TOWN OF FORT FRANCES

Operations and Facilities Executive Committee

AGENDA - March 20, 2019, 8:30 AM

MEETING - Civic Centre

Session #005

			Page
1.	**Call to Order**		
2.	**Disclosure of pecuniary interest and the general nature thereof**		
3.	**Approval of Previous Committee Minutes**		
	3.1	Minutes from the previous meeting on February 20, 2019.	2 - 3
4.	**Non-agenda Items**		
5.	**New Business**		
	5.1	2018 Drinking Water Systems Annual Report - Schedule 22	4 - 93
6.	**Information**		
	6.1	Fort Frances Wastewater Treatment Facility February 2019 Monthly Report	94 - 100
	6.2	2019 - Tonnage at the Landfill Site	101
	6.3	Aircraft Statistics 2019	102 - 103
	6.4	Maintenance Summary for February 2019	104 - 109
7.	**Adjourn / Next Meeting Date**		

TOWN OF FORT FRANCES

MINUTES SESSION NO. #004 February 20, 2019

The meeting of Operations & Facilities Executive Committee of the Town of Fort Frances was held in the Civic Centre on February 20, 2019 from 8:30 a.m. to 9:31 a.m.

PRESENT: Chairperson R. Wiedenhoeft - Councillor, M. Behan - Councillor, J. McTaggart - Councillor, Doug Brown, CAO and Travis Rob.

ALSO PRESENT: Mayor June Caul

1 Call to Order

1.1 The meeting was called to order at 8:30 a.m.

2 Disclosure of pecuniary interest and the general nature thereof

2.1 None

3 Approval of Previous Committee Minutes

3.1 Minutes from the previous meeting of this committee on February 6th, 2019 the minutes were approved as circualted.

4 Non-agenda Items

4.1 None

5 New Business

5.1 Report No. 3 - Establishing 2019 Water and Sewer Rates - Scenario No. 2 was recommended as presented.

5.2 Renewal of Bearskin Annual Lease - the Bearskin lease was renewed as recommended.

6 Information

6.1 Aircraft Statistics as of February 15, 2019 - the statistics were reviewed and will be forwarded to Council as information only. No action required.

6.2 Tonnage at the Landfill Site - the Landfill Statistics were reviewed and will be

forwarded to Council as information only. No action required.

7 Adjourn / Next Meeting Date

7.1 Meeting adjourned at 9:31 a.m. Next meeting scheduled for March 20, 2019.

_____
Executive Committee Chair

_____
T. Rob, Manager of Operations & Facilities

Page 3 of 109

March 20, 2019

Report To: Mayor and Council

From: Travis Rob, Manager of Operations and Facilities

RE: 2018 Drinking Water System Annual Report – Schedule 22

Administration is required to present to Council (owner) the 2018 Schedule 22 Summary Report prior to the March 31, 2019 deadline. Please find attached the Administration Report prepared by Craig Miller, Environmental Superintendent outlining the 2018 Schedule 22 Summary Report for the Town's Large Residential Drinking Water System. The entire Schedule 22 Summary Report is attached for your review and acceptance.

Also attached to the administration report prepared by Craig Miller outlined in appendix "D" is the MOE 2018/19 Drinking Water Inspection Report from their "unannounced focused" inspection, which was conducted on February 11 and 12, 2019. There was one area of non-compliance found during this inspection which was minor in nature. The Town is required to submit to the Ministry a Form 1 outlining any addition to their drinking water system. The 2018 Form 1 completed for the construction works did not include the watermain looping work completed on Frenette Avenue. A Form 1 is being prepared for that work and will be submitted to the Ministry in short order. There were a few areas where the Town could change process or equipment to better meet the regulations and these are being considered by the Operations and Facilities Division at this time.

Further, I would like to acknowledge all the efforts and hard work of the following staff members during this period; Doug Herr – Former Environmental and Facilities Superintendent, Craig Miller Environmental Superintendent, Randy White – Overall Responsible Operator, Brad Webb - Senior Water Treatment Plant (WTP) Operator, Paul Lemesurier - WTP Operator, Greg Wiedenhoeft -Water Distribution System Operator, Travis George – Former Water Distribution System Operator, Jay Bruyere – Water Distribution System Operator, Linda Carmody – Former Water Distribution Operator, Brian Patterson – Water Distribution Operator, and Joel Nicolay – Water Distribution Operator in Training (OIC) to ensure that all consumers connected to the Town's drinking water system receive outstanding potable water at all times. Please keep up the good work.

The 2018 Schedule 22 (Compliance) Summary Report will be available for inspection or review by any member of the public at the Water Treatment Plant or the Public Works Office during regular business hours without charge. Also, a copy of the report will be forwarded to Couchiching First Nations, the Walleye Trailer Park and the Lakeview Trailer Park prior to March 31, 2018. Also a copy of the report will be posted on the Town's website.

The Operations and Facilities Executive Committee recommends the following;

1. That Council accepts the 2018 Schedule 22 Annual Summary Report and that a separate resolution be prepared.

2. That the 2018/2019 MOE "Unannounced focused" Inspection Report of the Town's water system be reviewed and accepted by Council.

3. That at this time, the staff of the drinking water system should be acknowledged for all their effort and hard work to ensure that all consumers connected to the Town's water system receive outstanding water. Please keep up the good work.

Respectfully Submitted

Travis Rob, P.Eng

Manager of Operations and Facilities

Council approval of this report will ensure:

1. **That Council accepts the 2018 Schedule 22 Annual Summary Report and that a separate resolution be prepared.**
2. **That the 2018/2019 MOE "Unannounced focused" Inspection Report of the Town's water system be reviewed and accepted by Council.**
3. **That at this time, the staff of the drinking water system should be acknowledged for all their effort and hard work to ensure that all consumers connected to the Town's water system receive outstanding water. Please keep up the good work.**

2019March Schedule 22 Report

March 7, 2019

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

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

SUBJECT: Fort Frances Drinking Water System
2019 Annual Summary Report (O. Reg. 170/03, Schedule 22)

and

Ministry of the Environment Inspection Report – 2018/2019

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. 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 MOECC Drinking Water Inspection Report from the Ministry inspection conducted February 4th and 5th, 2019.

Once approved by council, a copy of the summary report will be sent to the Owners that connected to and receive drinking water for the Town system. Finally a copy of the report will be posted on the Town's website for public viewing.

Respectfully submitted,

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, 2018 TO DECEMBER 31, 2018

DRINKING WATER SYSTEM #220000978

Prepared by: Craig Miller, P.Eng.

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Appendix:

Appendix "A" - Municipal Drinking Water License
Appendix "B" - Drinking Water Works Permit
Appendix "C" - Permit to Take Water
Appendix "D" - Drinking Water System Inspection Program (2017 – 2018 Inspection Report)

List of References

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 considered to be a large municipal residential system.

2.0 General Overview

The reporting period for this report is January 01 to December 31, 2018.

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, Issue Number: 2, issued May 13, 2016;
2. Drinking Water Works Permit (DWWP) No. 224-201, Issue Number 2: issued May 13, 2016;
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 Transfer

   Permit 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:
(Amendment O. Reg. 185/18, March 27, 2018 to Current)
(Amendment O. Reg. 509/17, December 15, 2017 to March 26, 2018)
Etc.

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, 2018 to December 31, 2018, 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 2018 reporting period:

- Municipal Drinking Water License (No. 224-101), Issue Number: 2: Issued May 13, 2016.
- Drinking Water Works Permit (No. 224-201), Issue Number: 2: Issued May 13, 2016.
- 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 incidences 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 incidences 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 were no incidences of non-compliance with the Terms and Conditions of Ontario Regulation 169/03 during this reporting period.

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

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

**New Municipal Drinking Water License and Drinking Water Works Permit received May 13, 2016.

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

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

Further to the Inspection Report the Ministry has established 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 scored 100%.

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.

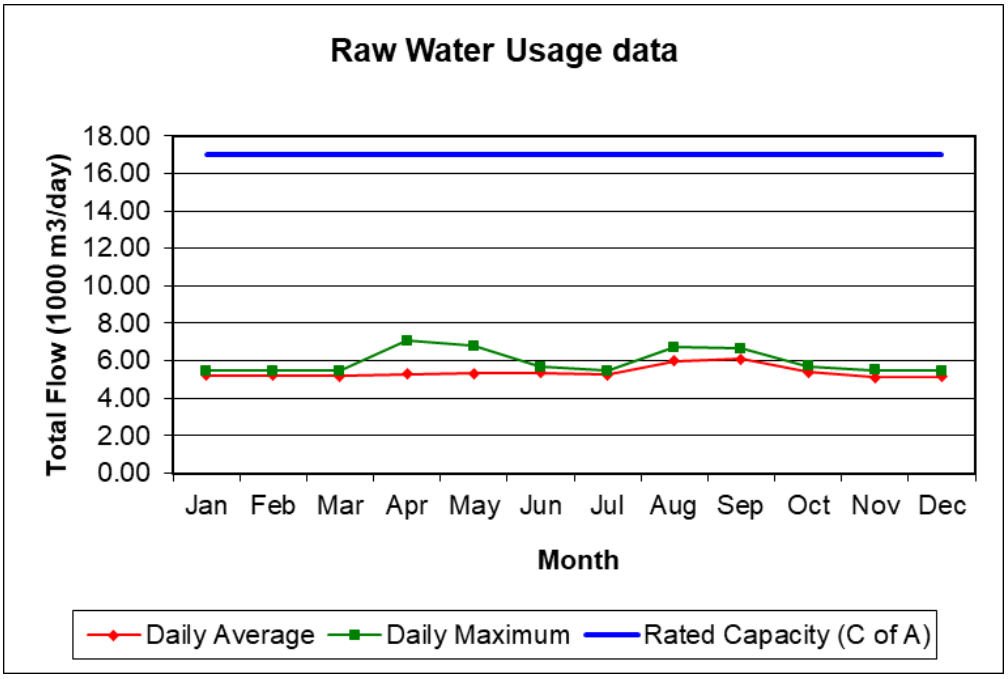
6.0 Quantity and Flow Data (2018)

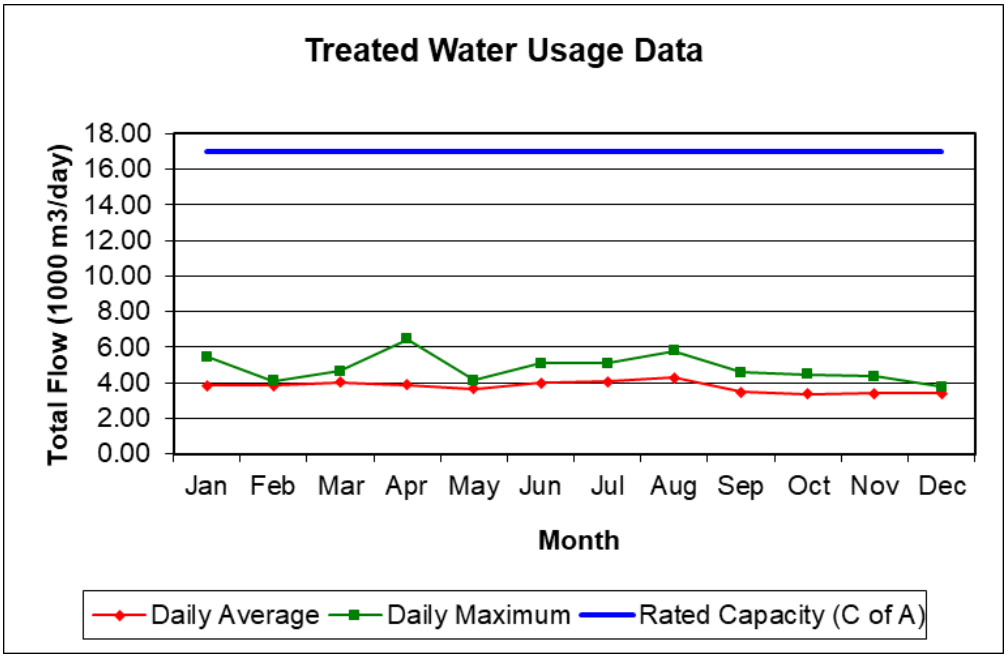
The following tables and graphs indicate the quantities and flow rates of water taken and produced during the reporting period, including monthly average flows, maximum daily flows and total monthly volumes.

Table 1 - RAW WATER USAGE - 2018				
Month	**Total Flow 1000 m³ / month**	**Average Daily Flow 1000 m³ / day**	**Maximum Daily Flow 1000 m³ / day**	**Max Daily Design Capacity 1000 m3 / day**
January	161.76	5.22	5.46	17
February	146.62	5.24	5.46	17
March	160.43	5.18	5.47	17
April	153.24	5.11	7.07	17
May	159.48	5.14	6.78	17
June	160.74	5.36	5.66	17
July	163.39	5.27	5.46	17
August	185.98	6.00	6.74	17
September	183.37	6.11	6.64	17
October	167.05	5.39	5.72	17
November	153.49	5.12	5.52	17
December	159.82	5.16	5.48	17
Annual Totals	1955.37	5.36		

Table 2 - TREATED WATER USAGE - 2018				
Month	**Total Flow 1000 m³ / month**	**Average Daily Flow 1000 m³ / day**	**Maximum Daily Flow 1000 m³ / day**	**Max Daily Design Capacity 1000 m3 / day**
January	115.51	3.73	4.11	17
February	107.41	3.84	4.09	17
March	124.80	4.03	4.64	17
April	115.85	3.86	6.46	17
May	109.23	3.52	4.13	17
June	119.76	3.99	5.08	17
July	125.81	4.06	5.10	17
August	132.73	4.28	5.78	17
September	104.13	3.47	4.59	17
October	103.78	3.35	4.45	17
November	101.43	3.38	4.35	17
December	104.79	3.38	3.76	17
Annual Totals	1365.23	3.74		

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 2018 was 7,070 m³/day, which is 41.6% 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 2018 was 6,460 m³/day, which is 38.0% 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, 2018.

Appendix "A"

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

Appendix "B"

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

Appendix "C"

PERMIT TO TAKE WATER
Surface Water
Number 3528-AE6PEM

Appendix "D"

DRINKING WATER SYSTEM INSPECTION PROGRAM
(2018 – 2019 Inspection Report)

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)

MUNICIPAL DRINKING WATER LICENCE

Licence Number: 224-101
Issue Number: 2

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this municipal drinking water licence is issued 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:

Schedule	Description
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

DATED at TORONTO this 13th day of May, 2016

Signature

Indra R. Prashad, 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**
Schedule A Issue Date	**May 13th, 2016**

The following information is applicable to the above drinking water system and forms part of this licence:

Licence

Licence Issue Date	May 13th, 2016
Licence Expiry Date	May 12th, 2021
Application for Licence Renewal Date	November 12th, 2020

Drinking Water Works Permit

Drinking Water System Name	Permit Number	Issue Date
Fort Frances Drinking Water System	224-201	May 13th, 2016

Permits to Take Water

Water Taking Location	Permit Number	Issue Date
Rainy River	7280-6UAMD9	October 05, 2006

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

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**
Schedule B Issue Date	**May 13th, 2016**

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 that, based on generally available information, may be emitted from a component of the drinking water system to the atmosphere in a quantity that is significant either in comparison to the relevant point of impingement limit or if a point of impingement limit is not available for the compound, then based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the EPA at a point of impingement;

"**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 the table that was prepared by a Professional Engineer in accordance with O. Reg. 419/05 and the procedure document listing the appropriate point of impingement concentrations of each compound of concern emitted from a component of the drinking water system and providing comparison to the corresponding point of impingement limit;

"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;

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

"**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;

"**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**" means any point in the natural environment that is not on the same property as the source of the contaminant and as defined by section 2 of O. Reg. 419/05;

"**point of impingement limit**" means the appropriate standard from Schedule 1, 2 or 3 of O. Reg. 419/05 and if a standard is not provided for a compound of concern, the appropriate criteria listed in the Ministry of the Environment and Climate Change publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution – Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended;

"**procedure document**" means the Ministry of the Environment and Climate Change procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated July 2005, as amended;

"**Professional Engineer**" means a Professional Engineer who has been licenced to practice in the Province of Ontario;

"**provincial officer**" means a provincial officer appointed pursuant to section 8 of the SDWA;

"**publication NPC-300**" means the Ministry of the Environment and Climate Change publication titled "Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning" dated August 2013, as amended;

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

"**sensitive populations**" means any one or a combination of the following locations where the health effects of nitrogen oxides emissions from emergency generators shall be considered using the point of impingement limit instead of the Ministry of the Environment and Climate Change screening level for emergency generators:

(a) health care units (e.g., hospitals and nursing homes),
(b) primary/junior public schools,
(c) day-care facilities, and
(d) playgrounds;

"**subsystem**" has the same meaning as in Ontario Regulation 128/04 (Certification of Drinking Water System Operators and Water Quality Analysts);

"**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;

2.0 Applicability

2.1 In addition to any other 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 Schedule A Issue Date.

7.2 A drinking water works permit identified in Schedule A of this licence is the applicable permit on the date identified as the Schedule A Issue Date.

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.

9.2 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 of the Environment and Climate Change 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 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.

14.1.2 The requirement for the owner to comply with NSF/372 shall come into force no later than July 01, 2018.

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; or

14.3.6 Any particular chemical or material where the owner has written documentation signed by the Director that indicates that the Ministry of the Environment and Climate Change 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 substantial completion of the alteration.

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 by 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

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 The requirement for the owner to comply with condition 16.2.3 shall come into force on January 01, 2017.

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**
Schedule C Issue Date	**May 13th, 2016**

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 Treatment Subsystem Name	Column 2 Rated Capacity (m^3/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 Treatment Subsystem Name	Column 2 Treatment Subsystem Component	Column 3 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.

Residue 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 not exceed the value in column 3 of the same row; and

1.5.2 The maximum concentration of a test parameter identified in column 2 shall not exceed the value in column 4 of the same row.

Table 3: Residue Management

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Annual Average Concentration (mg/L)	Column 4 Maximum Concentration (mg/L)
Not Applicable	Not Applicable	Not Applicable	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:

1.6.1 The UV disinfection equipment shall be operated 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 at the maximum design flow rate for the equipment;

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, 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, 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 **Treatment Subsystem or Treatment Subsystem Component Name**	**Column 2** **Minimum Continuous Pass-Through UV Dose (mJ/cm^2)**	**Column 3** **Control Strategy**	**Column 4** **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 and daily volume of treated water that flows from the treatment subsystem to the distribution system.

2.1.2 The flow rate and daily volume 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, or by a condition otherwise imposed by the Ministry of the Environment and Climate Change, shall be checked and 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 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 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 Additional Sampling, Testing and Monitoring

Drinking Water Health and Non-Health Related Parameters

4.1 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

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Table 6: Drinking Water Non-Health Related Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sampling Frequency	Column 4 Monitoring Location
Not Applicable	Not Applicable	Not Applicable	Not Applicable

Environmental Discharge Parameters

4.2 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.

4.3 For the purposes of Table 7:

4.3.1 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

4.3.2 Automated Composite means samples must be taken during a discharge event by an automated sampler at a minimum sampling frequency of once per hour.

4.4 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", 21st Edition, 2005, or as amended from time to time by more recently published editions.

Table 7: Environmental Discharge Parameters

Column 1 Treatment Subsystem or Treatment Subsystem Component Name	Column 2 Test Parameter	Column 3 Sample Type	Column 4 Sampling Frequency	Column 5 Monitoring Location
Fort Frances Water Treatment Plant	Total Suspended Solids	Composite	Quarterly	Point of discharge to Rainy River

4.5 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:

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

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

4.5.2.1 To a road or storm sewer; or

4.5.2.2 To a watercourse where the discharge has been dechlorinated and if necessary, sediment and erosion control measures have been implemented.

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

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

4.5.5 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.

5.0 Studies Required

5.1 Not applicable

6.0 Source Protection

6.1 Not applicable

Schedule D: Conditions for Relief from Regulatory Requirements

System Owner	**The Corporation of the Town of Fort Frances**
Licence Number	**224-101**
Drinking Water System Name	**Fort Frances Drinking Water System**
Schedule D Issue Date	**May 13th, 2016**

1.0 Lead Regulatory Relief

1.1 Any relief from regulatory requirements previously authorized by the Director in respect of the drinking water system under section 38 of the SDWA in relation to the sampling, testing or monitoring requirements contained in Schedule 15.1 of O. Reg. 170/03 shall remain in force until such time as Schedule 15.1 of O. Reg. 170/03 is amended after June 1, 2009.

2.0 Other Regulatory Relief

2.1 Not Applicable.

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**
Schedule E Issue Date	**May 13th, 2016**

1.0 Primary Disinfection Pathogen Log Removal/Inactivation Credits

Fort Frances Water Treatment Plant

Rainy River [SURFACE WATER]

Minimum Log Removal/ Inactivation Required	Cryptosporidium Oocysts	Giardia Cysts [a]	Viruses [b]
Fort Frances Water Treatment Plant	2	3	4

[a] At least 0.5 log inactivation of Giardia shall be achieved by the disinfection portion of the overall water treatment process.
[b] At least 2 log inactivation of viruses shall be achieved by disinfection.

Log Removal/Inactivation Credits Assigned [c]	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+

[c] 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	1. A chemical coagulant shall be used at all times when the treatment plant is in operation; 2. Chemical dosages shall be monitored and adjusted in response to variations in raw water quality; 3. Effective backwash procedures shall be maintained including filter-to-waste or an equivalent procedure during filter ripening to ensure that effluent turbidity requirements are met at all times; 4. Filtrate turbidity shall be continuously monitored from each filter; and 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.
Chlorination	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 2. At all times, CT provided shall be greater than or equal to the CT required to achieve the log removal credits assigned.
Primary Disinfection Notes	

DRINKING WATER WORKS PERMIT

Permit Number: 224-201
Issue Number: 2

Pursuant to the *Safe Drinking Water Act*, 2002, S.O. 2002, c. 32, and the regulations made thereunder and subject to the limitations thereof, this drinking water works permit is issued 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:

Schedule	Description
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

DATED at TORONTO this 13th day of May, 2016

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**
Schedule A Issue Date	**May 13th, 2016**

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.

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^2 in area
Notes	Screen chamber located ahead of raw water pumping well

Low Lift Pumps

Description	Three (3) vertical turbine low lift pumps
Capacity	- Two (2) pumps rated at 100 L/s against a total dynamic head (TDH) of 14 m - 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
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^2
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^3 capacity
Notes	

On-Site Storage

Chemical Contact Chamber

Description	One (1) chemical contact chamber to provide chlorine contact time
Volume	240 m^3
Notes	

Clearwell/Reservoir

Description	Two-celled, ground storage reservoir
Capacity	Cell No. 1 = 2,565 m^3 Cell No. 2 = 1,465 m^3 Total = 4,030 m^3
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	

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 with a calibration cylinder controlled automatically on the basis of the raw water flow complete with alum storage
	A day tank with secondary spill containment
Notes	

Chlorine

Description	Chlorine gas disinfection System
Feed Point(s)	1. Chemical contact chamber; and 2. Before the flash mixer
Equipment	One (1) duty chlorinator
	One (1) standby chlorinator including: - two (2) chlorine cylinders with an automatic switch over device in a separate room - a weight scale - one (1) chemical metering pump - a free chlorine analyzer for monitoring finished water residuals
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	- A polyelectrolytes feed system for assisting in flocculation - A polymer feed system for assisting in flocculation (used as back-up)
Feed Point	Solids Contact Clarifiers
Equipment	- 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)
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^3
Equipment	Includes calcium hypochlorite re-chlorination facility along with: - a telemetry system providing the water level information to the main computer at the plant; and - a looped circulation system
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 Document or File Name	Column 2 Date
WATER DISTRIBUTION SYSTEM - December 16, 2015.pdf	December 16, 2015

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**
Schedule B Issue Date	**May 13th, 2016**

1.0 Applicability

1.1 In addition to any other 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.

1.2 The definitions and conditions of the licence shall also apply to this drinking water works permit.

2.0 Alterations to the Drinking Water System

2.1 Any document issued by the Director as a Schedule C to this drinking water works permit shall provide authority to alter the drinking water system in accordance, where applicable, with the conditions of this drinking water works permit and the licence.

2.2 All Schedule C documents issued by the Director for the drinking water system shall form part of this drinking water works permit.

2.3 All parts of the drinking water system in contact with drinking water which are:

2.3.1 Added, modified, replaced, extended; or

2.3.2 Taken out of service for inspection, repair or other activities that may lead to contamination,

shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

a) The ministry's Watermain Disinfection Procedure, effective January 01, 2017;
b) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
c) AWWA C653 – Standard for Disinfection of Water Treatment Plants; and
d) AWWA C654 – Standard for Disinfection of Wells.

2.4 The owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement 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 Schedule C to this drinking water works permit respecting works other than watermains; or

2.4.3 Any approval issued prior to the issue date of the first drinking water works permit respecting works other than watermains which were not in service at the time of the issuance of the first drinking water works permit.

2.5 For greater certainty, the notification requirements set out in condition 2.4 do not apply to any addition, modification, replacement or extension in respect of the drinking water system which:

2.5.1 Is exempt from subsection 31(1) of the SDWA by subsection 9.(2) of O. Reg. 170/03;

2.5.2 Constitutes maintenance or repair of the drinking water system; or

2.5.3 Is a watermain authorized by condition 3.1 of Schedule B of this drinking water works permit.

2.6 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.

2.7 For greater certainty, any alteration to the drinking water system made in accordance with this drinking water works permit may only be carried out after other legal obligations have been complied with 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 drinking water system may be altered 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 Professional Engineer;

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 of the Environment and Climate Change 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 of the Environment and Climate Change 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 Professional Engineer 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 of the Environment and Climate Change, 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.

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 Raw water pumps and treatment process pumps in the treatment system;

4.1.2 Coagulant feed systems in the treatment system, including the location and number of dosing points;

4.1.3 Valves;

4.1.4 Instrumentation and controls, including SCADA systems, and software associated with these devices;

4.1.5 Filter media, backwashing equipment and under-drains in the treatment system; or,

4.1.6 Spill containment works.

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 and associated equipment;

4.2.2 Re-circulation devices within distribution system storage facilities;

4.2.3 In-line mixing equipment;

4.2.4 Chemical metering pumps and chemical handling pumps;

4.2.5 Chemical storage tanks (excluding fuel storage tanks) and associated equipment; or,

4.2.6 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 of the Environment and Climate Change.

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 Fuel storage tanks and spill containment works, and associated equipment; or

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.

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 of any unit process within a treatment subsystem;

4.4.3 A deterioration in the quality of drinking water provided to consumers;

4.4.4 A reduction in the reliability or redundancy of any component of the drinking water system;

4.4.5 A negative impact on the ability to undertake compliance and other monitoring necessary for the operation of the drinking water system; or

4.4.6 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", as published by the Ministry of the Environment and Climate Change, 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.

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 atmosphere:

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 add, modify or replace a drinking water system component set out in condition 5.1 for an activity that is not directly 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 oxide 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 populations shall not exceed the applicable point of impingement limit, and at non-sensitive populations shall not exceed the Ministry of the Environment and Climate Change half-hourly screening level of 1880 ug/m^3 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 of the Environment and Climate Change, 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

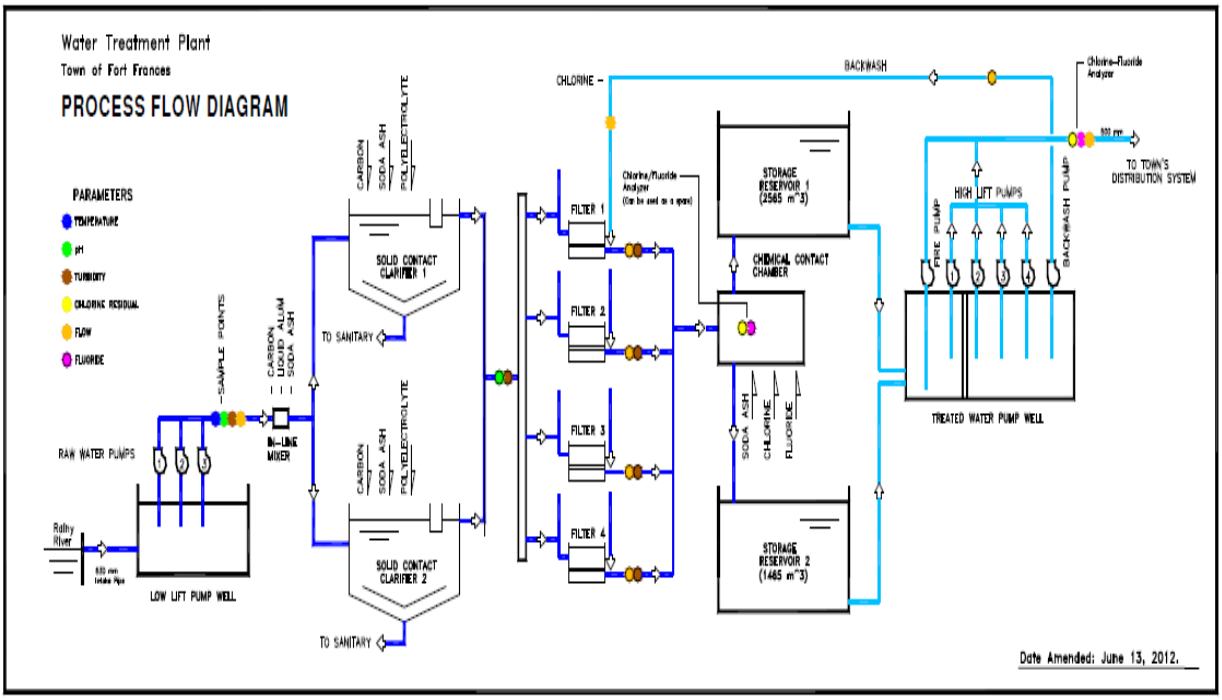
8.1 Not Applicable.

Schedule 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**
Schedule D Issue Date	**May 13th, 2016**

1.0 Process Flow Diagrams

Fort Frances Water Treatment Plant



[Source: Quality Management System Operational Plan Town of Fort Frances Water System, Revision No. 8, October 30, 2015]

Ontario

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

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: 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/ Easting/ Northing:

1	Rainy River	River	Municipal	Water Supply	12,000	24	17,000,000	365	15 472938 5384735
						Total Taking:	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 31st 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
Email: ERTTribunalsecretary@ontario.ca

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

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

by Telephone at	by Fax at	by e-mail at
(416) 212-6349	(416) 326-5370	www.ert.gov.on.ca
Toll Free 1(866) 448-2248	Toll Free 1(844) 213-3474	

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

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.

Ministry of the Environment Conservation and Parks
Northern Region
Kenora Area Office
808 Robertson Street
Kenora, ON P9N 1X9
Fax: (807) 468-2735
Telephone: (807) 468-2718

Ministère de l'Environnement, de la Protection de la nature et des Parcs
Direction régionale du Nord
Bureau du secteur de Kenora
808 rue Robertson
Kenora, ON P9N 1X9
Télécopieur: (807) 468-2735
Téléphone: (807) 468-2718

February 28, 2019

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

Attention: Craig Miller, Environmental and Facilities Superintendent

Dear Mr. Miller:

Re: Fort Frances Drinking Water System Inspection Report (2018/2019)

Please find attached the 2018/2019 municipal water works inspection report. The unannounced inspection was conducted on February 11 and 12, 2019. The time and co-operation of all operators involved was greatly appreciated.

One non-compliance issue was identified during the inspection. Actions required to address the non-compliance is included on pages 11 of the inspection report. Please note that "Actions Required" are linked to incidents of non-compliance with regulatory requirements contained within an Act, a Regulation, or site-specific approvals, licenses, permits, orders, or instructions. Such violations could result in the issuance of mandatory abatement instruments including Orders, tickets, penalties, or referrals to the ministry's Investigations and Enforcement Branch.

Best practice issues and associated recommendations, for the continued improvement of operations of the Fort Frances drinking-water system, are provided on pages 12 and 13 of the inspection report. *"Recommended Actions"* convey information that the owner or operating authority should consider implementing in order to advance efforts already in place to address such issues as emergency preparedness, the fulsome availability of information to consumers, and conformance with existing and emerging industrial standards. Please note that items which appear as recommended actions do not, in themselves, constitute violations.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles on the Inspection, Investigation &

Enforcement (II&E) Secretariat and advice in internal/external risk experts. The Inspection Summary Rating Record (IRR), included as Appendix B of the inspection report, provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance. Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report. If you have any questions or concerns regarding the rating, please contact Dave Manol, Drinking Water Program Supervisor, at (807) 475-1689.

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

If you have any questions or comments in regards to this inspection, or if you would like to discuss Ontario's drinking water legislation, please contact Carolyn Lacroix at (807) 468-2727.

Sincerely,

C Lacroix

Ministry of the Environment, Conservation and Parks
Northern Region - Kenora Area Office

CL/cl

cc. Northwestern Health Unit
21 Wolsley Street
Kenora, Ontario
P9N 3W7

Attention: Thomas Nabb, Program Manager

cc. Ministry of Natural Resources and Forestry
922 Scott Street
Fort Frances, Ontario
P9A 6S7

Attention: Greg Chapman, District Manager

cc. Ministry of the Environment, Conservation and Parks
435 James Street South
Suite 331
Thunder Bay, Ontario
P7E 6S7

Attention: Dave Manol, Drinking Water Supervisor

cc. Kenora Area Office
File Number: DK DY WI – 540

Ontario

Ministry of the Environment, Conservation and Parks

FORT FRANCES DRINKING WATER SYSTEM

Inspection Report

Site Number:	220000978
Inspection Number:	1-I4TQ4
Date of Inspection:	Feb 04, 2019
Inspected By:	Carolyn Lacroix

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OWNER INFORMATION:

Company Name: FORT FRANCES, THE CORPORATION OF THE TOWN OF
Street Number: 320 **Unit Identifier:**
Street Name: PORTAGE Ave
City: FORT FRANCES
Province: ON **Postal Code:** P9A 3P9

CONTACT INFORMATION

INSPECTION DETAILS:

Site Name: FORT FRANCES DRINKING WATER SYSTEM
Site Address: 901 COLONIZATION RD E FORT FRANCES P9A 3P9
County/District: Fort Frances
MECP District/Area Office: Kenora Area Office
Health Unit: NORTHWESTERN HEALTH UNIT
Conservation Authority:
MNR Office: Fort Frances District Office
Category: Large Municipal Residential
Site Number: 220000978
Inspection Type: Unannounced
Inspection Number: 1-I4TQ4
Date of Inspection: Feb 04, 2019
Date of Previous Inspection: Jan 22, 2018

COMPONENTS DESCRIPTION

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

Site (Name): SOURCE
Type: Source **Sub Type:** Surface
Comments:
The raw water supply for the Fort Frances municipal drinking water system is taken from the Rainy River at the outflow of Rainy Lake. The source water is generally of good quality, however it can be subject to elevated levels of colour, turbidity, and dissolved organic carbon.
Source water is gravity-fed into a low-lift pump well located within the plant. It is then drawn through a 630 mm diameter, 190 m long intake line that is equipped at the terminal end with a stainless steel screen. Coarse material is screened at the initial intake point and again through a set of screens within the raw water well.

Site (Name): TREATED WATER
Type: Treated Water POE **Sub Type:** Pumphouse
Comments:
Three (3) vertical turbine low lift pumps deliver raw water through a common header equipped with alum and soda

ash injection points, an in-line mixer, and a flow meter. Alum is added at all times when water is being produced; soda ash is added only when needed based on the pH of the raw water supply. Polymer is then injected as the water passes into two solids contact clarifiers. The clarifiers are equipped with blow-down devices to remove excess sludge, which is discharged to the municipal sanitary sewer. Clarified water passes through one of four dual media (anthracite coal/sand) filters. Each filter effluent line is monitored for pH and turbidity. Water is disinfected in a baffled contact chamber by the addition of chlorine gas. Soda ash, used for pH adjustment is added to the clearwell, as well as hydrofluosilicic acid. Treated water flows are measured using an in-line flow meter.
Four high lift pumps (rated at 63.1 L/s (2), 94.7 L/s and 126.2 L/s) pressurize treated water as it is directed to the distribution system. Distribution system pressure is also maintained by the elevated storage tank located in the southwest portion of Fort Frances.
A complete description of the treatment system can be found in Drinking Water Works Permit No. 224-201.

Site (Name): DISTRIBUTION (WATER INSPECTION)
Type: Other **Sub Type:** Other
Comments:
The Fort Frances distribution system services a population of approximately 8,000 in Town, and another 300 people in the neighbouring community of Couchiching First Nation. The distribution system is comprised of ductile steel, cast iron, and PVC piping. The original system was installed in the early 1900's. As older pipes are replaced, PVC piping comprises an increasing proportion of the works. Some sections of the distribution system have been looped at the recommendation of a consulting engineer, however several dead ends still remain. The distribution system is 70.73 kilometres in length and contains 399 fire hydrants.
A 4,500 cubic meter elevated storage tower is located in the southwest portion of the town. A telemetry system is used to maintain water levels in the tower. A paced-to-flow chlorination system injects liquid calcium hypochlorite at the outflow from the storage tower to maintain adequate chlorine residuals in the distribution system.

INSPECTION SUMMARY:

Introduction

- **The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water related policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment and distribution components as well as management practices.**

  This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O.Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.

  This report is based on a "focused" inspection of the system. Although the inspection involved fewer activities than those normally undertaken in a detailed inspection, it contained critical elements required to assess key compliance issues. This system was chosen for a focused inspection because the system's performance met the ministry's criteria, most importantly that there were no deficiencies as identified in O.Reg. 172/03 over the past 3 years. The undertaking of a focused inspection at this drinking water system does not ensure that a similar type of inspection will be conducted at any point in the future.

  This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

  This unannounced, focused inspection was conducted on February 4 and 5, 2019, by Water Inspector, Carolyn Lacroix. The inspection included a tour of the Drinking Water System (DWS) components, document review and interview with DWS personnel. The inspection review period is the period of time from the date of the previous Ministry of the Environment Conservation and Parks (MECP) inspection conducted on January 22 and 23, 2018, to the date of this inspection, unless otherwise stated.
  Text highlighted in bold-type is computer-generated based on yes/no responses to standard questions answered during the inspection. Supporting information, in regular font, has been added by the undersigned Water Inspector to qualify standard responses and to provide additional guidance/information.

Capacity Assessment

- **There was sufficient monitoring of flow as required by the Municipal Drinking Water Licence or Drinking Water Works Permit issued under Part V of the SDWA.**

  Conditions 2.1.1 and 2.1.2, Schedule C, Municipal Drinking Water Licence (MDWL) #224-101, requires continuous measurements and recording of the flow rate and daily volume of raw water flowing into the water treatment plant (WTP) 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.
  There were no losses of flow data during the inspection review period.

- **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.**

  Condition 1.1, Schedule C, MDWL #224-101, identifies the rated capacity of the Fort Frances WTP as 17,000 m^3/day. This represents the maximum daily 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 5780 m^3, in August 2018. This represents 34 % of the rated capacity of the plant.

Capacity Assessment

Treatment Processes

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

  During the inspection, the undersigned Water Inspector toured the WTP and the water tower.
  The following discrepancy was noted in Schedule A of Drinking Water Works Permit (DWWP) #224-201:
  - The alum chemical metering pump is described as "having a calibration cylinder controlled automatically on the basis of the raw water flow". A new chemical metering pump has been installed and the new pump does not have a calibration cylinder. The instrument is now calibrated manually by weighing a sample.
  During the next Drinking Water Works Permit and Municipal Drinking Water License renewal, the above item is to be updated.

- **The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.**

  Municipal Water Works Permit (MWWP) # 224-201 allows for the Fort Frances drinking water system 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 MWWP in Schedule B, section 3.0.
  During the review period, Frenette Ave. was looped between 1st St. E. and 2nd St. E. and a Form 1 was not generated prior to the work being completed.

- **Records indicated that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.**

  In accordance with O. Reg. 170/03, Schedule 1-2(2), 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, clearwell level 60% capacity, treated water flow 17 000 cubic meters per day), the plant must maintain their chlorine residual above 0.85 mg/L. 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. At the time of the inspection, the treated water low level chlorine alarm was set to 1.2 mg/L.
  Daily chemical feed and feed output reports were reviewed and demonstrated the consistent use of alum at all times the plant was treating water.
  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.

- **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.**

  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 0.24 mg/L.

Treatment Process Monitoring

- **Primary disinfection chlorine monitoring was conducted at a location approved by Municipal Drinking Water Licence and/or Drinking Water Works Permit issued under Part V of the SDWA, or at/near a location where the intended CT has just been achieved.**

  The treated water chlorine residual is monitored by a continuous analyzer at the point where treated water enters the distribution system.

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

  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 WTP office. There were no gaps in continuous data during the review period.

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

  Daily chlorine residuals are collected from the water tower, meeting the requirements of O. Reg. 170/03, Schedule 7, subsections 7-2(3),(4). Chlorine residuals are also collected during bacteriological sampling.

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

  Upon arrival at the WTP each morning, operators observe chlorine residuals from the previous 24 hour period on the circle chart recorder which is located next to the continuous chlorine analyzer.
  The circle chart recorder will hold up to a week of chlorine data. Operators then review a printout of the turbidity readings off each filter for the previous 24 hour period. These printouts display turbidity in 15 minute intervals; each 15 minute data set includes the minimum, maximum and mean turbidity value for the prior 15 minute time period. Operators then review continuous data for the previous 24 hour period on the SCADA computer.
  The operations manual has a standard operating procedure for "Reviewing Continuous Monitoring Turbidity Test Results".

- **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.**

  Currently, the alarm set points for chlorine and turbidity are as follows:
  • Final Effluent Low Chlorine Alarm = 1.20 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.
  • Final Effluent High Chlorine Alarm = 3.2 mg/L - calls out operator on duty
  • 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
  • Filter Effluent Turbidity High High Alarm = 0.80 NTU - plant immediately alarms, calls out the on-call operator and filter shuts down
  • Filter Effluent Turbidity Low Alarm = - 0.1 mg/L

- **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.**

  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 60 seconds, every 15 minutes, the mean, maximum and average values of the previous 15 minutes of data are recorded.

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

  O. Reg. 170/03, Schedule 6, section 6-5(1)8, requires that the continuous monitoring equipment must be checked and calibrated in accordance with the manufacturer's instructions.
  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 analyzer was last calibrated by an outside party on August 21, 2018 and had been previously calibrated on August 21, 2017. 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 23, 2018 and had been previously calibrated on August 21, 2017 (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 monthly.

Operations Manuals

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

  The Operations Manual contains computer generated print outs from the SCADA system, of the components of the drinking water system, as well as a complete process diagram for the entire system.

- **The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA.**

Logbooks

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

  Only certified operators make entries in the logbook.

Security

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

  Security measures provided at the WTP include:
  • "No Trespassing" signs;
  • alarm system; and
  • locked doors when employees are not present.
  Security measures provided at the water tower include:
  • "No Trespassing" signs; and
  • a fence around the water tower that is gated and locked
  There are a limited number of keys available for the WTP and the water tower.

Certification and Training

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

  The Fort Frances WTP is a Class 3 subsystem and the distribution system is a Class 2 subsystem. Two operators operated as the ORO for both subsystems during the review period. The ORO's hold valid certificates that are at the same level or higher than both subsystems.
  The ORO listed in the distribution log book on Friday, remains the ORO for the subsystem throughout the weekend. The ORO for the WTP is listed in the WTP log book daily.

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

  Only operators with the appropriate level of certification were designated as the OIC for the review period. The OIC for the WTP is listed in the WTP log book daily. The OIC's for the distribution system is listed in the distribution log book daily, except for on weekends. The OIC's documented on Friday remains the OIC's for the weekend.

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

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

Water Quality Monitoring

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

  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).
  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, except for in December 2018. During this month, weekly microbiological samples were taken; however, due to a snow storm, the courier service was unable to deliver the December 27, 2018 samples to the lab, prior to them expiring. On December 31, 2018, operators became aware that the samples arrived at the lab past their holding time and notified the local ministry office to discuss. Since it was the end of the month, there was not enough time to re-take the expired samples.

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

  Section 10-3, Schedule 10, O. Reg. 170/03 requires at least one treated water sample to be taken every week from the point of entry to the distribution system and tested for total coliform bacteria, E. coli and HPC. This requirement was met throughout the inspection review period except for during the week of December 27, 2018. During this week, a treated water sample was taken on December 27, 2018, but due to a snow storm, the courier service was unable to deliver this sample prior to it expiring. Operators became aware of this issue on December 31, 2018 and notified the local ministry office. Operators resumed weekly sampling later this week.

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

  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 6, 2018 and had been previously sampled on March 7, 2017.

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

Water Quality Monitoring

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 6, 2018, and had been previously sampled on March 7, 2017.

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

  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.

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

  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.
  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 54.65 ug/L, the maximum acceptable concentration is 100 ug/L.

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

  Treated water samples must be taken every three months for analysis of nitrate and nitrite, in accordance with O. Reg. 170/03, Schedule 13, section 13-7. During the inspection review period, samples were collected in each calendar quarter. All nitrate and nitrite samples were collected from the WTP at the point of entry to the distribution system.

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

  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 9, 2015 and the result was 16.4 mg/L. It had been previously sampled on March 8, 2010.

- **The required daily samples were being taken at the end of the fluoridation process.**

  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.
  During the review period, the highest observed fluoride residual observed from the daily recording of fluoride residuals was 0.81mg/L. The limit for fluoride is 1.5 mg/L.

- **All water quality monitoring requirements imposed by the Municipal Drinking Water Licence and Drinking Water Works Permit were being met.**

  Suspended solids are required to be monitored quarterly at the point of discharge to the Rainy River. Records indicate that manual composite samples were collected quarterly during the inspection review period and were tested for suspended solids.

- **Records confirmed that chlorine residual tests were being conducted at the same time and at the same**

Water Quality Monitoring

location that microbiological samples were obtained.

Water Quality Assessment

- **Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O.Reg. 169/03).**

Reporting & Corrective Actions

- **Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.**

  On average, it takes an operator approximately 10 minutes to respond to an alarm call out. Only certified operators responded to alarms during the inspection review period.

Other Inspection Findings

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

  1. O. Reg. 170/03, Schedule 13, section 13-6.1(1) requires that in each calendar quarter, a sample be taken and tested for HAA's from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of HAA's. In 2017, HAA samples were taken from the water tower, a location toward the end of the distribution system. In 2018, HAA samples were taken as follows:
  - Quarter 1 - location in middle of distribution system
  - Quarter 2 - location near the water treatment plant
  - Quarter 3 - water tower
  - Quarter 4 - water tower

  On May 9, 2018, the MECP distributed a letter to municipalities, clarifying ministry guidance on HAA sampling. The guidance provided in the letter differs from how the Town of Fort Frances is choosing their HAA sampling locations.
  2. Although the Fort Frances WTP has calculated a worst case scenario CT calculation and the calculation is kept in a filing cabinet at the water treatment plant office, it is not included in the operations manual. Operators may not be aware that the sample CT calculation can be found in the filing cabinet location.
  3. For the majority of the review period, the same operator was designated as the distribution ORO and two other operators were designated as distribution OIC's. This was written in the log book daily, except for on weekends. There was an understanding amongst operators that these same individuals would remain designated as the ORO and OIC's over the weekend.
  4. On occasion, it was not always made clear during maintenance or repair of the distribution system, who determined the category/level of contamination of the maintenance or repair. This determination is to be made by the OIC.
  5. On occasion, an entry was made by an operator in the WTP log book and was directly followed by another operator's log book entry, with no space between the entries. This made it challenging to distinguish who made the entry because the entries were not written as two separate entries, by two separate operators.
  6. On June 30, 2018, filter #3 was taken off-line at approximately 21:30 and was brought back into service on July 5, 2018. During this time the monthly filter effluent turbidity reading summaries for June 30, 2018 and July 1, 2018, did not reflect that this filter was off-line. This error impacts the accuracy of the monthly filter effluent turbidity calculation. The monthly calculations for June and July 2018 have been re-calculated and demonstrate this criteria was met for the review period.
  7. Some of the operations manual content are not up to date i.e. contact information, watermain break repair procedure.

NON-COMPLIANCE WITH REGULATORY REQUIREMENTS AND ACTIONS REQUIRED

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

1. **The owner/operating authority was not in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period.**

   Municipal Water Works Permit (MWWP) # 224-201 allows for the Fort Frances drinking water system 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 MWWP in Schedule B, section 3.0.
   During the review period, Frenette Ave. was looped between 1st St. E. and 2nd St. E. and a Form 1 was not generated prior to the work being completed.

   Action(s) Required:

   By April 5, 2019, the owner is to submit to the undersigned officer a completed Form 1, for the loop on Frenette Ave. between 1st. E and 2nd St. E. The documentation is to include written verification from:
   - a Professional Engineer stating hat the watermain loop meets the requirements of condition 3.1.1 of MWWP #224-201, Schedule B, section 3 and
   - the owner of the drinking water system stating that the watermain loop meets the requirements of conditions 3.1.2 to 3.1.6 of MWWP # 224-201, Schedule B, section 3.

SUMMARY OF RECOMMENDATIONS AND BEST PRACTICE ISSUES

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

1. **The following issues were also noted during the inspection:**
   1. To date, the majority of HAA samples have been taken from the water tower.
   2. The Fort Frances WTP worst case scenario CT calculation is kept in a filing cabinet in the plant office and not he operations manual.
   3. For the majority of the review period, the same operator was designated as the distribution ORO and two other operators were designated as distribution OIC's. This was written in the log book daily, except for on weekends. There was an understanding amongst operators that these same individuals would remain designated as the ORO and OIC's over the weekend.
   4. On occasion, it was not always made clear during maintenance or repair of the distribution system, who determined the category/level of contamination of the maintenance or repair. This determination is to be made by the OIC.
   5. On occasion, an entry was made by an operator in the WTP log book and was directly followed by another operator's log book entry, with no space between the entries. This made it challenging to distinguish who made the entry because the entries were not written as two separate entries, by two separate operators.
   6. On June 30, 2018, filter #3 was taken off-line at approximately 21:30 and was brought back into service on July 5,
   2018. During this time the monthly filter effluent turbidity reading summaries for June 30, 2018 and July 1, 2018, did not reflect that this filter was off-line. This error impacts the accuracy of the monthly filter effluent turbidity calculation. The monthly calculations for June and July 2018 have been re-calculated and demonstrate this criteria was met for the review period.
   7. Some of the operations manual content are not up to date i.e. contact information, watermain break repair procedure.

   Recommendation:

   1. On May 9, 2018, the ministry sent a letter to all municipal drinking water system owners clarifying the ministry's guidance for HAA sampling. This letter suggests that in each year leading up to implementation of the HAA standard, HAA's are to be sampled annually from different locations (i.e. beginning, middle and end of distribution system).
   Attached in Appendix C is a copy of this letter. It is recommended that the details of this letter be reviewed and compared to where HAA samples have already been taken, in each calendar quarter, when determining the HAA sampling locations for 2019.
   2. In addition to keeping a copy of the CT calculation in the WTP office filing cabinet, a copy should also be kept in the operations manual. The calculation should also include a description of the process used to achieve primary and secondary disinfection.
   3. It is recommended that it be indicated in the log book, who is designated as the ORO and OIC over the weekend. This may be documented and clarified in the Friday log book entry.
   4. It is recommended that the template that is used to track the details pertaining to watermain maintenance/repair, be updated to include a section that prompts the individual who made the determination of the category of the watermain maintenance/repair, to document their name. This determination is to be made by an OIC.
   5. It is recommended that if an operator makes a new entry in the log book that they leave a space between their entry and the previous entry made by another operator. All entries made by an officer are to be signed off on by the operator who made the entry.
   6. It is recommended that the computer technician re-assess how filter effluent turbidity data points are summarized

in the monthly filter effluent print out and ensure the monthly calculation is being completed accurately.

7. It is recommended that the content of the operations manual be reviewed and updated where necessary. Particular attention shall be made to the contact information and the watermain break procedure.

SIGNATURES

Inspected By:	Signature: (Provincial Officer)
Carolyn Lacroix	C Lacroix
Reviewed & Approved By:	Signature: (Supervisor)
Dave Manol	

Review & Approval Date: February 28, 2019

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

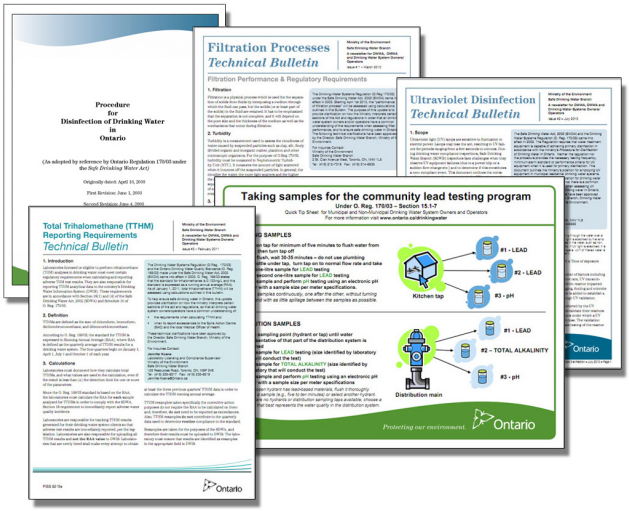
Key Reference Materials

Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

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

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

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



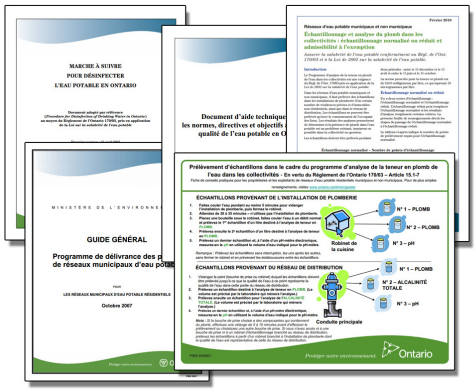
PUBLICATION TITLE	PUBLICATION NUMBER
Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils	7889e01
FORMS: Drinking Water System Profile Information, Laboratory Services Notification, Adverse Test Result Notification Form	7419e, 5387e, 4444e
Procedure for Disinfection of Drinking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

ontario.ca/drinkingwater

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

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

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



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

TITRE DE LA PUBLICATION	NUMÉRO DE PUBLICATION
Prendre soin de votre eau potable – Un guide destiné aux membres des conseils municipaux	7889f01
Renseignements sur le profil du réseau d'eau potable, Avis de demande de services de laboratoire, Formulaire de communication de résultats d'analyse insatisfaisants et du règlement des problèmes	7419f, 5387f, 4444f
Marche à suivre pour désinfecter l'eau potable en Ontario	4448f01
Strategies for Minimizing the Disinfection Products Thrihalomethanes 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

Inspection Summary Rating Record

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

DWS Name:	FORT FRANCES DRINKING WATER SYSTEM
DWS Number:	220000978
DWS Owner:	Fort Frances, The Corporation Of The Town Of
Municipal Location:	Fort Frances
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	February 4, 2019
Ministry Office:	Kenora Area Office

Maximum Question Rating: 452

Inspection Module	Non-Compliance Rating
Capacity Assessment	0 / 30
Treatment Processes	4 / 60
Operations Manuals	0 / 28
Logbooks	0 / 14
Certification and Training	0 / 42
Water Quality Monitoring	0 / 124
Reporting & Corrective Actions	0 / 21
Treatment Process Monitoring	0 / 133
TOTAL	**4 / 452**

Inspection Risk Rating	**0.88%**

FINAL INSPECTION RATING:	**99.12%**

Inspection Rating Record Generated On 28-FEB-19 (Inspection ID: 1-I4TQ4).

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

DWS Name:	FORT FRANCES DRINKING WATER SYSTEM
DWS Number:	220000978
DWS Owner:	Fort Frances, The Corporation Of The Town Of
Municipal Location:	Fort Frances
Regulation:	O.REG 170/03
Category:	Large Municipal Residential System
Type Of Inspection:	Focused
Inspection Date:	February 4, 2019
Ministry Office:	Kenora Area Office

Non-compliant Question(s)	Question Rating
Treatment Processes	
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?	4
TOTAL QUESTION RATING	4

Maximum Question Rating: 452

Inspection Risk Rating	**0.88%**

FINAL INSPECTION RATING:	**99.12%**

Inspection Rating Record Generated On 28-FEB-19 (Inspection ID: 1-I4TQ4).

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

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

This document describes the risk rating methodology, which has been applied to the findings of the Ministry's MRDWS inspection results since fiscal year 2008-09. The primary goals of this assessment are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

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

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

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

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

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

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

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

Determining Potential to Compromise the Delivery of Safe Water

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

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

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 Administrative Consequence	**Major** Administrative Consequence	**Minor** Environmental Consequence	**Minor** Health Consequence	**Medium** Environmental Consequence	**Major** Environmental Consequence	**Medium** Health Consequence	**Major** Health Consequence
L=4 (Almost Certain)	L=1 (Unlikely	L=2 (Possible)	L=3 (Likely)	L=3 (Likely)	L=1 (Unlikely	L=3 (Likely)	L=2 (Possible)
R=4	**R=2**	**R=6**	**R=12**	**R=15**	**R=6**	**R=21**	**R=16**

Application of the Methodology to Inspection Results

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

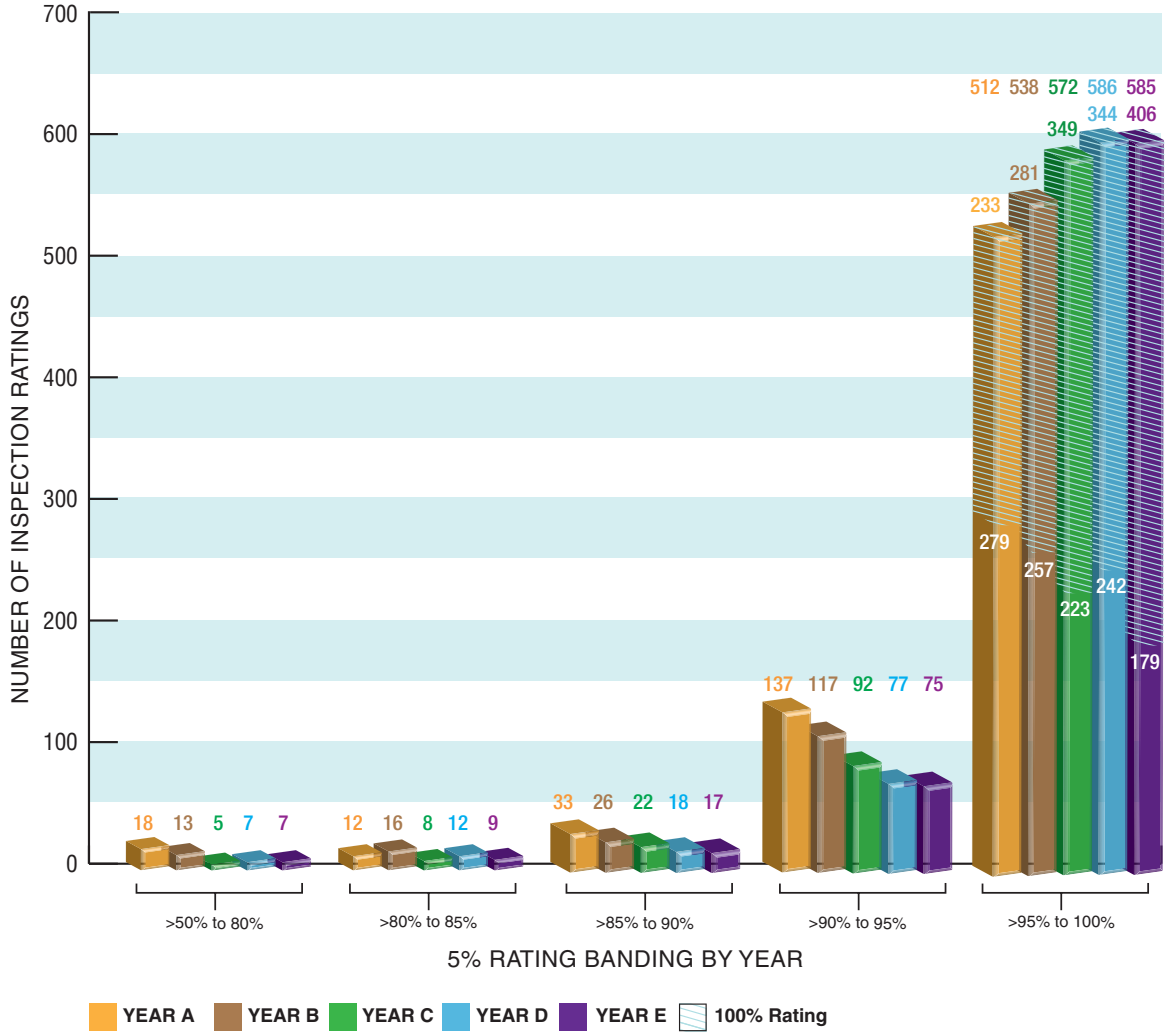
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

Application of the Methodology for Public Reporting

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

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

Figure 1: Year Over Year Distribution of MRDWS Ratings



Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 14 possible modules of the inspection protocol, which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

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

For further information, please visit **www.ontario.ca/drinkingwater**

Letter – Re: HAA Sampling Concerns

Ministry of the Environment
and Climate Change

Compliance, Promotion
and Support Branch

2nd floor
40 St. Clair Ave West
Toronto ON M4V 1M2

Ministère de l'Environnement
et de l'Action en matière de changement
climatique

Direction de la promotion de la conformité
et du soutien

2ème étage
40, avenue St. Clair Ouest
Toronto (Ontario) M4V 1M2

Ontario

May 9, 2018

Re: Haloacetic Acids (HAAs) Sampling Concerns

Municipal Drinking Water System Owners/Operators,

The purpose of this document is to clarify ministry guidance for HAAs sampling. HAAs are disinfection by-products (DBPs) that are formed when dissolved organic matter reacts with chlorine which is added for the purpose of disinfection. Detailed information on HAAs can be found in "Health Canada (2008) Guidelines for Canadian Drinking Water Quality: Guideline Technical Document — Haloacetic Acids".

HAAs are a collection of several different compounds. The haloacetic acids most commonly found in drinking water are monochloroacetic acid (MCA), dichloroacetic acid (DCA), trichloroacetic acid (TCA), monobromoacetic acid (MBA) and dibromoacetic acid (DBA). Total HAAs is the sum of these five haloacetic acids. The HAAs most commonly found in the distribution system of drinking water systems are TCA and DCA. However the presence of bromide ions can result in the formation of MBA and DBA.

Volatilization of HAA is not expected in the distribution system as HAAs have low vapour pressure and high water solubility. TCA appears to be the most persistent HAA followed by DCA and then MCA.

Factors influencing the creation of HAAs

The levels of DBPs formed depend on many water quality parameters and operating conditions. In the case of HAAs, higher precursor concentrations (synthetic and natural organic matter, bromide ion) in the raw water, chlorine dose, chlorination pH, water temperature and the residence time will influence the type (THMs, HAAs, etc.) and the levels of DBPs formed. Studies found that surface water sources are more likely to produce higher HAAs than ground water sources.

HAAs concentrations are found to be higher in the distribution system, usually just after the chlorination process. Health Canada studies performed in 2002 and 2003 indicated that concentration of HAAs peaked in the distribution system closer to the chlorine addition point and decreased in the extremities of the system. Furthermore, the location of peak HAA values in a distribution system tends to change throughout the year, it is likely to be closer to the chlorine addition point in the summer and fall and further away from the point in the winter and spring. Precipitation and runoff events can also affect DBPs.

Sampling Points for HAAs

The ministry has recognized that more than one sampling location may be needed to characterize the HAAs levels throughout a municipal distribution system. HAA concentrations

can vary within and between distribution systems and so monitoring samples should be taken at points in the "middle" of the distribution system (i.e. an average water age, post re-chlorination). In light of the recently introduced HAAs standard of 80 µg/L, which will come in to force on January 1, 2020, the following guidance should be used in developing your monitoring program:

1. As a general rule, all samples described below should be obtained from a sampling point where the free (combined) chlorine residual concentration is maintained over 0.2 mg/L (1.0 mg/L) respectively.
2. First year of sampling: A system's established THM sampling point may be appropriate provided the chlorine concentrations are as described in item 1. If the residual is below the concentrations listed, use a nearby sampling point that meets the recommended residual.
3. Second year of sampling (*recommended order of selection*):
    a. Where a system re-chlorinates via a booster station, samples should be obtained in the distribution system after the booster station.
    b. If the system does not have booster stations, but has storage facilities where re-chlorination occurs, the sampling should be at points after the storage facilities.
    c. If the system does not re-chlorinate, but has storage the sampling should be at points after the storage facilities.
    d. If the system does not re-chlorinate nor have storage, obtain the sample from another point in the distribution system.
4. Third year of sampling:
    a. If neither of the running annual averages for HAAs calculated (after year one and two) were higher than one-half of the standard (40 µg/L), the sampling point used in the first year of sampling can be used for compliance in future years.
    b. If one of the running annual averages is over 40 µg/L, the municipality is required to choose a third sampling point using the same criteria as the second year, and obtain samples from this sampling point for the third year. The municipality will then be required to sample from the point which had the highest individual sample result for future years.

The outlined sampling plan is intended to be flexible and recognizes that municipalities have been sampling for HAAs since 2017.

Questions can be directed to: drinking.water@ontario.ca.

Cammy Mack
Director, Compliance, Promotion and Support Branch
Ministry of the Environment and Climate Change

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Fort Frances WPCP
200 McIrvine Rd
Fort Frances, Ontario
P9A 3S3
Tel: 807-274-3121
Fax: 807-274-8381

March 14, 2019,

Town of Fort Frances
320 Portage Avenue
Fort Frances Ontario
P9A 3M5

Attention: Mr. Craig Miller
Environmental and Facilities Superintendent

Dear Craig:

Re: Fort Frances Wastewater Treatment Facility
February 2019 Monthly Report

As per the operating agreement, the attached document is the February 2019 monthly report for the Fort Frances Wastewater Treatment Facility.

The report highlights the influent and effluent quality and the process parameters. Additionally, the routine operation and maintenance activities conducted by the operators are summarized.

If you have any questions regarding this report do not hesitate to contact Mr. Larry Wachter – Sr. Operations Manager.

Yours truly,

Kelly Cunningham
Team Lead

For Larry Wachter
Sr. Operations Manager

The Corporation of the Town of Fort Frances
Wastewater Treatment Plant
(Sewage Plant)
February 2019 Monthly Operations Report

INTRODUCTION

In accordance with the Agreement between the Ontario Clean Water Agency (Operating Authority) and the Town of Fort Frances, the Fort Frances Sewage Treatment Plant is required to prepare a monthly report. This document covers the reporting month of February 2019; the facility performance report summarizes important information regarding the quality of the effluent, wastewater, analytical test results, maintenance operations, and relevant activities of the WWTP.

DESCRIPTION OF WORKS

Capacity of Works	9000 m^3/day (average flow)
Service Area	Town of Fort Frances and Couchiching Reserve
Service Population	9000
Effluent Receiver	Rainy River
Major Process	Secondary treatment facility complete with a phosphorus removal system; ultra violet disinfection; aerobic sludge stabilization and dewatering

The Fort Frances Sewage Treatment Plant operates under *Environmental Compliance Approval Number 6786-A44PWG*. The ECA outlines the terms and conditions, and the report captures these terms and conditions in the following sections.

LABORATORY

ALS Laboratory Group – Thunder Bay is contracted to conduct the required analytical tests of the influent (raw) and effluent samples; weekly requirement.

FEBRUARY 2019 EFFLUENT QUALITY

Parameters	***Monthly Actual Concentration* mg/L**	***Compliance Criteria Concentration* mg/L**	***Performance Objective Concentration* mg/L**	***Monthly Actual Loading, kg/d***	***Compliance Criteria Loading kg/d***	***Performance Objective Loading* kg/d**
$CBOD_5$	2.1 mg/L	25 mg/L	15 mg/L	11.7 kg/d	225 kg/d	135 kg/d
Total Suspended Solids	3.3 mg/L	25 mg/L	15 mg/L	18.2 kg/d	225 kg/d	135 kg/d
Total Phosphorus	0.12 mg/L	1.0 mg/L	0.9 mg/L	0.67 kg/d	9 kg/d	8.1 kg/d
Total Nitrogen Nitrate Nitrogen	9.94 mg/L 6.98 mg/L					
Total Cl_2 Residual		<0.01 mg/L (when in use)				
E-Coli	16.8 count/100 ml (geometric mean)		200 count/100ml (geometric mean)		E-coli not to exceed 150 organisms/100ml (monthly geometric mean density)	
pH			pH range 6.8 to 7.1; average pH was 7.0			
Temperature degrees C			Temperatures ranged from 7.5 to 8.0 C; average temperature of effluent was 7.8 C			

Compliance criteria are mandatory requirements of the ECA and performance objectives are a goal to be achieved using best reasonable efforts.

WASTEWATER LIQUID PROCESS

The average daily flow for February was 5561.0 m^3 /day. This represents 62% of the design average flow. Total treated flow for the month was 155707 m^3.
The Fort Frances WWTP met all effluent compliance criteria for the parameters listed above and additionally was well within the recommended more stringent monthly performance objective levels as outlined in the Environmental Compliance Approval.
**The Town of Fort Frances accepted an additional 163.7 m^3 of sewage from the New Gold mine site into the collection system. Lab analyses have not been provided.

MAINTENANCE

The operators performed the routine operations and maintenance at the treatment plant and pumping stations. The activities are highlighted as follows and a summary will be included:

Treatment Plant:

- Alternated lead/lag pumps
- Adjusted fluidizing water to head cell and grit snail as needed
- Greased all blowers
- Regular cleaning of head works EW basket strainer
- Greased Grit Snail and lubricated drive chain
- Monthly inspection of spiral screen access hatch, removed wrapped debris
- Weekly manifold wash on the Fournier press
- Drained and inspected teacup
- Drained and hosed snail

Pump Stations:

- Ran gensets
- Changed seal water strainers
- Adjusted the elevation of the level sensor at White Pine lift station

PROCESS AND OPTIMIZATION ISSUES

A new progressive cavity polymer pump and VFD have been ordered from Fournier. Fournier will be handling the installation and commissioning.

SLUDGE SUMMARY

Dennis Robinson Limited hauled a calculated total of 106.7 m3 (12 bins) of thickened digested sludge to the Town of Fort Frances landfill site. The hauled sludge averaged 16.0 % TS for the month but slump test results from the landfill have not been provided.
The Fournier press ran for 102 hours in February.

COMPLAINTS

There were no complaints during the report period.

BYPASS/OVERFLOW REPORT(S)

There were no bypass events during the month.

COMMENTS

Plant power consumption for the month was 581 (x 180 multiplier) kWh.
The Fournier press has been operated for 221 hours in 2019 (119 in January and 102 in February).

REPORTS

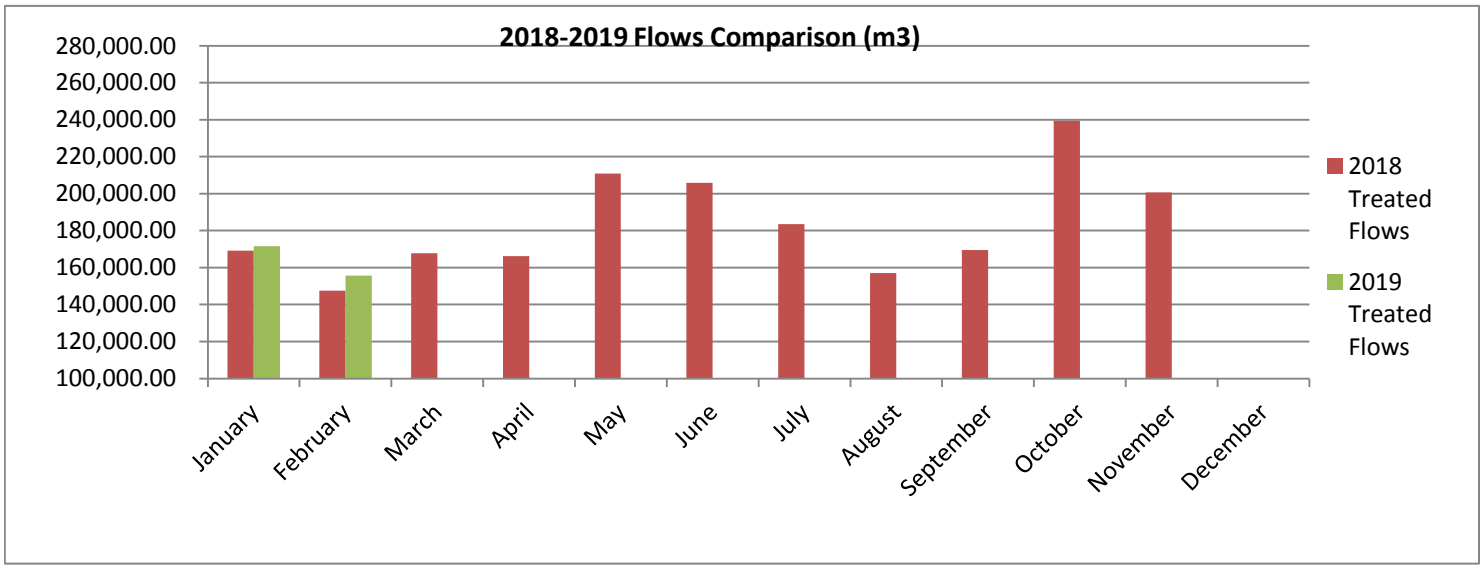
ALS – Environmental Analytical Reports (on-file at plant)
Fort Frances WPCP Equipment Run Time Report (on-file at plant)
Bypass Report (on-file at plant as per occurrence)
Incident Report (on-file at plant as per occurrence)

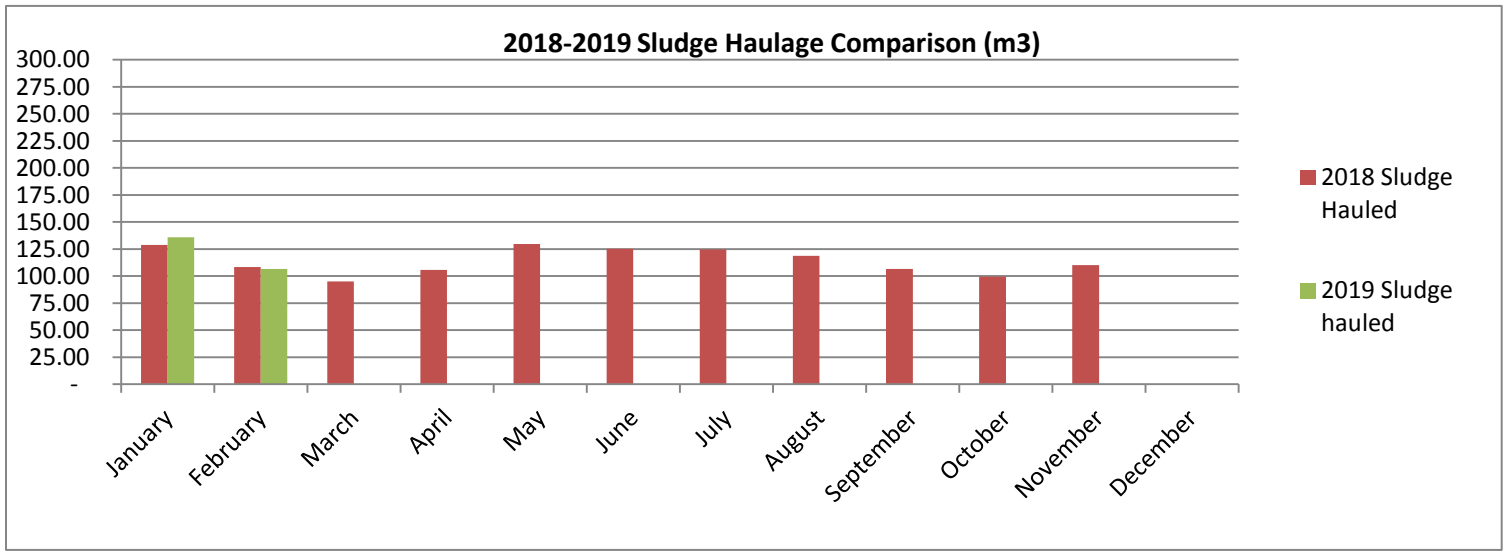
Month	Avg. Day Flow m3	Sewage Flows Year 2019 Max Day Flow m3	Total Treated Volume ML	Total ByPass Volume ML	Total Volume ML	Usage % Plant Capacity	Calculated Volume Hauled M3	Sludge Bins Hauled
January	5536.2	5933	171621		171621	62%	136	14
February	5561	6023	155707		155707	62%	106.7	12
March						0%		
April						0%		
May						0%		
June						0%		
July						0%		
August						0%		
September						0%		
October						0%		
November						0%		
December						0%		
Sum				0	327328		242.7	26
Average	5549		163664		163664	62%	121.4	13.0
Max		6023	171621		171621			14
ECA	9000	18000						

Removal Efficiency	
CBOD5	0.980373832
Suspended Solids	0.976996805
Total Phosphorus	0.960848287

	BOD5/CBOD5			Suspended Solids			Total Phosphorus			Nitrogen		E. Coli
	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Avg. Load	Avg. Raw	Avg. Eff.	Geo Mean
Month	BOD	CBOD	CBOD	S.S	S.S	S.S	T.P	T.P	T.P	TKN	Total N	Counts
	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	/100ml
January	110.2	2.1	11.5	160.1	3.9	21.4	2.52	0.12	0.69	20.9	8.8	11.5
February	103.8	2.1	11.7	152.9	3.3	18.2	3.61	0.12	0.67	19.3	9.9	16.8
March												
April												
May												
June												
July												
August												
September												
October												
November												
December												
Average	107.0	2.1	11.6	156.5	3.6	19.8	3.1	0.12	0.68	20.1	9.4	14.2
Max	110.2	2.1	11.7	160.1	3.9	21.4	3.6	0.12	0.69	20.9	9.94	16.8
ECA		25	225		25	225		1.0	9.0			200

2018-2019 Comparison Chart						
Month	2018 Treated Sewage	2019 Treated Sewage	% Variance 2018 to 2019	2018 Hauled Sludge	2019 Hauled Sludge	% Variance 2018 to 2019
	m3	m3	m3	m3 (calculated)	m3 (calculated)	m3
January	169,201.00	171,621.00	1%	128.90	136.00	6%
February	147,497.00	155,707.00	5%	108.30	106.70	-1%
March	167,707.00		#DIV/0!	95.00		-100%
April	166,292.00		#DIV/0!	105.70		-100%
May	210,932.00		#DIV/0!	129.70		-100%
June	205,818.00		#DIV/0!	125.30		-100%
July	183,465.00		#DIV/0!	124.70		-100%
August	157,126.00		#DIV/0!	118.60		-100%
September	169,565.00		#DIV/0!	106.50		-100%
October	239,494.00		#DIV/0!	99.60		-100%
November	200745.00		#DIV/0!	110.10		-100%
December						
Totals	2,017,842.00		#DIV/0!	1,252.40	242.70	-81%





2019 - Tonnage at Landfill Site - updated March 6, 2019

MONTH	Residential Waste tonnes	Res %	ICI Waste tonnes	ICI %	Non Community Waste tonnes	Non Com %	Covering Material tonnes	2018 Total Tonne	Average last 10 years Total Tonne	2019 Total Tonne	2018 Total Fees	Average last 10 years Fees 2009 to 2018	2019 Total Fees	2019-2018 Tonnes	2019-2018 Fees
JAN	149.54	27.28	387.83	70.75	10.82	1.97	16.76	495.69	370.24	548.19	$30,177.28	$20,128.17	$27,590.90	52.50	-$2,586.38
FEB	124.49	34.52	227.79	63.15	8.41	2.33	0.00	406.46	310.55	360.69	$23,347.65	$16,847.30	$21,887.90	-45.77	-$1,459.75
MAR		#DIV/0!		#DIV/0!		#DIV/0!		463.54	408.18	0.00	$27,716.10	$22,813.66		-463.54	-$27,716.10
APRIL		#DIV/0!		#DIV/0!		#DIV/0!		570.00	561.20	0.00	$35,930.07	$32,008.80		-570.00	-$35,930.07
MAY		#DIV/0!		#DIV/0!		#DIV/0!		704.26	712.14	0.00	$42,835.55	$38,717.06		-704.26	-$42,835.55
JUNE		#DIV/0!		#DIV/0!		#DIV/0!		636.08	818.82	0.00	$45,718.15	$39,435.12		-636.08	-$45,718.15
JULY		#DIV/0!		#DIV/0!		#DIV/0!		317.41	593.33	0.00	$37,855.70	$36,663.59		-317.41	-$37,855.70
AUG		#DIV/0!		#DIV/0!		#DIV/0!		687.72	650.90	0.00	$43,983.95	$36,983.59		-687.72	-$43,983.95
SEPT		#DIV/0!		#DIV/0!		#DIV/0!		647.03	651.00	0.00	$42,404.90	$37,190.53		-647.03	-$42,404.90
OCT		#DIV/0!		#DIV/0!		#DIV/0!		843.41	817.13	0.00	$43,140.48	$42,161.43		-843.41	-$43,140.48
NOV		#DIV/0!		#DIV/0!		#DIV/0!		555.90	551.11	0.00	$33,490.70	$29,847.06		-555.90	-$33,490.70
DEC		#DIV/0!		#DIV/0!		#DIV/0!		398.55	403.14	0.00	$27,798.40	$21,267.10		-398.55	-$27,798.40
Average per monthly	137.02	30.90	307.81	66.95	9.62	2.15	8.38	560.50	570.65	75.74	$36,199.91	$31,171.95	$24,739.40	-1,026.81	-156,246.00
Total	274.03		615.62		19.23		16.76	6726.05	6847.74	908.88	$434,398.93	$374,063.40	$49,478.80	-5817.17	-$384,920.13
											$434,398.93	Actual	$49,478.80		
Town of Fort Frances Tonnage	889.65										$396,950.00	Budget	$407,271.00		
Total Tonnage	908.88										$434,398.93	Forecasted	$296,872.80		
Residential Tonnage	274.03	30.15%													
ICI Tonnage	615.62	67.73%													
Coverage material	16.76														

Aircraft Landings 2019

As of March 6, 2019

	Bearskin Flights			Bearskin- Passengers			Air Bravo Passengers		Government			Private			Med-I-vacs			International			Commercial			Totals			Variance
Month	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019**	**2018**	**2017**	**2019-2018**
January	**54**	**68**	76	**160**	**198**	308	8	0	**0**	0	0	4	3	2	60	55	42	0	2	4	42	73	48	**160**	143	177	17
February	**56**	**66**	80	**197**	**187**	334	15	0	**13**	0	1	1	2	1	43	57	32	0	3	0	38	56	39	**151**	156	155	-5
March		**73**	90		**249**	336		0		0	10		5	4		43	50		6	14		57	51	**0**	178	192	-178
1/4 Total	**110**	**207**	**246**	**357**	**634**	**978**	**23**	**0**	**13**	**0**	**11**	**5**	**10**	**7**	**103**	**155**	**124**	**0**	**11**	**18**	**80**	**186**	**138**	**311**	**477**	**524**	-166
April		**77**	67		**270**	289		0		0	0		7	18		42	40		6	4		42	41	**0**	186	201	-186
May		**77**	87		**276**	389		2		4	8		19	8		35	50		28	0		54	54	**0**	229	259	-229
June		**68**	82		**219**	324		4		4	10		24	16		36	38		70	14		49	63	**0**	273	328	-273
1/2 Total	**110**	**429**	**482**	**357**	**1399**	**1980**	**23**	**6**	**13**	**8**	**29**	**5**	**60**	**49**	**103**	**268**	**252**	**0**	**115**	**36**	**80**	**331**	**296**	**311**	**1165**	**1312**	-854
July		**74**	70		**228**	224		7		10	3		40	26		38	51		79	76		41	54	**0**	286	324	-286
August		**69**	82		**219**	292		5		6	4		41	27		41	66		65	80		44	50	**0**	322	313	-322
September		**66**	79		**197**	267		2		29	7		33	14		44	40		45	42		37	39	**0**	230	249	-230
3/4 Total	**110**	**638**	**713**	**357**	**2043**	**2763**	**23**	**20**	**13**	**53**	**43**	**5**	**174**	**116**	**103**	**391**	**409**	**0**	**304**	**234**	**80**	**453**	**439**	**311**	**2003**	**2198**	-1692
October		**68**	72		**254**	255		8		5	6		18	16		37	44		8	18		43	42	**0**	203	214	-203
November		**71**	71		**209**	281		1		2	0		5	2		41	28		1	0		40	40	**0**	168	146	-168
December		**55**	62		**197**	199		7		0	0		7	2		41	36		0	0		34	40	**0**	122	139	-122
Total	**110**	**832**	**918**	**357**	**2703**	**3498**	**23**	**36**	**13**	**60**	**49**	**5**	**204**	**136**	**103**	**510**	**517**	**0**	**313**	**252**	**80**	**570**	**561**	**311**	**2496**	**2697**	-2185

Fort Frances Airport - Page 2/2 - Fuel Sales - March 6, 2019

Fuel Sales Recap - 2019									2019	2018	2017	2016	2015	2014	2013	2012	2011	9 year	Variance 2019-2018
	100LL		Jet Trk		Jet Cab		Month	Year	per	per	per	per	per	per	per	per	per	Average	per month
Month	Liters	Total	Liters	Total	Liters	Total	Total	Total	month	month	month	month	month	month	month	month	month	2019 to 2011	month
January	132	132	7,918	7,918	546	546	8,596	8,596	8,596	16,597	25,675	7,528	8,692	11,543	7,216	10,252	7,308	11,940	-8,001
February	27	159	7,964	15,882	10,602	11,148	18,593	27,189	18,593	16,286	12,503	11,904	11,231	12,304	6,197	6,918	3,687	11,276	2,307
March						11,148	0	27,189		9,798	21,928	13,255	17,795	10,508	12,077	9,329	10,390	12,744	-9,798
April						11,148	0	27,189		10,398	13,102	8,592	13,219	8,377	4,453	8,251	5,294	9,151	-10,398
May						11,148	0	27,189		24,839	21,362	24,681	16,161	29,753	18,350	21,891	19,790	22,318	-24,839
June						11,148	0	27,189		27,380	27,380	26,015	45,698	30,789	22,786	23,537	25,723	27,967	-27,380
July						11,148	0	27,189		23,461	24,642	29,002	28,150	14,441	19,232	32,650	19,124	23,959	-23,461
August						11,148	0	27,189		30,430	23,029	21,119	36,638	20,450	20,075	30,783	21,467	25,805	-30,430
September						11,148	0	27,189		25,191	13,489	21,325	24,238	21,837	18,005	19,431	22,511	20,552	-25,191
October						11,148	0	27,189		10,769	16,604	30,655	8,216	15,472	13,109	11,325	13,677	15,681	-10,769
November						11,148	0	27,189		10,748	9,924	22,349	11,616	7,238	6,398	8,170	6,785	10,442	-10,748
December						11,148	0	27,189		13,243	6,560	13,797	7,592	6,849	2,028	8,179	2,446	7,588	-13,243
Total	159		15,882		11,148		27,189			219,140	216,198	230,222	229,246	189,561	149,926	190,716	158,202	199,421	-191951

Lowest month in last 9 years
Highest month in last 9 years
Highest month
lowest month

Work Orders

ID	Origin ID	Asset ID	Department	Work Order Type	Work Order Subtype	Asset Name	Asset Location	Status	Hours	All Notes	Completed Date	Cost
WO-2560	SR-0032		Civic Centre	General Maintenance - Civic Centre	Lighting Maintenance			Completed	3	Replace broken light fixture lenses in the Council Chambers (2 fixtures 2'x2') One lens missing one lens cracked. To be completed before council Monday February 25	2019-02-22	$87.87
WO-2551			Civic Centre	General Maintenance - Civic Centre	Carpentry			Completed	2.5	1. By Law Office requests to install a shelf. (Contact Partirck) 2. Downstairs washroom paper towel dispenser needs to be installed 3. Handicapped washroom paper towel dispenser needs to be installed.	2019-02-19	$73.23
WO-2568			Com Serv - Children's Complex	General Maintenance- Children's Complex	Plumbing			Completed	0.75	Unplug preschool sink	2019-02-27	$21.97
WO-2539	PM-240	521101	Com Serv - Children's Complex	Preventative Maintenance- Children's Complex	Humidifier Sensor Check	Humidifier	Mechanical Room	Completed	2.5	This unit had 1133 hours on since last service. Cleaned out scale and flushed tank. Reset to 0 hrs	2019-02-11	$73.23
WO-2520			Com Serv - Children's Complex	Preventative Maintenance- Children's Complex				Completed	2.5	Repair broken toilet lid, Glued broken toilet tank lid and re-siliconed	2019-02-06	$88.21
WO-2353	PM-240	721115	Com Serv - Children's Complex	Preventative Maintenance- Children's Complex	Furnace Filter Check & inspect air make up filter	Forced Air Furnace with Cooling Unit	Service Yard	Completed	1	Filters are still good, outer screen was broken and laying on the ground.	2019-02-12	$29.29
WO-2487			Com Serv - East End Hall	Daily Inspection				Completed	15.5	Inspect East End Hall, Weight Scale, Marina, Tourist Information Building, Old Library, Old Nursing Station.	2019-02-28	$454.00
WO-2499	PM-222	522621	Com Serv - East End Hall	Preventative Maintenance	Hot Water Tank Inspetion	Potable Water Expansion Tank	Basement	Completed	0.5		2019-02-04	$14.65
WO-2498	PM-222	422620	Com Serv - East End Hall	Preventative Maintenance	Hot Water Tank Inspetion	Hot Water Tank	Basement	Completed	0.5		2019-02-04	$14.65
WO-2497	PM-222	322619	Com Serv - East End Hall	Preventative Maintenance	Furnace Inspection/ Filter Change	Furnace	Basement	Completed	0.5	Only 1 spare filter left	2019-02-04	$20.30
WO-2550			Com Serv - Library	General Maintenance - Library				Completed	2	Handicapped washroom toilet in the ladies room which is leaking., Replaced a gasket on the toilet tank	2019-02-14	$72.06
WO-2519			Com Serv - Library	General Maintenance - Library				Completed	0.5	Repair leaking tap in the Shaw room	2019-02-05	$14.65
WO-2548	PM-261	921062	Com Serv - Library	Inspection - Library	Boiler Monthly Inspection	Boiler #2	Closet Mechanical Room	Completed	0.25		2019-02-19	$7.32
WO-2547	PM-261	821061	Com Serv - Library	Inspection - Library	Boiler Monthly Inspection	Boiler #1	Closet Mechanical Room	Completed	0.25		2019-02-19	$7.32
WO-2546	PM-229	321065	Com Serv - Library	Preventative Maintenance - Library	Heat Pump Inspection	HP-4 (Filter:2-16x20x1, Belt:BX-64)	Non-Friction Mechanical Room	Completed	0.5	Filters did not need to be changed at this time	2019-02-19	$14.65

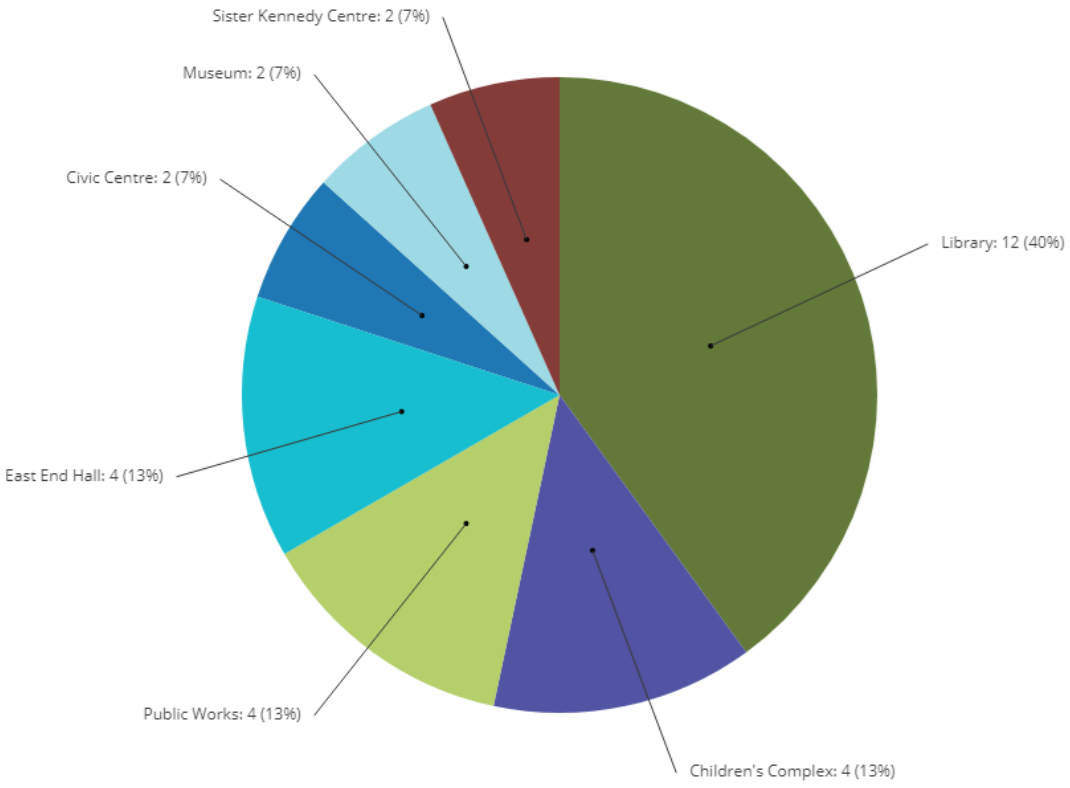
ID	Origin ID	Asset ID	Department	Work Order Type	Work Order Subtype	Asset Name	Asset Location	Status	Hours	All Notes	Completed Date	Cost
WO-2545	PM-229	221066	Com Serv - Library	Preventative Maintenance - Library	Heat Pump Inspection	HP-5 (Filter: 6-20x25x1, Belt: BX-64)	Closet Mechanical Room	Completed	0.5	Filters did not need to be changed at this time	2019-02-19	$14.65
WO-2544	PM-229	121069	Com Serv - Library	Preventative Maintenance - Library	Heat Pump Inspection	HP-3 (East of the Closet Ceiling) (2-16x20x1)	Shaw Mechanical Room	Completed	0.5	Filters did not need to be changed at this time	2019-02-19	$14.65
WO-2543	PM-229	021068	Com Serv - Library	Preventative Maintenance - Library	Heat Pump Inspection	HP-2 (West of the Closet Ceiling) 2-16x20x1	Shaw Mechanical Room	Completed	0.5	Filters did not need to be changed at this time	2019-02-19	$14.65
WO-2542	PM-228	921067	Com Serv - Library	Preventative Maintenance - Library	Heat Pump Inspection	HP-1 (Hanging on the Ceiling) 2-16x20x1	Hallway Mechanical Room	Completed	0.5	Replaced filters	2019-02-19	$14.65
WO-2496	PM-175	622617	Com Serv - Library	Preventative Maintenance - Library	HRV Core Wash	HRV 2	Shaw Room	Completed	3	Also cleaned the ceiling air vents	2019-02-07	$43.94
WO-2495	PM-175	422616	Com Serv - Library	Preventative Maintenance - Library	HRV Core Wash	HRV 1	Children Play Area	Completed	3	Also cleaned the ceiling air vents	2019-02-07	$43.94
WO-2494	PM-175	222618	Com Serv - Library	Preventative Maintenance - Library	HRV Core Wash	HRV 3	Study Carrol Location	Completed	3	Also cleaned ceiling the air vents.	2019-02-07	$43.94
WO-2538			Com Serv - Museum	General Maintenance-Museum				Completed	1	Purchase and install electric heater for the second floor emergency exit door.	2019-02-08	$54.28
WO-2518			Com Serv - Museum	General Maintenance-Museum				Completed	1.5	Relocate filing cabinets	2019-02-05	$43.94
WO-2516	PM-230	722625	Com Serv - Sister Kennedy	Preventative Maintenance-Sister Kennedy	Hot Water Heater Inspection	Hot Water Heater	Mechanical Room	Completed	0.5		2019-02-04	$14.65
WO-2473	PM-262	322677	Com Serv - Sister Kennedy	Preventative Maintenance-Sister Kennedy	HRV Filter Wash	HRV	Mechanical Room	Completed	1	Cleaned unit and vacuumed filters	2019-02-26	$29.29
WO-2553			Ops & Fac - Public Works	General Maintenance-PW	Repair/Correction			Completed	1	Repair the west over head door on the cold storage building. Cable came off.	2019-02-21	$29.29
WO-2540			Ops & Fac - Public Works	General Maintenance-PW	Repair/Correction			Completed	1	The chain for overhang door in Store Shelter is off.	2019-02-12	$29.29
WO-2561	PM-238	822696	Ops & Fac - Public Works	Preventative Maintenance	HRV Filter Change	HRV	O&F Manager's Office Ceiling	Completed	0.75		2019-02-26	$21.97
WO-2493	PM-156	622605	Ops & Fac - Public Works	Preventative Maintenance	Hot Water Tank Inspection	Hot Water Tank	Storage Room	Completed	0.5		2019-02-04	$14.65

Work Orders

ID	Asset ID	Department	Work Order Type	Work Order Subtype	Asset Name	Asset Location	Status	Assigned To	Hours	All Notes	Completed Date
WO-2562	15251	Com Serv - MSC	Preventative Maintenance - MSC	Filter/ Belt Inspection	F-5 IFK Classroom Furnace	IFK Second Floor Mechanical Room East	Completed	Bob Green			2019-02-28
WO-2557	15266	Com Serv - MSC	Preventative Maintenance - MSC	Filter Backwash	Pool Sand Filters #2	Main Floor Pool Mechanical Room	Completed	Bob Green			2019-02-27
WO-2549	15250	Com Serv - MSC	Preventative Maintenance - MSC	Filter/ Belt Inspection	F-6 Front Door Airlock Furnace	IFK Lobby Mechanical Room	Completed	Crystal Tan		Need to replace monthly.	2019-02-13
WO-2517	15254	Com Serv - MSC	Preventative Maintenance - MSC	Filter/ Belt Inspection	F-1 IFK Arena Furnace	IFK Second Floor West Mechanical Room	Completed	Crystal Tan, Jason Kabel		Crystal and Jason replaced the filters	2019-02-04
WO-2482	15276	Com Serv - MSC	Preventative Maintenance - MSC	Chiller Drian	Chiller	IFK Ice Plant	Completed	Scott Hamilton			2019-02-18
WO-2480	15265	Com Serv - MSC	Preventative Maintenance - MSC	Filter Backwash	Pool Sand Filters #1	Main Floor Pool Mechanical Room	Completed	Scott Hamilton			2019-02-14
WO-2477	15278	Com Serv - MSC	Preventative Maintenance - MSC	52 Rink Boiler Inspection	52 Rink Boiler	52 Lobby Furnace Room	Completed	Scott Hamilton		Scott mentioned boiler external pipes need to clean. Worker has to run the boiler manually., Scott Pryde cleaned lines and replaced old valves with new ball valves.	2019-02-21
WO-2367	15266	Com Serv - MSC	Preventative Maintenance - MSC	Filter Backwash	Pool Sand Filters #2	Main Floor Pool Mechanical Room	Completed	Scott Hamilton			2019-02-14
WO-2119	15286	Com Serv - MSC	Preventative Maintenance - MSC	Chiller Drian	52 Chiller	52 Ice Plant	Completed	Scott Hamilton		drained two pails.	2019-02-19
WO-2104	15243	Com Serv - MSC	Preventative Maintenance - MSC		Pool Dressing Room Air Exchange	Second Floor Pool Mechanical Room	Completed	Dan Scott		Scott and Jason replaced the filter, Scott did the core wash.	2019-02-06
WO-1878	15248	Com Serv - MSC	Preventative Maintenance - MSC	Dehumidifier Belt and Filter Check	IFK Arena Dehumidifier East	IFK Arena	Completed	Crystal Tan, Jason Kabel		Crystal and Jason replaced the filters.	2019-02-05
WO-1785	15290	Com Serv - MSC	Preventative Maintenance - MSC	Dehumidifier Belt and Filter Check	Canadian Arena South Dehumidifier	Canadian Arena	Completed	Scott Hamilton			2019-02-21
WO-1784	15289	Com Serv - MSC	Preventative Maintenance - MSC	Dehumidifier Belt and Filter Check	Canadian Arena North Dehumidifier	Canadian Arena	Completed	Scott Hamilton			2019-02-21
WO-1688	15245	Com Serv - MSC	Preventative Maintenance - MSC	Filter/ Belt Inspection	F-4-IFK East Dressing Room Furnace	IFK Second Floor Mechanical Room East	Completed	Scott Hamilton		Crystal and Jason inspected it. Filters still good., Tyson said have to replace filtes., filters have been changed using 2-16x25x2 and 2-20x16x2 filters.	2019-02-21
WO-1622	15253	Com Serv - MSC	Preventative Maintenance -	Filter/ Belt Inspection	F-2 IFK Lobby HVAC	IFK Second Floor West Mechanical	Completed	Crystal Tan,		Crystal and Jason replaced the filters.	2019-02-04

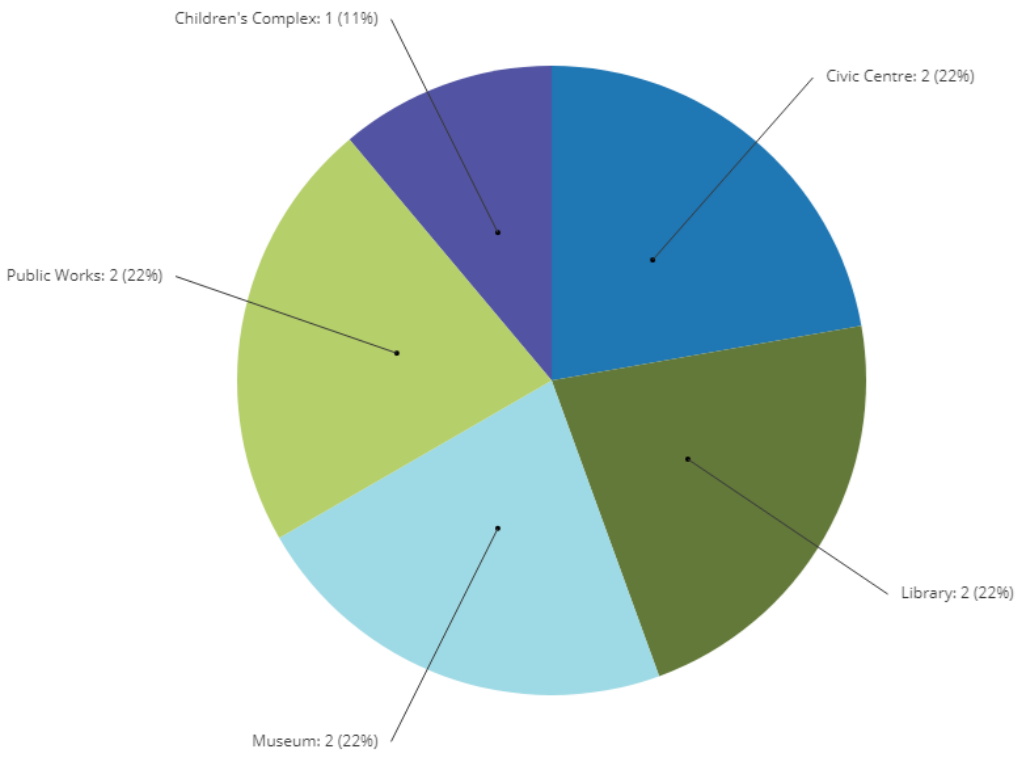
ID	Asset ID	Department	Work Order Type	Work Order Subtype	Asset Name	Asset Location	Status	Assigned To	Hours	All Notes	Completed Date
			MSC			Room		Jason Kabel			
WO-1587	15247	Com Serv - MSC	Preventative Maintenance - MSC	Dehumidifier Belt and Filter Check	IFK Arena Dehumidifier West	IFK Arena	Completed	Crystal Tan, Jason Kabel		Jason replaced Dehumidifier Filter	2019-02-04

February Work Orders Distribution



TOTAL: 30

February General Maintenance Work Orders Distribution



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