. The distribution system is equipped with a standpipe known as the "North Tower" which has a storage capacity of 732 m<sup>3</sup> and assists with maintaining water pressure in the system.

---



## INSPECTION SUMMARY:

### Introduction

- The primary focus of this inspection is to confirm compliance with Ministry of the Environment and Climate Change (MOECC) 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.

Ontario Clean Water Agency (OCWA) personnel Rebecca Marshall, Process and Compliance Technician and Bryce Logan, Senior Operator and Overall Responsible Operator (ORO) for the Temagami North Drinking Water System (DWS) accompanied Lori Duquette, Water Inspector/Provincial Officer with the Ministry of the Environment, Conservation and Parks during the inspection of the Temagami North DWS on August 1, 2018. OCWA operates the Temagami North DWS on behalf of the municipality.

The drinking-water system inspection included a physical assessment of the treatment works on August 1, 2018 and a document review for the period from November 24, 2017 until July 31, 2018. This period is referred to as the "inspection period" in this report.

### 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.
- 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.

The Licence identifies the rated capacity for the Temagami North DWS as 328 m<sup>3</sup>/day of total flow into the distribution system on any given calendar day.

A review of plant records for this inspection period indicated that the rated capacity noted above was complied with. The maximum daily flow into the distribution system was 316 m<sup>3</sup>/day in November, 2017.

### Treatment Processes

- The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of

### Treatment Processes

the Drinking Water Works Permit.

- 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.
- 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.

In accordance with O. Reg. 170/03, Schedule 1-2(2)3, surface water systems must consist of chemically assisted filtration and disinfection and achieve an overall performance of at least a 2-log 99% removal/inactivation of *Cryptosporidium* oocysts, a 3-log 99.9% removal/inactivation of *Giardia* cysts, and a 4-log 99.99% removal/inactivation of viruses by the time the water is delivered to the first consumer.

The Temagami North WTP is designed to achieve the above performance criteria using conventional filtration followed by chlorination for primary disinfection. The municipal drinking water licence (MDWL) identifies log removal/inactivation credits assigned to the two processes as the following:

- Conventional Filtration receives 2- log for *Cryptosporidium* oocysts, 2.5- log for *Giardia* cysts and 2- log for viruses;
- Chlorination receives 0.5+ log *Giardia* cysts and 2+ log viruses.

Note: In order to receive full log credits the treatment process must be fully operational and the credit assignment criteria met.

#### Chlorination

The CT calculation verified by the Ministry included the following worst-case operating conditions

- Treated water flow rate = 9.58 L/s
- Clear well level = 1.4 m
- Water temperature = 0.5 °C
- pH of water = 8.5
- minimum free chlorine residual after contact time of 0.82 mg/L

However, at the time of the inspection the following operational CT parameter values were being used to set alarms to ensure CT was met at all times:

Treated water flow rate = 19 L/s

- Clear well level = 1.75 m
- Water temperature = 0.5 °C
- pH of water = 8.0
- minimum free chlorine residual after contact time of 0.85 mg/L.

#### Conventional Filtration

In order to receive the full log removal credits assigned to conventional filtration the filtration process must meet the following criteria which are listed in the Municipal Drinking Water Licence No. 201-102, Issue No. 2, in Schedule E;

1. A chemical coagulant shall be used at all times when the treatment plant is in operation,
2. Chemical dosages shall be monitored and adjusted in response to variation in raw water quality,
3. Effective backwash procedures shall be maintained including filter to waste or an equivalent procedure during filter ripening to ensure that the effluent turbidity requirements are met all times,
4. Filtrate turbidity is continuously monitored from each filter, and
5. The plant is operated to meet the performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month for each filter.

### Treatment Processes

Based on a review of the continuous trends for the above noted parameters and a review of the alarm logs and CT calculations performed when operating outside of the above range, CT and the conventional filtration log removal credit requirements were met for the duration of this inspection 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.

### 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.
- Continuous monitoring of each filter effluent line was being performed for turbidity.
- The secondary disinfectant residual was measured as required for the distribution system.
- Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.
- 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.
- Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format.
- All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.

### Operations Manuals

- The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.
- The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.

### Logbooks

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

### Security

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

### Security

Current security measures provided for the Temagami North DWS include the following:

- Locked doors on all buildings (i.e. water treatment plant and water tower);
- An intruder alarm system at the water treatment plant; and
- Frequent visits by operational staff.

### Certification and Training

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

Claude Mongrain was the Overall Responsible Operator (ORO) for the Temagami North DWS for the period of time up until March 15, 2018. Bryce Logan became the ORO for the Temagami North DWS as of March 16, 2018.

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

Section 10-2 of Schedule 10 of O. Reg. 170/03 required the owner and operating authority for the system to ensure that at least eight (8) water samples were collected monthly from the distribution system sites (based on estimated population of 300). Samples must be tested for E.coli, total coliforms and 25% of those samples tested for general background population expressed as colony counts on a heterotrophic plate count.

Based on a review of the documentation provided during this inspection period, a minimum of two (2) samples were collected weekly from the distribution system. Of the eight to ten samples collected monthly over 25% of them were tested for HPC as required by section 10-2 of O. Reg. 170/03.

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

Section 10-3 of Schedule 10 of O. Reg. 170/03 required the owner and the operating authority for the system to ensure that at least one sample of treated water was collected weekly and tested for E.coli, total coliforms and general background population expressed as colony counts on a heterotrophic plate count.

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

Section 13-2 of Schedule 13 of O. Reg. 170/03 requires the owner and operating authority of the system to ensure that at least one sample of treated water was collected every 12 months and tested for every parameter set out in Schedule 23. The most recent sample was collected on October 10, 2017.

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

Section 13-4 of Schedule 13 of O. Reg. 170/03 requires the owner and operating authority of the system to ensure that at least one sample of treated water is collected every 12 months and tested for every parameter set out in Schedule 24. The most recent sample was collected on October 10, 2017.

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

### Water Quality Monitoring

Section 13-6.1 of Schedule 13 to O. Reg. 170/03 requires the owner and operating authority for the system to ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids (HAA), and have them tested for HAA.

During this inspection period samples for HAA were collected by the operating authority on January 8, April 9 and July 9, 2018.

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

Section 13-6 of Schedule 13 of O. Reg. 170/03 requires the owner and the operating authority for the system to ensure that at least one water sample was collected every calendar quarter from points in the distribution system (including connected plumbing) likely to have an elevated potential for the formation of trihalomethanes (THM). The operating authority completed the sampling in accordance with the regulatory requirements.

During this inspection period samples for THM were collected by the operating authority on January 8, April 9 and July 9, 2018. The running annual average (RAA) for THM as of July 2018 was 54.6 µg/L.

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

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

During this inspection period samples were collected on January 8, April 9 and July 9, 2018.

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

Section 13-8 of Schedule 13 of O. Reg. 170/03 requires the owner and the operating authority for the system to ensure that at least one treated water sample was collected every 60 months and tested for sodium. The most recent samples were collected in October 2017. Two samples were collected, the first exceeded the maximum acceptable concentration (MAC) of 20 mg/L with a result of 26.5 mg/L, and the resample was 23.7 mg/L.

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

Section 13-9 of Schedule 13 of O. Reg. 170/03 requires the owner and the operating authority for the system to ensure that at least one treated water sample was collected every 60 months and tested for fluoride. The most recent sample was collected on October 10, 2017.

- **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 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**

**Reporting & Corrective Actions**

took appropriate actions.

**Other Inspection Findings**

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

At the time of the inspection, it was noted that the operating authority could not locate the clearwell valve isolation standard operating procedure (SOP). This SOP describes the valve positioning to ensure that all three clearwells are in use during normal operation and how to isolate a particular clearwell if needed for maintenance. As this SOP is necessary to ensure adequate contact time is achieved it is recommended that either the original SOP is located and updated to include requirements for contact time re-calculation and possible adjustment to alarm set points to ensure compliance with regulatory requirements or a new SOP is created with valve positioning and CT information.

---

## 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:**

At the time of the inspection, it was noted that the operating authority could not locate the clearwell valve isolation standard operating procedure (SOP). This SOP describes the valve positioning to ensure that all three clearwells are in use during normal operation and how to isolate a particular clearwell if needed for maintenance.

**Recommendation:**

It is recommended that either the original SOP is located and updated to include requirements for contact time re-calculation and possible adjustment to alarm set points to ensure compliance with regulatory requirements or a new SOP is created with valve positioning and CT information.



---

**SIGNATURES**

Inspected By:

Lori Duquette

Signature: (Provincial Officer)



Reviewed &amp; Approved By:

Sherry Ilersich

Signature: (Supervisor)



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.

## APPENDIX A

### INSPECTION RATING RECORD (IRR)

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

**DWS Name:** TEMAGAMI NORTH DRINKING WATER SYSTEM  
**DWS Number:** 220000433  
**DWS Owner:** Temagami, The Corporation Of The Municipality Of  
**Municipal Location:** Temagami

**Regulation:** O.REG 170/03  
**Category:** Large Municipal Residential System  
**Type Of Inspection:** Focused  
**Inspection Date:** August 1, 2018  
**Ministry Office:** North Bay Area Office

Maximum Question Rating: 440

| Inspection Module              | Non-Compliance Rating |
|--------------------------------|-----------------------|
| Capacity Assessment            | 0 / 30                |
| Treatment Processes            | 0 / 60                |
| 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               |
| <b>TOTAL</b>                   | <b>0 / 440</b>        |

Inspection Risk Rating 0.00%

**FINAL INSPECTION RATING: 100.00%**

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

|  |
|--|
| <b>DWS Name:</b> TEMAGAMI NORTH DRINKING WATER SYSTEM              |
| <b>DWS Number:</b> 220000433                                       |
| <b>DWS Owner:</b> Temagami, The Corporation Of The Municipality Of |
| <b>Municipal Location:</b> Temagami                                |
| <b>Regulation:</b> O.REG 170/03                                    |
| <b>Category:</b> Large Municipal Residential System                |
| <b>Type Of Inspection:</b> Focused                                 |
| <b>Inspection Date:</b> August 1, 2018                             |
| <b>Ministry Office:</b> North Bay Area Office                      |

---

**Maximum Question Rating:** 440

|                               |              |
|-------------------------------|--------------|
| <b>Inspection Risk Rating</b> | <b>0.00%</b> |
|-------------------------------|--------------|

|                                 |                |
|---------------------------------|----------------|
| <b>FINAL INSPECTION RATING:</b> | <b>100.00%</b> |
|---------------------------------|----------------|

## **APPENDIX B**

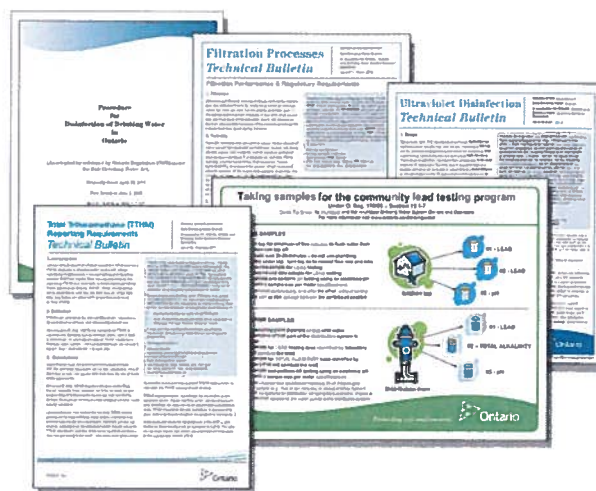
### **KEY REFERENCE AND GUIDANCE MATERIAL FOR STAKEHOLDERS**

# 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)



# APPLICATION OF THE RISK METHODOLOGY USED FOR MEASURING MUNICIPAL RESIDENTIAL DRINKING WATER SYSTEM INSPECTION RESULTS



The Ministry of the Environment (MOE) has a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS). Its objective is to determine the compliance of MRDWS with requirements under the Safe Drinking Water Act and associated regulations. It is the responsibility of the municipal residential drinking water system owner to ensure their drinking water systems are in compliance with all applicable legal requirements.

This document describes the risk rating methodology, which has been applied to the findings of the Ministry's MRDWS inspection results since fiscal year 2008-09. The primary goals of this assessment

are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

MOE reviews the risk rating methodology every three years to account for legislative and societal changes that affect acceptable risk levels. As a result of the most recent review, the methodology has been modified to present an improved metric for the evaluation of the risk/safety of MRDWS operations.

The Ministry's Municipal Residential Drinking Water Inspection Protocol contains up to 14 inspection modules and consists of approximately 120 regulatory questions. Those protocol questions are also linked to definitive guidance that

ministry inspectors use when conducting MRDWS inspections. The questions address a wide range of regulatory issues, from administrative procedures to drinking water quality monitoring. Additionally, the inspection protocol contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry have assessed each of the inspection protocol regulatory questions to determine the risk (not complying with the regulation) to the delivery of safe drinking water. This assessment was based on established provincial risk assessment principles, with each question receiving a risk rating referred to as the Question Risk Rating. Based on the number of areas where a system is deemed to be non-compliant during the inspection, and the significance of these areas to administrative, environmental, and health consequences, a risk-based inspection rating is calculated by the ministry for each drinking water system.

It is important to be aware that an inspection rating that is less than 100 per cent does not mean that the drinking water from the system is unsafe. It shows areas where a system's operation can improve. To that end, the ministry works with owners and operators of systems to make sure they know what they need to do to achieve full compliance.

The inspection rating reflects the inspection results of the specific drinking water system for the reporting year. Since the methodology is applied consistently over a period of years, it serves as a comparative measure both provincially and in relation to the individual system. Both the drinking water system and the public are able to track the performance over time, which encourages continuous improvement and allows systems to identify specific areas requiring attention.

The ministry's annual inspection program is an important aspect of our drinking water safety net. The ministry and its partners share a common commitment to excellence and we continue to work toward the goal of 100 per cent regulatory compliance.

## Determining Potential to Compromise the Delivery of Safe Water

The risk management approach used for MRDWS is aligned with the Government of Ontario's Risk Management Framework. Risk management is a systematic approach to identifying potential hazards; understanding the likelihood and consequences of the hazards; and taking steps to reduce their risk if necessary and as appropriate.

The Risk Management Framework provides a formula to be used in the determination of risk:

$$\text{RISK} = \text{LIKELIHOOD} \times \text{CONSEQUENCE}$$

(of the consequence)

Every regulatory question in the inspection protocol possesses a likelihood value (L) for an assigned consequence value (C) as described in **Table 1** and **Table 2**.

TABLE 1:

| Likelihood of Consequence Occurring       | Likelihood Value |
|---|------------------|
| 0% - 0.99% (Possible but Highly Unlikely) | L = 0            |
| 1 - 10% (Unlikely)                        | L = 1            |
| 11 - 49% (Possible)                       | L = 2            |
| 50 - 89% (Likely)                         | L = 3            |
| 90 - 100% (Almost Certain)                | L = 4            |

TABLE 2:

| Consequence                       | Consequence Value |
|-----------------------------------|-------------------|
| Medium Administrative Consequence | C = 1             |
| Major Administrative Consequence  | C = 2             |
| Minor Environmental Consequence   | C = 3             |
| Minor Health Consequence          | C = 4             |
| Medium Environmental Consequence  | C = 5             |
| Major Environmental Consequence   | C = 6             |
| Medium Health Consequence         | C = 7             |
| Major Health Consequence          | C = 8             |



The consequence values (0 through 8) are selected to align with other risk-based programs and projects currently under development or in use within the ministry as outlined in **Table 2**.

The Question Risk Rating for each regulatory inspection question is derived from an evaluation of every identified consequence and its corresponding likelihood of occurrence:

- All levels of consequence are evaluated for their potential to occur
- Greatest of all the combinations is selected.

The Question Risk Rating quantifies the risk of non-compliance of each question relative to the others. Questions with higher values are those with a potentially more significant impact on drinking water safety and a higher likelihood of occurrence. The highest possible value would be 32 (4×8) and the lowest would be 0 (0×1).

**Table 3** presents a sample question showing the risk rating determination process.

| TABLE 3:  |                                  |                                 |                          |                                  |                                 |                           |                          |
|---|----------------------------------|---------------------------------|--------------------------|----------------------------------|---------------------------------|---------------------------|--------------------------|
| Does the Operator in Charge ensure that the equipment and processes are monitored, inspected and evaluated? |                                  |                                 |                          |                                  |                                 |                           |                          |
| Risk = Likelihood × Consequence   |                                  |                                 |                          |                                  |                                 |                           |                          |
| C=1   | C=2                              | C=3                             | C=4                      | C=5                              | C=6                             | C=7                       | C=8                      |
| Medium Administrative Consequence   | Major Administrative Consequence | Minor Environmental Consequence | Minor Health Consequence | Medium Environmental Consequence | Major Environmental Consequence | Medium Health Consequence | Major Health Consequence |
| L=4 (Almost Certain)  | L=1 (Unlikely)                   | L=2 (Possible)                  | L=3 (Likely)             | L=3 (Likely)                     | L=1 (Unlikely)                  | L=3 (Likely)              | L=2 (Possible)           |
| R=4   | R=2                              | R=6                             | R=12                     | R=15                             | R=6                             | R=21                      | R=16                     |

## Application of the Methodology to Inspection Results

Based on the results of a MRDWS inspection, an overall inspection risk rating is calculated. During an inspection, inspectors answer the questions that relate to regulatory compliance and input their responses as “yes”, “no” or “not applicable” into the Ministry’s Laboratory and Waterworks Inspection System (LWIS) database. A “no” response indicates non-compliance. The maximum number of regulatory questions asked by an inspector varies by: system (i.e., distribution, stand-alone), type of inspection (i.e., focused, detailed), and source type (i.e., groundwater, surface water).

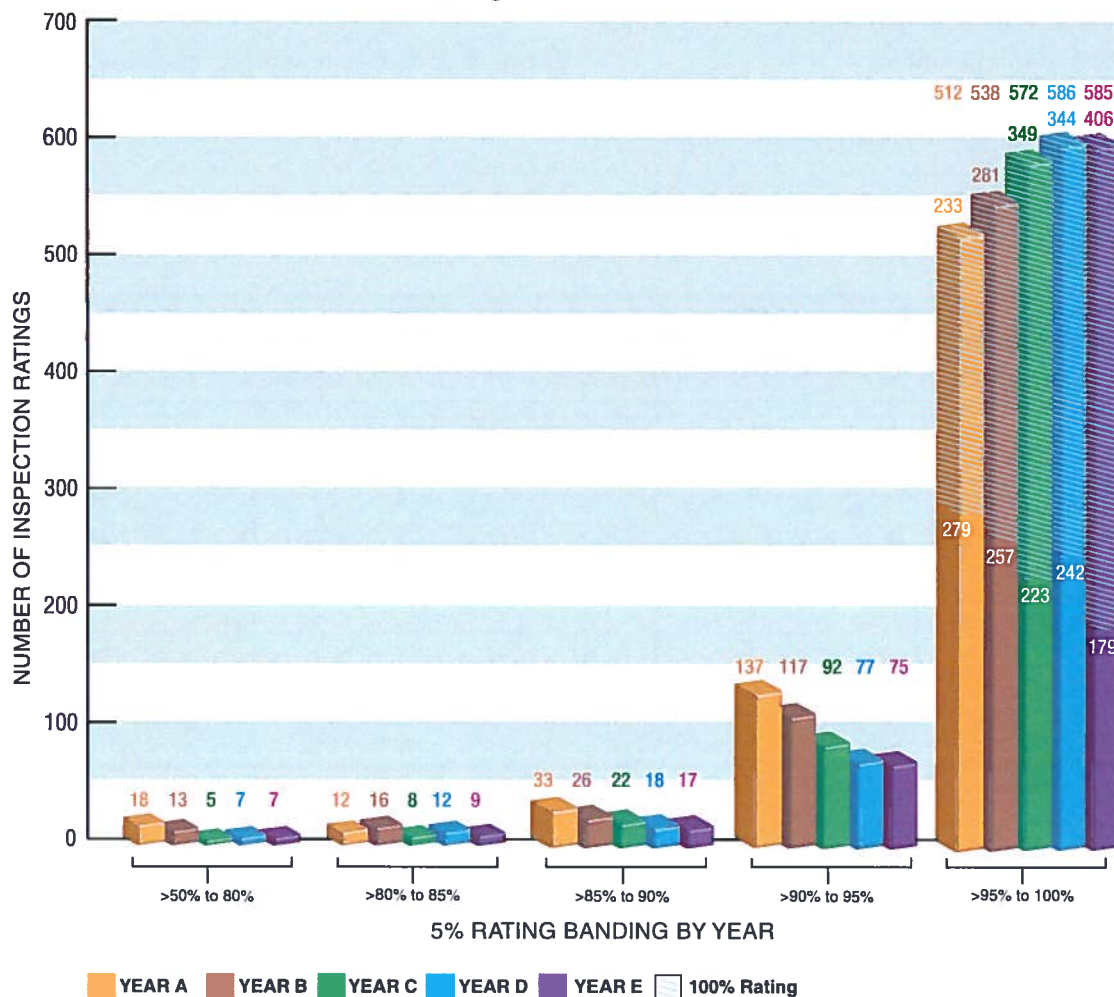
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

## Application of the Methodology for Public Reporting

The individual MRDWS Total Inspection Ratings are published with the ministry's Chief Drinking Water Inspector's Annual Report.

**Figure 1** presents the distribution of MRDWS ratings for a sample of annual inspections. Individual drinking water systems can compare against all the other inspected facilities over a period of inspection years.

**Figure 1: Year Over Year Distribution of MRDWS Ratings**



## Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 14 possible modules of the inspection protocol,

which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

- |                         |                        |                                       |  |
|-------------------------|------------------------|---------------------------------------|--|
| 1. Source               | 5. Process Wastewater  | 9. Contingency and Emergency Planning | 12. Water Quality Monitoring                       |
| 2. Permit to Take Water | 6. Distribution System | 10. Consumer Relations                | 13. Reporting, Notification and Corrective Actions |
| 3. Capacity Assessment  | 7. Operations Manuals  | 11. Certification and Training        | 14. Other Inspection Findings                      |
| 4. Treatment Processes  | 8. Logbooks            |                                       |  |

For further information, please visit [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater)