

**The Corporation of the Town of Fort Frances  
Wastewater Treatment Plant  
(Sewage Plant)  
December 2017 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 December 2017; 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 <sup>3</sup> /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.

## DECEMBER 2017 EFFLUENT QUALITY

<i>Parameters</i>	<i>Monthly Actual Concentration mg/L</i>	<i>Compliance Criteria Concentration mg/L</i>	<i>Performance Objective Concentration mg/L</i>	<i>Monthly Actual Loading, kg/d</i>	<i>Compliance Criteria Loading kg/d</i>	<i>Performance Objective Loading kg/d</i>
CBOD <sub>5</sub>	2.0 mg/L	25 mg/L	15 mg/L	11.1 kg/d	225 kg/d	135 kg/d
Total Suspended Solids	4.3 mg/L	25 mg/L	15 mg/L	23.8 kg/d	225 kg/d	135 kg/d
Total Phosphorus	0.18 mg/L	1.0 mg/L	0.9 mg/L	0.99 kg/d	9 kg/d	8.1 kg/d
Total Nitrogen Nitrate Nitrogen	6.96 mg/L 5.18 mg/L					
Total Cl <sub>2</sub> Residual		<0.01 mg/L (when in use)				
E-Coli		14.5 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 7.5 to 7.9; average pH was 7.8		
Temperature degrees C				Temperatures ranged from 9.5 to 13.0 C; average temperature of effluent was 11.3 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 December was 5535.4 m<sup>3</sup>/day. This represents 62% of the design average flow. Total treated flow for the month was 171598 m<sup>3</sup>.

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 491 m<sup>3</sup> of untested sewage from the New Gold mine site into the collection system in December. Effluent quality may not have suffered greatly since this external source sewage has been accepted, but much effort has been required to manage issues with internal plant process problems.

## INVENTORY

Chemical	End of Month Status	Units
Hypochlorite	1000 +/- @ 8.0% +3x205 L @ 12%	Litres
Alum	14.8 +/- @ 55 %	Cubic meters
Polymer	3 x 205 L drums	Liters

## 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
- Replaced block heater portable diesel generator
- Weekly manifold wash on the Fournier press
- Cleaned DO probes
- Drained and inspected teacup
- Changed oil blowers 1 and 2
- Greased flocculator seal bearing
- Changed oil in both grit pump gear boxes
- Installed new belt ASU 02
- Repaired alum line
- Thawed frozen sump line in aeration channel

### Pump Stations:

- Ran gensets
- Changed seal water strainers
- Cleaned and reset floats at 5<sup>th</sup> Street lift station

## **PROCESS AND OPTIMIZATION ISSUES**

Optimization of the new sludge thickener process continues to be hampered by deficiencies and unfinished work.

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## **SLUDGE SUMMARY**

Asselin Storage and Transportation Limited hauled a calculated total of 125.1 m<sup>3</sup> (12 bins) of thickened digested sludge to the Town of Fort Frances landfill site. The hauled sludge averaged 16.5 % TS for the month. Optimization has not been completed for the Fournier press as the polymer water booster pump is not installed and 18% TS was not met.

## **COMPLAINTS**

There were no complaints during the report period.

## **BYPASS/OVERFLOW REPORT(S)**

There were no bypass or overflow events during the reporting period.

## **COMMENTS**

Plant power consumption for the month was 652 (x 180 multiplier) kWh.

Screen and Dewatering Upgrades at the FFWWTP have been under way since May 30, 2016.

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## **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)