



March 3, 2022

Report To: Travis Rob, P.Eng., Manager of Operations & Facilities

From: Craig Miller, P.Eng., Environmental Superintendent

**SUBJECT: Fort Frances Drinking Water System  
2021 Annual Summary Report (O. Reg. 170/03, Schedule 22)**

**Ministry of the Environment Inspection Report – 2021/2022**

**Fort Frances Drinking Water System  
2021 Annual Report**

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As a requirement of Ontario Regulation 170/03 Schedule 22, the Owner of the Drinking Water System (The Town of Fort Frances) shall prepare a report for the preceding calendar year and give to the members of council no later than March 31<sup>st</sup>. The report is to list the requirements of the Act, regulation, system's approval, drinking water works permit, municipal drinking water licence and any orders applicable to the drinking water system that were not met and what duration/measures were taken to correct the failure during this period. The report is also to include a summary of the quantities and flow rates and compare them to the rated capacity and flow rates approved in system's approval, drinking water works permit or municipal drinking water licence.

The attached Schedule 22 Summary Report identifies the above and includes the findings of the MECP Annual Drinking Water Inspection, conducted on-site commencing January 27<sup>th</sup>, 2022 and concluding January 28<sup>th</sup>, 2022. The period of the inspection was from January 8, 2021 to January 27, 2022. There were no non-conformances identified by the Ministry and the inspection scored 100%.

A copy of the 2021 Annual Report, submitted to the MECP on February 28<sup>th</sup>, 2022, is also included.

Current copies of the Drinking Water Works Permit (DWWP Issue #3) and Municipal Drinking Water License (MDWL Issue #4) are also included with this report. Both documents were renewed for a 5-year period in 2021. MDWL Issue #3 was originally issued in May 2021. The Town successfully appealed the Ministry's inclusion of the Media Filter Backwash Water Total Chlorine Residual (TCR) clause. After the appeal was concluded, the Ministry issued MDWL Issue #4 with the TCR clause removed, to the satisfaction of Administration.

Once approved by Council, a copy of the Summary Report will be sent to the Owners that are connected to and receive drinking water from the Town system. A copy of the report will be posted on the Town's website for public viewing.

It should be noted that achieving a score of 100% on the MECP's annual inspection an outstanding result and is a direct reflection on the efforts and diligence of the staff working in the Water Treatment Plant and the Water Distribution System. Their accomplishments and hard work should be duly recognized by the Town.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Craig Miller', is positioned above the printed name.

Craig Miller, P.Eng.  
Environmental Superintendent



# **FORT FRANCES DRINKING WATER SYSTEM**

**Large Municipal Residential Drinking Water System**

**(O. Reg. 170/03 - SCHEDULE 22)**

## **ANNUAL SUMMARY REPORT**

**For the period of**

**JANUARY 01, 2021 TO DECEMBER 31, 2021**

**DRINKING WATER SYSTEM #220000978**

**March 3, 2022**

**Prepared By: Craig Miller, P.Eng.  
Environmental Superintendent**

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## **1.0 Description**

This is the Summary Report for the Fort Frances Drinking Water System, as required by Schedule 22 of O. Reg. 170/03, as amended, Summary Reports for Municipalities. For the purposes of the regulation, the Fort Frances Drinking Water System is a large municipal residential system.

## **2.0 General Overview**

The reporting period for this report is January 1, 2021 to December 31, 2021.

During the reporting period, the Fort Frances Drinking Water System was operated pursuant to the legislative, system approval, license and permits listed below:

1. Municipal Drinking Water License (MDWL) No. 224-101
  - a. Issue Number: 2 (Jan 1, 2021 – May 10, 2021)
  - b. Issue Number: 3 (May 11, 2021 – Dec 31, 2021)
2. Drinking Water Works Permit (DWWP) No. 224-201
  - a. Issue Number: 2 (Jan 1, 2021 – May 10, 2021)
  - b. Issue Number: 3 (May 11, 2021 – Dec 31, 2021)
3. Safe Drinking Water Act, 2002;
  - O. Reg. 170/03 Drinking Water Systems
  - O. Reg. 128/04 Certification of Drinking Water Operators and Water Quality Analysts
  - O. Reg. 169/03 Ontario Drinking Water Quality Standard
  - O. Reg. 188/07 Licensing of Municipal Drinking Water Systems
4. Ontario Water Resources Act;
  - O. Reg. 387/04 Taking of Water and TransferPermit to Take Water No. 3258-AE6PEM, issued September 27, 2016.

The DWWP and MDWL were issued in accordance with Sections 40 and 44, respectively of the Safe Drinking Water Act (SDWA), 2002. The issuance of the DWWP and MDWL replaces the previously required Certificate of Approval.

The Fort Frances Water Treatment Plant is designated a Class 3 Water Treatment Facility and the Water Distribution System as a Class 2 Water Distribution System. They are referenced through the Ministry of the Environment as Drinking Water System Number 220000978.

The summary report is required to provide the following:

1. A list of any instances when the system failed to meet the requirements of the Safe Drinking Water Act, the regulations, the system's approval, MDWL, DWWP and any order;
2. Descriptions of the measures that were taken to correct the failure;
3. A summary of the quantities and flow rates of water supplied during the reporting period;
4. The monthly average and maximum instantaneous flow rates;
5. A comparison of the data summarized above to the rated capacities and flow rates in the system's approval and/or MDWL.

### **3.0 Legislative Requirements**

#### **Safe Drinking Water Act, 2002 (SDWA):**

Every owner of a municipal drinking-water system or a regulated non-municipal drinking-water system and, if an operating authority is responsible for the operation of the system, the operating authority for the system shall ensure the following:

1. That all water provided by the system to the point where the system is connected to a user's plumbing system meets the requirements of the prescribed drinking-water quality standards.
2. That, at all times in which it is in service, the drinking-water system
  - i. is operated in accordance with the requirements under this Act,
  - ii. is maintained in a fit state of repair, and
  - iii. satisfies the requirements of the standards prescribed for the system or the class of systems to which the system belongs.
3. That the drinking-water system is operated by persons having the training or expertise for their operating functions that is required by the regulations and the license or approval issued or granted for the system under this Act.
4. That all sampling, testing and monitoring requirements under this Act that relate to the drinking-water system are complied with.
5. That personnel at the drinking-water system are under the supervision of persons having the prescribed qualifications.
6. That the persons who carry out functions in relation to the drinking-water system comply with such reporting requirements as may be prescribed or that are required by the conditions in the license or approval issued or granted for the system under this Act.

#### **Ontario Regulation 170/03: (Drinking Water Systems)**

The Town of Fort Frances Drinking Water System is categorized as a Large Municipal Residential System; serves a major residential development and serves more than 100 private residences. For this system, the regulation requires that:

The owner of a drinking-water system shall ensure that, not later than March 31 of each year, a report is prepared for the preceding calendar year and is given to:

- (a) in the case of a drinking-water system owned by a municipality, the members of the municipal council;
- (b) in the case of a drinking-water system owned by a municipal service board established under section 195 of the *Municipal Act, 2001*, the members of the municipal service board; or
- (c) in the case of a drinking-water system owned by a corporation, the board of directors of the corporation.

The report must:

- (a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license and any orders applicable to the system that were not met at any time during the period covered by the report; and
- (b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

1. A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows.
2. A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license or if the system is receiving all of its water from another system under an agreement to the flow rates specified in the written agreement.

If a report is prepared for a system that supplies water to a municipality under the terms of a contract, the owner of the system shall give a copy of the report to the municipality by March 31.

#### **Ontario Regulation 128/04:**

*(Certification of Drinking Water Operators and Water Quality Analysts)*

This Regulation establishes the training and certification requirements that must be satisfied by certified operators and water quality analysts.

Every operator is required to complete the required training hours within the three-year operator certificate renewal period. Operator training consists of the following:

- a) Water Treatment Plant (Class 3): 42 hours of Ministry of the Environment's "Director Approved" class room training, plus 78 hours of On-the-job practical training.
- b) Water Distribution System (Class 2): 36 hours of Ministry of the Environment's "Director Approved" class room training, plus 69 hours of On-the-job practical training.

During the reporting period January 1, 2021 to December 31, 2021, all the Town's drinking water operators held a valid operator certificate in compliance with O. Reg. 128/04, made under the Safe Drinking Water Act.

#### **Ontario Regulation 169/03:**

*(Ontario Drinking Water Quality Standards - ODWQS)*

This Ontario Drinking Water Standard (ODWQS) identifies the minimum level of drinking water acceptable for human consumption.

The Town of Fort Frances assesses the acceptability of water through compliance with the following standards:

- Schedule 1. Microbiological Standards
- Schedule 2. Chemical Standards
- Schedule 3. Radiological Standards

As this Regulation indicates the minimum standard, exceedance of these values represents the point of which adverse reporting comes into effect.

**Ontario Regulation 188/07:**  
*(Licensing of Municipal Drinking Water Systems)*

The Safe Drinking Water Act, 2002 requires Owners and Operating Authorities of municipal residential drinking water systems to have an accredited Operating Authority. In order to become accredited, an Operating Authority must establish and maintain a Quality Management System (QMS). Minimum requirements for the QMS are specified within the Drinking Water Quality Management Standard (DWQMS). Ontario Regulation 188/07 of the SDWA has been established to aid licensing of municipal drinking water systems.

**Ontario Water Resources Act, R.S.O. 1990, c. O.40:**

**Ontario Regulation 387/04:**  
*(Water Taking and Transfer)*

The Ontario Water Resources Act requires Owners and Operating Authorities of municipal residential drinking water systems to obtain a Permit to Take Water. The Permit Holder, The Corporation of the Town of Fort Frances, shall comply with the terms and conditions specified within the permit. On September 27, 2016 the Ministry of the Environment and Climate Change issued the Town a new permit, Permit No. 3528-AE6PEM. This permit will expire on September 27, 2026.

**4.0 System Approvals – (Current)**

The following outlines the current water system Approvals during the 2021 reporting period:

- Municipal Drinking Water License (No. 224-101), Issue Number: 2: Issued May 13, 2016.
- Municipal Drinking Water License (No. 224-101), Issue Number: 3: Issued May 11, 2021.
- Drinking Water Works Permit (No. 224-201), Issue Number: 2: Issued May 13, 2016.
- Drinking Water Works Permit (No. 224-201), Issue Number: 3: Issued May 11, 2021.
- Permit to Take Water: Permit Number 3528-AE6PEM: Issued September 27, 2016.

**5.0 Failure to Meet Requirements (Non-compliance Issues)**

The following is a list of instances when the system failed to meet the requirements of the Act, legislative, the system's approval, MDWL, DWWP or any order that has been issued.

**Non-Compliance with Ontario Regulation:**

**Ontario Regulation 170/03:**

There were no incidents of non-compliance with the Terms and Conditions of Ontario Regulation 170/03 during this reporting period.

**Ontario Regulation 128/04:**  
*(Certification of Drinking Water Operators and Water Quality Analysts)*

There were no incidents of non-compliance with the Terms and Conditions of Ontario Regulation 128/04 during this reporting period.



**Ontario Regulation 169/03:**

*(Ontario Drinking Water Standards - ODWQS)*

There was one (1) incident of non-compliance with the Terms and Conditions of Ontario Regulation 169/03 during this reporting period.

The drinking water system had one (1) adverse water quality incidents for Total Coliforms.

- 3/22/2021      AWQI #153752      Weekly Distribution System Sample

All reporting and corrective actions were met, as specified by the MECP and Health Unit.

**Ontario Regulation 188/07:**

*(Licensing of Municipal Drinking Water Systems)*

There were no incidents of non-compliance with the Terms and Conditions of Ontario Regulation 188/07 during this reporting period.

**Non-Compliance with the Municipal Drinking Water License (MDWL) No. 224-101 and Municipal Water Works Permit (MWWP) No. 224-201:**

There were no incidents of non-compliance with the Terms and Conditions of the MWWP during this period.

**Non-Compliance with the Permit to Take Water No. 3528-AE6PEM:**

There were no incidences of non-compliance with the Terms and Conditions of the Permit to Take Water during this reporting period.

**Provincial Orders:**

No Orders have been issued by the Ministry of the Environment with respect to municipal drinking water system during this reporting period.

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**Further to the Inspection Report, the Ministry has established an inspection compliances risk framework based on the principles on the Inspection, Investigation & Enforcement Secretariat and advice in internal/external risk experts. The Inspection Rating for the Town of Fort Frances Drinking Water System was 100%.**

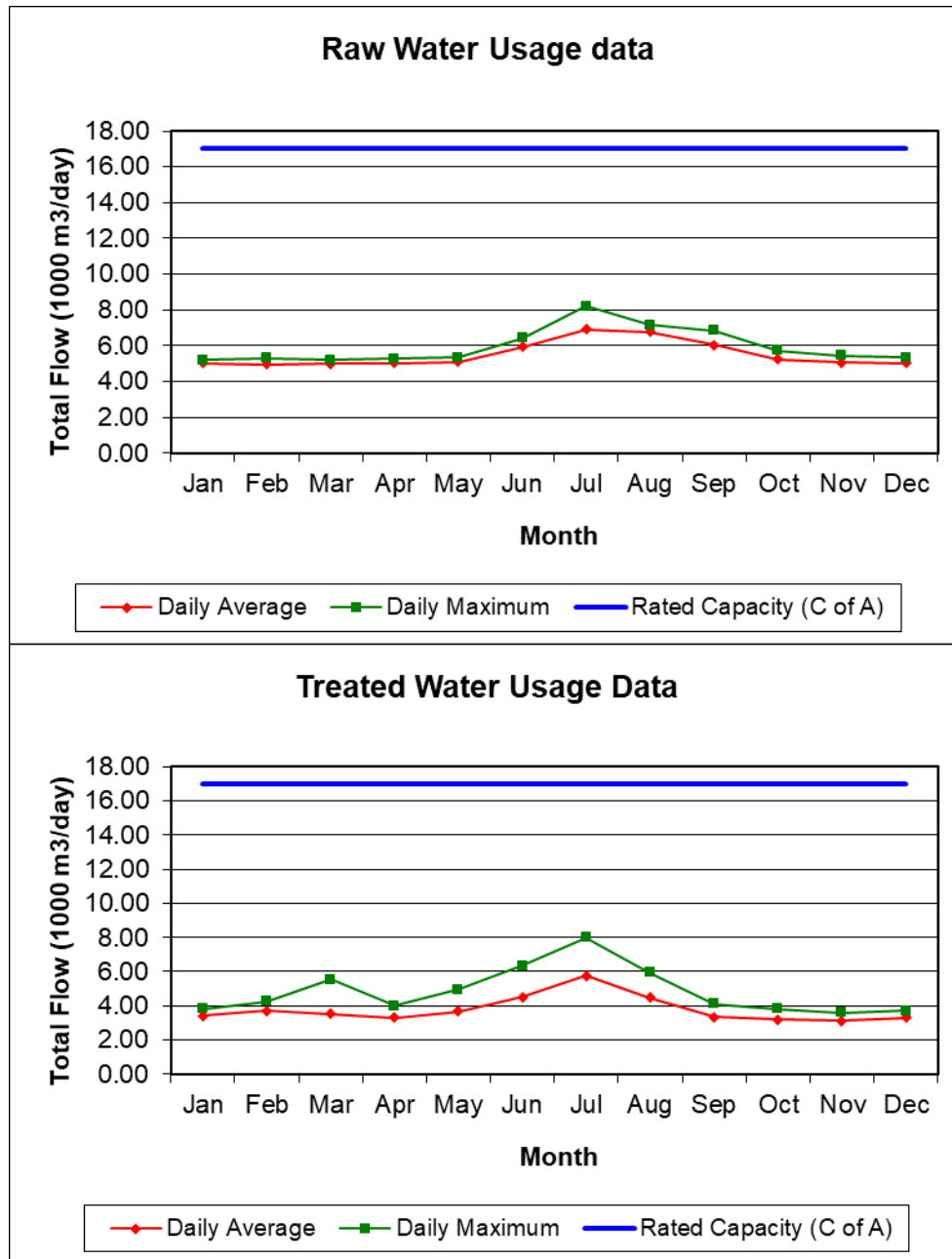
## 6.0 Quantity and Flow Data (2021)

The following tables and graphs indicate the quantities and flow rates of water taken and produced during the reporting period, including monthly average flows, maximum daily flows and total monthly volumes.

| <b>Table 1 - RAW WATER USAGE - 2021</b> |  |  |  |   |
|---|--|--|--|---|
| <b>Month</b>                            | <b>Total Flow<br/>1000 m<sup>3</sup> / month</b> | <b>Average Daily<br/>Flow<br/>1000 m<sup>3</sup> / day</b> | <b>Maximum Daily<br/>Flow<br/>1000 m<sup>3</sup> / day</b> | <b>Max Daily<br/>Design Capacity<br/>1000 m<sup>3</sup> / day</b> |
| January                                 | 156.12   | 5.04   | 5.22   | 17  |
| February                                | 139.41   | 4.98   | 5.32   | 17  |
| March                                   | 155.30   | 5.01   | 5.20   | 17  |
| April                                   | 150.94   | 5.03   | 5.26   | 17  |
| May                                     | 158.52   | 5.11   | 5.35   | 17  |
| June                                    | 178.39   | 5.95   | 6.42   | 17  |
| July                                    | 214.11   | 6.91   | 8.20   | 17  |
| August                                  | 209.55   | 6.76   | 7.17   | 17  |
| September                               | 180.80   | 6.03   | 6.84   | 17  |
| October                                 | 162.70   | 5.25   | 5.73   | 17  |
| November                                | 152.51   | 5.08   | 5.46   | 17  |
| December                                | 156.01   | 5.03   | 5.34   | 17  |
| <b>Annual Totals</b>                    | 2014.36 Total<br>167.86 Average                  | 5.52   |  |   |

| <b>Table 2 - TREATED WATER USAGE - 2021</b> |  |  |  |   |
|---|--|--|--|---|
| <b>Month</b>                                | <b>Total Flow<br/>1000 m<sup>3</sup> / month</b> | <b>Average Daily<br/>Flow<br/>1000 m<sup>3</sup> / day</b> | <b>Maximum Daily<br/>Flow<br/>1000 m<sup>3</sup> / day</b> | <b>Max Daily<br/>Design Capacity<br/>1000 m<sup>3</sup> / day</b> |
| January                                     | 105.36   | 3.40   | 3.81   | 17  |
| February                                    | 103.89   | 3.71   | 4.27   | 17  |
| March                                       | 109.12   | 3.52   | 5.53   | 17  |
| April                                       | 99.40  | 3.31   | 4.00   | 17  |
| May   | 113.29   | 3.65   | 4.95   | 17  |
| June  | 135.47   | 4.52   | 6.34   | 17  |
| July  | 178.93   | 5.77   | 8.01   | 17  |
| August                                      | 139.07   | 4.49   | 5.95   | 17  |
| September                                   | 99.82  | 3.33   | 4.12   | 17  |
| October                                     | 98.92  | 3.19   | 3.81   | 17  |
| November                                    | 93.59  | 3.12   | 3.58   | 17  |
| December                                    | 102.56   | 3.31   | 3.70   | 17  |
| <b>Annual Totals</b>                        | 1379.42 Total<br>114.95 Average                  | 3.78   |  |   |

## Comparison of Flow Summary to Rated Capacity



The **Permits to Take Water #3528-AE6PEM** (Issued September 27, 2016) allows the municipality to draw 17,000 m³/day at a maximum flow rate of 12,000 L/min. from its raw water source. As indicated from the charts and tables above, the maximum daily flow of raw water in 2021 was 8,200 m³/day, which is 48.2% of the maximum allowable flow rate.

In accordance with the Municipal Drinking Water License No. 224-201, the Town of Fort Frances Drinking Water System shall not be operated to exceed the rated capacity of 17,000 m³/day on any calendar day, conveyed from the treatment system to the distribution system. The highest single day treated flow in 2021 was 8,010 m³/day, which is 47.1% of the plant's maximum capacity.

There were no instances of treated water flows exceeding the rated capacity as stated in the Municipal Drinking Water Licence during the reporting period of January 1 to December 31, 2021.

**Appendix "A"**

**MUNICIPAL DRINKING WATER LICENCE**  
**License Number: 224-101**  
**Issue Number: 2**

## MUNICIPAL DRINKING WATER LICENCE

**Licence Number: 224-101**

**Issue Number: 4**

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this municipal drinking water licence under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

### **The Corporation of the Town of Fort Frances**

**320 Portage Avenue  
Fort Frances, ON  
P9A 3P9**

For the following municipal residential drinking water system:

### **Fort Frances Drinking Water System**

This municipal drinking water licence includes the following:

| <b>Schedule</b> | <b>Description</b>                                 |
|-----------------|--|
| Schedule A      | Drinking Water System Information                  |
| Schedule B      | General Conditions                                 |
| Schedule C      | System-Specific Conditions                         |
| Schedule D      | Conditions for Relief from Regulatory Requirements |
| Schedule E      | Pathogen Log Removal/Inactivation Credits          |

Upon the effective date of this drinking water licence #224-101, all previously issued versions of licence #224-101 are revoked and replaced by this licence.

DATED at TORONTO this 15<sup>th</sup> day of February, 2022

Signature



Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act*, 2002

## Schedule A: Drinking Water System Information

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Licence Number             | 224-101                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Licence Effective Date     | February 15, 2022                           |

### 1.0 Licence Information

|                                      |                   |
|--------------------------------------|-------------------|
| Licence Issue Date                   | February 15, 2022 |
| Licence Effective Date               | February 15, 2022 |
| Licence Expiry Date                  | May 11, 2026      |
| Application for Licence Renewal Date | November 10, 2025 |

### 2.0 Incorporated Documents

The following documents are applicable to the above drinking water system and form part of this licence:

#### 2.1 Drinking Water Works Permit

| Drinking Water System Name         | Permit Number | Issue Date   |
|------------------------------------|---------------|--------------|
| Fort Frances Drinking Water System | 224-201       | May 11, 2021 |

#### 2.2 Permits to Take Water

| Water Taking Location | Permit Number | Issue Date         |
|-----------------------|---------------|--------------------|
| Rainy River           | 3528-AE6PEM   | September 27, 2016 |

#### 2.1 Other Documents

| Document Title | Version Number | Version Date   |
|----------------|----------------|----------------|
| Not Applicable | Not Applicable | Not Applicable |

### 3.0 Financial Plans

|  |          |
|--|----------|
| The Financial Plan Number for the Financial Plan required to be developed for this drinking water system in accordance with O. Reg. 453/07 shall be: | 224-301  |
| Alternately, if one Financial Plan is developed for all drinking water systems owned by the owner, the Financial Plan Number shall be:               | 224-301A |

### 4.0 Accredited Operating Authority

| Drinking Water System or Operational Subsystems | Accredited Operating Authority              | Operational Plan No. | Operating Authority No. |
|---|---|----------------------|-------------------------|
| Fort Frances Drinking Water System              | The Corporation of the Town of Fort Frances | 224-401              | 224-OA1                 |

## Schedule B: General Conditions

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Licence Number             | 224-101                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Licence Effective Date     | February 15, 2022                           |

### 1.0 Definitions

**1.1** Words and phrases not defined in this licence and the associated drinking water works permit shall be given the same meaning as those set out in the SDWA and any regulations made in accordance with that act, unless the context requires otherwise.

**1.2** In this licence and the associated drinking water works permit:

“**adverse effect**”, “**contaminant**” and “**natural environment**” shall have the same meanings as in the EPA;

“**alteration**” may include the following in respect of this drinking water system:

- (a) An addition to the system,
- (b) A modification of the system,
- (c) A replacement of part of the system, and
- (d) An extension of the system;

“**compound of concern**” means a contaminant described in paragraph 4 subsection 26 (1) of O. Reg. 419/05, namely, a contaminant that is discharged to the air from a component of the drinking water system in an amount that is not negligible;

“**CT**” means the CT Disinfection Concept, as described in subsection 3.1.1 of the Ministry’s Procedure for Disinfection of Drinking Water in Ontario, dated July 29 2016.

“**Director**” means a Director appointed pursuant to section 6 of the SDWA for the purposes of Part V of the SDWA;

“**drinking water works permit**” means the drinking water works permit for the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

“**emission summary table**” means a table described in paragraph 14 of subsection 26 (1) of O. Reg. 419/05;

“**EPA**” means the *Environmental Protection Act*, R.S.O. 1990, c. E.19;

“**financial plan**” means the financial plan required by O. Reg. 453/07;

“**Harmful Algal Bloom (HAB)**” means an overgrowth of aquatic algal bacteria that produce or have the potential to produce toxins in the surrounding water, when the algal

cells are damaged or die. Such bacteria are harmful to people and animals and include microcystins produced by cyanobacterial blooms.

**“licence”** means this municipal drinking water licence for the municipal drinking water system identified in Schedule A of this licence;

**“licensed engineering practitioner”** means a person who holds a licence, limited licence or temporary licence under the Professional Engineers Act;

**“Ministry”** means the Ontario Ministry of the Environment, Conservation and Parks;

**“operational plan”** means an operational plan developed in accordance with the Director’s Directions – Minimum Requirements for Operational Plans made under the authority of subsection 15(1) of the SDWA;

**“owner”** means the owner of the drinking water system as identified in Schedule A of this licence;

**“OWRA”** means the *Ontario Water Resources Act*, R.S.O. 1990, c. 0.40;

**“permit to take water”** means the permit to take water that is associated with the taking of water for purposes of the operation of the drinking water system, as identified in Schedule A of this licence and as amended from time to time;

**“point of impingement”** has the same meaning as in section 2 of O. Reg. 419/05 under the EPA;

**“point of impingement limit”** means the appropriate standard from Schedule 2 or 3 of O. Reg. 419/05 under the EPA and if a standard is not provided for a compound of concern, the concentration set out for the compound of concern in the document titled “Air Contaminants Benchmarks (ACB) List: Standards, guidelines and screening levels for assessing point of impingement concentrations of air contaminants”, as amended from time to time and published by the Ministry and available on a government of Ontario website;

**“provincial officer”** means a provincial officer designated pursuant to section 8 of the SDWA;

**“publication NPC-300”** means the Ministry publication titled “Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning” dated August 2013, as amended;

**“SCADA system”** means a supervisory control and data acquisition system used for process monitoring, automation, recording and/or reporting within the drinking water system;

**“SDWA”** means the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32;



**“sensitive receptor”** means any location where routine or normal activities occurring at reasonably expected times would experience adverse effect(s) from a discharge to air from an emergency generator that is a component of the drinking water system, including one or a combination of:

- (a) private residences or public facilities where people sleep (e.g.: single and multi-unit dwellings, nursing homes, hospitals, trailer parks, camping grounds, etc.),
- (b) institutional facilities (e.g.: schools, churches, community centres, day care centres, recreational centres, etc.),
- (c) outdoor public recreational areas (e.g.: trailer parks, play grounds, picnic areas, etc.), and
- (d) other outdoor public areas where there are continuous human activities (e.g.: commercial plazas and office buildings).

**“sub-system”** has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts) under the SDWA;

**“surface water”** means water bodies (lakes, wetlands, ponds - including dug-outs), water courses (rivers, streams, water-filled drainage ditches), infiltration trenches, and areas of seasonal wetlands;

**“UV”** means ultraviolet, as in ultraviolet light produced from an ultraviolet reactor.

## 2.0 Applicability

- 2.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be established, altered and operated in accordance with the conditions of the drinking water works permit and this licence.

## 3.0 Licence Expiry

- 3.1 This licence expires on the date identified as the licence expiry date in Schedule A of this licence.

## 4.0 Licence Renewal

- 4.1 Any application to renew this licence shall be made on or before the date identified as the application for licence renewal date set out in Schedule A of this licence.

## 5.0 Compliance

- 5.1 The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same.

## **6.0 Licence and Drinking Water Works Permit Availability**

- 6.1** At least one copy of this licence and the drinking water works permit shall be stored in such a manner that they are readily viewable by all persons involved in the operation of the drinking water system.

## **7.0 Permit to Take Water and Drinking Water Works Permit**

- 7.1** A permit to take water identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.
- 7.2** A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Effective Date of this licence.

## **8.0 Financial Plan**

- 8.1** For every financial plan prepared in accordance with subsections 2(1) and 3(1) of O. Reg. 453/07, the owner of the drinking water system shall:
- 8.1.1 Ensure that the financial plan contains on the front page of the financial plan, the appropriate financial plan number as set out in Schedule A of this licence; and
- 8.1.2 Submit a copy of the financial plan to the Ministry of Municipal Affairs and Housing within three (3) months of receiving approval by a resolution of municipal council or the governing body of the owner.

## **9.0 Interpretation**

- 9.1** Where there is a conflict between the provisions of this licence and any other document, the following hierarchy shall be used to determine the provision that takes precedence:
- 9.1.1 The SDWA;
- 9.1.2 A condition imposed in this licence that explicitly overrides a prescribed regulatory requirement;
- 9.1.3 A condition imposed in the drinking water works permit that explicitly overrides a prescribed regulatory requirement;
- 9.1.4 Any regulation made under the SDWA;
- 9.1.5 Any provision of this licence that does not explicitly override a prescribed regulatory requirement;
- 9.1.6 Any provision of the drinking water works permit that does not explicitly override a prescribed regulatory requirement;
- 9.1.7 Any application documents listed in this licence, or the drinking water works permit from the most recent to the earliest; and

- 9.1.8 All other documents listed in this licence, or the drinking water works permit from the most recent to the earliest.
- 9.1.9 Any other technical bulletin or procedure issued by the Ministry from the most recent to the earliest.
- 9.2** If any requirement of this licence or the drinking water works permit is found to be invalid by a court of competent jurisdiction, the remaining requirements of this licence and the drinking water works permit shall continue to apply.
- 9.3** The issuance of and compliance with the conditions of this licence and the drinking water works permit does not:
  - 9.3.1 Relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement, including the *Environmental Assessment Act*, R.S.O. 1990, c. E.18; and
  - 9.3.2 Limit in any way the authority of the appointed Directors and provincial officers of the Ministry to require certain steps be taken or to require the owner to furnish any further information related to compliance with the conditions of this licence or the drinking water works permit.
- 9.4** For greater certainty, nothing in this licence or the drinking water works permit shall be read to provide relief from regulatory requirements in accordance with section 46 of the SDWA, except as expressly provided in the licence or the drinking water works permit.

## 10.0 Adverse Effects

- 10.1** Nothing in this licence or the drinking water works permit shall be read as to permit:
  - 10.1.1 The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or
  - 10.1.2 The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters.
- 10.2** All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10.3** Fulfillment of one or more conditions imposed by this licence or the drinking water works permit does not eliminate the requirement to fulfill any other condition of this licence or the drinking water works permit.

## **11.0 Change of Owner or Operating Authority**

- 11.1** This licence is not transferable without the prior written consent of the Director.
- 11.2** The owner shall notify the Director in writing at least 30 days prior to a change of any operating authority identified in Schedule A of this licence.
- 11.2.1 Where the change of operating authority is the result of an emergency situation, the owner shall notify the Director in writing of the change as soon as practicable.

## **12.0 Information to be Provided**

- 12.1** Any information requested by a Director or a provincial officer concerning the drinking water system and its operation, including but not limited to any records required to be kept by this licence or the drinking water works permit, shall be provided upon request.

## **13.0 Records Retention**

- 13.1** Except as otherwise required in this licence or the drinking water works permit, any records required by or created in accordance with this licence or the drinking water works permit, other than the records specifically referenced in section 12 or section 13 of O. Reg. 170/03, shall be retained for at least 5 years and made available for inspection by a provincial officer, upon request.

## **14.0 Chemicals and Materials**

- 14.1** All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.
- 14.1.1 In the event that the standards are updated, the owner may request authorization from the Director to use any on hand chemicals and materials that previously met the applicable standards.
- 14.2** The most current chemical and material product registration documentation from a testing institution accredited by either the Standards Council of Canada or by the American National Standards Institution ("ANSI") shall be available at all times for each chemical and material used in the operation of the drinking water system that comes into contact with water within the system.
- 14.3** Conditions 14.1 and 14.2 do not apply in the case of the following:
- 14.3.1 Water pipe and pipe fittings meeting AWWA specifications made from ductile iron, cast iron, PVC, fibre and/or steel wire reinforced cement pipe or high density polyethylene (HDPE);
- 14.3.2 Articles made from stainless steel, glass, HDPE or Teflon®;

- 14.3.3 Cement mortar for watermain lining and for water contacting surfaces of concrete structures made from washed aggregates and Portland cement;
- 14.3.4 Gaskets that are made from NSF approved materials;
- 14.3.5 Food grade oils and lubricants, food grade anti-freeze, and other food grade chemicals and materials that are compatible for drinking water use that may come into contact with drinking water, but are not added directly to the drinking water; or
- 14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry is satisfied that the chemical or material is acceptable for use within the drinking water system and the chemical or material is only used as permitted by the documentation.

## 15.0 Drawings

- 15.1 All drawings and diagrams in the possession of the owner that show any treatment subsystem as constructed shall be retained by the owner unless the drawings and diagrams are replaced by a revised or updated version showing the subsystem as constructed subsequent to the alteration.
- 15.2 Any alteration to any treatment subsystem shall be incorporated into process flow diagrams, process and instrumentation diagrams, and record drawings and diagrams within one year of the alteration being completed or placed into service.
- 15.3 Process flow diagrams and process and instrumentation diagrams for any treatment subsystem shall be kept in a place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system.

## 16.0 Operations and Maintenance Manual

- 16.1 An up-to-date operations and maintenance manual or manuals shall be maintained and applicable parts of the manual or manuals shall be made available for reference to all persons responsible for all or part of the operation or maintenance of the drinking water system.
- 16.2 The operations and maintenance manual or manuals, shall include at a minimum:
  - 16.2.1 The requirements of this licence and associated procedures;
  - 16.2.2 The requirements of the drinking water works permit for the drinking water system;
  - 16.2.3 A description of the processes used to achieve primary and secondary disinfection within the drinking water system including where applicable:
    - a) A copy of the CT calculations that were used as the basis for primary disinfection under worst case operating conditions and other operating conditions, if applicable; and

- b) The validated operating conditions for UV disinfection equipment, including a copy of the validation certificate;
- 16.2.4 Procedures for monitoring and recording the in-process parameters necessary for the control of any treatment subsystem and for assessing the performance of the drinking water system;
- 16.2.5 Procedures for the operation and maintenance of monitoring equipment;
- 16.2.6 Contingency plans and procedures for the provision of adequate equipment and material to deal with emergencies, upset conditions and equipment breakdown;
- 16.2.7 Procedures for dealing with complaints related to the drinking water system, including the recording of the nature of the complaint and any investigation and corrective action taken in respect of the complaint;
- 16.3** Procedures necessary for the operation and maintenance of any alterations to the drinking water system shall be incorporated into the operations and maintenance manual or manuals prior to those alterations coming into operation.
- 16.4** All of the procedures included or referenced within the operations and maintenance manual must be implemented.

## Schedule C: System-Specific Conditions

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Licence Number             | 224-101                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Licence Effective Date     | February 15, 2022                           |

### 1.0 System Performance

#### Rated Capacity

- 1.1** For each treatment subsystem listed in column 1 of Table 1, the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed the value identified as the rated capacity in column 2 of the same row.

| Table 1: Rated Capacity              |  |
|--------------------------------------|--|
| Column 1<br>Treatment Subsystem Name | Column 2<br>Rated Capacity (m <sup>3</sup> /day) |
| Fort Frances Water Treatment Plant   | 17,000   |

#### Maximum Flow Rates

- 1.2** For each treatment subsystem listed in column 1 of Table 2, the maximum flow rate of water that flows into a treatment subsystem component listed in column 2 shall not exceed the value listed in column 3 of the same row.

| Table 2: Maximum Flow Rates          |   |                                     |
|--------------------------------------|---|-------------------------------------|
| Column 1<br>Treatment Subsystem Name | Column 2<br>Treatment Subsystem Component | Column 3<br>Maximum Flow Rate (L/s) |
| Not Applicable                       | Not Applicable                            | Not Applicable                      |

- 1.3** Despite conditions 1.1 and 1.2, a treatment subsystem may be operated temporarily at a maximum daily volume and/or a maximum flow rate above the values set out in column 2 of Table 1 and column 3 of Table 2 respectively for the purposes of fighting a large fire or for the maintenance of the drinking water system.
- 1.4** Condition 1.3 does not authorize the discharge into the distribution system of any water that does not meet all of the requirements of this licence and all other regulatory requirements, including compliance with the Ontario Drinking Water Quality Standards.

### Residuals Management

- 1.5** In respect of an effluent discharged into the natural environment from a treatment subsystem or treatment subsystem component listed in column 1 of Table 3:
- 1.5.1 The annual average concentration of a test parameter identified in column 2 shall:
- a) not exceed the value in column 3 of the same row; and
  - b) be calculated at least once monthly as the running annual average based on the previous twelve months of results;
- 1.5.2 Where the average concentration of a test parameter identified in column 2 exceeds the value in column 3, the concentration shall be reported to the local Ministry district office within 72 hours of receipt of the last lab result used in the calculation;
- 1.5.3 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row;
- 1.5.4 Where the maximum concentration of a test parameter identified in column 2 exceeds the value in column 4, the discharge shall be reported in accordance with s.13.2 of O. Reg. 675.98 and recorded in accordance with s.12.2 of O. Reg. 675.98 within 24 hours of receipt of the lab result; and,
- 1.5.5 The test parameters listed in column 2 of Table 3 shall be sampled in accordance with conditions 5.2, 5.3 and 5.4 of Schedule C in this Licence.

| Table 3: Residuals Management   |                            |  |   |
|---|----------------------------|--|---|
| Column 1<br>Treatment Subsystem or<br>Treatment Subsystem<br>Component Name | Column 2<br>Test Parameter | Column 3<br>Annual Average<br>Concentration (mg/L) | Column 4<br>Maximum<br>Concentration (mg/L) |
| Media filter backwash effluent  | Total Suspended Solids     | 25   | Not Applicable                              |

### UV Disinfection Equipment Performance

- 1.6** For each treatment subsystem or treatment subsystem component listed in column 1 of Table 4, and while directing water to the distribution system and being used to meet pathogen log removal/inactivation credits specified in Schedule E:
- 1.6.1 The UV disinfection equipment shall be operated within the validated limits for the equipment at all times such that a continuous pass-through UV dose is maintained throughout the life time of the UV lamp(s) that is at least the minimum continuous pass-through UV dose set out in column 2 of the same row
- 1.6.2 In addition to any other sampling, analysis and recording that may be required, the ultraviolet light disinfection equipment shall test for the test parameters set



out in column 4 of the same row at a testing frequency of once every five (5) minutes or less and record the test data at a recording frequency of once every four (4) hours or less;

- 1.6.3 If there is a UV disinfection equipment alarm signaling that the disinfection equipment is malfunctioning, has lost power, or is not providing the appropriate level of disinfection the test parameters set out in column 4 of the same row shall be recorded at a recording frequency of once every five minutes or less until the alarm condition has been corrected;
- 1.6.4 A monthly summary report shall be prepared at the end of each calendar month which sets out the time, date and duration of each UV equipment alarm described in condition 1.6.3, the volume of water treated during each alarm period and the actions taken by the operating authority to correct the alarm situation;

| Table 4: UV Disinfection Equipment  |   |                              |                            |
|---|---|------------------------------|----------------------------|
| Column 1<br>Treatment Subsystem or<br>Treatment Subsystem<br>Component Name | Column 2<br>Minimum Continuous<br>Pass-Through UV Dose<br>(mJ/cm <sup>2</sup> ) | Column 3<br>Control Strategy | Column 4<br>Test Parameter |
| Not Applicable  | Not Applicable  | Not Applicable               | Not Applicable             |

## 2.0 Flow Measurement and Recording Requirements

- 2.1 For each treatment subsystem identified in column 1 of Table 1 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for:
- 2.1.1 The flow rate (L/s) and daily volume (m<sup>3</sup>/day) of treated water that flows from the treatment subsystem to the distribution system.
- 2.1.2 The flow rate (L/s) and daily volume (m<sup>3</sup>/day) of water that flows into the treatment subsystem.
- 2.2 For each treatment subsystem component identified in column 2 of Table 2 and in addition to any other flow measurement and recording that may be required, continuous flow measurement and recording shall be undertaken for the flow rate and daily volume of water that flows into the treatment subsystem component.
- 2.3 Where a rated capacity from Table 1 or a maximum flow rate from Table 2 is exceeded, the following shall be recorded:
- 2.3.1 The difference between the measured amount and the applicable rated capacity or maximum flow rate specified in Table 1 or Table 2;
- 2.3.2 The time and date of the measurement;

2.3.3 The reason for the exceedance; and

2.3.4 The duration of time that lapses between the applicable rated capacity or maximum flow rate first being exceeded and the next measurement where the applicable rated capacity or maximum flow rate is no longer exceeded.

### **3.0 Calibration of Flow Measuring Devices**

**3.1** All flow measuring devices that are required by regulation, by a condition in the drinking water works permit 224-201, or by a condition otherwise imposed by the Ministry, shall be checked and where necessary calibrated in accordance with the manufacturer's instructions.

**3.2** If the manufacturer's instructions do not indicate how often to check and calibrate a flow measuring device, the equipment shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation.

3.2.1 For greater certainty, if condition 3.2 applies, the equipment shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

### **4.0 Calibration of CT Monitoring System**

**4.1** Any measuring instrumentation that forms part of the monitoring system for CT shall be checked and where necessary calibrated at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.

4.1.1 For greater certainty, if condition 4.1 applies, the instrumentation shall be checked and where necessary calibrated not more than 30 days after the first anniversary of the day the equipment was checked and calibrated in the previous 12-month period.

### **5.0 Additional Sampling, Testing and Monitoring**

#### **Drinking Water Health and Non-Health Related Parameters**

**5.1** For each treatment subsystem or treatment subsystem component identified in column 1 of Tables 5 and 6 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 at the sampling frequency listed in column 3 and at the monitoring location listed in column 4 of the same row.

**Table 5: Drinking Water Health Related Parameters**

| <b>Column 1<br/>Treatment Subsystem or<br/>Treatment Subsystem<br/>Component Name</b> | <b>Column 2<br/>Test Parameter</b> | <b>Column 3<br/>Sampling Frequency</b> | <b>Column 4<br/>Monitoring Location</b> |
|---|------------------------------------|--|---|
| Not Applicable  | Not Applicable                     | Not Applicable                         | Not Applicable                          |

**Table 6: Drinking Water Non-Health Related Parameters**

| <b>Column 1<br/>Treatment Subsystem or<br/>Treatment Subsystem<br/>Component Name</b> | <b>Column 2<br/>Test Parameter</b> | <b>Column 3<br/>Sampling Frequency</b> | <b>Column 4<br/>Monitoring Location</b> |
|---|------------------------------------|--|---|
| Not Applicable  | Not Applicable                     | Not Applicable                         | Not Applicable                          |

**Environmental Discharge Parameters**

- 5.2** For each treatment subsystem or treatment subsystem component identified in column 1 of Table 7 and in addition to any other sampling, testing and monitoring that may be required, sampling, testing and monitoring shall be undertaken for a test parameter listed in column 2 using the sample type identified in column 3 at the sampling frequency listed in column 4 and at the monitoring location listed in column 5 of the same row.
- 5.3** For the purposes of Table 7:
- 5.3.1 Manual Composite means the mean of at least three grab samples taken during a discharge event, with one sample being taken immediately following the commencement of the discharge event, one sample being taken approximately at the mid-point of the discharge event and one sample being taken immediately before the end of the discharge event; and
- 5.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.
- 5.4** Any sampling, testing and monitoring for the test parameter Total Suspended Solids shall be performed in accordance with the requirements set out in the publication "Standard Methods for the Examination of Water and Wastewater", 23<sup>rd</sup> Edition, 2017, or as amended from time to time by more recently published editions.

**Table 7: Environmental Discharge Parameters**

| Column 1<br>Treatment Subsystem or<br>Treatment Subsystem<br>Component Name | Column 2<br>Test Parameter | Column 3<br>Sample Type | Column 4<br>Sampling<br>Frequency | Column 5<br>Monitoring Location                          |
|---|----------------------------|-------------------------|-----------------------------------|--|
| Fort Frances Water Treatment<br>Plant                                       | Total Suspended<br>Solids  | Composite               | Monthly                           | Top of filter (for point of<br>discharge to Rainy River) |

**5.5** Pursuant to Condition 10 of Schedule B of this licence, the owner may undertake the following environmental discharges associated with the maintenance and/or repair of the drinking water system:

5.5.1 The discharge of potable water from a watermain to a road or storm sewer;

5.5.2 The discharge of potable water from a water storage facility or pumping station:

- a) To a road or storm sewer; or
- b) To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

5.5.3 The discharge of dechlorinated non-potable water from a watermain, water storage facility or pumping station to a road or storm sewer;

5.5.4 The discharge of raw water from a groundwater well to the environment where if necessary, sediment and erosion control measures have been implemented; and

5.5.5 The discharge of raw water, potable water or non-potable water from a treatment subsystem to the environment where if necessary, the discharge has been dechlorinated and sediment and erosion control measures have been implemented.

5.5.6 The discharge of any excess water to a road, storm sewer or the environment, associated with the management of materials excavated as part of watermain construction or repair, where necessary sediment, erosion and environmental control measures have been implemented.

## **6.0 Studies Required**

### **Harmful Algal Blooms**

**6.1** The owner shall develop and keep up to date a Harmful Algal Bloom monitoring, reporting and sampling plan, herein known as the "Plan", to be implemented when a potential harmful algal bloom is suspected or present. The owner shall have the Plan in place on or before October 28, 2021.

6.1.1 The owner must have a copy of the Plan available onsite at the drinking water system, for inspection upon request by Ministry staff.

- 
- 6.1.2 The owner must implement the Plan annually during the harmful algal bloom season, during but not limited to the warm seasonal period between June 1 and October 31 each year, or as otherwise directed by the Ministry or the Medical Officer of Health.
- 6.1.3 The owner must train all relevant drinking water system staff on the Plan prior to the beginning of each warm season, as described in Condition 6.1.2.
- 6.2** For clarity, a Harmful Algal Bloom is considered suspected or occurring when:
- 6.2.1 the owner or operating authority has observed an algal bloom:
- a) near the shoreline at or near the source water intake(s) described in drinking water works permit #224-201, or
  - b) where the intake has an Intake Protection Zone in a source protection plan, within IPZ-1, or
  - c) within a circle that has a radius, measured from the intake, equal to the distance from the intake to the farthest edge of IPZ-2.
- 6.2.2 microcystin has been detected in a raw or treated water sample; and/or,
- 6.2.3 the owner has received any form of notification related to an algal bloom from the Ministry, a Medical Officer of Health, or the public; or,
- 6.2.4 the presence of or identification of cyanobacteria has been determined through optical probes or other analytic techniques used by the drinking water system.
- 6.3** The Plan described in condition 6.1 must include, at a minimum:
- 6.3.1 details relating to visual monitoring for harmful algal blooms at or near the drinking water system intake(s),
- a) as described in drinking water works permit #224-101, or
  - b) where the intake has an Intake Protection Zone in a source protection plan, within IPZ-1, or
  - c) within a circle that has a radius, measured from the intake, equal to the distance from the intake to the farthest edge of IPZ-2.
- 6.3.2 details relating to visual monitoring of shoreline; this is applicable to drinking water systems where the proximity of the intake(s) may be of concern.
- 6.3.3 details relating to reporting the observed or suspected harmful algal bloom, as described in section 6.2:
- a) to the Overall Responsible Operator(s) and/or Operator(s)-in-Charge if the blooms have been observed or suspected by a duty operator; the Plan shall include wording that directs relevant drinking water staff to follow the instructions provided by the Overall Responsible Operator(s) or the Operator(s)-in-Charge;

- b) to the medical officer of health; and
  - c) to the local MECP representative and the Ministry's Spills Action Centre.,
- 6.3.4 a sampling plan, including the identification of sample location(s) and frequencies that at a minimum match those described in condition 6.4.
- 6.3.5 triggers that may increase the required sampling frequency;
- 6.3.6 up-to-date records that document staff training on the harmful algal bloom monitoring, reporting, and sampling procedures.
- 6.4** Any water samples collected under Condition 6.3.4 must be:
  - 6.4.1 collected, at a minimum, once per week, or as otherwise directed by the Ministry or the medical officer of health;
  - 6.4.2 collected prior to any treatment, if the sample is taken from raw water;
  - 6.4.3 collected at the point of entry into the distribution system, if the sample is taken from treated water;
  - 6.4.4 collected from the shoreline by the drinking water system, if applicable based on Condition 6.3.1;
  - 6.4.5 submitted to a laboratory licensed to perform ELISA testing for total microcystin;
  - 6.4.6 repeatedly collected until 3 consecutive samples have shown non-detection of microcystin and the algal bloom is no longer suspected or visually observed.

## 7.0 Source Protection

- 7.1** The owner of the drinking water system shall implement risk management measures, as appropriate, to manage any potential threat to drinking water that results from the operation of the drinking water system.
- 7.2** The owner of the system shall notify the Director in writing within thirty (30) days of any approved changes to an applicable source protection plan that impact the assessed threat level of a fuel oil system identified in Schedule A of drinking water works permit.
- 7.3** The notification required in condition 7.2 shall include:
  - 7.3.1 A description of the changes and their impact on the assessed threat level of the fuel oil system(s); and,
  - 7.3.2 A timeline for re-assessing the threat level and providing the results of the assessment to the Director.

## **Schedule D: Conditions for Relief from Regulatory Requirements**

|                            |  |
|----------------------------|--|
| System Owner               | <b>The Corporation of the Town of Fort Frances</b> |
| Licence Number             | <b>224-101</b>                                     |
| Drinking Water System Name | <b>Fort Frances Drinking Water System</b>          |
| Licence Effective Date     | <b>February 15, 2022</b>                           |

As of the effective date of the Licence, no relief from regulatory requirements is authorized by the Director under section 46 of the SDWA in respect of the drinking water system.

## Schedule E: Pathogen Log Removal/Inactivation Credits

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Licence Number             | 224-101                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Licence Effective Date     | February 15, 2022                           |

### 1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

#### Fort Frances Water Treatment Plant

Rainy River [SURFACE WATER]

| Minimum Log Removal/<br>Inactivation Required | Cryptosporidium Oocysts | Giardia Cysts <sup>a</sup> | Viruses <sup>b</sup> |
|---|-------------------------|----------------------------|----------------------|
| Fort Frances Water Treatment Plant            | 2                       | 3                          | 4                    |

<sup>a</sup> At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.

<sup>b</sup> At least 2 log inactivation of viruses shall be achieved by disinfection.

| Log Removal/Inactivation<br>Credits Assigned <sup>c</sup>                          | Cryptosporidium Oocysts | Giardia Cysts | Viruses |
|--|-------------------------|---------------|---------|
| Conventional Filtration  | 2                       | 2.5           | 2       |
| Chlorination [CT: Contact chamber, clearwell/reservoir and high lift pump chamber] | -                       | 0.5           | 2+      |

<sup>c</sup> Log removal/inactivation credit assignment is based on each treatment process being fully operational and the applicable log removal/inactivation credit assignment criteria being met.

| Treatment Component        | Log Removal/Inactivation Credit Assignment Criteria   |
|----------------------------|---|
| Conventional Filtration    | <ol style="list-style-type: none"> <li>1. A chemical coagulant shall be used at all times when the treatment plant is in operation;</li> <li>2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality;</li> <li>3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times;</li> <li>4. Filtrate turbidity shall be continuously monitored from each filter; and</li> <li>5. Performance criterion for filtered water turbidity of less than or equal to 0.3 NTU in 95% of the measurements each month shall be met for each filter.</li> </ol> |
| Chlorination               | <ol style="list-style-type: none"> <li>1. Sampling and testing for free chlorine residual shall be carried out by continuous monitoring equipment in the treatment process at or near a location where the intended contact time has just been completed in accordance with the Ministry's Procedure for Disinfection of Drinking Water in Ontario; and</li> <li>2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.</li> </ol>   |
| Primary Disinfection Notes |   |



**Appendix “B”**

**DRINKING WATER WORKS PERMIT**  
**Permit Number: 224-201**  
**Issue Number: 2**



## DRINKING WATER WORKS PERMIT

**Permit Number: 224-201**

**Issue Number: 3**

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, I hereby issue this drinking water works permit under Part V of the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32 to:

### **The Corporation of the Town of Fort Frances**

**320 Portage Avenue  
Fort Frances, ON  
P9A 3P9**

For the following municipal residential drinking water system:

### **Fort Frances Drinking Water System**

This drinking water works permit includes the following:

| <b>Schedule</b> | <b>Description</b>  |
|-----------------|---|
| Schedule A      | Drinking Water System Description   |
| Schedule B      | General   |
| Schedule C      | All documents issued as Schedule C to this drinking water works permit which authorize alterations to the drinking water system |
| Schedule D      | Process Flow Diagrams   |

Upon the effective date of this drinking water works permit #224-201, all previously issued versions of permit #224-201 are revoked and replaced by this permit.

DATED at TORONTO this 11<sup>th</sup> day of May, 2021

Signature

Aziz Ahmed, P.Eng.  
Director  
Part V, *Safe Drinking Water Act*, 2002

## Schedule A: Drinking Water System Description

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Permit Number              | 224-201                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Permit Effective Date      | May 11, 2021                                |

### 1.0 System Description

- 1.1 The following is a summary description of the works comprising the above drinking water system:

#### Overview

The **Fort Frances Drinking Water System** consists of a drinking water treatment plant, a two-celled storage ground reservoir, an elevated storage tank and approximately 6.0 kilometers of trunk watermains and 70.4 kilometers of distribution watermains.

The Fort Frances Water Treatment Plant is a conventional surface water treatment plant. Raw water is drawn from Rainy River through low lift pumps. Liquid alum is added to the raw water ahead of the in-line mixer for coagulation while polyelectrolytes are added to the solids contact tanks for assisting flocculation. The water then flows to the two solids contact clarifiers units, operating in parallel, where flocculation and sedimentation occurs. The settled floc is disposed of to the sanitary sewer. Powdered activated carbon, soda ash, and hydrofluosilicic are also added ahead of in-line mixer, in solids contact clarifiers, and/or in chemical contact chambers, as needed, for taste and odour and pH adjustment. The settled effluent is gravity fed to four dual media gravity sand filters. The filters are equipped with a backwash pump. The filtered water flows to a two-celled, ground storage reservoir through a chemical contact chamber. Chlorine and fluoride are added in the chemical contact chamber. The treated water then flows to the high lift pump wells where it is pumped to the distribution system. Chlorine residual and fluoride are monitored with continuous on-line analyzers just prior to the water leaving the plant. The Fort Frances Drinking Water System also includes an elevated water storage tank within the distribution system equipped with re-chlorination facilities.

The Fort Frances Drinking Water System provides drinking water to the Couchiching First Nation (borders the northeast limits of the Town) and five sites on Agency 1 Land (Rusty Myers Flying Service Ltd., Treaty 3 Police Station, Nanicost Ltd., Gizhewaadiziwin Health Access Centre, and Seven Generations Educational Institute). The Fort Frances Drinking Water System also provides Drinking water to the Friesen 5 Apartment Units located in Alberton Township, outside the limits of the Town of Fort Frances.

## Fort Frances Water Treatment Plant

### Treatment Plant

#### Location and General Description

|                 |   |
|-----------------|---|
| Name            | Fort Frances Water Treatment Plant housed in an approximately 46 m by 32 m masonry structure  |
| Street Address  | 901 Colonization Road East  |
| UTM Coordinates | NAD 83: Zone 15 +/- 10m: Easting 472938: Northing 5384735   |
| System Type     | Treatment, storage and distribution   |
| Notes           | Houses screen chamber, low and high lift pumps, solids contact clarifiers, filters, chemical storage and feeding equipment, instrumentation and control, an administration area comprising of an office, lunchroom, washrooms and control room/laboratory |

### Surface Water Supply

#### Raw Water Intake

|             |   |
|-------------|---|
| Description | Approximately 190 m of 630 mm diameter intake pipe located in the Rainy River including an upturned elbow intake structure with a coarse bar screen |
| Source      | Rainy River   |
| Location    | Approximately 190 m east of the Water Treatment Plant in Rainy River  |
| Notes       |   |

### Low Lift Works

#### Screens

|             |  |
|-------------|--|
| Description | A raw water screen chamber equipped with two sets of screens |
| Dimensions  | Each screen 2.25 m <sup>2</sup> in area                      |
| Notes       | Screen chamber located ahead of raw water pumping well       |

#### Low Lift Pumps

|                 |   |
|-----------------|---|
| Description     | Three (3) vertical turbine low lift pumps   |
| Capacity        | <ul style="list-style-type: none"><li>- Two (2) pumps rated at 100 L/s against a total dynamic head (TDH) of 14 m</li><li>- One (1) VFD pump capable of providing flows in the range of 40 to 150 L/s against a total dynamic head (TDH) of 14m</li></ul> |
| Metering Device | Equipped with one metering device for measuring raw water flows   |
| Notes           |   |

## Coagulation

### In-Line Mixer

|             |   |
|-------------|---|
| Description | An in-line mixer located downstream of the low lift pumps within the influent (raw water) line to facilitate the dosing of liquid alum, activated carbon slurry and soda ash solution |
| Dimensions  | 450 mm diameter   |
| Notes       | Located between low lift pumps and solids contact clarifiers  |

## Flocculation/Clarification

### Flocculation/Clarification Tanks - Solids Contact Clarifiers

|             |   |
|-------------|---|
| Description | Two (2) solids contact clarifier units, operating in parallel equipped with facilities for polymer dosing |
| Dimensions  | Each solids contact clarifier approximately 13.7 m x 13.7 m x 3.75 m side water depth (s.w.d.)            |
| Notes       | The settled floc is discharged to sanitary sewer  |

## Filtration

### Filters

|             |  |
|-------------|--|
| Description | Four (4) dual media, gravity filters (sand and anthracite)                                     |
| Dimensions  | Each filter approximately 4.9 m x 4.9 m providing a total filtration area of 96 m <sup>2</sup> |
| Equipment   | One (1) vertical turbine backwash pump capable of delivering 290.3 L/s at 14 m TDH             |
|             | A turbidimeter on each filter  |
|             | All filters equipped with an underdrain and air scouring system                                |
| Notes       |  |

## Instrumentation and Control

### SCADA System

|             |   |
|-------------|---|
| Description | A computerized control system monitoring the critical components of the process including raw and finished water quantity and quality     |
| Equipment   | Four (4) turbidimeters for continuously monitoring filter effluent  |
|             | One (1) laboratory model turbidimeter for manual testing  |
|             | One (1) continuous chlorine/fluoride analyzer monitoring free chlorine and fluoride residual in the discharge pipe of the high lift pumps |
|             | Three (3) flowmeters to measure flow at various locations   |
| Notes       | Status of the elevated storage tank by telemetry, receiving alarms and controlling the operation  |

## Waste Residual Management

### Outfall Pipe

|             |  |
|-------------|--|
| Description | Filter backwash disposal   |
| Dimensions  | Approximately 60 m of 800 mm diameter pipe   |
|             | One (1) vertical turbine backwash pump capable of delivering 290.3 L/s at 14 m TDH |
| Notes       | Filter backwash water returned to Rainy River through outfall line                 |

### Sludge Disposal

|             |  |
|-------------|--|
| Description | Solids contact clarifier settled sludge disposal   |
| Equipment   | Settled sludge discharged through a 150 mm pipe using pneumatic blow down valves - gravity system, no pumps utilized |
| Notes       | Solids contact clarifier settled sludge discharged to the sanitary sewer system                                      |

## High Lift Works

### High Lift Pumps

|                        |   |
|------------------------|---|
| Description            | Four (4) vertical turbine high lift pumps and one (1) diesel engine driven vertical turbine fire pump |
| Capacity               | Two (2) vertical turbine pumps rated at 63.1 L/s. at TDH of 55m                                       |
|                        | One (1) vertical turbine pump rated at 94.7 L/s at TDH of 55m   |
|                        | One (1) vertical turbine pump rated at 126.2 L/s at a TDH of 55m                                      |
| High Lift Pump Chamber | 470 m <sup>3</sup> capacity   |
| Notes                  |   |

## On-Site Storage

### Chemical Contact Chamber

|             |   |
|-------------|---|
| Description | One (1) chemical contact chamber to provide chlorine contact time |
| Volume      | 240 m <sup>3</sup>  |
| Notes       |   |

**Clearwell/Reservoir**

|             |  |
|-------------|--|
| Description | Two-celled, ground storage reservoir   |
| Capacity    | Cell No. 1 = 2,565 m <sup>3</sup><br>Cell No. 2 = 1,465 m <sup>3</sup><br>Total = 4,030 m <sup>3</sup> |
| Notes       | The two cells receive filtered water after passing through chemical contact chamber                    |

**Emergency Power****Backup Power Supply**

|             |  |
|-------------|--|
| Description | One (1) 450 kW diesel generator set for use during power outage situations |
| Notes       |  |

**Fuel Oil Systems****Fuel Storage Locations**

|                        |   |
|------------------------|---|
| Location               | 901 Colonization Road East<br>NAD 83: Zone 15 +/- 10m: Easting 472938: Northing 5384735 |
| Description            | 3785 litres, double walled, integrated sub-base fuel tank for the diesel generator      |
| Fuel Type              | Diesel  |
| Source Protection Area | Not Applicable  |
| Notes                  |   |

**Chemical Addition****Alum**

|             |   |
|-------------|---|
| Description | Alum feed system for coagulation  |
| Feed Point  | Liquid alum to the raw water ahead of the in-line mixer for coagulation |
| Equipment   | A chemical metering pump<br>A day tank with secondary spill containment |
| Notes       |   |

**Chlorine**

|               |   |
|---------------|---|
| Description   | Chlorine gas disinfection System  |
| Feed Point(s) | 1. Chemical contact chamber; and<br>2. Before the flash mixer   |
| Equipment     | One (1) duty chlorinator  |
|               | One (1) standby chlorinator including: <ul style="list-style-type: none"> <li>- two (2) chlorine cylinders with an automatic switch over device in a separate room</li> <li>- a weight scale</li> <li>- one (1) chemical metering pump</li> <li>- a free chlorine analyzer for monitoring finished water residuals</li> </ul> |
| Notes         |   |

**Hydrofluosilicic Acid**

|             |                                |
|-------------|--------------------------------|
| Description | Fluoridation system            |
| Feed Point  | Chemical Contact Chamber       |
| Equipment   | One (1) day tank               |
|             | One (1) chemical metering pump |
|             | Secondary spill containment    |
| Notes       |                                |

**Polyelectrolytes/Polymer**

|             |  |
|-------------|--|
| Description | <ul style="list-style-type: none"> <li>- A polyelectrolytes feed system for assisting in flocculation</li> <li>- A polymer feed system for assisting in flocculation (used as back-up)</li> </ul>  |
| Feed Point  | Solids Contact Clarifiers  |
| Equipment   | <ul style="list-style-type: none"> <li>- Two (2) chemical metering pumps for polyelectrolytes injection complete with aging and batch tanks</li> <li>- Two (2) chemical metering pumps for polymer injection complete with aging and solution tanks (used as back-up)</li> </ul> |
| Notes       |  |



**Powdered Activated Carbon**

|             |  |
|-------------|--|
| Description | Powdered activated carbon for taste and odor control |
| Feed Point  | Ahead of in-line mixer or solids contact clarifiers  |
| Equipment   | One (1) slurry tank                                  |
|             | One (1) chemical metering pump                       |
|             | Secondary spill containment                          |
|             | A dust control system                                |
| Notes       |  |

**Soda Ash**

|               |  |
|---------------|--|
| Description   | Soda ash dosing system for pH adjustment |
| Feed Point #1 | Chemical contact chamber                 |
| Feed Point #2 | Solid contact clarifiers                 |
| Feed Point #3 | In-line mixture                          |
| Equipment     | A silo inside the building               |
|               | One (1) day tank                         |
|               | Volumetric feeder                        |
|               | A dust collector                         |
| Notes         |  |

**Elevated Storage Tank**

|                 |   |
|-----------------|---|
| Description     | An elevated storage tank  |
| Location        | South-east side of the intersection of Colonization Road West and McIrvine Road   |
| UTM Coordinates | NAD 83: Zone 15 +/- 10: Easting 468540: Northing 5383616  |
| Capacity        | 4,500 m <sup>3</sup>  |
| Equipment       | Includes calcium hypochlorite re-chlorination facility along with: <ul style="list-style-type: none"> <li>- a telemetry system providing the water level information to the main computer at the plant; and</li> <li>- a looped circulation system</li> </ul> |
| Notes           |   |

**Watermains****1.2** Watermains within the distribution system comprise:**1.2.1** Watermains that have been set out in each document or file identified in column 1 of Table 1.

| Table 1: Watermains  |                   |
|--|-------------------|
| Column 1<br>Document or File Name  | Column 2<br>Date  |
| PDF File Name: Distribution Map.pdf<br>Title: Water Distribution System, November 10, 2020 | November 10, 2020 |

- 1.2.2 Watermains that have been added, modified, replaced or extended further to the provisions of Schedule C of this drinking water works permit on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.
- 1.2.3 Watermains that have been added, modified, replaced or extended further to an authorization by the Director on or after the date identified in column 2 of Table 1 for each document or file identified in column 1.

## Schedule B: General

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Permit Number              | 224-201                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Permit Effective Date      | May 11, 2021                                |

### 1.0 Applicability

- 1.1 In addition to any other applicable legal requirements, the drinking water system identified above shall be altered and operated in accordance with the conditions of this drinking water works permit and the licence #224-101.
- 1.2 The definitions and conditions of licence #224-101 are incorporated into this permit and also apply to this drinking water system.

### 2.0 Alterations to the Drinking Water System

- 2.1 Any document issued by the Director to be incorporated into Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance with the applicable conditions of this drinking water works permit and licence #224-101.
- 2.2 All documents issued by the Director as described in condition 2.1 shall form part of this drinking water works permit.
- 2.3 All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:
- a) Until November 9, 2021 the ministry's Watermain Disinfection Procedure, dated November 2015. As of November 10, 2021 the ministry's Watermain Disinfection Procedure, dated August 1, 2020;
  - b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
  - c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
  - d) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
  - e) AWWA C654 – Standard for Disinfection of Wells.
- 2.3.1 For greater clarity, where an activity has occurred that could introduce contamination, including but not limited to repair, maintenance, or physical / video inspection, all equipment that may come in contact with the drinking water system shall be disinfected in accordance with the requirements of condition 2.3. above.
- 2.3.2 Updated requirements described in condition 2.3 b) are effective six months from the date of publication of the updated Watermain Disinfection Procedure.

- 2.4 The owner shall notify the Director in writing within thirty (30) days of the placing into service or the completion of any addition, modification, replacement, removal or extension of the drinking water system which had been authorized through:
- 2.4.1 Schedule B to this drinking water works permit which would require an alteration of the description of a drinking water system component described in Schedule A of this drinking water works permit;
  - 2.4.2 Any document to be incorporated in Schedule C to this drinking water works permit respecting works other than watermain; or
  - 2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermain which were not in service at the time of the issuance of the first drinking water works permit.
- 2.5 The notification required in condition 2.4 shall be submitted using the "Director Notification Form" published by the Ministry.
- 2.6 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement, removal or extension in respect of the drinking water system which:
- 2.6.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;
  - 2.6.2 Constitutes maintenance or repair of the drinking water system; or
  - 2.6.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.
- 2.7 The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system.
- 2.8 For greater certainty, the owner may only carry out alterations to the drinking water system in accordance with this drinking water works permit after having satisfied other applicable legal obligations, including those arising from the *Environmental Assessment Act*, *Niagara Escarpment Planning and Development Act*, *Oak Ridges Moraine Conservation Act, 2001* and *Greenbelt Act, 2005*.

### 3.0 Watermain Additions, Modifications, Replacements and Extensions

- 3.1 The owner may alter the drinking water system, or permit it to be altered by a person acting on the owner's behalf, by adding, modifying, replacing or extending a watermain within the distribution system subject to the following conditions:
- 3.1.1 The design of the watermain addition, modification, replacement or extension:
    - a) Has been prepared by a licensed engineering practitioner;
    - b) Has been designed only to transmit water and has not been designed to treat water;

- c) Satisfies the design criteria set out in the Ministry publication “Watermain Design Criteria for Future Alterations Authorized under a Drinking Water Works Permit – June 2012”, as amended from time to time; and
  - d) Is consistent with or otherwise addresses the design objectives contained within the Ministry publication “Design Guidelines for Drinking Water Systems, 2008”, as amended from time to time.
- 3.1.2 The maximum demand for water exerted by consumers who are serviced by the addition, modification, replacement or extension of the watermain will not result in an exceedance of the rated capacity of a treatment subsystem or the maximum flow rate for a treatment subsystem component as specified in the licence, or the creation of adverse conditions within the drinking water system.
- 3.1.3 The watermain addition, modification, replacement or extension will not adversely affect the distribution system’s ability to maintain a minimum pressure of 140 kPa at ground level at all points in the distribution system under maximum day demand plus fire flow conditions.
- 3.1.4 Secondary disinfection will be provided to water within the added, modified, replaced or extended watermain to meet the requirements of O. Reg. 170/03.
- 3.1.5 The watermain addition, modification, replacement or extension is wholly located within the municipal boundary over which the owner has jurisdiction.
- 3.1.6 The owner of the drinking water system consents in writing to the watermain addition, modification, replacement or extension.
- 3.1.7 A licensed engineering practitioner has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of condition 3.1.1.
- 3.1.8 The owner of the drinking water system has verified in writing that the watermain addition, modification, replacement or extension meets the requirements of conditions 3.1.2 to 3.1.6.
- 3.2 The authorization for the addition, modification, replacement or extension of a watermain provided for in condition 3.1 does not include the addition, modification, replacement or extension of a watermain that:
  - 3.2.1 Passes under or through a body of surface water, unless trenchless construction methods are used;
  - 3.2.2 Has a nominal diameter greater than 750 mm;
  - 3.2.3 Results in the fragmentation of the drinking water system; or
  - 3.2.4 Connects to another drinking water system, unless:
    - a) Prior to construction, the owner of the drinking water system seeking the connection obtains written consent from the owner or owner’s delegate of the drinking water system being connected to; and

- b) The owner of the drinking water system seeking the connection retains a copy of the written consent from the owner or owner's delegate of the drinking water system being connected to as part of the record that is recorded and retained under condition 3.3.
- 3.3 The verifications required in conditions 3.1.7 and 3.1.8 shall be:
  - 3.3.1 Recorded on "Form 1 – Record of Watermains Authorized as a Future Alteration", as published by the Ministry, prior to the watermain addition, modification, replacement or extension being placed into service; and
  - 3.3.2 Retained for a period of ten (10) years by the owner.
- 3.4 For greater certainty, the verification requirements set out in condition 3.3 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:
  - 3.4.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
  - 3.4.2 Constitutes maintenance or repair of the drinking water system.
- 3.5 The document or file referenced in Column 1 of Table 1 of Schedule A of this drinking water works permit that sets out watermains shall be retained by the owner and shall be updated to include watermain additions, modifications, replacements and extensions within 12 months of the addition, modification, replacement or extension.
- 3.6 The updates required by condition 3.5 shall include watermain location relative to named streets or easements and watermain diameter.
- 3.7 Despite clause (a) of condition 3.1.1 and condition 3.1.7, with respect to the replacement of an existing watermain or section of watermain that is 6.1 meters in length or less, if a licensed engineering practitioner has:
  - 3.7.1 inspected the replacement prior to it being put into service;
  - 3.7.2 prepared a report confirming that the replacement satisfies clauses (b), (c) and (d) of condition 3.1.1 (i.e. "Form 1 – Record of Watermains Authorized by a Future Alteration" (Form 1), Part 3, items No. 2, 3 and 4); and
  - 3.7.3 appended the report referred to in condition 3.7.2 to the completed Form 1,

the replacement is exempt from the requirements that the design of the replacement be prepared by a licensed engineering practitioner and that a licensed engineering practitioner verify on Form 1, Part 3, item No. 1 that a licensed engineering practitioner prepared the design of the replacement.
- 3.8 For greater certainty, the exemption in condition 3.7 does not apply to the replacement of an existing watermain or section of watermain if two or more sections of pipe, each of which is 6.1 meters in length or less, are joined together, if the total length of replacement pipes joined together is greater than 6.1 meters.

## 4.0 Minor Modifications to the Drinking Water System

- 4.1 The drinking water system may be altered by adding, modifying or replacing the following components in the drinking water system:
  - 4.1.1 Coagulant feed systems in the treatment system, including the location and number of dosing points:
    - a) Prior to making any alteration to the drinking water system under condition 4.1.1, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
    - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.1.1 and shall provide the Director with a copy of the review.
    - c) The notification required in condition 4.1.1 b) shall be submitted using the "Director Notification Form" published by the Ministry
  - 4.1.2 Instrumentation and controls, including new SCADA systems and upgrades to SCADA system hardware;
  - 4.1.3 SCADA system software or programming that:
    - a) Measures, monitors or reports on a regulated parameter;
    - b) Measures, monitor or reports on a parameter that is used to calculate CT; or,
    - c) Calculates CT for the system or is part of the process algorithm that calculates log removal, where the impacts of addition, modification or replacement have been reviewed by a licensed engineering practitioner;
  - 4.1.4 Filter media, backwashing equipment, filter troughs, and under-drains and associated equipment in the treatment system;
  - 4.1.5 Spill containment works; or,
  - 4.1.6 Coarse screens and fine screens
- 4.2 The drinking water system may be altered by adding, modifying, replacing or removing the following components in the drinking water system:
  - 4.2.1 Treated water pumps, pressure tanks, and associated equipment;
  - 4.2.2 Raw water pumps and process pumps in the treatment system;
  - 4.2.3 Inline booster pumping stations that are not associated with distribution system storage facilities and are on a watermain with a nominal diameter not exceeding 200 mm;
  - 4.2.4 Re-circulation devices within distribution system storage facilities;
  - 4.2.5 In-line mixing equipment;

- 
- 4.2.6 Chemical metering pumps and chemical handling pumps;
  - 4.2.7 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,
  - 4.2.8 Measuring and monitoring devices that are not required by regulation, by a condition in the Drinking Water Works Permit, or by a condition otherwise imposed by the Ministry.
  - 4.2.9 Chemical injection points;
  - 4.2.10 Valves.
- 4.3 The drinking water system may be altered by replacing the following:
- 4.3.1 Raw water piping, treatment process piping or treated water piping within the treatment subsystem;
  - 4.3.2 Measuring and monitoring devices that are required by regulation, by a condition in the Drinking Water Works Permit or by a condition otherwise imposed by the Ministry.
  - 4.3.3 Coagulants and pH adjustment chemicals, where the replacement chemicals perform the same function;
    - a) Prior to making any alteration to the drinking water system under condition 4.3.3, the owner shall undertake a review of the impacts that the alteration might have on corrosion control or other treatment processes; and
    - b) The owner shall notify the Director in writing within thirty (30) days of any alteration made under condition 4.3.3 and shall provide the Director with a copy of the review.
    - c) The notification required in condition 4.3.3 b) shall be submitted using the "Director Notification Form" published by the Ministry.
- 4.4 Any alteration of the drinking water system made under conditions 4.1, 4.2 or 4.3 shall not result in:
- 4.4.1 An exceedance of a treatment subsystem rated capacity or a treatment subsystem component maximum flow rate as specified in the licence;
  - 4.4.2 The bypassing or removal of any unit process within a treatment subsystem;
  - 4.4.3 The addition of any new unit process other than coagulation within a treatment subsystem;
  - 4.4.4 A deterioration in the quality of drinking water provided to consumers;
  - 4.4.5 A reduction in the reliability or redundancy of any component of the drinking water system;



- 4.4.6 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or
- 4.4.7 An adverse effect on the environment.
- 4.5 The owner shall verify in writing that any addition, modification, replacement or removal of drinking water system components in accordance with conditions 4.1, 4.2 or 4.3 has met the requirements of the conditions listed in condition 4.4.
- 4.6 The verifications and documentation required in condition 4.5 shall be:
  - 4.6.1 Recorded on “Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System” published by the Ministry, prior to the modified or replaced components being placed into service; and
  - 4.6.2 Retained for a period of ten (10) years by the owner.
- 4.7 For greater certainty, the verification requirements set out in conditions 4.5 and 4.6 do not apply to any addition, modification, replacement or removal in respect of the drinking water system which:
  - 4.7.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
  - 4.7.2 Constitutes maintenance or repair of the drinking water system, including software changes to a SCADA system that are not listed in condition 4.1.3
- 4.8 The owner shall update any drawings maintained for the drinking water system to reflect the modification or replacement of the works, where applicable.

## 5.0 Equipment with Emissions to the Air

- 5.1 The drinking water system may be altered by adding, modifying or replacing any of the following drinking water system components that may discharge or alter the rate or manner of a discharge of a compound of concern to the air:
  - 5.1.1 Any equipment, apparatus, mechanism or thing that is used for the transfer of outdoor air into a building or structure that is not a cooling tower;
  - 5.1.2 Any equipment, apparatus, mechanism or thing that is used for the transfer of indoor air out of a space used for the production, processing, repair, maintenance or storage of goods or materials, including chemical storage;
  - 5.1.3 Laboratory fume hoods used for drinking water testing, quality control and quality assurance purposes;
  - 5.1.4 Low temperature handling of compounds with a vapor pressure of less than 1 kilopascal;
  - 5.1.5 Maintenance welding stations;
  - 5.1.6 Minor painting operations used for maintenance purposes;

- 5.1.7 Parts washers for maintenance shops;
  - 5.1.8 Emergency chlorine and ammonia gas scrubbers and absorbers;
  - 5.1.9 Venting for activated carbon units for drinking water taste and odour control;
  - 5.1.10 Venting for a stripping unit for methane removal from a groundwater supply;
  - 5.1.11 Venting for an ozone treatment unit;
  - 5.1.12 Natural gas or propane fired boilers, water heaters, space heaters and make-up air units with a total facility-wide heat input rating of less than 20 million kilojoules per hour, and with an individual fuel energy input of less than or equal to 10.5 gigajoules per hour; or
  - 5.1.13 Emergency generators that fire No. 2 fuel oil (diesel fuel) with a sulphur content of 0.5 per cent or less measured by weight, natural gas, propane, gasoline or biofuel, and that are used for emergency duty only with periodic testing.
- 5.2 The owner shall not make an addition, modification, or replacement described in condition 5.1 in relation to an activity that is not related to the treatment and/or distribution of drinking water.
- 5.3 The emergency generators identified in condition 5.1.13 shall not be used for non-emergency purposes including the generation of electricity for sale or for peak shaving purposes.
- 5.4 The owner shall prepare an emission summary table for nitrogen oxides emissions only, for each addition, modification or replacement of emergency generators identified in condition 5.1.13.

### Performance Limits

- 5.5 The owner shall ensure that a drinking water system component identified in conditions 5.1.1 to 5.1.13 is operated at all times to comply with the following limits:
- 5.5.1 For equipment other than emergency generators, the maximum concentration of any compound of concern at a point of impingement shall not exceed the corresponding point of impingement limit;
  - 5.5.2 For emergency generators, the maximum concentration of nitrogen oxides at sensitive receptors shall not exceed the applicable point of impingement limit, and at non-sensitive receptors shall not exceed the Ministry half-hourly screening level of 1880 ug/m<sup>3</sup> as amended; and
  - 5.5.3 The noise emissions comply at all times with the limits set out in publication NPC-300, as applicable.
- 5.6 The owner shall verify in writing that any addition, modification or replacement of works in accordance with condition 5.1 has met the requirements of the conditions listed in condition 5.5.

- 5.7 The owner shall document how compliance with the performance limits outlined in condition 5.5.3 is being achieved, through noise abatement equipment and/or operational procedures.
- 5.8 The verifications and documentation required in conditions 5.6 and 5.7 shall be:
- 5.8.1 Recorded on "Form 3 – Record of Addition, Modification or Replacement of Equipment Discharging a Contaminant of Concern to the Atmosphere", as published by the Ministry, prior to the additional, modified or replacement equipment being placed into service; and
- 5.8.2 Retained for a period of ten (10) years by the owner.
- 5.9 For greater certainty, the verification and documentation requirements set out in conditions 5.6 and 5.8 do not apply to any addition, modification or replacement in respect of the drinking water system which:
- 5.9.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03; or
- 5.9.2 Constitutes maintenance or repair of the drinking water system.
- 5.10 The owner shall update any drawings maintained for the works to reflect the addition, modification or replacement of the works, where applicable.

## **6.0 Previously Approved Works**

- 6.1 The owner may add, modify, replace or extend, and operate part of a municipal drinking water system if:
- 6.1.1 An approval was issued after January 1, 2004 under section 36 of the SDWA in respect of the addition, modification, replacement or extension and operation of that part of the municipal drinking water system;
- 6.1.2 The approval expired by virtue of subsection 36(4) of the SDWA; and
- 6.1.3 The addition, modification, replacement or extension commenced within five years of the date that activity was approved by the expired approval.

## **7.0 System-Specific Conditions**

- 7.1 Not Applicable

## **8.0 Source Protection**

- 8.1 Not Applicable

## Schedule C: Authorization to Alter the Drinking Water System

|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Permit Number              | 224-201                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Permit Effective Date      | May 11, 2021                                |

### 1.0 General

- 1.1 Table 2 provides a reference list of all documents to be incorporated into Schedule C that have been issued as of the date that this permit was issued.

- 1.1.1 Table 2 is not intended to be a comprehensive list of all documents that are part of Schedule C. For clarity, any document issued by the Director to be incorporated into Schedule C after this permit has been issued is considered part of this drinking water works permit.

| Table 2: Schedule C Documents |                         |                         |                    |                   |
|-------------------------------|-------------------------|-------------------------|--------------------|-------------------|
| Column 1<br>Issue #           | Column 2<br>Issued Date | Column 3<br>Description | Column 4<br>Status | Column 5<br>DN#   |
| Not<br>Applicable             | Not Applicable          | Not Applicable          | Not Applicable     | Not<br>Applicable |

- 1.2 For each document described in columns 1, 2 and 3 of Table 2, the status of the document is indicated in column 4. Where this status is listed as 'Archived', the approved alterations have been completed and relevant portions of this permit have been updated to reflect the altered works. These 'Archived' Schedule C documents remain as a record of the alterations.

## Schedule D: Process Flow Diagrams

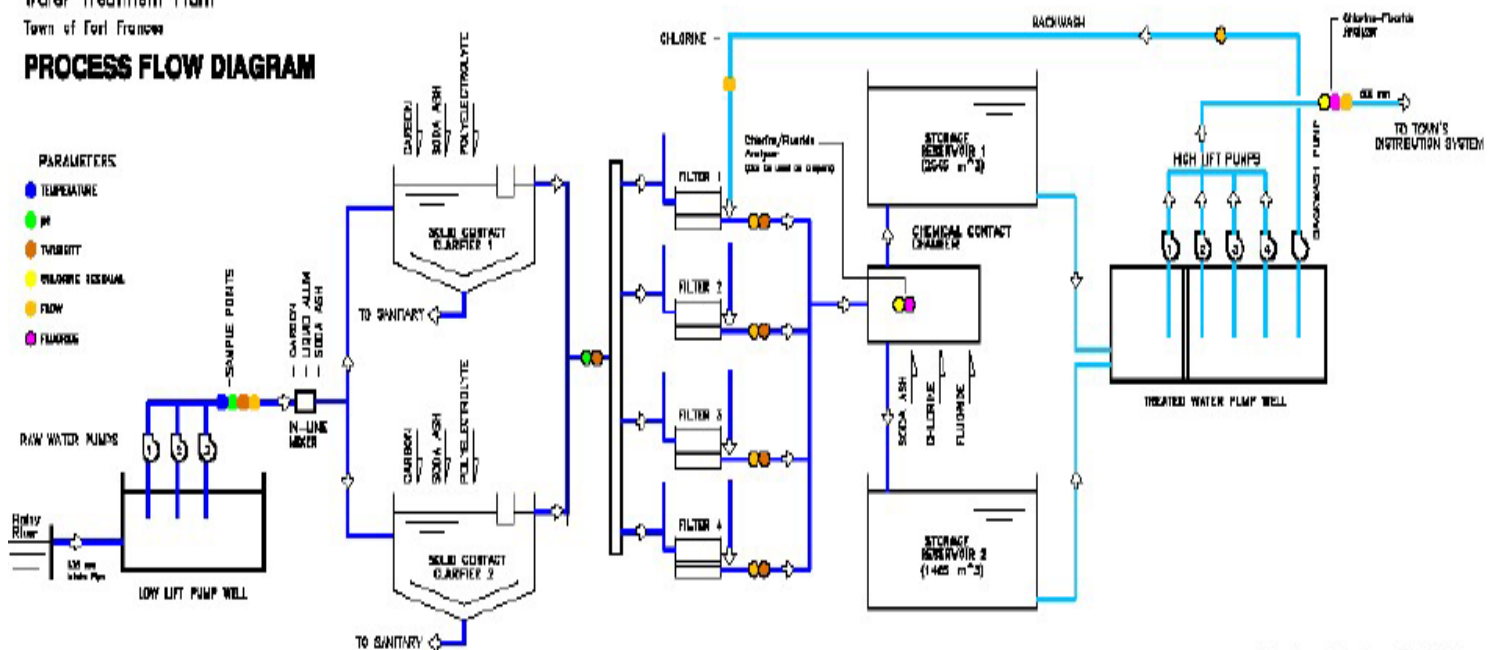
|                            |   |
|----------------------------|---|
| System Owner               | The Corporation of the Town of Fort Frances |
| Permit Number              | 224-201                                     |
| Drinking Water System Name | Fort Frances Drinking Water System          |
| Permit Effective Date      | May 11, 2021                                |

### 1.0 Process Flow Diagrams

#### Fort Frances Water Treatment Plant

Water Treatment Plant  
Town of Fort Frances

#### PROCESS FLOW DIAGRAM



[Source: Quality Management System Operational Plan Town of Fort Frances Water System, Revision No. 13, June 3, 2020]

Note: this process flow diagram is for reference only, and represents a high level overview of the system as of June 3, 2016.

**Appendix "C"**

**PERMIT TO TAKE WATER  
Surface Water  
Number 3528-AE6PEM**

**PERMIT TO TAKE WATER**

Surface Water

NUMBER 3528-AE6PEM

*Pursuant to Section 34.1 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:*

The Corporation of the Town of Fort Frances  
320 Portage Ave  
Fort Frances, Ontario, P9A 3P9  
Canada

*For the water  
taking from:* Rainy River

*Located at:* 901 Colonization Rd E  
Fort Frances, District of Rainy River

*For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:*

**DEFINITIONS**

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34.1, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment and Climate Change.
- (d) "District Office" means the Kenora District Office.
- (e) "Permit" means this Permit to Take Water No. 3528-AE6PEM including its Schedules, if any, issued in accordance with Section 34.1 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Town of Fort Frances.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

*You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:*

**TERMS AND CONDITIONS**

## **1. Compliance with Permit**

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated September 12, 2016 and signed by Douglas Herr, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

## **2. General Conditions and Interpretation**

### **2.1 Inspections**

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

### **2.2 Other Approvals**

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and the *Environmental Protection Act*, and any regulations made thereunder; or
- (b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.



- 2.2.1 Prior to the taking of any water under the authorization of the Permit to Take Water, the Permit Holder shall ensure full compliance with the Safe Drinking Water Act, 2002 and its regulations. At no time does this permit authorize the taking of water when out of compliance with the Safe Drinking Water Act, 2002 and its regulations.
- 2.3 Information  
The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:
- (a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or
- (b) acceptance by the Ministry of the information's completeness or accuracy.
- 2.4 Rights of Action  
The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.
- 2.5 Severability  
The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.
- 2.6 Conflicts  
Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.
- 3. Water Takings Authorized by This Permit**
- 3.1 **Expiry**  
This Permit expires on **September 27, 2026**. No water shall be taken under authority of this Permit after the expiry date.
- 3.2 Amounts of Taking Permitted  
The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

**Table A**

| Source Name / Description: | Source:<br>Type: | Taking Specific Purpose: | Taking Major Category: | Max. Taken per Minute (litres): | Max. Num. of Hrs Taken per Day: | Max. Taken per Day (litres): | Max. Num. of Days Taken per Year: | Zone/<br>Easting/<br>Northing: |
|----------------------------|------------------|--------------------------|------------------------|---------------------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------------|
|----------------------------|------------------|--------------------------|------------------------|---------------------------------|---------------------------------|------------------------------|-----------------------------------|--------------------------------|

|   |             |       |           |              |        |                      |            |     |                         |
|---|-------------|-------|-----------|--------------|--------|----------------------|------------|-----|-------------------------|
| 1 | Rainy River | River | Municipal | Water Supply | 12,000 | 24                   | 17,000,000 | 365 | 15<br>472938<br>5384735 |
|   |             |       |           |              |        | <b>Total Taking:</b> | 17,000,000 |     |                         |

#### 4. Monitoring

- 4.1 The Permit Holder shall, on each day water is taken under the authorization of this Permit, record the date, the volume of water taken on that date and the rate at which it was taken. The daily volume of water taken shall be measured by a flow meter or calculated in accordance with the method described in the application for this Permit or as otherwise accepted by the Director. A separate record shall be maintained for each source. The Permit Holder shall keep all records required by this condition current and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The Permit Holder, unless otherwise required by the Director, shall submit, on or before March 31<sup>st</sup> in every year, the daily water taking data collected and recorded for the previous year to the ministry's Water Taking Reporting System.

#### 5. Impacts of the Water Taking

##### 5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

##### 5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

#### 6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water Resources Act*, Section 100 (4).

*The reasons for the imposition of these terms and conditions are as follows:*

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

*In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:*

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

*In addition to these legal requirements, the Notice should also include:*

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

*This notice must be served upon:*

*The Secretary  
Environmental Review Tribunal  
655 Bay Street, 15th Floor  
Toronto ON  
M5G 1E5  
Fax: (416) 326-5370*

*AND*

*The Director, Section 34.1, Ministry of the  
Environment and Climate Change  
331-435 James St S  
Thunder Bay ON P7E 6S7  
Fax: (807) 475-1754*

*Email: [ERTTribunalsecretary@ontario.ca](mailto:ERTTribunalsecretary@ontario.ca)*

***Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:***

by Telephone at  
(416) 212-6349  
Toll Free 1(866) 448-2248

by Fax at  
(416) 326-5370  
Toll Free 1(844) 213-3474

by e-mail at  
[www.ert.gov.on.ca](http://www.ert.gov.on.ca)

This Permit cancels and replaces Permit Number 7280-6UAMD9, issued on 2006/10/05.

Dated at Thunder Bay this 27th day of September, 2016.



Carrie Hutchison  
Director, Section 34.1  
*Ontario Water Resources Act , R.S.O. 1990*

### **Schedule A**

This Schedule "A" forms part of Permit To Take Water 3528-AE6PEM, dated September 27, 2016.

Permit To Take Water 7280-6UAMD9, dated October 5, 2006.

**Appendix “D”**

**2021 Annual Report**

## ANNUAL REPORT

|  |   |
|--|---|
| <b>Drinking-Water System Number:</b>   | <b>220000978</b>                          |
| <b>Drinking-Water System Name:</b>     | <b>Fort Frances Drinking Water System</b> |
| <b>Drinking-Water System Owner:</b>    | Town of Fort Frances                      |
| <b>Drinking-Water System Category:</b> | Large Municipal Residential System        |
| <b>Period being reported:</b>          | January 01, 2021 to December 31, 2021     |

**Complete if your Category is Large Municipal Residential or Small Municipal Residential**

**Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ x ]**

**Is your annual report available to the public at no charge on a web site on the Internet? Yes [ x ] No [ ]**

**Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.**

Water Treatment Plant  
901 Colonization Road East  
or  
Public Works Department  
900 Wright Avenue

**Complete for all other Categories.**

**Number of Designated Facilities served:**

**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]**

**Number of Interested Authorities you report to:**

**Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]**

**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

**List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:**

| <b>Drinking Water System Name</b>   | <b>Drinking Water System Number</b>   |
|---|---|
| Couchiching First Nation & Agency 1 Land between Fort Frances and Couchiching First Nation. | Unknown if designated as a Drinking Water System under Provincial Regulation 170/03.          |
| Walleye Trailer Park  | Within the Town of Fort Frances' System Number 220000978                                      |
| Lakeview Trailer Park   | Within the Town of Fort Frances' System Number 220000978                                      |
| Friesen 5 - Apartment Units   | Alberton Township – Private<br>Supplied through Town of Fort Frances' System Number 220000978 |

**Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?**

Yes [ ☒ ] No [ ☐ ]

**Indicate how you notified system users that your annual report is available, and is free of charge.**

- [ ☒ ] **Public access/notice via the web**  
[ ☒ ] **Public access/notice via Government Office**  
[ ☐ ] **Public access/notice via a newspaper**  
[ ☐ ] **Public access/notice via Public Request**  
[ ☐ ] **Public access/notice via a Public Library**  
[ ☐ ] **Public access/notice via other method** \_\_\_\_\_

**Describe your Drinking-Water System**

**INTAKE STRUCTURE:**

Located approximately 190 metres southeast of the Water Treatment Plant.

**INTAKE LINE:**

600mm Polyethylene Pipe.

**SCREEN CHAMBER:**

Two stainless steel screens.

**PUMPWELL:**

Raw water enters pump well from screen chamber, gravity feed.

**LOW LIFT PUMPS:**

Three (3) vertical turbine low lift pumps each electrically driven. Two (2) by 30 hp motors with a rated capacity to deliver 100 L/s and one (1) variable speed drive (40 hp) capable of providing flows in the range of 40 to 150 L/s.

**RAW WATER FLOW METERING SYSTEM:**

This unit counts the litres of water as it passes through the unit.

**IN LINE MIXER:**

The mixer is equipped with four (4) chemical application injectors and the following chemicals can be added to the treatment process at this point:

1. Liquid Alum
2. Soda Ash
3. Carbon Slurry
4. Chlorine Solution (per-chlorination is practiced only under exceptional circumstances)

**RAW WATER INFLUENT LINE:**

This 450mm line carries the raw water to the clarifiers.





## CLARIFIERS:

The raw water, after pre-treatment, enters primary mixing and reaction zone of each unit through the 450mm inlet pipe. Activated carbon, soda ash and polymer can be added to the process in this zone.

Recycled solids are drawn up into the bottom of the zone by the re-circulator impellor to be mixed with the incoming pre-treated water. The re-circulated solids provide additional particle surface area to absorb and entrap precipitates in the raw water. The solids settle to the bottom of the clarifier to form a sludge blanket. The pre-treated water then flows upward and into the effluent box.

## FILTER INFLUENT FLUME:

Settled water from the effluent box is piped through two (2) 450 mm diameter pipes to the filter influent flume for distribution to the filters.

## FILTERS:

Four (4) gravity filters are provided. Each filter consists of ecodyne filtration equipment installed within a square concrete tank. The dual-media gravity filters are to remove any particles in suspension that have carried over from the solids contact clarifiers.

The filter media on top of the underdrain system consists of a 500 mm thickness of anthracite over 400mm thickness of silica sand.

The filtered water then enters the chemical contact chamber.

## CHEMICAL CONTACT CHAMBER:

This chamber is located between the two (2) reservoir storage cells and underneath the filters. Soda Ash solution, chlorine solution and hydrofluosilicic acid are added to the process in the chamber.

## RESERVOIR CELLS:

Two (2) reservoir cells are provided, cell number 1 has capacity of approximately 2,565 m<sup>3</sup> and cell number 2 has capacity of approximately 1,465 m<sup>3</sup> (887,665 gallons).

## TREATED WATER PUMP WELL:

The treated water pump well contains the filter backwash pump and high lift pumps; numbers 1, 2, and 3. It is located between the two reservoir cells.

## HIGH LIFT PUMPS:

These four (4) units draw water from the treated water pump wells. They are of varying capacities and are controlled by the water tower level.

High Lift Pump Number 1: Rated to deliver 63.1 L/s. This pump is equipped with a variable speed drive 60 hp electric motor.

High Lift Pump Number 2: Rated to deliver 94.7 L/s. This pump is equipped with a 100 hp electric motor.

High Lift Pump Number 3: Rated to deliver 126.2 L/s. The pump is equipped with a 125 hp electric motor.

High Lift Pump Number 4: Rated to deliver 63.1 L/s. This pump is equipped with a variable speed drive 60 hp electric motor.

## BACKWASH PUMP:

The backwash pump is used for back washing the filters. It draws water from the pump well. This unit is rated to deliver 300 L/s and is equipped with a 75 hp electric motor.



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

## PLANT EFFLUENT DISCHARGE HEADER:

The plant effluent discharge header receives the flow from the high lift pumps and fire pump and directs it to the community's water distribution system.

There are two (2) analyzers - one for chlorine and one for fluoride which continually monitor the concentration of these two chemicals prior to entering the water distribution system.

## EMERGENCY STANDBY GENERATOR:

The emergency standby generator is a 450kW unit capable of running all the operational needs of the treatment plant. It automatically comes on-line when there is a power outage and shuts down once the power is restored.

## RATED CAPACITY OF THE PLANT:

Capacity: 17,000 m<sup>3</sup>/day or 3,744,493 gallons/day.

## List all water treatment chemicals used over this reporting period

|                                    |                                 |
|------------------------------------|---------------------------------|
| Poly Electrolyte (Coagulant Aid)   | 1000 kg (40 bags @ 25 kg / bag) |
| Aluminum Sulphate (Main Coagulant) | 72309.64 kg                     |
| Soda Ash (ph Adjustment)           | 74444.22 kg                     |
| Chlorine (Disinfection)            | 8328 kg                         |
| Fluoride (Dental Aid)              | 6673 kg                         |

## Were any significant expenses incurred to?

- ☒ Install required equipment
- ☐ Repair required equipment
- ☒ Replace required equipment

## Please provide a brief description and a breakdown of monetary expenses incurred

### **A) Water Main Replacement – Armit Avenue between Scott Street and Church Street (Contracted Works)**

The removal and replacement of approximately 153m of existing 150 mm DI water main with new 150 mm PVC water main including services and appurtenances, Qty 5 – 150mm valves – a cost of \$107,615

### **B) Water Main Relining – Wright Avenue between 5<sup>th</sup> Street West and 4<sup>th</sup> Street West & Keating Avenue between 5<sup>th</sup> Street West and 4<sup>th</sup> Street West (Contracted Works)**

Reline the existing water mains using Fer-Pal Construction. Wright Avenue (110m) and Keating Avenue (114m). Lining extended through VAL065, essentially eliminating the valve from the distribution system – a cost of \$256,375

### **C) Water Distribution System – Replaced 5 Valves (Contracted Works)**

Valves: VAL508 (150mm); VAL055 (200mm); VAL450 (250mm); VAL462 (300mm); VAL470 (300mm) – a cost of \$77,000

### **D) Water Distribution System – Added 1 Valves & Replaced 1 Hydrant (Town of Fort Frances Crew)**

Added VAL113 (250mm) back into system after previously being removed and replaced hydrant HYD085 at Lillie Avenue and 5<sup>th</sup> Street East – an estimated cost of \$17,500

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

| Incident Date | Parameter       | Result  | Unit of Measure | Corrective Action  | Corrective Action Date |
|---------------|-----------------|---------|-----------------|--|------------------------|
| 3/22/2021     | Total Coliforms | Present | N/A             | Weekly distribution sample. Placed sample point on DWA. Resampled with no adverse. Lifted DWA. AWQI 153752 | 3/27/2021              |
|               |                 |         |                 |  |                        |

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

|              | Number of Samples | Range of E. Coli or Fecal Results (min #)-(max #) | Range of Total Coliform Results (min #)-(max #) | Number of HPC Samples | Range of HPC Results (min #)-(max #) |
|--------------|-------------------|---|---|-----------------------|--------------------------------------|
| Raw          | 52                | E.C.: <1 – 11                                     | 1 - 2420  | N/A                   | N/A                                  |
| Treated      | 52                | 0   | 0   | 52                    | 0                                    |
| Distribution | 339               | 0   | 0   | 175                   | 0 – 71                               |

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

|   | Number of Grab Samples | Range of Results (min #)-(max #) |
|---|------------------------|----------------------------------|
| Turbidity                                   | 8760                   | 0.01 to 0.15 NTU                 |
| Chlorine                                    | 8760                   | 1.64 to 2.67 mg/L                |
| Fluoride (If the DWS provides fluoridation) | 8760                   | 0.45 to 0.78 mg/L                |

**NOTE:** For continuous monitors use 8760 as the number of samples.

**NOTE:** Record the unit of measure if it is **not** milligrams per litre.

**Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.**

| Date of legal instrument issued | Parameter  | Date Sampled | Result               | Unit of Measure      |
|---------------------------------|--|--------------|----------------------|----------------------|
| June 01/07                      | Suspended Solids – Filter 1<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Mar 16/21    | 14.8<br><3.0<br><3.0 | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 3<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | May 19/21    | 9.0<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 4<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Jun 23/21    | 4.8<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 1<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Jul 21/21    | 19.9<br>3.9<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 3<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Aug 23/21    | 4.7<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 4<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Sep 21/21    | 5.0<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 1<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Oct 20/21    | 8.6<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 3<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Nov 23/21    | 6.6<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |
| June 01/07                      | Suspended Solids – Filter 4<br>(1 <sup>st</sup> Cycle)<br>(2 <sup>nd</sup> Cycle)<br>(3 <sup>rd</sup> Cycle) | Dec 20/21    | 9.2<br><3.0<br><3.0  | mg/L<br>mg/L<br>mg/L |



# Ontario Drinking-Water Systems Regulation O. Reg. 170/03

## Summary of Inorganic parameters tested during this reporting period or the most recent sample results

| Parameter | Sample Date       | Result Value | Unit of Measure | Standard (Max.) | Exceedance |
|-----------|-------------------|--------------|-----------------|-----------------|------------|
| Antimony  | March 16, 2021    | <0.6         | µg/L            | 6               | None       |
| Arsenic   | March 16, 2021    | <1.0         | µg/L            | 10              | None       |
| Barium    | March 16, 2021    | <10          | µg/L            | 1000            | None       |
| Boron     | March 16, 2021    | <50          | µg/L            | 5000            | None       |
| Cadmium   | March 16, 2021    | <0.10        | µg/L            | 5               | None       |
| Chromium  | March 16, 2021    | <1.0         | µg/L            | 50              | None       |
| *Lead     |                   |              | µg/L            | 10              | None       |
| Mercury   | March 16, 2021    | <0.10        | µg/L            | 1               | None       |
| Selenium  | March 16, 2021    | <5.0         | µg/L            | 50              | None       |
| Sodium    | March 18, 2020    | 18.2         | mg/L            | 20              | None       |
| Uranium   | March 16, 2021    | <5.0         | µg/L            | 20              | None       |
| Fluoride  | November 23, 2020 | 0.76         | mg/L            | 1.5             | None       |
| Nitrite   | December 20, 2021 | <0.010       | mg/L            | 1.0             | None       |
| Nitrate   | December 20, 2021 | <0.020       | mg/L            | 10.0            | None       |

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

## Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

| Location Type | Number of Samples | Range of Lead Results (min#) – (max #) | Number of Exceedances |
|---------------|-------------------|--|-----------------------|
| *Plumbing     | 0                 | <1.0                                   | 0                     |
| *Distribution | 0                 | <1.0 – 6.6                             | 0                     |

Note: The Town of Fort Frances is currently exempt from lead testing per O.Reg. 170/03 Schedule 15.1-5(10). Alkalinity and pH are tested twice per year and lead will be tested every third 12 month period (2021 is the first period).

## Summary of Organic parameters sampled during this reporting period or the most recent sample results

| ANALYTE                                    | Sample Date | Result | Units | Detectable Limit | Standard (Max) | Exceedance |
|--|-------------|--------|-------|------------------|----------------|------------|
| 1,1-dichloroethylene (vinylidene chloride) | 3/16/2021   | <0.50  | ug/L  | 0.5              | 14             | None       |
| 1,2-Dichlorobenzene                        | 3/16/2021   | <0.50  | ug/L  | 0.5              | 200            | None       |
| 1,2-Dichloroethane                         | 3/16/2021   | <0.50  | ug/L  | 0.5              | 5              | None       |
| 1,4-Dichlorobenzene                        | 3/16/2021   | <0.50  | ug/L  | 0.5              | 5              | None       |
| 2,3,4,6-Tetrachlorophenol                  | 3/16/2021   | <0.50  | ug/L  | 0.5              | 100            | None       |
| 2,4,6-Trichlorophenol                      | 3/16/2021   | <0.50  | ug/L  | 0.5              | 5              | None       |
| 2,4-Dichlorophenol                         | 3/16/2021   | <0.30  | ug/L  | 0.3              | 900            | None       |
| Alachlor                                   | 3/16/2021   | <0.10  | ug/L  | 0.1              | 5              | None       |

| ANALYTE                                 | Sample Date | Result  | Units | Detectable Limit | Standard (Max) | Exceedance |
|---|-------------|---------|-------|------------------|----------------|------------|
| Atrazine + N-dealkylated metabolites    | 3/16/2021   | <0.20   | ug/L  | 0.2              | 5              | None       |
| Azinphos-methyl                         | 3/16/2021   | <0.10   | ug/L  | 0.1              | 20             | None       |
| Benzene                                 | 3/16/2021   | <0.50   | ug/L  | 0.5              | 1              | None       |
| Benzo(a)pyrene                          | 3/16/2021   | <0.0050 | ug/L  | 0.005            | 0.01           | None       |
| Bromoxynil                              | 3/16/2021   | <0.20   | ug/L  | 0.2              | 5              | None       |
| Carbaryl                                | 3/16/2021   | <0.20   | ug/L  | 0.2              | 90             | None       |
| Carbofuran                              | 3/16/2021   | <0.20   | ug/L  | 0.2              | 90             | None       |
| Carbon tetrachloride                    | 3/16/2021   | <0.20   | ug/L  | 0.2              | 2              | None       |
| Chlorpyrifos                            | 3/16/2021   | <0.10   | ug/L  | 0.1              | 90             | None       |
| Diazinon                                | 3/16/2021   | <0.10   | ug/L  | 0.1              | 20             | None       |
| Dicamba                                 | 3/16/2021   | <0.20   | ug/L  | 0.2              | 120            | None       |
| Dichloromethane                         | 3/16/2021   | <5.0    | ug/L  | 5                | 50             | None       |
| Diclofop-methyl                         | 3/16/2021   | <0.20   | ug/L  | 0.2              | 9              | None       |
| Dimethoate                              | 3/16/2021   | <0.10   | ug/L  | 0.1              | 20             | None       |
| Diquat                                  | 3/16/2021   | <1.0    | ug/L  | 1                | 70             | None       |
| Diuron                                  | 3/16/2021   | <1.0    | ug/L  | 1                | 150            | None       |
| Ethylbenzene                            | 3/16/2021   | <0.50   | ug/L  | 0.5              | 140            | None       |
| Glyphosate                              | 3/16/2021   | <5.0    | ug/L  | 5                | 280            | None       |
| Malathion                               | 3/16/2021   | <0.10   | ug/L  | 0.1              | 190            | None       |
| Metolachlor                             | 3/16/2021   | <0.10   | ug/L  | 0.1              | 50             | None       |
| Metribuzin                              | 3/16/2021   | <0.10   | ug/L  | 0.1              | 80             | None       |
| Monochlorobenzene                       | 3/16/2021   | <0.50   | ug/L  | 0.5              | 80             | None       |
| Paraquat                                | 3/16/2021   | <1.0    | ug/L  | 1                | 10             | None       |
| Phorate                                 | 3/16/2021   | <0.10   | ug/L  | 0.1              | 2              | None       |
| Picloram                                | 3/16/2021   | <0.20   | ug/L  | 0.2              | 190            | None       |
| Prometryne                              | 3/16/2021   | <0.10   | ug/L  | 0.1              | 1              | None       |
| Simazine                                | 3/16/2021   | <0.10   | ug/L  | 0.1              | 10             | None       |
| Terbufos                                | 3/16/2021   | <0.20   | ug/L  | 0.2              | 1              | None       |
| Tetrachloroethylene (perchloroethylene) | 3/16/2021   | <0.50   | ug/L  | 0.5              | 10             | None       |
| Toluene                                 | 3/16/2021   | <0.50   | ug/L  | 0.5              | 60             | None       |
| Total PCBs                              | 3/16/2021   | <0.035  | ug/L  | 0.035            | 3              | None       |
| Triallate                               | 3/16/2021   | <0.10   | ug/L  | 0.1              | 230            | None       |
| Trichloroethylene                       | 3/16/2021   | <0.50   | ug/L  | 0.5              | 5              | None       |
| Trifluralin                             | 3/16/2021   | <0.10   | ug/L  | 0.1              | 45             | None       |
| Vinyl chloride                          | 3/16/2021   | <0.20   | ug/L  | 0.2              | 1              | None       |
| Xylenes (Total)                         | 3/16/2021   | <1.5    | ug/L  | 1.5              | 90             | None       |
| Haloacetic acids (2021 Average) (HAA)   | 12/20/2021  | 64.5    | ug/L  | 5.4              | 80             | None       |
| Trihalomethanes (2021 Average) (THM)    | 12/20/2021  | 96.2    | ug/L  | 4.0              | 100            | None       |

**List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.**

| Parameter | Result Value     | Unit of Measure | Date of Sample    |
|-----------|------------------|-----------------|-------------------|
| Sodium    | 18.2 (STD. – 20) | mg/L            | March 18, 2020    |
| HAA       | 64.5 (STD – 80)  | µg/L            | December 20, 2021 |
| THM       | 96.2 (STD – 100) | µg/L            | December 20, 2021 |
| Fluoride  | 0.76 (STD – 1.5) | mg/L            | November 23, 2020 |

**Appendix “E”**

**MECP DRINKING WATER SYSTEM INSPECTION PROGRAM  
(2021 – 2022 Inspection Report)**

February 24, 2022

**Send by E-mail: [cmiller@fortfrances.ca](mailto:cmiller@fortfrances.ca)**

Town of Fort Frances  
320 Portage Ave.  
Fort Frances, ON  
P9A 3P9

Attn: Mr. Craig Miller, Environmental and Facilities Superintendent

**RE: Drinking Water System Inspection Program – 2021/2022 Inspection Report  
Fort Frances Drinking Water System – Inspection Number: 1-75242090**

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Dear Mr. Miller,

The enclosed report documents findings of the inspection that was performed for the Fort Frances Drinking Water System on January 27 and 28, 2022, and covers the period of time from January 8, 2021, to the date of the on-site inspection.

There were no items of “Non-Compliance/Non-Conformance” identified during this inspection.

“Recommendations” convey information that the owner or operating authority should consider implementing to advance efforts already in place to address such issues as emergency preparedness and conformance with existing and emerging industry standards. Please note that items which appear as recommendations do not, in themselves, constitute violations.

Please note that due to a change in IT systems, the Inspection Rating Report (IRR) cannot be generated at the same time as the inspection report. The IRR will be sent separately and prior to any public release (typically within 1-2 month of the completion of the inspection).

The assistance afforded to me by water treatment plant operators was greatly appreciated. Should you have any questions regarding the content of the enclosed report, please do not hesitate to contact me.



Sincerely,



Carolyn Lacroix  
Water Inspector  
Badge No. 1467  
Drinking Water and Environmental Compliance Division

CL/cl

cc: Town of Fort Frances

**Attn: Travis Rob**, Manager of Operations and Facilities – trob@fortfrances.ca

**Attn: Greg Wiedenhoef**, Overall Responsible Operator – gwiedenhoef@fortfrances.ca

Northwestern Health Unit – 21 Wolsley Street, Kenora, ON P9N 3W7

**Attn: Thomas Nabb**, Program Manager – tnabb@nwhu.on.ca

Ministry of Natural Resources and Forestry – 922 Scott Street, Fort Frances, ON P9A 6S7

**Attn: Greg Chapman**, District Manager – greg.chapman@ontario.ca

Ministry of the Environment, Conservation and Parks – 808 Robertson Street – 2nd Floor,  
Kenora, ON P9N 1X9

**Attn: Sherry Ilersich**, Water Compliance Supervisor – sherry.ilersich@ontario.ca

c: DK DY WI - 540



FORT FRANCES DRINKING WATER SYSTEM  
901 COLONIZATION RD E, FORT FRANCES, ON, P9A 3P9  
**Inspection Report**

|                        |                 |
|------------------------|-----------------|
| System Number:         | 220000978       |
| Inspection Start Date: | 01/26/2022      |
| Inspection End Date:   | 02/17/2022      |
| Inspected By:          | Carolyn Lacroix |
| Badge #:               | 1467            |

  
(signature)

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## SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

The following item(s) have been identified as a best management practice (BMP).

### **Question Group:** Other Inspection Findings

|  |               |                         |  |
|--|---------------|-------------------------|--|
| Question ID  | MRDW1116000   |                         |  |
| Question   | Question Type | Legislative Requirement |  |
| Were the inspection questions sufficient to address other identified best practice issues?   | BMP           | Not Applicable          |  |
| Observation/Corrective Action(s)   |               |                         |  |
| <p>The following item was also noted during the inspection:</p> <p>Daily, operators manually sample the treated water chlorine residual and compare the result to the reading on the in-line continuous analyzer. If operators observe the continuous analyzer is drifting, they will calibrate the analyzer to reflect the residual obtained from the handheld instrument. When the daily check is completed, operators do not document the residual obtained from the handheld instrument, in comparison to the continuous analyzer. Furthermore, when a calibration is completed it is unknown what the continuous analyzer was reading prior to and after the instrument was calibrated.</p> <p>RECOMMENDATION:</p> <p>It is recommended that the daily treated water chlorine residual result obtained from the handheld colorimeter be documented, as well as the residual from treated water continuous chlorine analyzer, from the same time. This will assist in demonstrating that the continuous chlorine analyzer is being operated within the allowable margin of error and calibrated as required.</p> |               |                         |  |

## INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program: Regulated Activity:** DRINKING WATER : DW Municipal Residential

|   |               |                         |  |
|---|---------------|-------------------------|--|
| Question ID   | MRDW1001000   |                         |  |
| Question  | Question Type | Legislative Requirement |  |
| What was the scope of this inspection?  | Information   | Not Applicable          |  |
| Observation   |               |                         |  |
| <p>The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.</p> <p>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.</p> <p>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.</p> <p>Responses provided in this inspection are computer generated based on yes/no responses to standard questions answered during the inspection. Supporting information, identified as 'INSPECTOR OBSERVATIONS', have been added by the undersigned water inspector to qualify standard responses and to provide additional guidance/information.</p> <p>The Fort Frances Drinking Water System (DWS) is owned and operated by the Town of Fort Frances. A focused, unannounced inspection of the Fort Frances DWS was conducted on January 27 and 28, 2022, by water inspector, Carolyn Lacroix. The inspection included a review of the DWS components, document review and interview with DWS personnel. The inspection review period is the period of time from the date of the previous MECP inspection conducted on January 8, 2021, to the first day of this inspection, unless otherwise stated.</p> |               |                         |  |

|   |             |               |                         |
|---|-------------|---------------|-------------------------|
| Question ID   | MRDW1000000 |               |                         |
| Question  |             | Question Type | Legislative Requirement |
| Does this drinking water system provide primary disinfection?                       |             | Information   | Not Applicable          |
| Observation   |             |               |                         |
| This Drinking Water System provides for both primary and secondary disinfection and |             |               |                         |

distribution of water.

|  |                      |                                |
|--|----------------------|--------------------------------|
| <b>Question ID</b>   | MRDW1012000          |                                |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Does the owner have a harmful algal bloom monitoring plan in place that meets the requirements of the MDWL?  | Legislative          | SDWA   31   (1)                |
| <b>Observation</b>   |                      |                                |
| <p>The owner had a harmful algal bloom monitoring plan in place.</p> <p>INSPECTOR OBSERVATIONS:<br/>The DWS's Municipal Drinking Water Licence (MDWL) requires that a Harmful Algal Monitoring Plan be prepared by no later than October 28, 2021. The DWS's Plan was prepared by October 21, 2021 and includes the necessary information.</p> |                      |                                |

|   |                      |                                |
|---|----------------------|--------------------------------|
| <b>Question ID</b>  | MRDW1014000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Is there sufficient monitoring of flow as required by the MDWL or DWWP issued under Part V of the SDWA?   | Legislative          | SDWA   31   (1)                |
| <b>Observation</b>  |                      |                                |
| <p>There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Dinking Water Works Permit issued under Part V of the SDWA.</p> <p>INSPECTOR OBSERVATIONS:<br/>Conditions 2.1.1 and 2.1.2, Schedule C, MDWL #224-101, requires continuous measurements and recording of the flow rate and daily volume of raw water flowing into the DWS and of treated water flowing from the WTP into the distribution system. The Fort Frances WTP is equipped with one raw water flow meter and one treated water flow meter. Data obtained from the flow meters is transferred and recorded into the facility's SCADA monitoring system.</p> |                      |                                |

|  |                      |                                |
|--|----------------------|--------------------------------|
| <b>Question ID</b>   | MRDW1016000          |                                |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Is the owner in compliance with the conditions associated with maximum flow rate or the rated capacity conditions in the MDWL issued under Part V of the SDWA?   | Legislative          | SDWA   31   (1)                |
| <b>Observation</b>   |                      |                                |
| <p>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.</p> <p>INSPECTOR OBSERVATIONS: Condition 1.1, Schedule C, MDWL #224-101, identifies the rated capacity of the Fort Frances WTP as 17,000 m<sup>3</sup>/day. This represents the maximum daily</p> |                      |                                |

volume of treated water that is allowed to be directed to the distribution system, from the WTP. During the review period, the highest volume of treated water pumped to the distribution system, in a single day, was 8010 m3. This represents 47 % of the plant's rated capacity.

|   |                      |  |
|---|----------------------|--|
| <b>Question ID</b>  | MRDW1030000          |  |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>                                       |
| Is primary disinfection chlorine monitoring being conducted at a location approved by MDWL and/or DWWP issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved?   | Legislative          | SDWA   O. Reg. 170/03   7-2   (1), SDWA   O. Reg. 170/03   7-2   (2) |
| <b>Observation</b>  |                      |  |
| 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. |                      |  |
| INSPECTOR OBSERVATIONS:<br>The treated water chlorine residual is monitored by a continuous analyzer at the point where treated water enters the distribution system.   |                      |  |

|   |                      |                                   |
|---|----------------------|-----------------------------------|
| <b>Question ID</b>  | MRDW1032000          |                                   |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>    |
| If the drinking water system obtains water from a surface water source and provides filtration, is continuous monitoring of each filter effluent line being performed for turbidity?  | Legislative          | SDWA   O. Reg. 170/03   7-3   (2) |
| <b>Observation</b>  |                      |                                   |
| Continuous monitoring of each filter effluent line was being performed for turbidity.   |                      |                                   |
| INSPECTOR OBSERVATIONS:<br>Reg. 170/03, Section 7-3(2)(b) requires the owner of the system to ensure that sampling and testing for turbidity is carried out by continuous monitoring equipment on each filter effluent line. All four filters in the WTP are equipped with turbidity analyzers. Continuous turbidity data from each filter is printed daily, reviewed by operators and filed in the DWS office. |                      |                                   |

|  |                      |  |
|--|----------------------|--|
| <b>Question ID</b>   | MRDW1033000          |  |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>                                       |
| Is the secondary disinfectant residual measured as required for the large municipal residential distribution system? | Legislative          | SDWA   O. Reg. 170/03   7-2   (3), SDWA   O. Reg. 170/03   7-2   (4) |
| <b>Observation</b>   |                      |  |

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

**INSPECTOR OBSERVATIONS:**

O. Reg. 170/03, Section 7-2(3) requires that the owner and operating authority of a large municipal residential system that provides secondary disinfection shall ensure that at least seven (7) distribution samples are taken each week in accordance with subsection (4). For systems which provide chlorination, samples must be tested immediately for free chlorine residual. During the review period, a daily distribution chlorine residual was taken from the water tower. The results are documented in the water tower log book.

|  |                      |   |
|--|----------------------|---|
| <b>Question ID</b>   | MRDW1037000          |   |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>  |
| 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?   | Legislative          | SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10,SDWA   O. Reg. 170/03   6-5   (1.1) |
| <b>Observation</b>   |                      |   |
| 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.  |                      |   |
| <b>INSPECTOR OBSERVATIONS:</b>   |                      |   |
| Currently, the alarm set points for chlorine and turbidity are as follows:   |                      |   |
| <ul style="list-style-type: none"> <li>• Final Effluent Low Chlorine Alarm = 1.6 mg/L - If final effluent chlorine levels drop below this set point, an alarm will sound immediately and the high lift pumps will shut down. The system will run off of the water tower.</li> <li>• Final Effluent High Chlorine Alarm = 3.2 mg/L - calls out operator on duty.</li> <li>• Filter Effluent Turbidity High Alarm = 0.3 NTU - plant alarm sounds, if the filter effluent turbidity continues to exceed the set point for more than 10 min, the filter that is exceeding will shut down and a call out will be made to the on-call operator.</li> <li>• Filter Effluent Turbidity High High Alarm = 0.80 NTU - plant immediately alarms, calls out the on-call operator and filter shuts down.</li> <li>• Filter Effluent Turbidity Low Alarm = - 0.01 mg/L.</li> </ul> |                      |   |

|   |                      |                                       |
|---|----------------------|---------------------------------------|
| <b>Question ID</b>  | MRDW1038000          |                                       |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>        |
| 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 | Legislative          | SDWA   O. Reg. 170/03   6-5   (1) 1-4 |



|   |  |  |
|---|--|--|
| the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?  |  |  |
| <b>Observation</b>  |  |  |
| 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. 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. |  |  |
| INSPECTOR OBSERVATIONS:   |  |  |
| Final effluent chlorine residuals and filter effluent turbidity from of each filter, are read and recorded in the SCADA system every 60 seconds. Final effluent chlorine residuals are also documented on a chart recorder.   |  |  |
| Daily, the SCADA system prints out a summary of all the filter effluent turbidity data. Based on the data collected, every 15 minutes, the mean, maximum and average values of the previous 15 minutes of data are recorded.  |  |  |
| During the inspection, it was confirmed that the minimum testing and recording frequency was met for the inspection review period.  |  |  |

|   |                      |   |
|---|----------------------|---|
| <b>Question ID</b>  | MRDW1035000          |   |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>  |
| Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?  | Legislative          | SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10 |
| <b>Observation</b>  |                      |   |
| Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test.  |                      |   |
| INSPECTOR OBSERVATIONS:   |                      |   |
| Daily, operators review continuous treated water chlorine residual data, for the previous 24 hours, off the circle chart recorder and filter effluent turbidity from a printout of each filter's continuous data, for the previous 24 hour period. In addition, the trending for these parameters are reviewed on the facility's SCADA system, every 24 hours. The operations manual has a standard operating procedure for "Reviewing Continuous Monitoring Turbidity Test Results". |                      |   |

|  |                      |   |
|--|----------------------|---|
| <b>Question ID</b>   | MRDW1040000          |   |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>                  |
| Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation? | Legislative          | SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. |

|   |  |                                |
|---|--|--------------------------------|
|   |  | Reg. 170/03   6-5<br>  (1)5-10 |
| <b>Observation</b>  |  |                                |
| <p>All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation.</p> <p><b>INSPECTOR OBSERVATIONS:</b><br/>Reg. 170/03, section 6-5(1)8, requires that the continuous monitoring equipment must be checked and calibrated in accordance with the manufacturer's instructions.<br/>The Rosemont Chlorine Residual Analyzer is used to continuously monitor the treated water chlorine residual. The instruction manual for this instrument does not state how frequently the instrument is to be calibrated; therefore, O. Reg. 170/03, Schedule 6, section 6-5(1)10 applies. This section requires that the instrument be checked and calibrated as frequently as necessary to ensure that the margin of error for free chlorine residual test results are within 0.05 mg/L, if the concentrations usually measured by the equipment are less than or equal to 1.0 mg/L, and proportionally higher if the concentrations usually measured are greater than 1.0 mg/L. Documentation shows that the treated water chlorine analyzer was last calibrated by an outside party on August 11, 2021 and had been previously calibrated on August 4, 2020. In addition, manual chlorine residuals are taken daily and compared to the on-line analyzer. If the analyzer starts to drift, an in- house calibration is completed. Rosemount Clarity II Turbidity Analyzers are used to continuously monitor the filter effluent turbidity on each filter. The instruction manual, for these instruments requires that they be calibrated annually. Documentation shows that the filter 1, 3 and 4 turbidity analyzers were calibrated on August 11, 2021 and had been previously calibrated on August 4 and 5, 2020 (filter #2 was not calibrated because it is currently off-line and there are no plans to bring it back on-line at this time). In addition, in-house calibrations of the # 1, 3 and 4 filter effluent turbidity analyzers are completed.</p> |  |                                |

|  |                      |   |
|--|----------------------|---|
| <b>Question ID</b>   | MRDW1108000          |   |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>  |
| Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by Regulation 170, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions? | Legislative          | SDWA   O. Reg. 170/03   6-5   (1) 1-4,SDWA   O. Reg. 170/03   6-5   (1)5-10,SDWA   O. Reg. 170/03   6-5   (1.1) |
| <b>Observation</b>   |                      |   |
| 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.  |                      |   |

|                    |                      |                                |
|--------------------|----------------------|--------------------------------|
| <b>Question ID</b> | MRDW1018000          |                                |
| <b>Question</b>    | <b>Question Type</b> | <b>Legislative Requirement</b> |

|   |             |                 |
|---|-------------|-----------------|
| Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?  | Legislative | SDWA   31   (1) |
| <b>Observation</b>  |             |                 |
| <p>The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit.</p> <p>INSPECTOR OBSERVATIONS:<br/>During the inspection, ministry staff toured the water treatment plant and the water tower. All components were in place, as per DWWP #224-201; however the system was described as having a total of 4 chemical metering pumps for polymer injection; however, there are only two chemical metering pumps. During the next DWWP renewal, the description of the works is to be updated to reflect the equipment on site.</p> |             |                 |

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| <b>Question ID</b>  | MRDW1020000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 1 documents were prepared in accordance with their Drinking Water Works Permit?   | Legislative          | SDWA   31   (1)                |
| <b>Observation</b>  |                      |                                |
| <p>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.</p> <p>INSPECTOR OBSERVATIONS:<br/>Drinking Water Works Permit (DWWP) # 224-201 allows for the DWS to be altered by adding, modifying, replacing or extending a watermain within the distribution system if certain conditions are met. These conditions are outlined in DWWP, Schedule B, section 3.0(3.3) and includes the requirement for all work to be recorded on a "Form 1 - Record of Watermains Authorized as a Future Alteration", prior to the watermain, addition, modification.<br/>During the inspection review period, one form 1 document was completed for the replacement of watermains along Armit Avenue and the Armit and Avenue and Church Street intersection. It was confirmed that the Form 1 document was prepared prior to the work being completed and in accordance with the Drinking Water Works Permit.</p> |                      |                                |

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|---|----------------------|-----------------------------------|
| <b>Question ID</b>  | MRDW1023000          |                                   |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>    |
| Do records indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a DWWP and/or MDWL issued under Part V of the SDWA at all times that water was being supplied to consumers? | Legislative          | SDWA   O. Reg. 170/03   1-2   (2) |
| <b>Observation</b>  |                      |                                   |

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.

#### INSPECTOR OBSERVATIONS:

In accordance with O. Reg. 170/03, Schedule 1-2(2), surface water systems must have 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 Fort Frances WTP achieves the above performance criteria using conventional treatment consisting of coagulation, flocculation, sedimentation filtration, and chlorine disinfection.

Trends on the SCADA system were reviewed to ensure that minimum chlorine residuals were met continuously. Under worst case conditions (temp 0.5 degrees Celsius, pH 7.5, clear-well level 60% capacity, treated water flow 17000 cubic meters per day), a chlorine residual above 0.85 mg/L must be maintained to achieve adequate disinfection. Records reviewed during the inspection confirmed that the system was providing the required level of treatment throughout the inspection review period. If the treated water chlorine residual dropped below the alarm set point, the high lift pumps will shut down and stop the flow of water to the distribution system.

Monthly turbidity summaries were reviewed to ensure that the filtered water turbidity was less than or equal to 0.3 NTU in 95% of the measurements taken each month. This was met throughout the inspection review period.

|  |               |                                   |  |
|--|---------------|-----------------------------------|--|
| Question ID  | MRDW1024000   |                                   |  |
| Question   | Question Type | Legislative Requirement           |  |
| Do records confirm 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? | Legislative   | SDWA   O. Reg. 170/03   1-2   (2) |  |
| Observation  |               |                                   |  |
| 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.  |               |                                   |  |
| INSPECTOR OBSERVATIONS:  |               |                                   |  |
| Distribution chlorine levels must be maintained at or above 0.05 mg/L at all times. The lowest recorded chlorine level in the distribution system during the inspection review period was 0.21 mg/L, on September 3, 2021, from the water tower.   |               |                                   |  |

|                    |                 |                    |  |
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| <b>Question ID</b> | MRDW1025000     |                    |  |
| <b>Question</b>    | <b>Question</b> | <b>Legislative</b> |  |

|   | Type        | Requirement     |
|---|-------------|-----------------|
| Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?  | Legislative | SDWA   31   (1) |
| <b>Observation</b>  |             |                 |
| All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit.   |             |                 |
| INSPECTOR OBSERVATIONS:<br>DWWP #224-201, Schedule B, Condition 2.3 requires all parts of the drinking water system in contact with drinking water which are: added, modified, replaced, extended, or taken out of service for inspection, repair or other activities that lead to contamination, shall be disinfected before being put into service in accordance with the ministry's Watermain Disinfection Procedure. Distribution log books and Watermain Shut Down Reports were reviewed and demonstrated disinfection was taking place for work completed in the distribution system.<br>During the review period, there was no notable work done at the water treatment plant; however, operators are aware of the requirement to disinfect any piece of equipment/part, that is put into the system, that comes into contact with drinking water. Operators were reminded that they should document in the log book whenever they disinfect a piece of equipment. |             |                 |

| <b>Question ID</b>   | MRDW1062000   |                             |
|--|---------------|-----------------------------|
| Question   | Question Type | Legislative Requirement     |
| Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5?    | Legislative   | SDWA   O. Reg. 170/03   7-5 |
| <b>Observation</b>   |               |                             |
| 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. |               |                             |

| <b>Question ID</b>   | MRDW1060000   |                         |
|--|---------------|-------------------------|
| Question   | Question Type | Legislative Requirement |
| Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?  | Legislative   | SDWA   31   (1)         |
| <b>Observation</b>   |               |                         |
| 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. |               |                         |

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|---|-------------|----------------------|--------------------------------|
| <b>Question ID</b>  | MRDW1071000 |                      |                                |
| <b>Question</b>   |             | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Has the owner provided security measures to protect components of the drinking water system?  |             | BMP                  | Not Applicable                 |
| <b>Observation</b>  |             |                      |                                |
| <p>The owner had provided security measures to protect components of the drinking water system.</p> <p>INSPECTOR OBSERVATIONS:<br/>Water storage is provided by the clearwell at the DWS and by a water tower in the distribution system. All facilities are locked at all times when personnel are absent. The water tower is fenced and equipped with a locked gate.<br/>'No Trespassing' signs have been posted at both locations.</p> |             |                      |                                |

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| <b>Question ID</b>  | MRDW1073000 |                      |                                  |
| <b>Question</b>   |             | <b>Question Type</b> | <b>Legislative Requirement</b>   |
| Has the overall responsible operator been designated for all subsystems which comprise the drinking water system? |             | Legislative          | SDWA   O. Reg. 128/04   23   (1) |
| <b>Observation</b>  |             |                      |                                  |
| The overall responsible operator has been designated for each subsystem.  |             |                      |                                  |

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| <b>Question ID</b>  | MRDW1074000 |                      |                                  |
| <b>Question</b>   |             | <b>Question Type</b> | <b>Legislative Requirement</b>   |
| Have operators in charge been designated for all subsystems for which comprise the drinking water system? |             | Legislative          | SDWA   O. Reg. 128/04   25   (1) |
| <b>Observation</b>  |             |                      |                                  |
| Operators-in-charge had been designated for all subsystems which comprised the drinking water system.     |             |                      |                                  |

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| <b>Question ID</b>                                   | MRDW1075000 |                      |                                |
| <b>Question</b>                                      |             | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Do all operators possess the required certification? |             | Legislative          | SDWA   O. Reg. 128/04   22     |
| <b>Observation</b>                                   |             |                      |                                |
| All operators possessed the required certification.  |             |                      |                                |

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| <b>Question ID</b> | MRDW1076000 |                      |                                |
| <b>Question</b>    |             | <b>Question Type</b> | <b>Legislative Requirement</b> |

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| Do only certified operators make adjustments to the treatment equipment? | Legislative | SDWA   O. Reg. 170/03   1-2   (2) |
| <b>Observation</b>   |             |                                   |
| Only certified operators made adjustments to the treatment equipment.    |             |                                   |

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| <b>Question ID</b>  | MRDW1099000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Do records show 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)?                             | Information          | Not Applicable                 |
| <b>Observation</b>  |                      |                                |
| Records did not show 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).                         |                      |                                |
| INSPECTOR OBSERVATIONS:<br>On March 22, 2021, a microbiological distribution sample was taken and the result showed the presence of total coliforms. Resamples were taken as required and came back without the presence of bacteria. |                      |                                |

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| <b>Question ID</b>  | MRDW1091000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Where fluoridation is practiced, are the required daily samples being taken at the end of the fluoridation process?   | Legislative          | SDWA   O. Reg. 170/03   7-4    |
| <b>Observation</b>  |                      |                                |
| The required daily samples were being taken at the end of the fluoridation process.   |                      |                                |
| INSPECTOR OBSERVATIONS:<br>Schedule 7, section 7-4 of O. Reg. 170/03 requires that if a drinking water system provides fluoridation, the owner of the system and the operating authority for the system shall ensure that a water sample is taken at the end of the fluoridation process at least once every day and is tested for fluoride. Fluoride residuals were being recorded daily by operators. Fluoride is monitored by a continuous analyzer at the same location as the treated water chlorine analyzer, after treatment, prior to water leaving the plant.<br>During the review period, the highest fluoride residual observed from the daily recording of fluoride residual was 0.78 mg/L. The limit for fluoride is 1.5 mg/L. |                      |                                |

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| <b>Question ID</b>                                       | MRDW1094000          |                                |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Are all water quality monitoring requirements imposed by | Legislative          | SDWA   31   (1)                |



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| the MDWL and DWWP being met?  |  |  |
| <b>Observation</b>  |  |  |
| All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were being met. |  |  |

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| <b>Question ID</b>  | MRDW1096000          |                                   |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>    |
| Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?  | Legislative          | SDWA   O. Reg. 170/03   6-3   (1) |
| <b>Observation</b>  |                      |                                   |
| Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained. |                      |                                   |

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| <b>Question ID</b>   | MRDW1081000          |  |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>   |
| Are all microbiological water quality monitoring requirements for distribution samples being met?  | Legislative          | SDWA   O. Reg. 170/03   10-2   (1),SDWA   O. Reg. 170/03   10-2   (2),SDWA   O. Reg. 170/03   10-2   (3) |
| <b>Observation</b>   |                      |  |
| <p>All microbiological water quality monitoring requirements for distribution samples were being met.</p> <p><b>INSPECTOR OBSERVATIONS:</b><br/> O. Reg. 170/03, Schedule 10, section 10-2 requires owners and operating authorities of DWS's that serve 100,000 people or fewer to ensure that at least eight distribution samples plus one additional distribution sample for every 1,000 people served by the system are taken each month. At least one of the samples must be taken each week. The samples must be tested for E. coli and total coliform bacteria with at least 25% of the required samples to be tested for general bacteria measured using heterotrophic plate counts (HPC).<br/> The Fort Frances DWS serves a population of approximately 8,000 people; therefore, at least 16 distribution samples must be taken every month. This requirement was met throughout the inspection review period.</p> |                      |  |

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| <b>Question ID</b>                               | MRDW1083000          |                                |
| <b>Question</b>                                  | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Are all microbiological water quality monitoring | Legislative          | SDWA   O. Reg.                 |



|  |  |               |
|--|--|---------------|
| requirements for treated samples being met?  |  | 170/03   10-3 |
| <b>Observation</b>   |  |               |
| All microbiological water quality monitoring requirements for treated samples were being met.  |  |               |
| INSPECTOR OBSERVATIONS:<br>Section 10-3, O. Reg. 170/03, requires drinking water system owners to ensure that at least one treated water sample is taken every week (from the point of entry to the distribution system) and is tested for total coliform bacteria, E. coli, and HPC bacteria. Samples must be taken at least 5 days and not more than 10 days from when the previous weekly treated water sample was taken. |  |               |

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| <b>Question ID</b>  | MRDW1084000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Are all inorganic water quality monitoring requirements prescribed by legislation conducted within the required frequency?  | Legislative          | SDWA   O. Reg. 170/03   13-2   |
| <b>Observation</b>  |                      |                                |
| All inorganic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.   |                      |                                |
| INSPECTOR OBSERVATIONS:<br>Treated water samples must be taken at least once every 12 months (+/- 30 days from the anniversary of the previous sampling date) and tested for the inorganic parameters listed in O. Reg. 170/03, Schedule 23. These parameters were last sampled for on March 16, 2021, and had been previously sampled on March 18, 2020. |                      |                                |

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| <b>Question ID</b>   | MRDW1085000          |  |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>   |
| Are all organic water quality monitoring requirements prescribed by legislation conducted within the required frequency?   | Legislative          | SDWA   O. Reg. 170/03   13-4   (1),SDWA   O. Reg. 170/03   13-4   (2),SDWA   O. Reg. 170/03   13-4   (3) |
| <b>Observation</b>   |                      |  |
| All organic water quality monitoring requirements prescribed by legislation were conducted within the required frequency.  |                      |  |
| INSPECTOR OBSERVATIONS:<br>Treated water samples must be taken at least once every 12 months, +/- 30 days from the anniversary of the previous sampling date and tested for organic parameters listed in O. Reg. 170/03, Schedule 24. These parameters were last sampled for on March 16, 2021, and had been previously sampled on March 18, 2020. |                      |  |

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| <b>Question ID</b>   | MRDW1086000          |   |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>  |
| Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?  | Legislative          | SDWA   O. Reg. 170/03   13-6.1   (1),SDWA   O. Reg. 170/03   13-6.1   (2),SDWA   O. Reg. 170/03   13-6.1   (3),SDWA   O. Reg. 170/03   13-6.1   (4),SDWA   O. Reg. 170/03   13-6.1   (5),SDWA   O. Reg. 170/03   13-6.1   (6) |
| <b>Observation</b>   |                      |   |
| <p>All haloacetic acid water quality monitoring requirements prescribed by legislation are being conducted within the required frequency and at the required location.</p> <p><b>INSPECTOR OBSERVATIONS:</b></p> <p>In accordance with section 13-6.1, Schedule 13, O. Reg. 170/03, a sample from the distribution system or plumbing is required to be taken and tested for Haloacetic acid (i.e. HAAs) once in each calendar quarter, from a location that is likely to have an elevated potential for the formation of HAA's. During the inspection review period, HAA samples were collected from the water tower in each calendar quarter. The running annual average (RAA) at the time of the inspection was 64.5 ug/L, the maximum acceptable concentration is 80 ug/L.</p> |                      |   |

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| <b>Question ID</b>   | MRDW1087000          |                                    |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>     |
| Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?   | Legislative          | SDWA   O. Reg. 170/03   13-6   (1) |
| <b>Observation</b>   |                      |                                    |
| <p>All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location.</p> <p><b>INSPECTOR OBSERVATIONS:</b></p> <p>In accordance with section 13-6, Schedule 13, O. Reg. 170/03, a sample from the distribution system or plumbing is required to be taken and tested for Trihalomethanes (i.e. HAAs) once in each calendar quarter, from a location that is likely to have an elevated potential for the formation of THM's.</p> |                      |                                    |

During the inspection review period, THM samples were collected from the water tower, in each calendar quarter. The running annual average THM concentration at the time of the inspection was 96.1 ug/L, the maximum acceptable concentration is 100 ug/L.

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|---|-------------|---------------|------------------------------|
| Question ID   | MRDW1088000 |               |                              |
| Question  |             | Question Type | Legislative Requirement      |
| Are all nitrate/nitrite water quality monitoring requirements prescribed by legislation conducted within the required frequency for the DWS?  |             | Legislative   | SDWA   O. Reg. 170/03   13-7 |
| Observation   |             |               |                              |
| All nitrate/nitrite water quality monitoring requirements prescribed by legislation were conducted within the required frequency for the DWS. |             |               |                              |

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| Question ID  | MRDW1089000   |                              |  |
| Question   | Question Type   | Legislative Requirement      |  |
| Are all sodium water quality monitoring requirements prescribed by legislation conducted within the required frequency?  | Legislative   | SDWA   O. Reg. 170/03   13-8 |  |
| Observation  | . All sodium water quality monitoring requirements prescribed by legislation were conducted within the required frequency |                              |  |
| INSPECTOR OBSERVATIONS:<br>Sodium samples must be collected from the WTP at the point of entry to the distribution system at least once every 60 months to meet the requirements of O. Reg. 170/03, Schedule 13, section 13-8. A sodium sample was last collected from the Fort Frances WTP on March 18, 2020 and the result was 18.2 mg/L. It had been previously sampled on March 9, 2015. |   |                              |  |

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|--|-------------|---------------|-------------------------|
| Question ID  | MRDW1100000 |               |                         |
| Question   |             | Question Type | Legislative Requirement |
| Did any reportable adverse/exceedance conditions occur during the inspection period? |             | Information   | Not Applicable          |
| Observation  |             |               |                         |
| There were reportable adverse/exceedances during the inspection period.              |             |               |                         |

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| <b>Question ID</b>  | MRDW1101000          |                                |  |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |  |
| Have corrective actions (as per Schedule 17) been taken to address adverse conditions, including any other steps as | Legislative          | SDWA   O. Reg. 170/03   17-1,  |  |

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|--|--|---|
| directed by the Medical Officer of Health?   |  | SDWA   O. Reg. 170/03   17-10   (1),SDWA   O. Reg. 170/03   17-10   (2),SDWA   O. Reg. 170/03   17-11,SDWA   O. Reg. 170/03   17-12,SDWA   O. Reg. 170/03   17-13,SDWA   O. Reg. 170/03   17-14,SDWA   O. Reg. 170/03   17-2,SDWA   O. Reg. 170/03   17-3,SDWA   O. Reg. 170/03   17-4,SDWA   O. Reg. 170/03   17-5,SDWA   O. Reg. 170/03   17-6,SDWA   O. Reg. 170/03   17-9 |
| <b>Observation</b>   |  |   |
| 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. |  |   |

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|---|----------------------|------------------------------------|
| <b>Question ID</b>  | MRDW1113000          |                                    |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>     |
| Have all changes to the system registration information been provided to the Ministry within ten (10) days of the change? | Legislative          | SDWA   O. Reg. 170/03   10.1   (3) |
| <b>Observation</b>  |                      |                                    |
| All changes to the system registration information were provided within ten (10) days of the change.                      |                      |                                    |

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| <b>Question ID</b>   | MRDW1104000          |  |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>                                 |
| Were all required verbal notifications of adverse water quality incidents immediately provided as per O. Reg. 170/03 16-6? | Legislative          | SDWA   O. Reg. 170/03   16-6   (1),SDWA   O. Reg. 170/03   16- |

|   |  |   |
|---|--|---|
|   |  | 6   (2),SDWA   O.<br>Reg. 170/03   16-<br>6   (3),SDWA   O.<br>Reg. 170/03   16-<br>6   (3.1),SDWA  <br>O. Reg. 170/03  <br>16-6   (3.2),<br>SDWA   O. Reg.<br>170/03   16-6  <br>(4),SDWA   O.<br>Reg. 170/03   16-<br>6   (5),SDWA   O.<br>Reg. 170/03   16-<br>6   (6) |
| <b>Observation</b>  |  |   |
| All required notifications of adverse water quality incidents were immediately provided as per O. Reg. 170/03 16-6. |  |   |

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|---|----------------------|--------------------------------|
| <b>Question ID</b>  | MRDW1116000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Were the inspection questions sufficient to address other identified best practice issues?  | BMP                  | Not Applicable                 |
| <b>Observation</b>  |                      |                                |
| <p>The following item was also noted during the inspection:</p> <p>Daily, operators manually sample the treated water chlorine residual and compare the result to the reading on the in-line continuous analyzer. If operators observe the continuous analyzer is drifting, they will calibrate the analyzer to reflect the residual obtained from the handheld instrument.</p> <p>When the daily check is completed, operators do not document the residual obtained from the hand held instrument, in comparison to the continuous analyzer. Furthermore, when a calibration is completed it is unknown what the continuous analyzer was reading prior to and after the instrument was calibrated.</p> <p><b>RECOMMENDATION:</b></p> <p>It is recommended that the daily treated water chlorine residual result obtained from the handheld colorimeter be documented, as well as the residual from treated water continuous chlorine analyzer, from the same time. This will assist in demonstrating that the continuous chlorine analyzer is being operated within the allowable margin of error and calibrated as required.</p> |                      |                                |

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| <b>Question ID</b>  | MRDW1117000          |                                |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b> |
| Are there any other DWS related items that should be recognized in this report? | Information          | Not Applicable                 |

### Observation

The following items are noted as being relevant to the Drinking Water System: The Fort Frances DWWP describes the facility's polyelectrolytes/polymer system as having:

- Two (2) chemical metering pumps for polyelectrolytes injection complete with aging and batch tanks
- Two (2) chemical metering pumps for polymer injection complete with aging and solution tanks (used as back-up)

During the inspection it was identified that the facility only has 2 chemical metering pumps for polyelectrolytes injection. Schedule B, section 2.4 of DWWP 224-201, Issue 3 requires that the Director be notified of any alteration to the description of a drinking water system component described in Schedule A of this DWWP.

### CORRECTIVE ACTION:

Effective immediately, the Town of Fort Frances must ensure that the components as described in the facility's DWWP are consistent with the on-site components of the system. To achieve this, the Town of Fort Frances can complete one of the following:

- acquire 2 additional chemical metering pumps for polymer injection complete with aging and solution tanks to be used as back-up
- complete a Form 2 that describes the actual # of polymer metering pumps on-site and submit to the ministry a Director's Notification Form that summarizes the change in the description of the works

By March 18, 2022, the owner is to provide written notification to the undersigned officer that either:

- two additional pumps have been acquired or are being acquired or
- a completed Director's Notification Form has been submitted to this ministry describing the change to the description of the works

|   |             |               |                            |
|---|-------------|---------------|----------------------------|
| Question ID   | MRDW1059000 |               |                            |
| Question  |             | Question Type | Legislative Requirement    |
| Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system? |             | Legislative   | SDWA   O. Reg. 128/04   28 |
| Observation   |             |               |                            |
| The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system.  |             |               |                            |

|  |                      |   |  |
|--|----------------------|---|--|
| <b>Question ID</b>   | MRDW1061000          |   |  |
| <b>Question</b>  | <b>Question Type</b> | <b>Legislative Requirement</b>                      |  |
| Are logbooks properly maintained and contain the required information? | Legislative          | SDWA   O. Reg. 128/04   27   (1),<br>SDWA   O. Reg. |  |

|   |  |   |
|---|--|---|
|   |  | 128/04   27   (2),<br>SDWA   O. Reg.<br>128/04   27   (3),<br>SDWA   O. Reg.<br>128/04   27   (4),<br>SDWA   O. Reg.<br>128/04   27   (5),<br>SDWA   O. Reg.<br>128/04   27   (6),<br>SDWA   O. Reg.<br>128/04   27   (7) |
| <b>Observation</b>  |  |   |
| Logbooks were properly maintained and contained the required information. |  |   |

|   |                      |                                    |
|---|----------------------|------------------------------------|
| <b>Question ID</b>  | MRDW1103000          |                                    |
| <b>Question</b>   | <b>Question Type</b> | <b>Legislative Requirement</b>     |
| Have corrective actions as directed by the Medical Officer of Health been taken by the owner and operating authority to address exceedances of the lead standard? | Legislative          | SDWA   O. Reg.<br>170/03   15.1-10 |
| <b>Observation</b>  |                      |                                    |
| Corrective actions as directed by the Medical Officer of Health had been taken by the owner and operating authority to address exceedances of the lead standard.  |                      |                                    |

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**Key Reference Materials**

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

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Public Information Centre if you need assistance or have questions at 1-800-565-4923/416-325-4000 or [picemail.moe@ontario.ca](mailto:picemail.moe@ontario.ca).

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



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

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

# 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](mailto: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](http://www.ontario.ca/eaupotable) ou envoyez un courriel à [drinking.water@ontario.ca](mailto: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](http://ontario.ca/eaupotable)

Ministry of the Environment, Conservation and Parks - Inspection Summary Rating Record (Reporting Year - 2021-2022)

**DWS Name:** FORT FRANCES DRINKING WATER SYSTEM  
**DWS Number:** 220000978  
**DWS Owner:** CORPORATION OF THE TOWN OF FORT FRANCES ADMINISTRATION  
**Municipal Location:** FORT FRANCES

**Regulation:** O.REG. 170/03  
**DWS Category:** DW Municipal Residential  
**Type of Inspection:** Focused  
**Inspection Date:** Jan-26-22  
**Ministry Office:** Kenora Area Office

**Maximum Risk Rating:** 528

| Inspection Module              | Non Compliance Rating |
|--------------------------------|-----------------------|
| Source                         | 0 / 0                 |
| Capacity Assessment            | 0 / 30                |
| Treatment Processes            | 0 / 214               |
| Operations Manuals             | 0 / 28                |
| Logbooks                       | 0 / 18                |
| Certification and Training     | 0 / 42                |
| Water Quality Monitoring       | 0 / 112               |
| Reporting & Corrective Actions | 0 / 84                |
| <b>Overall - Calculated</b>    | <b>0 / 528</b>        |

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

|                                 |                |
|---------------------------------|----------------|
| <b>Final Inspection Rating:</b> | <b>100.00%</b> |
|---------------------------------|----------------|

Ministry of the Environment, Conservation and Parks - Detailed Inspection Rating Record (Reporting Year - 2021-2022)

**DWS Name:** FORT FRANCES DRINKING WATER SYSTEM

**DWS Number:** 220000978

**DWS Owner Name:** CORPORATION OF THE TOWN OF FORT FRANCES ADMINISTRATION

**Municipal Location:** FORT FRANCES

**Regulation:** O.REG. 170/03

**DWS Category:** DW Municipal Residential

**Type of Inspection:** Focused

**Inspection Date:** Jan-26-22

**Ministry Office:** Kenora Area Office

*All legislative requirements were met. No detailed rating scores.*

Maximum Question Rating: 528

|                         |       |
|-------------------------|-------|
| Inspection Risk Rating: | 0.00% |
|-------------------------|-------|

|                          |         |
|--------------------------|---------|
| FINAL INSPECTION RATING: | 100.00% |
|--------------------------|---------|

# 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](http://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:

**RISK = LIKELIHOOD × 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<br>Administrative<br>Consequence   | Major<br>Administrative<br>Consequence | Minor<br>Environmental<br>Consequence | Minor<br>Health<br>Consequence | Medium<br>Environmental<br>Consequence | Major<br>Environmental<br>Consequence | Medium<br>Health<br>Consequence | Major<br>Health<br>Consequence |
| L=4<br>(Almost<br>Certain)  | L=1<br>(Unlikely)                      | L=2<br>(Possible)                     | L=3<br>(Likely)                | L=3<br>(Likely)                        | L=1<br>(Unlikely)                     | L=3<br>(Likely)                 | L=2<br>(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).

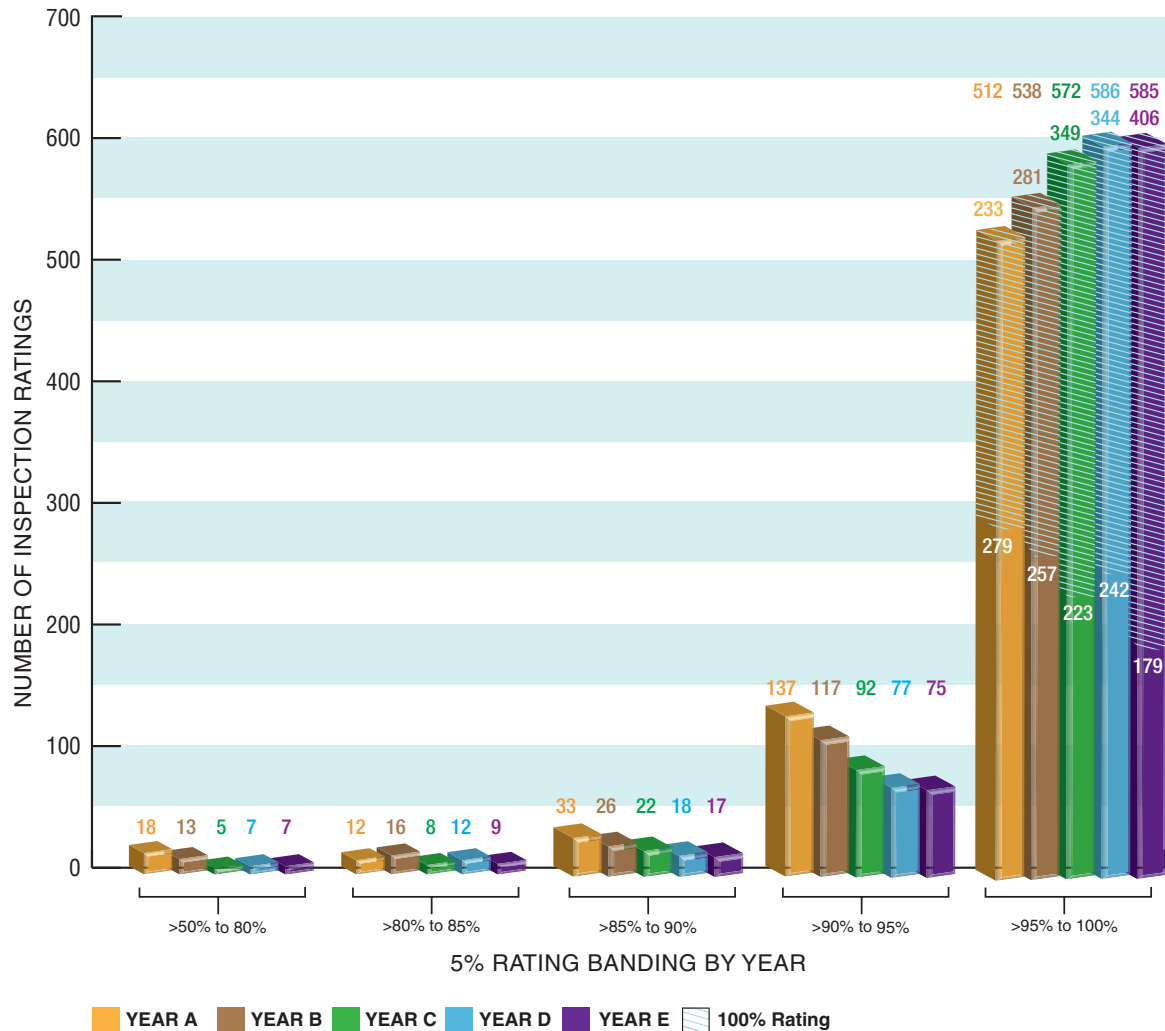
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

# 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)



**Appendix “F”**

**DWQMS Certificate of Accreditation**



# CERTIFICATE OF ACCREDITATION

This is to certify that the following operating authority:

## **The Corporation of the Town of Fort Frances**

320 Portage Avenue, Fort Frances, Ontario P9A 2P9 Canada

Refer to Attachment to Certificate of Accreditation dated December 21, 2021 for additional drinking water systems  
operates a

## **Quality Management System**

which conforms with the requirements of

## **DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017**

for the following scope of accreditation

### **Full Scope - Entire DWQMS**

Certificate No.: CERT-0145422  
File No.: 1631580  
Issue Date: December 21, 2021

Original Certification Date: December 7, 2012  
Certification Effective Date: February 17, 2022

Frank Camasta  
Global Head of Technical Services  
SAI Global Assurance



DWQMS 2017



# ATTACHMENT TO CERTIFICATE OF ACCREDITATION

These sites are accredited under Certificate No: CERT-0145422 issued on December 21, 2021

**File No.**

1631580

**The Corporation of the Town of Fort Frances**

320 Portage Avenue, Fort Frances, Ontario P9A 2P9 Canada

**Effective Date**

February 17, 2022

**Drinking Water Systems**

|     | <b>Site No.</b> | <b>Site Name</b>                   |
|-----|-----------------|------------------------------------|
| Yes | 1633091         | Fort Frances Drinking Water System |

These accreditations are dependent on The Corporation of the Town of Fort Frances (File No. 1631580) maintaining their scope of registration to DRINKING WATER QUALITY MANAGEMENT STANDARD VERSION 2 - 2017

## **List of References**

Safe Drinking Water Act, 2002 (SDWA)

Ontario Regulation 170/03 of the SDWA (Drinking Water Systems),

Ontario Regulation 128/04 of the SDWA (Certification of Drinking Water System Operators and Water Quality Analysts),

Ontario Regulation 169/03 of the SDWA (Ontario Drinking Water Quality Standards)

Ontario Regulation 188/07 of the SDWA (Licensing of Municipal Drinking Water Systems)