Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Fort Frances WPCP
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October 13, 2015

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

Attention: Mr. Doug Herr
Environmental and Facilities Superintendent

Dear Doug:

Re: Fort Frances Wastewater Treatment Facility
September 2015 Monthly Report

As per the operating agreement, the attached document is the September 2015 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 – Operations Manager.

Yours truly,

Kelly Cunningham
Senior Operator

For Larry Wachter
Operations Manager

The Corporation of the Town of Fort Frances
Wastewater Treatment Plant
(Sewage Plant)
September 2015 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 September 2015; 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 received and operates its operation under *Certificate of Approval Number 3-0049-96-006,* in accordance with Section 53 of the Ontario Water Resources Act. The Certificate of Approval 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.

SEPTEMBER 2015 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**
$CBOD_5$	4.1 mg/L	25 mg/L	15 mg/L	22.2 kg/d	225 kg/d	135 kg/d
Suspended Solids	10.5 mg/L	25 mg/L	15 mg/L	56.6 kg/d	225 kg/d	135 kg/d
Total Phosphorus	0.25 mg/L	1.0 mg/L	1.0 mg/L	1.3 kg/d	9 kg/d	9 kg/d
Ammonia as N Nitrite as N Nitrate as N	0.17 mg/L 0.08 mg/L 5.87 mg/L					
Total Cl_2 Residual		<0.01 mg/L (when in use)				
E-Coli		76.4 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 7.4 to 7.8; average pH was 7.6			
Temperature degrees C			Temperatures ranged from 17.0 – 18.0 average temperature of effluent at 17.4			

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

WASTEWATER LIQUID PROCESS

The average daily flow for September was 5437.1 m^3 /day. This represents 60% of the design average flow. Total treated flow for the month was 163113 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 Certificate of Approval.

INVENTORY

Chemical	End of Month Status	Units
Hypochlorite	890 +/-@ 7.0% + 205 @ 12%	Litres
Alum	6.0 +/- @ 60 %	Cubic meters
Polymer	32 Bags (800 kg)	Bags (25 kg/bag)

MAINTENANCE

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

Treatment Plant:

- Alternated lead/lag pumps
- Adjusted fluidizing water to head cell and grit snail as needed
- Greased GBT, mechanical bar screen and grit snail. Lubricated drive chain on grit snail and bar screen
- Regular cleaning of head works EW basket strainer
- Installed and set up new effluent automatic sampler
- Regular cleaning of seal water strainer TFP 9-5
- Replaced tubing and calibrated influent automatic sampler
- Removed debris from Headcell inlet, Teacup and grit pump 2 impeller
- Greased all blowers
- Replaced the packing TFP 9-5 stuffing box
- Set the impeller gap RAS pump 1
- Installed new ignition switch on John Deere tractor
- Removed debris from aeration cells outlet channel
- Replaced the UPS units for CP-1 and lift station Delta V cabinets

Pump Stations:

- Ran gensets
- Changed seal water strainers
- Cleaned bar screens
- Asselin Transportation removed debris from wet wells at Central Avenue and Fifth Street lift stations

OPERATIONAL ISSUES

All of the chain and some damaged flights were replaced in clarifier1, as were some worn bearings and sprockets. Clarifier 1 was placed in service and clarifier 2 was drained and cleaned in order that similar repairs can be completed there as well. Following the 9 hour power failure on September 20th there were 4 days in the month where effluent suspended solids exceeded 25 mg/L but the monthly average met the C of A compliance criteria.

SLUDGE SUMMARY

The volume directed to the gravity belt thickener totaled 853.7 m3 for the month. Asselin Transportation and Storage Limited hauled a total of 239.6 m3 of thickened digested sludge (average 12.0m3/load) to the Town of Fort Frances landfill site.

COMPLAINTS

There were no complaints during the report period.

BY-PASS REPORT(S)

There were no bypass events in the report period.

COMMENTS

Plant power consumption for the month was 655 (x 180 multiplier) kWh.
A new effluent automatic sampler was installed and set up.
The scheduled 6 hour power outage on September 20th, which ended up being 9 hours duration, was very stressful for the activated sludge process and recovery will be gradual.
September 27th the RAS 1 flow meter failed and a replacement has been ordered.
The additional effluent testing necessary to meet the requirements of the Wastewater Systems Effluent Regulations is now a part of our regular sampling regimen.

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)

Month	Avg. Day Flow m3	Sewage Flows Year 2015 Max Day Flow m3	Total Treated Volume ML	Total ByPass Volume ML	Total Volume ML	Usage % Plant Capacity	Sludge Volume Hauled M3
January	5205.2	5615	161362		161362	58%	133.6
February	5008.5	5247	140237		140237	56%	163.2
March	5608.6	6833	173865		173865	62%	244.8
April	5628.8	5970	168865		168865	63%	239.8
May	7834.5	15983	242869		242869	87%	240.3
June	7292.4	10570	218773		218773	81%	217.4
July	5805.5	6247	179969		179969	65%	242.8
August	5920.3	6606	183529		183529	66%	217.3
September	5437.1	5822	163113		163113	60%	239.6
October						0%	
November						0%	
December						0%	
Sum				0	1632582		1938.8
Average	5971		181398		181398	66%	215.4
Max		15983	242869		242869		
C of A	9000	18000					

Removal Efficiency	
CBOD5	0.955355734
Suspended Solids	0.951753664
Total Phosphorus	0.890710383

	CBOD5			Suspended Solids			Total Phosphorus			E. Coli		pH
	Avg Raw	Avg. Eff.	Avg. Load	Avg Raw	Avg. Eff.	Avg. Load	Avg Raw	Avg. Eff.	Avg. Load	Geo Mean	Monthly	Monthly
Month	CBOD	CBOD	CBOD	S.S	S.S	S.S	T.P	T.P	T.P	Counts	Minimum	Maximum
	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	(mg/L)	(mg/L)	(kg/day)	/100ml		
January	84.5	2.6	13.6	151.9	6.0	31.0	2.5	0.23	1.18	17.8	6.8	7.6
February	87.0	3.1	15.3	136.4	6.4	32.1	2.2	0.22	1.12	8.3	6.9	7.5
March	62.8	3.5	19.6	127.6	8.0	45.1	1.9	0.23	1.29	14.8	6.8	7.5
April	66.3	4.4	24.7	135.3	7.8	44.2	1.9	0.28	1.57	56.6	6.8	7.2
May	48.5	3.6	34.9	109.6	5.4	43.4	1.4	0.18	1.40	20.1	6.8	7.3
June	51.2	2.7	19.8	115.8	4.2	31.7	1.3	0.17	1.30	8.3	7.0	7.5
July	74.8	2.1	12.4	133.1	3.5	20.6	2.1	0.22	1.30	5.8	7.1	7.7
August	82.8	2.2	13.1	147.3	6.8	40.6	2.7	0.22	1.30	13.3	7.3	7.9
September	76.0	4.1	22.2	157.6	10.5	56.6	2.3	0.25	1.34	76.4	7.4	7.8
October												
November												
December												
Average	70.4	3.1	19.5	135.0	6.5	38.4	2.0	0.22	1.31	24.6	7.0	7.6
Max	87	4.4	34.9	157.6	10.5	56.6	2.7	0.28	1.57	76.4	7.4	7.9
C of A		25	225		25	225		1	9	200	6.0	9.5