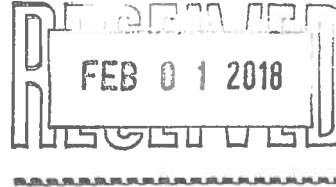


From: Elaine Gunnell
Sent: Thursday, February 1, 2018 8:35 AM
To: Roxanne St. Germain
Subject: FW: Temagami North and South DWS Inspection Reports
Attachments: Temagami North DWS Inspection Report # 1F7Q2R.pdf; Temagami South DWS Inspection Report # 1-F7QQY.pdf; Risk Methodology sheet EN July 2011.pdf

For incoming.

Elaine Gunnell, Dipl.M.A., AOMC
Municipal Clerk
The Corporation of the Municipality of Temagami
7 Lakeshore Drive, P.O. Box 220
Temagami, ON P0H 2H0
Phone: 705-569-3421 ext 208
Email: clerk@temagami.ca



File ☒ Incoming ☐ Other
Mayor ☐
Council ☒ *BA*
CAO ☐
Building ☐
Finance ☐ S ☐ C
Ec Dev ☐ S ☐ C
Parks & Rec ☐ S ☐ C
Planning ☐ S ☐ C
Public Wks ☐ S ☐ C
PPP ☐
Social Services ☐
OCWA binder

From: Barry Turcotte
Sent: Thursday, February 1, 2018 7:40 AM
To: Elaine Gunnell <clerk@temagami.ca>
Cc: Deb Larochelle <publicworks@temagami.ca>
Subject: FW: Temagami North and South DWS Inspection Reports

FYI

Barry Turcotte
Public Works Superintendent

From: Duquette, Lori (MOECC) [<mailto:Lori.Duquette@ontario.ca>]
Sent: Friday, January 26, 2018 3:14 PM
To: Patrick Cormier <cao@temagami.ca>
Cc: Barry Turcotte <pwsuper@temagami.ca>; Victor Legault <VLegault@ocwa.com>; 'Rebecca Marshall' <RMarshall@ocwa.com>; Yvan Rondeau <YRondeau@ocwa.com>; Claude Mongrain <CMongrain@ocwa.com>; Ilersich, Sherry (MOECC) <Sherry.ilersich@ontario.ca>; Ryan Peters (petersr@timiskaminghu.com) <petersr@timiskaminghu.com>; Baldwin, Mitch (MNRF) <mitch.baldwin@ontario.ca>
Subject: Temagami North and South DWS Inspection Reports

Mr. Cormier,

Attached are the inspection reports for inspections conducted on November 23, 2017 at the Temagami North and Temagami South Drinking Water Systems. Also attached is the Inspection Risk Rating methodology memo.

In an attempt to reduce the amount of paper used in distributing inspection reports the Ministry of the Environment and Climate Change has been 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 and Climate Change| 191 Booth Road, Unit 16 & 17, North Bay, Ontario, P1A 4K3 | ph: 705-495-3804 or 1-800-609-5553 | fax: 705-497-6866 |lori.duquette@ontario.ca

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

ontario.ca/drinkingwater

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).

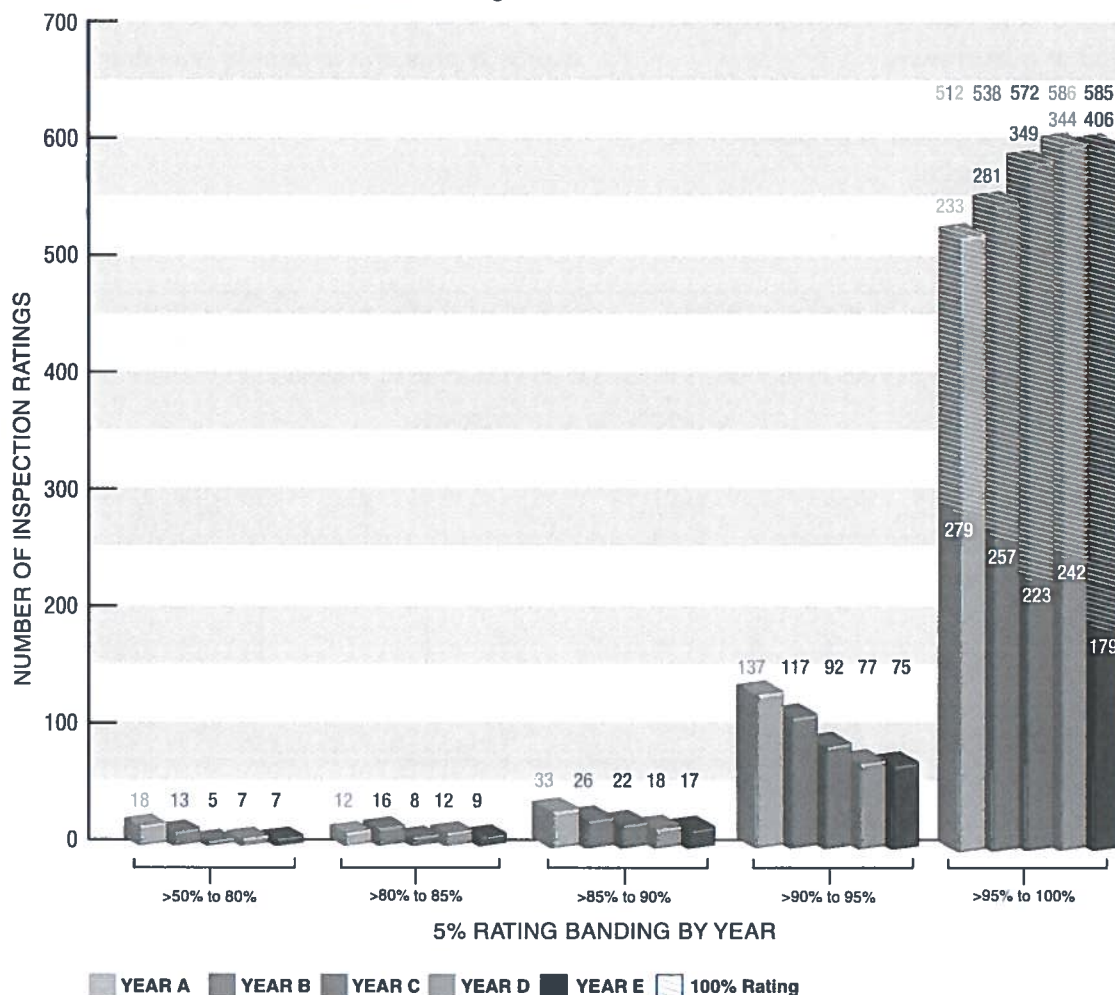
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

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

Ministry of the Environment and
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Safe Drinking Water Branch
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North Bay, ON P1A 4K3
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Ministère de l'Environnement et de l'Action en
matière de changement climatique
Direction du contrôle de la qualité de l'eau potable
Bureau de District, Timmins/North Bay
191 rue Booth
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North Bay ON P1A 4K3
Tél. : 705-497-6865
Téléc. : 705-497-6866



January 26, 2018

via email

Mr. Patrick Cormier
CAO/Clerk
The Corporation of the Municipality of Temagami
P.O. Box 220
Temagami, Ontario
POH 2H0

Dear Mr. Cormier:

Re: Inspection Report for the Temagami North Drinking Water System - Inspection #1-F7Q2R

On November 23, 2017, I conducted the annual inspection of the Temagami North Drinking Water System. The detailed inspection included a physical assessment of the water treatment plant as well as a document review for the period of December 5, 2016 to November 23, 2017. 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.

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 Badge # 812
North Bay Office
Safe Drinking Water Branch

Attachments

- c: Barry Turcotte, Municipality of Temagami, Public Works Superintendent
Victor Legault, OCWA Northeastern Region, Operations Manager
Claude Mongrain, 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, MOECC



Ministry of the Environment and Climate Change

TEMAGAMI NORTH DRINKING WATER SYSTEM
Inspection Report

Site Number:	220000433
Inspection Number:	1-F7Q2R
Date of Inspection:	Nov 23, 2017
Inspected By:	Lori Duquette

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Appendices

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

OWNER INFORMATION:

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

CONTACT INFORMATION

Type:	Owner	Name:	Patrick Cormier
Phone:	(705) 569-3421	Fax:	(705) 569-2834
Email:	cao@temagami.ca		
Title:	CAO, Municipality of Temagami		

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

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

Type:	Operating Authority	Name:	Claude Mongrain
Phone:	(705) 672-5584	Fax:	(705) 672-2534
Email:	cmongrain@ocwa.com		
Title:	ORO - Temagami North and South DWS, OCWA, Northeastern Region		

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

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

Type:	MOECC SDWB	Name:	Sherry Ilersich
Phone:	(705) 495-3834	Fax:	(705) 497-6866
Email:	sherry.ilersich@ontario.ca		
Title:	Water Compliance Supervisor, Timmins / NorthBay		

INSPECTION DETAILS:

Site Name:	TEMAGAMI NORTH DRINKING WATER SYSTEM
-------------------	--------------------------------------

Site Address:	5 CEDAR AVE S TEMAGAMI ON P0H 2H0
County/District:	Temagami
MOECC 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:	Unannounced
Inspection Number:	1-F7Q2R
Date of Inspection:	Nov 23, 2017
Date of Previous Inspection:	Dec 05, 2016

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 268.9 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 m³ 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 Claude Mongrain, Senior Operator accompanied Lori Duquette, Water Inspector/Provincial Officer with the Ministry of the Environment and Climate Change during the inspection of the Temagami North Drinking Water System (DWS) on November 23, 2017. 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 November 23, 2017 and a document review for the period from December 5, 2016 until November 23, 2017. 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 m³/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 322 m³/day on June 13, 2017.

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.

Treatment Processes

- 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.
- 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.

Based on a review of the continuous trends for the above noted parameters and a review of the alarm logs and CT

Treatment Processes

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.

The free chlorine residual low level alarm after primary disinfection was set at 0.85 mg/L. This alarm set point immediately shutdown the plant and called the on-call staff.

The filter effluent turbidity alarm set point was set at 1.0 NTU and triggered an on-site audible alarm and called the on-call staff. Also, if the filter effluent turbidity remained above 1.0 NTU for 10 minutes a plant shutdown is triggered and a second alarm is sent to the on-call operator.

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

Logbooks

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.**

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.**
Mr. Claude Mongrain was the Overall Responsible Operator (ORO) for the Temagami North DWS.
- **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

Water Quality Monitoring

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.**

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 9, April 10, July 10 and October 10, 2017.

NOTE: It is worth noting that the most suitable sampling location for HAA's should be determined by sampling a variety of locations throughout the distribution system that includes locations nearer the point of entry to the distribution system, the middle and the end. HAA's are known to decline over time within the distribution system and may or may not be best represented at the extremities of the distribution system.

- **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 9, April 10, July 10 and October 10, 2017. The running annual average (RAA) for THM as of October 2017 was 45.2 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 9, April 10, July 10 and October 10, 2017.

- **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

- 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.

During this inspection period, the operating authority of the system reported one (1) adverse water quality incident report relating to a sodium exceedance to the Medical Officer of Health (MOH) and the ministry. A resample was collected and any additional requirements from the MOH were completed.

- All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.
- Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

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

Not Applicable

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

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

Not Applicable

SIGNATURES

Inspected By:

Lori Duquette

Signature: (Provincial Officer)



Reviewed & Approved By:

Sherry Ilersich

Signature: (Supervisor)



Review & Approval Date:



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

APPENDIX A
INSPECTION RATING RECORD

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2017-2018)

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: November 23, 2017
Ministry Office: North Bay Area Office

Maximum Question Rating: 485

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 / 66
Treatment Process Monitoring	0 / 133
TOTAL	0 / 485

Inspection Risk Rating 0.00%

FINAL INSPECTION RATING: 100.00%

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2017-2018)

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: November 23, 2017

Ministry Office: North Bay Area Office

Maximum Question Rating: 485

Inspection Risk Rating 0.00%

FINAL INSPECTION RATING: 100.00%

APPENDIX B

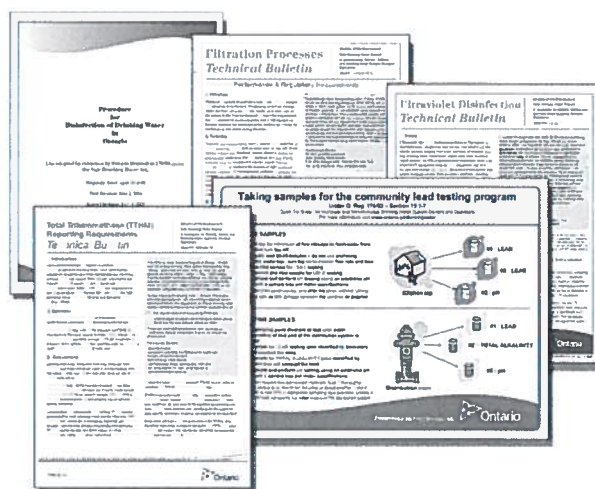
Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater and email drinking.water@ontario.ca to subscribe to drinking water news.



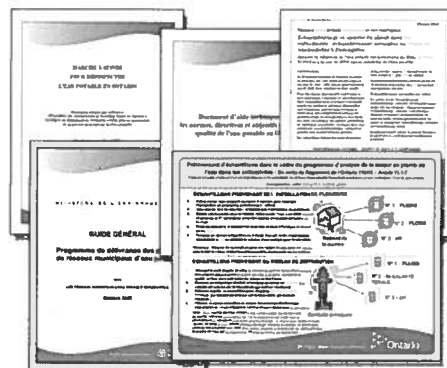
PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking 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

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

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment.

Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le Centre d'information au public au 1 800 565-4923 ou au 416 325-4000, ou encore à picemail.moe@ontario.ca si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable ou envoyez un courriel à drinking.water@ontario.ca pour suivre l'information sur l'eau potable.

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Prendre soin de votre eau potable – Un guide destiné aux membres des conseils municipaux	7889f01
Renseignements sur le profil du réseau d'eau potable, Avis de demande de services de laboratoire, Formulaire de communication de résultats d'analyse insatisfaisants et du règlement des problèmes	7419f, 5387f, 4444f
Marche à suivre pour désinfecter l'eau potable en Ontario	4448f01
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids (en anglais seulement)	7152e
Total Trihalomethane (TTHM) Reporting Requirements: Technical Bulletin (février 2011) (en anglais seulement)	8215e
Filtration Processes Technical Bulletin (en anglais seulement)	7467
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	7685
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable, de modification du permis de réseau municipal d'eau potable, de renouvellement du permis de réseau municipal d'eau potable et de permis pour un nouveau réseau	7014f01
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802f
Prélèvement d'échantillons dans le cadre du programme d'analyse de la teneur en plomb de l'eau dans les collectivités	6560f01
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	7423f
Guide: Requesting Regulatory Relief from Lead Sampling Requirements (en anglais seulement)	6610
Liste des personnes-ressources du réseau d'eau potable	7128f
Document d'aide technique pour les normes, directives et objectifs associés à la qualité de l'eau potable en Ontario	4449f01

ontario.ca/eaupotable

Ministry of the Environment and
Climate Change
Safe Drinking Water Branch
Timmins/North Bay District
191 Booth Road
Unit 16 & 17
North Bay, ON P1A 4K3
Tel.: 705-497-6865
Fax: 705-497-6866

Ministère de l'Environnement et de l'Action en
matière de changement climatique
Direction du contrôle de la qualité de l'eau potable
Bureau de District, Timmins/North Bay
191 rue Booth
unité 16 et 17
North Bay ON P1A 4K3
Tél. : 705-497-6865
Télééc. : 705-497-6866



January 26, 2018

via email

Mr. Patrick Cormier
CAO/Clerk
The Corporation of the Municipality of Temagami
P.O. Box 220
Temagami, Ontario
P0H 2H0

Dear Mr. Cormier:

Re: Inspection Report for the Temagami South Drinking Water System - Inspection #1-F7QQY

On November 23, 2017, I conducted the annual inspection of the Temagami South Drinking Water System. The detailed inspection included a physical assessment of the water treatment plant as well as a document review for the period of December 5, 2016 to November 23, 2017. The resulting inspection report is attached.

Two sections of the report, namely, "*Actions Required*" and "*Recommended Actions*" identify aspects of the drinking water system's operation with the potential for improvement.

Please note that "*Actions Required*" are linked to incidents of non-compliance with regulatory requirements contained within an Act, a Regulation or site-specific approvals, licenses, permits, orders, or instructions. Such violations could result in the issuance of mandatory abatement instruments including Orders, tickets, penalties, or referrals to the Ministry's Investigations and Enforcement Branch.

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

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

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)

Yours truly,



Lori Duquette
Water Inspector/Provincial Officer Badge # 812
North Bay Office
Safe Drinking Water Branch

Attachments

- c: Barry Turcotte, Municipality of Temagami, Public Works Superintendent
- Victor Legault, OCWA Northeastern Region, Operations Manager
- Claude Mongrain, 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, MOECC



Ministry of the Environment and Climate Change

TEMAGAMI SOUTH DRINKING WATER SYSTEM

Inspection Report

Site Number:	220000424
Inspection Number:	1-F7QQY
Date of Inspection:	Nov 23, 2017
Inspected By:	Lori Duquette

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Appendices

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

OWNER INFORMATION:

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

CONTACT INFORMATION

Type:	Owner	Name:	Patrick Cormier
Phone:	(705) 569-3421	Fax:	(705) 569-2834
Email:	cao@temagami.ca		
Title:	CAO, Municipality of Temagami		

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

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

Type:	Operating Authority	Name:	Claude Mongrain
Phone:	(705) 672-5584	Fax:	(705) 672-2534
Email:	cmongrain@ocwa.com		
Title:	ORO - Temagami North and South DWS, OCWA, Northeastern Region		

Type:	Operating Authority	Name:	Rebecca Marshall
Phone:	(705) 648-4267	Fax:	(705) 567-7974
Email:	rmarshall@ocwa.com		
Title:	Process and Compliance Technician		

Type:	MOECC SDWB	Name:	Sherry Ilersich
Phone:	(705) 495-3834	Fax:	(705) 497-6866
Email:	sherry.ilersich@ontario.ca		
Title:	Water Compliance Supervisor, Timmins / NorthBay		

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

INSPECTION DETAILS:

Site Name:	TEMAGAMI SOUTH DRINKING WATER SYSTEM
-------------------	--------------------------------------

Site Address:	39 LAKESHORE DR E TEMAGAMI ON P0H 2H0
County/District:	Temagami
MOECC 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:	220000424
Inspection Type:	Unannounced
Inspection Number:	1-F7QQY
Date of Inspection:	Nov 23, 2017
Date of Previous Inspection:	Dec 05, 2016

COMPONENTS DESCRIPTION

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

Sub Type:

Site (Name): Lake Temagami
Type: Source

Sub Type: Surface Water

Comments:

The Temagami South Water Treatment Plant (WTP) draws its raw water from Lake Temagami through a 1524 mm diameter by 1220 mm high intake structure located on the lake bottom at a depth of 5.7 m. The intake pipe is 200 mm in diameter, 20 m long and directs water by gravity to a low lift pumping station consisting of a wet well and two submersible low lift pumps, each rated at 11 L/s (950 m³/day). These pumps are controlled by the treatments system PLC and discharge to the two package plants located within the WTP.

Site (Name): Treatment Plant
Type: Treated Water POE

Sub Type: Treatment Facility

Comments:

The upgrade design of the Temagami South WTP consists of two (2) pre-fabricated treatment trains. The treatment is centred on a BCA Pre-Fabricated package treatment plant and upgrades to the already existing Neptune Microfloc "Trident" package treatment plant, along with their associated treatment and process control components. The plants and their respective control and chemical dosing equipment, direct filtered water to two (2) clear wells having a combined working volume of 280.68 m³. Further chemical treatment for disinfection and pH adjustment is undertaken as the filtered water enters the clear wells and as it 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 flow rates and chemical treatment dosages. The plants operate on a distribution demand basis controlled by water level signals fed back from the storage standpipe. All process and floor drain wastes are directed to waste sumps for pumping to the municipal sanitary collection system.

Site (Name): Distribution
Type: Other

Sub Type: Reservoir

Comments:

The drinking water system (DWS) supplying water to Temagami South is classified as a large municipal residential DWS and has 182 service connections serving an estimated population of 350 residents. The distribution system is equipped with an elevated storage reservoir known as the "South Tower" which has a working storage capacity of 570 m³ 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 Claude Mongrain, Senior Operator accompanied Lori Duquette, Water Inspector/Provincial Officer with the Ministry of the Environment and Climate Change during the inspection of the Temagami South Drinking Water System (DWS) on November 23, 2017. OCWA operates the Temagami South DWS on behalf of the municipality.

The drinking-water system inspection included a physical assessment of the treatment works on November 23, 2017 and a document review for the period from December 5, 2016 until November 23, 2017. 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 South DWS as 950 m³/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 394 m³/day on June 20, 2017.

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.

Treatment Processes

Note: At the time of the inspection, it was identified that one of the backwash pumps was broken and will need to be removed to be sent away for repair.

- **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.**
- **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 South 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 = 11 L/s
- Clear well level = 1.5 m
- Water temperature = 0.5 °C
- pH of water = 8.0
- minimum free chlorine residual after contact time of 0.90 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 = 20 L/s

- Clear well level = 2.2 m
- Water temperature = 3.0 °C
- pH of water = 7.8
- minimum free chlorine residual after contact time of 1.0 mg/L

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 was met for the duration of this inspection period.

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,

Treatment Processes

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.

Based on a review of the filter effluent turbidity trends and operational information provided, for the duration of this inspection period, the above noted conventional filtration criteria were met.

- **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.**

Subsection 6-5(1)3 of Schedule 6 to O. Reg. 170/03 requires that test results recorded by continuous monitoring equipment for sampling and testing required by this regulation or under drinking water works permit and licence be examined within 72 hours by a certified operator. The legislative requirement to review the continuous data is intended to ensure that operators have examined the trends and verified that the continuous monitoring equipment was working properly and that the water treatment equipment achieved the log removal requirements for primary disinfection.

Based on a review of records for this inspection period, the operators have been examining the continuous data within the required timeframe and recording this information in the logs.

- **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 not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

Subsection 6-5(1)5 of Schedule 6 to O. Reg. 170/03 requires continuous monitoring equipment to be designed and operated such that either an alarm must sound immediately at the location where the equipment conducts tests and at a location where a person is present, if a person is not always present at the location where the equipment conducts tests or ensure that no water is directed to users, if the equipment malfunctions or loses power or a test result for a parameter is above or below the alarm standard.

The free chlorine residual low level alarm after primary disinfection was set at 1.0 mg/L. This alarm set point immediately shutdown the plant and called the on-call staff.

Additionally, the filter effluent turbidity alarm set point was set at 1.0 NTU and triggered an on-site audible alarm and called the on-call staff if the effluent valve was open. Also, if the filter effluent turbidity remained above 1.0 NTU for 10 minutes a plant shutdown was triggered and a second alarm was sent to the on-call operator. However, it was noted that the filter turbidity analyzer malfunctioned on October 2, 2017 (i.e bulb failure) without an alarm being

Treatment Process Monitoring

triggered. Upon further review it was noted that the alarm feature for bulb failure was not enabled.

Failure to ensure that the filter effluent turbidity analyzer is equipped with an alarms meeting the requirements of subsection 6-5(1) 5 of schedule 6 is a violation of O. Reg. 170/03.

Please refer to item # 1 in the section entitled "Non-Compliance with Regulatory Requirements and Actions Required" located on page 11 for further direction related to this item.

- **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and/or was not recording data with the prescribed format.**

During this inspection period there was one (1) instance where problems with the analyzer resulted in the filter effluent turbidity not being tested and recorded at the required frequency.

As previously noted, on October 2, 2017, the filter effluent turbidity analyzer for filter # 2 had a bulb failure which resulted in the trends flat lining for a period of 3 hours and 34 minutes without an alarm being triggered. It was indicated that the plant was offline for most of this time and that water was only being produced for a period of 56 minutes while the analyzer was not functioning (i.e. 10:04 am to 11 am). The analyzer value was stuck at 0.00 NTU. Once the problem was noted by the operator, the plant was shutdown, bulb replaced and analyzer examined to determine why an alarm was not triggered. Upon further examination, the instrument technician noticed that the analyzer was not set to alarm in the event of a bulb failure (i.e. malfunction). The alarm feature has since been enabled.

Failure to ensure that continuous analyzer tests for filter effluent turbidity within the required frequency is a violation of section 6-5(1)1 of schedule 6 to O. Reg. 170/03.

Please refer to item # 2 in the section entitled "Non-Compliance with Regulatory Requirements and Actions Required" located on page 11 for further discussion related to this item.

- **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.**

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

Security

- 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.**
Mr. Claude Mongrain was the Overall Responsible Operator (ORO) for the Temagami South DWS.
- **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 requires the owner and operating authority for the system to ensure that at least eight water samples were collected monthly from distribution system sites (based on estimated population of 350). 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 the operating authority for 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. During this inspection period, samples were 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 the operating authority for 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 24. During this inspection period, samples were 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.**

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

Water Quality Monitoring

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 9, April 10, July 10 and October 10, 2017.

NOTE: It is worth noting that the most suitable sampling location for HAA's should be determined by sampling a variety of locations throughout the distribution system that includes locations nearer the point of entry to the distribution system, the middle and the end. HAA's are known to decline over time within the distribution system and may or may not be best represented at the extremities of the distribution system.

- **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 9, April 10, July 10 and October 10, 2017. The running annual average (RAA) for THM as of October 2017 was 40.4 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 authority on January 9, April 18, July 10 and October 10, 2017.

- **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 sample was collected on October 10, 2017 with a sample result of 23.1 mg/L. A resample was collected on October 18, 2017 19.4 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

- **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.**
- **All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6.**
- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

Other Inspection Findings

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

At the time of the inspection it was noted that the floor of the water plant is corroded under the sodium hypochlorite day tank.

Please refer to the section entitled "Summary of Recommendations and Best Practice Issues" located on page for further 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.

1. **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 not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.**

Subsection 6-5(1)5 of Schedule 6 to O. Reg. 170/03 requires continuous monitoring equipment to be designed and operated such that either an alarm must sound immediately at the location where the equipment conducts tests and at a location where a person is present, if a person is not always present at the location where the equipment conducts tests or ensure that no water is directed to users, if the equipment malfunctions or loses power or a test result for a parameter is above or below the alarm standard.

The filter turbidity analyzer malfunctioned on October 2, 2017 (i.e bulb failure) without an alarm being triggered. Upon further review it was noted that the alarm feature for bulb failure was not enabled.

Failure to ensure that the filter effluent turbidity analyzer is equipped with an alarms meeting the requirements of subsection 6-5(1) 5 of schedule 6 is a violation of O. Reg. 170/03.

Action(s) Required:

The operating authority must ensure that the continuous monitoring equipment alarms are tested regularly to ensure functionality. Additionally, the alarm that would be triggered when the analyzer malfunctions should also be tested.

No further action is required as the analyzer was repaired at the time of the incident and the alarm features verified and enabled.

2. **Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was not performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and/or was not recording data with the prescribed format.**

During this inspection period there was one (1) instance where problems with the analyzer resulted in the filter effluent turbidity not being tested and recorded at the required frequency.

On October 2, 2017, the filter effluent turbidity analyzer for filter # 2 had a bulb failure which resulted in the trends flat lining for a period of 3 hours and 34 minutes without an alarm being triggered. It was indicated that the plant was offline for most of this time and that water was only being produced for a period of 56 minutes while the analyzer was not functioning (i.e. 10:04 am to 11 am). The analyzer value was stuck at 0.00 NTU. Once the problem was noted by the operator, the plant was shutdown, bulb replaced and analyzer examined to determine why an alarm was not triggered. Upon further examination, the instrument technician noticed that the analyzer was not set to alarm in the event of a bulb failure (i.e. malfunction). The alarm feature has since been enabled.

Failure to ensure that continuous analyzer tests for filter effluent turbidity within the required frequency is a violation of section 6-5(1)1 of schedule 6 to O. Reg. 170/03.

Action(s) Required:

No further action is required as the analyzer was repaired at the time of the incident and the alarm features verified and enabled.

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 floor of the water plant is corroded under the sodium hypochlorite day tank.

Recommendation:

It is recommended that the floor under the sodium hypochlorite chemical solution tank be repaired and sealed to prevent further degradation of the concrete floor.

SIGNATURES

Inspected By:

Lori Duquette

Signature: (Provincial Officer)



Reviewed & Approved By:

Sherry Ilersich

Signature: (Supervisor)



Review & Approval Date:



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

APPENDIX A

INSPECTION RATING RECORD

Ministry of the Environment - Inspection Summary Rating Record (Reporting Year - 2017-2018)

DWS Name: TEMAGAMI SOUTH DRINKING WATER SYSTEM
DWS Number: 220000424
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: November 23, 2017
Ministry Office: North Bay Area Office

Maximum Question Rating: 485

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 / 66
Treatment Process Monitoring	42 / 133
TOTAL	42 / 485

Inspection Risk Rating 8.66%

FINAL INSPECTION RATING: 91.34%

Ministry of the Environment - Detailed Inspection Rating Record (Reporting Year - 2017-2018)

DWS Name: TEMAGAMI SOUTH DRINKING WATER SYSTEM
DWS Number: 220000424
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: November 23, 2017
Ministry Office: North Bay Area Office

Non-compliant Question(s)	Question Rating
Treatment Process Monitoring	
Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements 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?	21
Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg.170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6?	21
TOTAL QUESTION RATING	42

Maximum Question Rating: 485

Inspection Risk Rating	8.66%
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FINAL INSPECTION RATING:	91.34%
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APPENDIX B

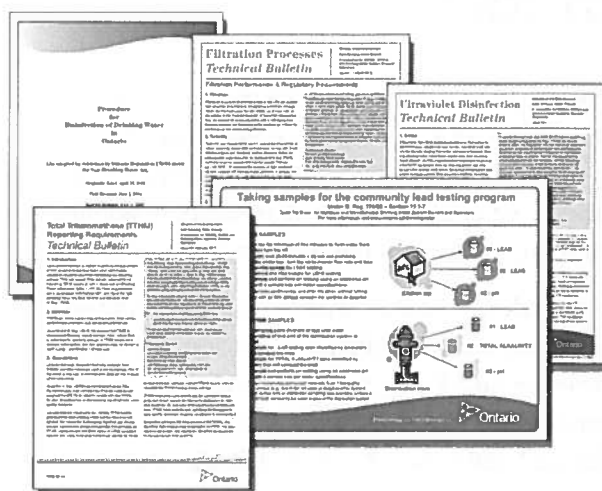
Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater and email drinking.water@ontario.ca to subscribe to drinking water news.



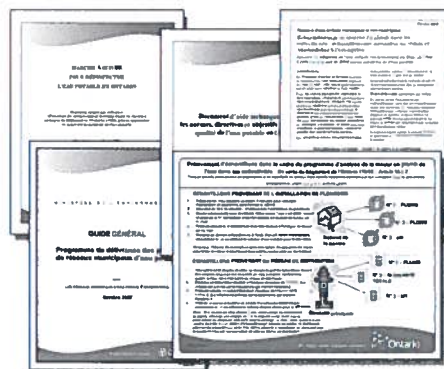
PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking 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

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

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment.

Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le Centre d'information au public au 1 800 565-4923 ou au 416 325-4000, ou encore à picemail.moe@ontario.ca si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site www.ontario.ca/eaupotable ou envoyez un courriel à drinking.water@ontario.ca pour suivre l'information sur l'eau potable.

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Prendre soin de votre eau potable – Un guide destiné aux membres des conseils municipaux	7889f01
Renseignements sur le profil du réseau d'eau potable, Avis de demande de services de laboratoire, Formulaire de communication de résultats d'analyse insatisfaisants et du règlement des problèmes	7419f, 5387f, 4444f
Marche à suivre pour désinfecter l'eau potable en Ontario	4448f01
Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids (en anglais seulement)	7152e
Total Trihalomethane (TTHM) Reporting Requirements: Technical Bulletin (février 2011) (en anglais seulement)	8215e
Filtration Processes Technical Bulletin (en anglais seulement)	7467
Ultraviolet Disinfection Technical Bulletin (en anglais seulement)	7685
Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable, de modification du permis de réseau municipal d'eau potable, de renouvellement du permis de réseau municipal d'eau potable et de permis pour un nouveau réseau	7014f01
Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable	
Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable	9802f
Prélèvement d'échantillons dans le cadre du programme d'analyse de la teneur en plomb de l'eau dans les collectivités	6560f01
Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption	7423f
Guide: Requesting Regulatory Relief from Lead Sampling Requirements (en anglais seulement)	6610
Liste des personnes-ressources du réseau d'eau potable	7128f
Document d'aide technique pour les normes, directives et objectifs associés à la qualité de l'eau potable en Ontario	4449f01

ontario.ca/eaupotable