



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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March 25, 2020

Ministry of the Environment
Thunder Bay Regional Office
3rd Flr Suite 331B
435 James St. South
Thunder Bay ON
P7E 6S7

Attention: Trina Rawn
District Manager

Re: 2019 Performance Report for Fort Frances Sewage Treatment Plant

Attached is the 2019 Performance Report for the **Fort Frances Sewage Treatment Plant** located in the Town of Fort Frances. This report has been completed in accordance with Condition No. 10 (5) cited in *Amended Environmental Compliance Approval Number 6786-A44PWG* dated January 6 2016 and issued to the Town of Fort Frances.

This report was prepared by the Ontario Clean Water Agency on behalf of the Town of Fort Frances based on the information kept on record by OCWA at the Fort Frances Sewage Treatment Plant location; and the report covers the period from January 1 to December 31, 2019.


Should you have any questions or comments in regards to this annual report, please do not hesitate to contact David Hoffman at 807-854-7142.

Yours truly,

A handwritten signature in black ink, appearing to be 'BM' followed by a horizontal line.

Brad McMahon
Operations Manager
Ontario Clean Water Agency
Northwestern Ontario Hub
807-853-1227

Copy to: Craig Miller– Fort Frances Environmental and Facilities Superintendent
Operations Staff – Fort Frances Sewage Treatment Plant



2019 Annual Report

Fort Frances

Wastewater Treatment Plant

Prepared by the Ontario Clean Water Agency



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

**The Corporation of the Town of Fort Frances
Wastewater Treatment Plant
(Sewage Plant)
2019 Annual Report**

Introduction

In accordance with the Amended Environmental Compliance Approval Number 6786-A44PWG section 10(5), the Town of Fort Frances Wastewater Treatment Plant is required to prepare an annual performance report. The 2019 annual performance report summarizes important information regarding the treatment quality of the effluent wastewater, analytical test results, relevant activities and maintenance operations of the Works.

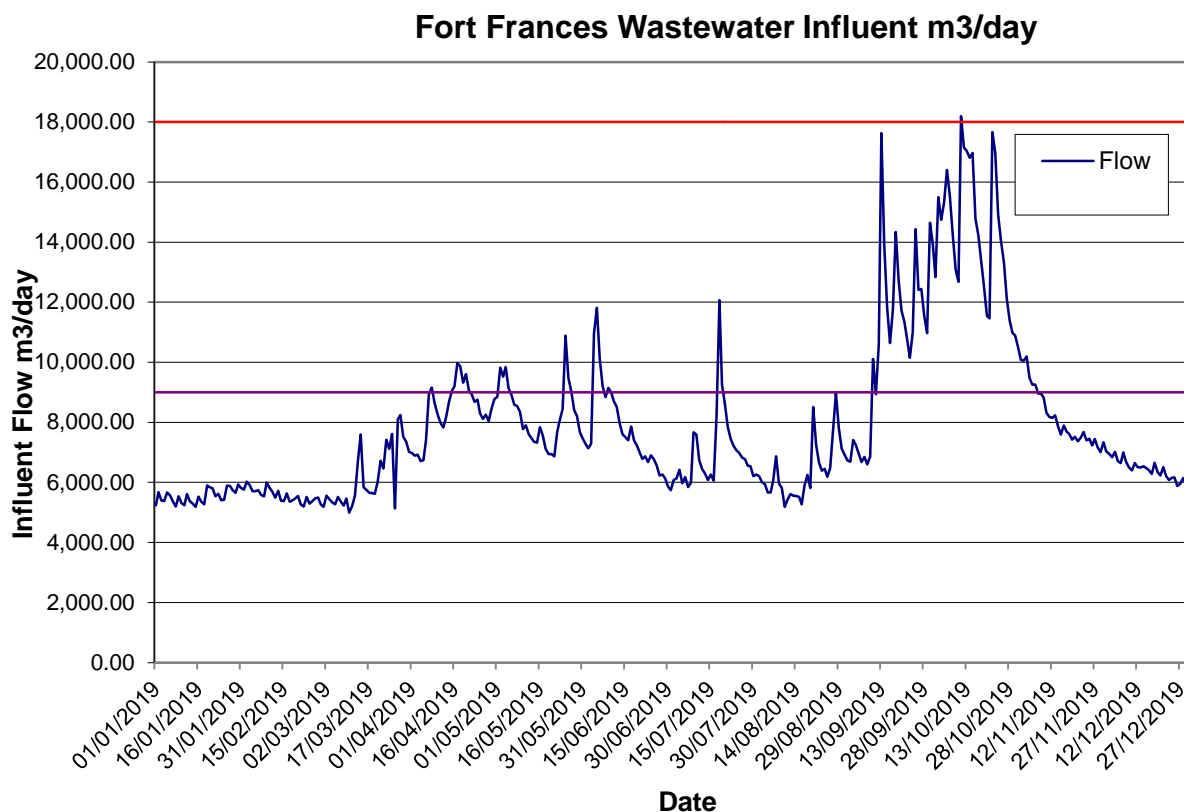
Description of the Works

Capacity of Works	9000 m ³ /day (average flow) Peak 18000 m ³ /day
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

1. Summary and Comprehensive Interpretation of Data

Flow Summary	2015	2016	2017	2018	2019	5-yr avg.
Avg. Day m ³ /day	5942	6731	6476	5988	7860	6601
Design m ³ /day	9000	9000	9000	9000	9000	9000
Utilization (Avg. Day/ Design)	66%	75%	72%	67%	87%	74 %
Max Day m ³ /day	15983	18874	12238	13977	18190	15852
Max Day Factor	2.7	2.8	1.9	2.3	2.3	2.4

The daily flow of influent into the Fort Frances Wastewater treatment plant is presented in the following graph.



The peak flow occurred on October 11 2019. The peak flow through the treatment plant was 18190 m³/day. The flow through the plant exceeded the design flow of 9000 m³/day on seven days in each April and May, five days in June, two days in July, twenty days in September, all thirty one days in October and six days in November for 2019.

The daily analytical and process data for the plant is attached as the Monthly Operations Summary. This data is summarized in the Annual Summary also attached to the report.

In the following table the Carbonaceous Biochemical Oxygen Demand, Suspended Solids and Total Phosphorus are compared to the Certificate of Approval effluent concentrations and loadings as specified in section 7.

Month	CBOD5		Suspended Solids		Total Phosphorus		E. Coli	pH	
	Avg. Eff.	Avg. Load	Avg.Eff.	Avg. Load	Avg. Eff.	Avg. Load	Geo Mean	Monthly	Monthly
	CBOD	CBOD	S.S	S.S	T.P	T.P	Counts	Minimum	Maximum
	(mg/L)	(kg/day)	(mg/L)	(kg/day)	(mg/L)	(kg/day)	/100ml		
January	2.1	11.5	3.9	21.4	0.12	0.69	11.5	6.7	7.2
February	2.1	11.7	3.3	18.2	0.12	0.67	16.8	6.8	7.1
March	2.5	15.0	5.5	36.0	0.12	0.82	16.8	6.7	7.0
April	3.4	29.4	6.0	50.1	0.12	1.02	34.4	6.6	7.0
May	2.6	20.8	5.0	41.8	0.11	0.91	40.5	6.7	7.1
June	2.6	20.3	4.3	33.6	0.11	0.88	58.0	6.8	7.1
July	2.1	13.8	4.3	29.9	0.15	1.06	10.0	6.6	7.0
August	2.0	12.0	3.6	22.8	0.16	0.99	13.2	6.6	6.8
September	2.0	19.9	3.1	34.7	0.13	1.35	39.0	6.6	6.9
October	2.1	27.0	4.0	58.3	0.17	2.37	185.4	6.3	6.8
November	2.4	19.2	3.5	28.1	0.16	1.30	22.1	6.3	6.6
December	2.4	15.2	3.7	23.9	0.12	0.77	187.8	6.2	6.6
Average	2.4	18.0	4.2	33.3	0.13	1.07	53.0	6.6	6.9
Max (Min)	3.4	29.4	6.0	58.3	0.17	2.37	187.8	(6.2)	7.2
C of A Limit	<25	<225	<25	<225	<1	<9	<200	>6.0	<9.5
C of A Obj.	<15		<15		<0.9		<150		

The Certificate of Approval Limits for CBOD5 and suspended solids are 25 mg/l with an objective target of 15 mg/l and loading limits of less than 225 kg/day. The levels for total phosphorus are less than 1 mg/l and a loading limit of 9 kg/day. In the reporting year 2019, CBOD₅, suspended solids and total phosphorus concentration limits and loading limits met both the Certificate of Approval limits and the objectives.

The Certificate of Approval states the pH of the effluent shall be maintained between 6.0 and 9.5, inclusive, at all times. The pH during this period was a high of 7.2 and a low of 6.2. The pH met the requirements of the Certificate of Approval in 2019.

The Certificate of Approval also requires the E-coli results to be less than 200 organisms per 100 ml and an objective of less than 150 organisms per 100 ml as a monthly geometric mean density. The effluent met the limit targets with a maximum monthly geometric mean density of 187.8 organisms per 100 ml. The objective of 150 organisms per 100 ml was not met in the months of October and December.

2. Effluent Quality Assurance or Control Measures

The effluent sample is a 24 hour composite sampled downstream of the UV disinfection system. The influent and effluent samplers are set to collect samples at a frequency of at the least one sample per hour interval.

The operators send weekly influent and effluent samples to ALS Laboratories in Thunder Bay. The effluent samples are analyzed for carbonaceous biochemical oxygen demand, total phosphorus, ammonia, total nitrogen, and nitrates. E-coli are sampled from the effluent only. The influent samples are tested for biochemical oxygen demand, total Kjeldahl nitrogen and total phosphorus. The digester contents are analyzed on an annual basis.

Suspended solids are sampled and tested in house on both influent and effluent and total phosphorus is tested on the effluent. The plant operators perform in-house laboratory testing for several other process parameters to monitor plant performance.

3. Maintenance

The operators performed required routine maintenance through the 2019 period. Additional maintenance activities conducted during the year are as follows:

Treatment Plant:

- Replaced portable digester heater
- New polymer containment is in place
- Repaired digester sludge removal/isolation valve
- New DO controller was installed
- Cross collector 2 was repaired and 1 link removed from flight chain
- Lakeside Controls replaced a failed DeltaV VIM card
- Replaced shear pin long collector 1 drive
- Repaired the hoist in the sludge/polymer area
- Repaired ruptured polymer line
- Installed spare Netzsch polymer pump so that unit with leaking shaft seal could be shipped back to supplier
- Installed spare DO probe cell 1
- Installed new EW pump
- Installed repaired Netzsch polymer pump so that the spare with leaking shaft seal could be shipped back to supplier
- Clarifier 2 was drained and inspected in order that a repair could be made. A link was removed from each side of the cross collector and 1 link was removed from the drive chain.
- The fire hydrant at the plant was replaced by town contractor.
- The garage floor was repaired.

- Lakeside Controls performed upgrades on Delta V SCADA computers.
- Digester doghouse heaters were replaced
- Wajax did load bank test on portable genset, it failed
- The on demand heater for the polymer dilution water has been installed.
- Gas head verifications were completed for the head works/sludge thickening building.

Pump Stations:

- Adjusted the elevation of the level sensor at White Pine lift station x2
- Replaced level sensor head at Church Street lift station with spare
- Lakeside was in to asses a communications fault at Central Ave. lift station. A faulty communications card was identified and replaced with an onsite spare
- Reloaded the PLC programming at Church St. lift station
- Replaced sump pump White Pine lift station drywell
- Replaced pump 1 outlet valve at White Pine lift station
- Wajax did load bank test on gensets at Central, Fifth and White Pine lift stations
- Debris was removed from Central and Fifth St. wet wells by contractor vacuum truck.

4. Operational issues

The Town of Fort Frances has accepted 2100.8 m³ of untested sewage from the New Gold mine site into the collection system in 2019. The additions were made in every month in the year. The operators of the wastewater plant are not aware of when the addition sewage material is added to the town collection system. Additional testing of the sewage from the New Gold mine has been requested but the results of the testing have not been provided to the Fort Frances wastewater plant operators.

A new ECA was received from the MOE on January 6 2016 allowing for the installation of the new sludge dewatering equipment. The new equipment began processing sludge on September 19 2016. Optimization of the sludge dewatering process using the new equipment has been continuing in 2019.

A Fournier press technician recommended a water heater be installed for polymer dilution water and that the sludge be tested in colder weather for SVI and filaments that could potentially impede drainage. The on-demand water heater was installed in January 2019.

Ongoing pumping issues with the LMI polymer pumps made it necessary to delay trials of alternate polymer samples. A new progressive cavity polymer pump was installed in May 2019. Once the new pump was installed we started ordering totes of polymer instead of drums.

The installation of the fine bubble aeration system by Honeywell and EDI was completed. Some minor adjustments to controls and programming will be made in the near future but the system is running quite nicely.

There was one reported bypass during 2019. On July 17 2019 an intense thunderstorm surcharged the sewer system and the overflow weir in Manhole 8 was reached resulting in 178.9 m³ of sewage bypassing the treatment processes.

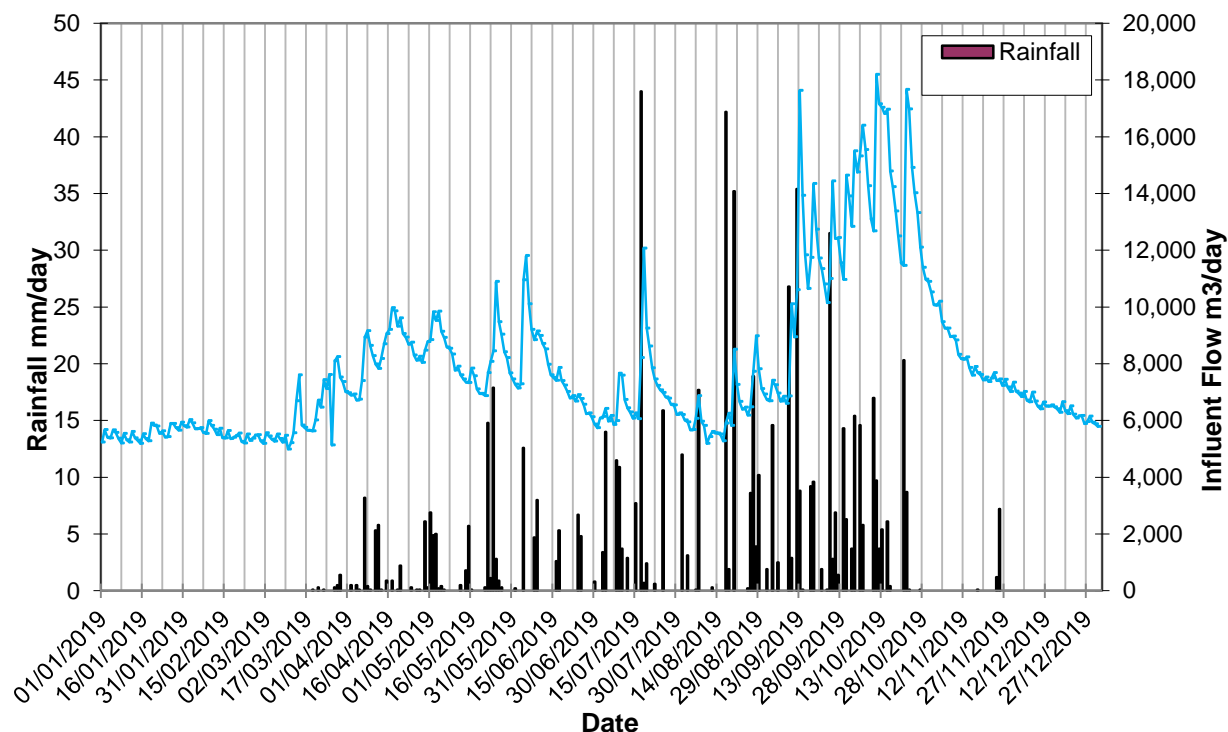
On June 4th there was an extreme rainfall event which brought flows through the wastewater plant to a level that was above the 208 L/s rated capacity of the UV system. There was a 2.5 hour period where the flows were between 208-250 L/s but under our ECA this type of event will not be identified as a bypass. This wastewater stream received all usual treatment processes. Samples were sent out and e-coli results have been included in the geometric mean calculation for the month. The flow through the UV units was also above the 208 L/s rated capacity on four different occasions during the month of October 2019.

There was no community complaints received during the period of this report.

A graph of the influent flows and rainfall as recorded at the Fort Frances Airport sourced from Environment Canada is included illustrating several rainfall events closely correlating to influent flow spikes. There were a number of rainfall data gaps in the Environment Canada database; these were supplemented by data from the International Falls Airport when available. The highest rainfall event occurred on July 17 2019 with a recorded rainfall amount of 44 mm. The flow at the sewage plant was 8213 m³ on July 17 and 12069 m³ on July 18 2019. The peak flow of 18190 m³ was recorded on October 11 2019 with a rainfall of 9.7 mm. The rainfall in the town may have been higher than the recorded value as the airport is located outside of the town.

The flow to the treatment plant was above the rated capacity of 9000 m³/day for 78 days in 2019. The flow was over the rated capacity continuously for the last 19 days of September, all of October and the first 6 days of November 2019. There was frequent significant rainfall in the area from the last weeks of August through most of October with measureable rainfall recorded on 40 days of the 67 days from August 17 through October 23 2019. This period had 409 mm of recorded rainfall.

Rainfall vs influent Flow 2019



5. Sludge Generation and Disposal

A new Fournier Rotary Press was installed and in operation as of September 19 2016 decreasing the water content of the sludge for disposal at the landfill. The rotary press operated for 1380 hours in 2019.

Sludge Volume Hauled in 2019

Month	Total Volume(m3)
January	136.0
February	106.7
March	109.2
April	121.6
May	135.0
June	132.6

July	97.7
August	136.0
September	83.1
October	111.1
November	105.7
December	104.5
Total	1379.2

There was 1379.2 m³ of sludge generated and hauled in 2019 with an average of 114.9 m³ per month. The sludge analytical sample results for 2019 are appended to this report.

The Town of Fort Frances installed a Fournier rotary press designed to dewater the sludge and allow for the hauled sludge to meet the MOE criteria for landfill disposal without further drying. The new equipment began processing sludge on September 19 2016. The sludge is being disposed of in the municipal landfill site.

A Fournier press technician recommended a water heater be installed for polymer dilution water and that the sludge be tested in colder weather for SVI and filaments that could potentially impede drainage. The on-demand water heater was installed in January 2019.

Ongoing pumping issues with the LMI polymer pumps made it necessary to delay trials of alternate polymer samples. A new progressive cavity polymer pump was installed in May 2019.

Once the new pump was installed we started ordering totes of polymer instead of drums.

The only anticipated potential changes to volumes of sludge hauled from the system are dependent on further optimization of the dewatering process.

6. Calibrations

The owner shall maintain a continuous flow-measuring device to measure the flow rate within an accuracy of +/- 5% of actual rate of flow within the range of 10% to 100% of the full-scale reading of the measuring devices.

In 2019, calibration of the plant bypass weir was completed on July 9 2019 and effluent parshall flume was completed on August 24 2019; results attached to this report. Both flow measuring devices passed the verification testing.

2019 Annual Summary Report

2019 Fort Frances Wastewater

Month	Sewage Flows Year 2019						Usage	Calculated	Sludge	Removal Efficiency	
	Avg. Day Flow	Max Day Flow	Total Treated	Total ByPass	Total Volume ML	Total Volume	% Plant Capacity	Volume Hauled	Bins Hauled	CBOD5	Suspended Solids
	m3	m3	Volume ML	Volume ML	ML			IM3		Total Phosphorus	
January	5536.2	5933	171621		171621		62%	136.0	14		
February	5561.0	6023	155707		155707		62%	106.7	12		
March	6180.7	8247	191603		191603		69%	109.2	10		
April	8390.4	9966	251711		251711		93%	121.6	13		
May	8244.3	10890	255574		255574		92%	135.0	14		
June	7766.7	11807	233001		233001		86%	132.6	13		
July	6946.8	12069	215351	178.9	215529.9		77%	97.7	9		
August	6347.5	8974	196772		196772		71%	136.0	14		
September	10530.6	17630	315918		315918		117%	83.1	9		
October	14228.3	18190	441076		441076		158%	111.1	11		
November	8159.9	10192	245097		245097		91%	105.7	12		
December	6420.9	7029	199047		199047		71%	104.5	9		
Sum				178.9	2872656.9			1379.2	140		
Average	7860		239373		239388		87%	114.9	11.7		
Max		18190	441076						14		
ECA	9000	18000									

Month	BOD5/CBODS				Suspended Solids				Total Phosphorus				Nitrogen				E. Coli		pH	
	Avg. Raw BOD (mg/L)	Avg. Eff. CBOD (mg/L)	Avg. Load CBOD (kg/day)	Avg. Raw S.S (mg/L)	Avg. Eff. S.S (mg/L)	Avg. Load S.S (kg/day)	Avg. Raw T.P (mg/L)	Avg. Eff. T.P (mg/L)	Avg. Load T.P (kg/day)	Avg. Raw TKN (mg/L)	Avg. Eff. Total N (mg/L)	Avg. Raw Geo Mean Counts /100ml	Avg. Eff. Geo Mean Counts /100ml	Monthly Minimum	Monthly Maximum	Monthly Minimum	Monthly Maximum			
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	6.7	7.2	7.2	7.2	7.2	7.2		
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	6.8	7.1	7.1	7.1	7.1	7.1		
March	84.0	2.5	15.0	142.8	5.5	36.0	2.30	0.12	0.82	18.2	11.1	16.8	6.7	7.0	7.0	7.0	7.0	7.0		
April	67.6	3.4	29.4	117.6	6.0	50.1	1.72	0.12	1.02	12.9	9.9	34.4	6.6	7	7	7	7	7		
May	61.5	2.6	20.8	120.7	5.0	41.8	1.60	0.11	0.91	12.6	9.5	40.5	6.7	7.1	7.1	7.1	7.1	7.1		
June	62.0	2.6	20.3	129.9	4.3	33.6	1.77	0.11	0.88	12.6	9.7	58.0	6.8	7.1	7.1	7.1	7.1	7.1		
July	82.2	2.1	13.8	145.6	4.3	30.5	2.48	0.15	1.07	16.8	7.7	10.0	6.6	7.0	7.0	7.0	7.0	7.0		
August	86.5	2.0	12.0	160.0	3.6	22.8	2.31	0.16	0.99	17.3	7.9	13.2	6.6	6.8	6.8	6.8	6.8	6.8		
September	53.9	2.0	19.9	118.0	3.1	34.7	1.70	0.13	1.35	13.5	6.1	39.0	6.6	6.9	6.9	6.9	6.9	6.9		
October	31.7	2.1	27.0	74.5	4.0	58.3	4.00	0.17	2.37	7.2	5.7	185.4	6.3	6.8	6.8	6.8	6.8	6.8		
November	58.0	2.4	19.2	118.2	3.5	28.1	1.87	0.16	1.30	11.2	6.6	22.1	6.3	6.6	6.6	6.6	6.6	6.6		
December	85.0	2.4	15.2	167.3	3.7	23.9	2.30	0.12	0.77	15.6	8.2	187.8	6.2	6.5	6.5	6.5	6.5	6.5		
Average	73.9	2.4	18.0	134.0	4.2	33.3	2.3	0.13	1.07	14.8	8.4	53.0	6.6	6.9	6.9	6.9	6.9	6.9		
Max	110.2	3.4	29.4	167.3	6	58.3	4.0	0.17	2.37	20.9	11.1	187.8	6.8	7.2	7.2	7.2	7.2	7.2		
ECA		25	225		25	225		1.0	9.0			200	6.0	6.5	6.5	6.5	6.5	6.5		

Monthly Operations Summary Report

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
Day	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/01/2019	5,236.00			127	5,236.00	85					0.14		3.2	9.5	7		
02/01/2019	5,673.00	108	2.44	151	5,673.00	99	2	0.266	0.021	7.92	0.11	2	2.4	9.5	6.9	20	
03/01/2019	5,397.00			186	5,397.00	86					0.17		3.6	9.5	6.9		
04/01/2019	5,378.00			198	5,378.00	88					0.1		2.8	9.5	6.9		
05/01/2019	5,665.00			230	5,665.00	104					0.15		6.4	9.5	7		
06/01/2019	5,569.00			190	5,569.00	91					0.16		4	9.5	6.9		
07/01/2019	5,367.00			167	5,367.00	87					0.13		3.6	9.5	7		
08/01/2019	5,200.00	99	2.47	141	5,200.00	87	2	0.35	0.05	6.9	0.14	2.9	3.2	9	7.1	10	
09/01/2019	5,532.00			162	5,532.00	101					0.25		4	9	7		
10/01/2019	5,316.00			150	5,316.00	87					0.19		5.2	9	6.9		
11/01/2019	5,234.00			144	5,234.00	87					0.17		3.6	9	7		
12/01/2019	5,610.00			160	5,610.00	97					0.18		4.8	9	7		
13/01/2019	5,380.00			146	5,380.00	86					0.11		2.4	9	7		
14/01/2019	5,296.00	103	2.5	171	5,296.00	88	2	0.215	0.063	6.45	0.09	2	4	9	6.9	10	
15/01/2019	5,186.00			147	5,186.00	83					0.1		5.2	9	7.1		
16/01/2019	5,525.00			128	5,525.00	103					0.06		2.8	9	7.2		
17/01/2019	5,351.00			134	5,351.00	87					0.15		6.4	9	7		
18/01/2019	5,275.00			159	5,275.00	92					0.11		3.6	8.5	6.9		
19/01/2019	5,894.00			154	5,894.00	98					0.1		3.6	8.5	6.9		
20/01/2019	5,830.00			137	5,830.00	92					0.09		4.4	8.5	6.9		
21/01/2019	5,799.00			135	5,799.00	90					0.08		2.4	8.5	7		
22/01/2019	5,538.00	91	2.11	150	5,538.00	91	2.3	0.489	0.076	6.79	0.1	3.2	3.6	8.5	6.9	10	
23/01/2019	5,625.00			158	5,625.00	103					0.12		5.6	8.5	7		
24/01/2019	5,412.00			147	5,412.00	89					0.1		2	8.5	7		
25/01/2019	5,420.00			161	5,420.00	90					0.11		2.4	8.5	7		
26/01/2019	5,886.00			152	5,886.00	96					0.13		3.6	8.5	6.9		
27/01/2019	5,888.00			229	5,888.00	96					0.06		2	8.5	7		
28/01/2019	5,743.00	150	3.1	186	5,743.00	93	2.2	0.69	0.057	6.38	0.04	2.1	2.4	8	7	10	
29/01/2019	5,651.00			184	5,651.00	90					0.04		1.6	8	7		
30/01/2019	5,933.00			137	5,933.00	101					0.2		10.4	8	6.8		
31/01/2019	5,812.00			142	5,812.00	94					0.08		4.4	8	6.7		
Total	171,621.00				171,621.00												0.00
Average	5,536.16	110.20	2.52	160.10	5,536.16	92.29	2.10	0.40	0.05	6.89	0.12	2.44	3.86	8.82	6.96	11.49	0.00
Minimum	5,186.00	91.00	2.11	127.00	5,186.00	83.00	2.00	0.22	0.02	6.38	0.04	2.00	1.60	8.00	6.70	10.00	0.00
Maximum	5,933.00	150.00	3.10	230.00	5,933.00	104.00	2.30	0.69	0.08	7.92	0.25	3.20	10.40	9.50	7.20	20.00	0.00
Count	31	5	5	31	31	31	5	5	5	5	31	5	31	31	31	5	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/02/2019	5,760.00			157	5,760.00	92					0.11		2.4	8	7		
02/02/2019	6,023.00			146	6,023.00	100					0.08		2	8	6.9		
03/02/2019	5,911.00			133	5,911.00	97					0.05		2	8	7.1		
04/02/2019	5,704.00			128	5,704.00	92					0.12		2.8	8	6.8		
05/02/2019	5,705.00	99	2.17	124	5,705.00	91	2	1.98	0.093	6.95	0.11	4.1	2.4	8	6.8	40	
06/02/2019	5,742.00			129	5,742.00	96					0.09		2.4	8	6.9		
07/02/2019	5,576.00			119	5,576.00	92					0.39		4.4	8	6.9		
08/02/2019	5,532.00			132	5,532.00	89					0.22		4	8	7		
09/02/2019	5,992.00			146	5,992.00	102					0.18		3.6	8	7		
10/02/2019	5,821.00			155	5,821.00	96					0.07		1.2	8	6.9		
11/02/2019	5,685.00	111	7.2	136	5,685.00	94	2.2	1.5	0.061	6.81	0.05	2	2	8	6.9	10	
12/02/2019	5,497.00			144	5,497.00	89					0.03		4.4	8	6.9		
13/02/2019	5,722.00			137	5,722.00	106					0.14		3.6	8	6.8		
14/02/2019	5,389.00			147	5,389.00	88					0.08		3.6	7.5	7		
15/02/2019	5,377.00			173	5,377.00	91					0.08		3.2	7.5	7.1		
16/02/2019	5,635.00			175	5,635.00	91					0.1		3.6	7.5	7.1		
17/02/2019	5,352.00			173	5,352.00	88					0.09		3.2	7.5	6.9		
18/02/2019	5,399.00			165	5,399.00	87					0.1		2.4	8	7.1		
19/02/2019	5,460.00	99	2.45	173	5,460.00	90	2.2	1.05	0.065	6.84	0.1	2.4	2.4	8	7.1	10	
20/02/2019	5,548.00			197	5,548.00	95					0.1		4.8	8	6.9		
21/02/2019	5,255.00			161	5,255.00	83					0.08		2	8	6.9		
22/02/2019	5,200.00			172	5,200.00	85					0.11		2.4	8	7		
23/02/2019	5,517.00			166	5,517.00	89					0.07		4.4	8	7		
24/02/2019	5,289.00			171	5,289.00	85					0.17		2.8	7.5	6.9		
25/02/2019	5,373.00	106	2.61	158	5,373.00	89	2	1.32	0.082	7.33	0.15	4.3	2.8	7.5	6.9	20	
26/02/2019	5,477.00			142	5,477.00	91					0.19		6	7.5	7		
27/02/2019	5,493.00			176	5,493.00	108					0.16		7.2	7.5	7		
28/02/2019	5,273.00			147	5,273.00	87					0.07		4	7.5	7.1		
Total	155,707.00				155,707.00												0.00
Average	5,560.96	103.75	3.61	152.93	5,560.96	92.25	2.10	1.46	0.08	6.98	0.12	3.20	3.29	7.84	6.96	16.82	0.00
Minimum	5,200.00	99.00	2.17	119.00	5,200.00	83.00	2.00	1.05	0.06	6.81	0.03	2.00	1.20	7.50	6.80	10.00	0.00
Maximum	6,023.00	111.00	7.20	197.00	6,023.00	108.00	2.20	1.98	0.09	7.33	0.39	4.30	7.20	8.00	7.10	40.00	0.00
Count	28	4	4	28	28	28	4	4	4	4	28	4	28	28	28	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/03/2019	5,185.00			145	5,185.00	88					0.06		1.6	7.5	6.9		
02/03/2019	5,556.00			149	5,556.00	92					0.12		4.8	7	6.8		
03/03/2019	5,444.00			142	5,444.00	93					0.09		4.8	7	7		
04/03/2019	5,339.00	90	2.2	137	5,339.00	89	2.5	4.23	0.072	6.15	0.1	6	4	7.5	6.9	20	
05/03/2019	5,266.00			146	5,266.00	88					0.06		4.8	7.5	7		
06/03/2019	5,515.00			163	5,515.00	98					0.11		6	7.5	6.8		
07/03/2019	5,351.00			170	5,351.00	107					0.09		4	7.5	6.9		
08/03/2019	5,229.00			161	5,229.00	87					0.07		3.6	7.5	6.8		
09/03/2019	5,464.00			152	5,464.00	90					0.11		3.2	7.5	7		
10/03/2019	4,988.00			169	4,988.00	85					0.06		1.6	7.5	7		
11/03/2019	5,207.00	99	2.72	211	5,207.00	85	2.3	2.2	0.07	7.08	0.09	3.1	3.2	7.5	7	10	
12/03/2019	5,558.00			155	5,558.00	89					0.14		4	7	6.8		
13/03/2019	6,682.00				6,682.00	103					0.15		3.2	6.5	6.8		
14/03/2019	7,598.00			135	7,598.00	115					0.28		8	7	6.9		
15/03/2019	5,835.00			126	5,835.00	100					0.1		6	7	6.7		
16/03/2019	5,750.00			115	5,750.00	93					0.11		5.6	7	6.8		
17/03/2019	5,651.00			123	5,651.00	93					0.1		4	7	6.8		
18/03/2019	5,640.00	69	2.41	163	5,640.00	92	2.7	2.74	0.041	6.19	0.07	4.8	1.6	7	6.8	10	
19/03/2019	5,627.00			144	5,627.00	90					0.07		6	7.5	6.7		
20/03/2019	6,015.00			144	6,015.00	103					0.1		5.2	7	6.9		
21/03/2019	6,715.00			154	6,715.00	113					0.05		2.4	7	6.9		
22/03/2019	6,465.00			161	6,465.00	100					0.07		3.6	7	6.9		
23/03/2019	7,427.00			146	7,427.00	128					0.09		4.4	7	6.8		
24/03/2019	7,118.00			125	7,118.00	114					0.31		11.6	7	6.9		
25/03/2019	7,612.00			109	7,612.00	162					0.21		18	7	6.9		
26/03/2019	5,128.00			111	5,128.00	97					0.08		3.6	7	6.7		
27/03/2019	8,097.00	78	1.88	142	8,097.00	136	2.4	3.7	0.044	5.76	0.39	3.3	10	7	6.7	40	
28/03/2019	8,247.00			115	8,247.00	120					0.23		9.2	6.5	6.7		
29/03/2019	7,517.00			114	7,517.00	114					0.11		6.4	6.5	6.8		
30/03/2019	7,363.00			117	7,363.00	114					0.12		7.2	6.5	6.9		
31/03/2019	7,014.00			140	7,014.00	110					0.11		8	6.5	7		
Total	191,603.00				191,603.00												0.00
Average	6,180.74	84.00	2.30	142.80	6,180.74	102.84	2.48	3.22	0.06	6.30	0.12	4.30	5.47	7.08	6.85	16.82	0.00
Minimum	4,988.00	69.00	1.88	109.00	4,988.00	85.00	2.30	2.20	0.04	5.76	0.05	3.10	1.60	6.50	6.70	10.00	0.00
Maximum	8,247.00	99.00	2.72	211.00	8,247.00	162.00	2.70	4.23	0.07	7.08	0.39	6.00	18.00	7.50	7.00	40.00	0.00
Count	31	4	4	30	31	31	4	4	4	4	31	4	31	31	31	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/04/2019	6,971.00			163	6,971.00	111					0.1		6	6.5	6.8		
02/04/2019	6,888.00	84	2.24	166	6,888.00	106	2.6	3.16	0.067	6.01	0.09	5.9	6.4	7	6.7	50	
03/04/2019	6,922.00			138	6,922.00	119					0.15		6.8	7	6.7		
04/04/2019	6,711.00			127	6,711.00	108					0.05		6	7	6.8		
05/04/2019	6,741.00			141	6,741.00	100					0.07		5.2	7	6.8		
06/04/2019	7,398.00			153	7,398.00	108					0.11		6.4	7	7		
07/04/2019	8,937.00			108	8,937.00	140					0.15		9.2	7	7		
08/04/2019	9,158.00	63	1.52	82	9,158.00	129	6	1.73	0.045	5.4	0.06	11.1	4	7	6.7	30	
09/04/2019	8,635.00			90	8,635.00	125					0.08		3.6	7	6.8		
10/04/2019	8,278.00			100	8,278.00	134					0.09		4.8	7	6.9		
11/04/2019	7,983.00			108	7,983.00	119					0.24		10.8	6.5	6.9		
12/04/2019	7,830.00			86	7,830.00	116					0.14		7.6	7	6.9		
13/04/2019	8,178.00			107	8,178.00	119					0.18		9.6	7	6.7		
14/04/2019	8,695.00			117	8,695.00	126					0.14		7.2	7	6.6		
15/04/2019	9,057.00	68	1.85	109	9,057.00	130	3.9	2.27	0.125	5.97	0.12	9.1	7.6	7	6.7	20	
16/04/2019	9,206.00			118	9,206.00	128					0.11		6.8	7	6.9		
17/04/2019	9,966.00			104	9,966.00	143					0.11		2.8	7	6.8		
18/04/2019	9,861.00			111	9,861.00	140					0.08		3.6	7	6.8		
19/04/2019	9,318.00			98	9,318.00	130					0.1		4	7	6.7		
20/04/2019	9,610.00			113	9,610.00	138					0.14		6.4	7	6.7		
21/04/2019	9,061.00			88	9,061.00	130					0.15		9.6	7	6.8		
22/04/2019	8,928.00			95	8,928.00	127					0.08		3.2	7	6.8		
23/04/2019	8,681.00	59	1.54	88	8,681.00	125	2.3	3.08	0.098	4.69	0.07	4.3	4.4	7	6.9	40	
24/04/2019	8,751.00			101	8,751.00	135					0.11		4	7	6.9		
25/04/2019	8,297.00			106	8,297.00	121					0.08		3.6	7	7		
26/04/2019	8,116.00			153	8,116.00	118					0.31		10.8	7	6.9		
27/04/2019	8,252.00			164	8,252.00	123					0.25		9.2	7	6.9		
28/04/2019	8,039.00			90	8,039.00	114					0.07		2	7	6.9		
29/04/2019	8,471.00	64	1.44	203	8,471.00	127	2.2	2.22	0.101	5.43	0.09	4.1	3.6	7	7	40	
30/04/2019	8,772.00			100	8,772.00	127					0.14		5.6	7	7		
Total	251,711.00				251,711.00												0.00
Average	8,390.37	67.60	1.72	117.57	8,390.37	123.87	3.40	2.49	0.09	5.50	0.12	6.90	6.03	6.97	6.83	34.38	0.00
Minimum	6,711.00	59.00	1.44	82.00	6,711.00	100.00	2.20	1.73	0.05	4.69	0.05	4.10	2.00	6.50	6.60	20.00	0.00
Maximum	9,966.00	84.00	2.24	203.00	9,966.00	143.00	6.00	3.16	0.13	6.01	0.31	11.10	10.80	7.00	7.00	50.00	0.00
Count	30	5	5	30	30	30	5	5	5	5	30	5	30	30	30	5	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/05/2019	8,846.00			103	8,846.00	125					0.13		7.2	7	6.7		
02/05/2019	9,819.00			106	9,819.00	141					0.13		8.4	7	6.8		
03/05/2019	9,521.00			102	9,521.00	135					0.13		8.4	7	6.9		
04/05/2019	9,843.00			112	9,843.00	137					0.12		4.4	7	7		
05/05/2019	9,138.00			83	9,138.00	128					0.15		5.2	7	6.9		
06/05/2019	8,916.00	55	1.29	146	8,916.00	128	3.3	1.96	0.067	4.94	0.16	8.1	6.8	7	7	60	
07/05/2019	8,587.00			135	8,587.00	126					0.11		6.4	7.5	6.9		
08/05/2019	8,536.00			161	8,536.00	138							9.6	7.5	6.9		
09/05/2019	8,336.00			148	8,336.00	121					0.14		4.8	7.5	7.1		
10/05/2019	7,769.00			156	7,769.00	117					0.09		4	7.5	7.1		
11/05/2019	7,903.00			136	7,903.00	120					0.11		3.6	7.5	6.9		
12/05/2019	7,606.00			119	7,606.00	112					0.1		2.4	7.5	6.9		
13/05/2019	7,460.00	74	1.62	131	7,460.00	111	2	2.84	0.063	5.27	0.08	2.9	5.2	7.5	7	30	
14/05/2019	7,345.00			113	7,345.00	116					0.21		6.8	8	6.9		
15/05/2019	7,326.00			103	7,326.00	113					0.05		2	8	6.9		
16/05/2019	7,841.00			107	7,841.00	123					0.11		6	8	7.1		
17/05/2019	7,566.00			120	7,566.00	124					0.09		4.4	8	6.9		
18/05/2019	7,110.00			95	7,110.00	108					0.08		4.4	8	6.9		
19/05/2019	6,946.00			138	6,946.00	104					0.11		4.8	8	6.9		
20/05/2019	6,944.00			176	6,944.00	101					0.12		5.2	8	7		
21/05/2019	6,869.00	74	1.94	119	6,869.00	108	3	3.3	0.071	5.61	0.14	7.5	4	8.5	6.8	50	
22/05/2019	7,677.00			126	7,677.00	122					0.11		4	8.5	6.9		
23/05/2019	8,073.00			125	8,073.00	118					0.09		3.2	8.5	6.9		
24/05/2019	8,448.00			133	8,448.00	132					0.12		2.8	8.5	7		
25/05/2019	10,890.00			91	10,890.00	153					0.13		6	8.5	7		
26/05/2019	9,477.00			93	9,477.00	131					0.07		4.8	8.5	7		
27/05/2019	9,030.00	43	1.54	104	9,030.00	132	2	1.6	0.043	5.2	0.05	5.6	4	8.5	7	30	
28/05/2019	8,417.00			111	8,417.00	125					0.09		3.6	9	6.9		
29/05/2019	8,205.00			121	8,205.00	133					0.08		2.8	9	6.9		
30/05/2019	7,671.00			98	7,671.00	114					0.1		6	9	7		
31/05/2019	7,459.00			131	7,459.00	113					0.08		3.2	9	7		
Total	255,574.00				255,574.00												0.00
Average	8,244.32	61.50	1.60	120.71	8,244.32	122.87	2.58	2.43	0.06	5.26	0.11	6.03	4.98	7.94	6.94	40.54	0.00
Minimum	6,869.00	43.00	1.29	83.00	6,869.00	101.00	2.00	1.60	0.04	4.94	0.05	2.90	2.00	7.00	6.70	30.00	0.00
Maximum	10,890.00	74.00	1.94	176.00	10,890.00	153.00	3.30	3.30	0.07	5.61	0.21	8.10	9.60	9.00	7.10	60.00	0.00
Count	31	4	4	31	31	31	4	4	4	4	30	4	31	31	31	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/06/2019	7,273.00			180	7,273.00	112					0.16		2.8	9	7		
02/06/2019	7,133.00			106	7,133.00	103					0.07		1.6	9.5	6.9		
03/06/2019	7,280.00	52	1.48	127	7,280.00	118	3.6	2.75	0.087	4.84	0.12	2.9	2.8	9.5	7.1	70	
04/06/2019	10,956.00			244	10,956.00	225					0.14		6.4	9.5	7		
05/06/2019	11,807.00			109	11,807.00	168					0.11		4	9.5	7		
06/06/2019	10,104.00			82	10,104.00	145					0.13		6.4	9.5	7		
07/06/2019	9,203.00			103	9,203.00	132					0.1		5.6	10	6.9		
08/06/2019	8,836.00			111	8,836.00	131					0.07		4	10	6.9		
09/06/2019	9,144.00			96	9,144.00	173					0.06		3.6	10.5	7		
10/06/2019	8,988.00	54	1.26	101	8,988.00	131	2.3	2.86	0.027	3.88	0.08	2	3.2	10.5	7	20	
11/06/2019	8,702.00			118	8,702.00	126					0.09		4.4	10.5	7		
12/06/2019	8,518.00			99	8,518.00	135					0.1		4.8	10	7		
13/06/2019	7,974.00			125	7,974.00	119					0.11		4.8	10.5	7		
14/06/2019	7,605.00			105	7,605.00	114					0.12		4.4	10.5	7		
15/06/2019	7,508.00			110	7,508.00	112					0.13		4.4	10.5	6.9		
16/06/2019	7,404.00			113	7,404.00	113					0.1		5.6	11	7		
17/06/2019	7,861.00	67		127	7,861.00	122	2.6	2.86	0.073	5.58	0.13	4.1	4.4	11	6.9	10	
18/06/2019	7,402.00			116	7,402.00	113					0.21		3.6	11	7		
19/06/2019	7,235.00			147	7,235.00	124					0.22		7.2	11.5	6.8		
20/06/2019	7,018.00			140	7,018.00	107					0.09		2	11.5	6.8		
21/06/2019	6,786.00			151	6,786.00	102					0.07		1.6	11.5	6.9		
22/06/2019	6,873.00			136	6,873.00	114					0.09		4	11.5	6.9		
23/06/2019	6,681.00			185	6,681.00	101					0.11		1.6	11.5	7		
24/06/2019	6,902.00	75	2.58	151	6,902.00	103	2	2.52	0.1	7.41	0.08	3.6	3.6	12	7	10	
25/06/2019	6,769.00			144	6,769.00	102					0.14		5.6	12	6.8		
26/06/2019	6,561.00			138	6,561.00	111					0.09		5.2	12	6.9		
27/06/2019	6,233.00			150	6,233.00	94					0.13		7.2	12.5	6.9		
28/06/2019	6,261.00			153	6,261.00	100					0.16		5.6	12.5	6.8		
29/06/2019	6,119.00			126	6,119.00	102					0.12		5.2	12.5	6.8		
30/06/2019	5,865.00			103	5,865.00	89					0.09		2.4	12.5	6.9		
Total	233,001.00				233,001.00												0.00
Average	7,766.70	62.00	1.77	129.87	7,766.70	121.37	2.63	2.75	0.07	5.43	0.11	3.15	4.27	10.87	6.94	19.34	0.00
Minimum	5,865.00	52.00	1.26	82.00	5,865.00	89.00	2.00	2.52	0.03	3.88	0.06	2.00	1.60	9.00	6.80	10.00	0.00
Maximum	11,807.00	75.00	2.58	244.00	11,807.00	225.00	3.60	2.86	0.10	7.41	0.22	4.10	7.20	12.50	7.10	70.00	0.00
Count	30	4	3	30	30	30	4	4	4	4	30	4	30	30	30	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/07/2019	5,737.00			123	5,737.00	89					0.08		2	13	6.8		10
02/07/2019	6,079.00	84	2.4	146	6,079.00	95	2.1	0.198	0.041	6.41	0.24	2	7.2	13	6.9		
03/07/2019	6,131.00			138	6,131.00	102					0.2		6.4	13	6.9		
04/07/2019	6,421.00			141	6,421.00	97					0.17		5.2	13	6.9		10
05/07/2019	5,975.00			151	5,975.00	92					0.15		3.2	13	6.8		
06/07/2019	6,172.00			134	6,172.00	103					0.16		4	13.5	6.8		
07/07/2019	5,849.00			155	5,849.00	90					0.15		2.8	14	7		10
08/07/2019	5,988.00	87	2.98	148	5,988.00	96	2.4	0.135	0.103	5.76	0.13	4.5	3.2	14	6.8		
09/07/2019	7,663.00			211	7,663.00	117					0.11		3.6	14	6.8		
10/07/2019	7,589.00			107	7,589.00	123					0.12		2	14	6.9		10
11/07/2019	6,730.00			123	6,730.00	108					0.1		3.6	14	6.9		
12/07/2019	6,439.00			252	6,439.00	102					0.12		3.6	14	7		
13/07/2019	6,289.00			126	6,289.00	103					0.19		4.4	14	7		10
14/07/2019	6,075.00			186	6,075.00	95					0.08		2.4	14.5	6.8		
15/07/2019	6,263.00	86	2.79	206	6,263.00	98	2	0.338	0.21	5.34	0.1	2.7	3.6	14.5	6.8		
16/07/2019	6,058.00			161	6,058.00	103					0.08		1.6	14.5	6.9		178.9
17/07/2019	8,213.00			233	8,213.00	241					0.29		15.2	14.5	6.7		
18/07/2019	12,069.00			111	12,069.00	230					0.16		4	14.5	6.7		
19/07/2019	9,250.00			121	9,250.00	127					0.14		3.6	15	6.8		10
20/07/2019	8,612.00			109	8,612.00	128					0.12		4	15	6.8		
21/07/2019	7,851.00			135	7,851.00	113					0.16		5.2	14.5	6.7		
22/07/2019	7,457.00	74	2.02	103	7,457.00	111	2.2	0.227	0.176	4.22	0.14	5.1	3.2	14.5	6.8		10
23/07/2019	7,224.00			161	7,224.00	110					0.2		10	15	6.7		
24/07/2019	7,071.00			121	7,071.00	118					0.14		3.6	15	6.7		
25/07/2019	6,978.00			117	6,978.00	107					0.14		4.8	15	6.6		10
26/07/2019	6,825.00			112	6,825.00	104					0.19		2	15	6.8		
27/07/2019	6,777.00			113	6,777.00	106					0.23		6.4	15	6.8		
28/07/2019	6,561.00			158	6,561.00	98					0.13		3.2	15	6.7		10
29/07/2019	6,539.00	80	2.19	127	6,539.00	103	2	0.111	0.236	5.5	0.15	4.1	1.6	15.5	6.7		
30/07/2019	6,208.00			141	6,208.00	94					0.18		2	15.5	6.7		
31/07/2019	6,258.00			145	6,258.00	107					0.22		5.6	15	6.7		
Total	215,351.00				215,351.00												178.90
Average	6,946.81	82.20	2.48	145.65	6,946.81	113.23	2.14	0.20	0.15	5.45	0.15	3.68	4.30	14.32	6.80	10.00	0.00
Minimum	5,737.00	74.00	2.02	103.00	5,737.00	89.00	2.00	0.11	0.04	4.22	0.08	2.00	1.60	13.00	6.60	10.00	178.90
Maximum	12,069.00	87.00	2.98	252.00	12,069.00	241.00	2.40	0.34	0.24	6.41	0.29	5.10	15.20	15.50	7.00	10.00	178.90
Count	31	5	5	31	31	31	5	5	5	5	31	5	31	31	31	5	1

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/08/2019	6,208.00			176	6,208.00	96					0.15		3.6	15.5	6.7		
02/08/2019	6,006.00			156	6,006.00	92					0.12		4	15.5	6.6		
03/08/2019	5,945.00			192	5,945.00	92					0.14		2.4	15.5	6.7		
04/08/2019	5,664.00			173	5,664.00	95					0.11		3.2	15.5	6.7		
05/08/2019	5,668.00			155	5,668.00	90					0.13		2	15.5	6.7		
06/08/2019	6,062.00	86	2.48	163	6,062.00	102	2	0.081	0.064	5.34	0.14	2	3.6	16	6.6	10	
07/08/2019	6,872.00			133	6,872.00	153					0.24		8.8	16	6.7		
08/08/2019	5,965.00			137	5,965.00	95					0.18		6.4	15.5	6.7		
09/08/2019	5,814.00			148	5,814.00	141					0.19		2.4	15.5	6.7		
10/08/2019	5,184.00			140	5,184.00	104					0.16		2.8	16	6.6		
11/08/2019	5,429.00			145	5,429.00	94					0.13		2.8	16	6.6		
12/08/2019	5,610.00	88	2.37	152	5,610.00	92	2	0.45	0.135	7.03	0.22	2.8	4	16	6.7	10	
13/08/2019	5,559.00			164	5,559.00	100					0.13		3.2	16	6.6		
14/08/2019	5,544.00			145	5,544.00	91					0.27		2	16	6.6		
15/08/2019	5,514.00			169	5,514.00	94					0.13		4	16	6.6		
16/08/2019	5,272.00			172	5,272.00	91					0.11		3.6	16	6.6		
17/08/2019	5,902.00			156	5,902.00	98					0.14		4	16	6.6		
18/08/2019	6,250.00			179	6,250.00	97					0.21		6.8	16	6.7		
19/08/2019	5,815.00	96	2.16	186	5,815.00	96	2	0.059	0.092	5.39	0.17	4.1	5.2	16	6.7	30	
20/08/2019	8,505.00			196	8,505.00	183					0.26		5.6	16.5	6.7		
21/08/2019	7,263.00			151	7,263.00	127					0.17		2.4	16.5	6.6		
22/08/2019	6,663.00			157	6,663.00	109					0.18		4.4	16	6.5		
23/08/2019	6,389.00			142	6,389.00	103					0.11		3.2	16	6.7		
24/08/2019	6,457.00			145	6,457.00						0.12		2	16	6.6		
25/08/2019	6,184.00			152	6,184.00	98					0.15		0.8	16	6.8		
26/08/2019	6,475.00	76	2.23	161	6,475.00	100	2	0.032	0.059	6.59	0.17	2.4	4	16	6.8	10	
27/08/2019	7,720.00			154	7,720.00	125					0.14		3.6	16	6.7		
28/08/2019	8,974.00			174	8,974.00	141					0.11		2.4	16	6.7		
29/08/2019	7,816.00			173	7,816.00	117					0.13		4	16	6.6		
30/08/2019	7,119.00			153	7,119.00	108					0.12		1.6	16	6.6		
31/08/2019	6,924.00			162	6,924.00	112					0.08		2	16	6.7		
Total	196,772.00				196,772.00												0.00
Average	6,347.48	86.50	2.31	160.03	6,347.48	107.87	2.00	0.16	0.09	6.09	0.16	2.83	3.57	15.92	6.66	13.16	0.00
Minimum	5,184.00	76.00	2.16	133.00	5,184.00	90.00	2.00	0.03	0.06	5.34	0.08	2.00	0.80	15.50	6.50	10.00	0.00
Maximum	8,974.00	96.00	2.48	196.00	8,974.00	183.00	2.00	0.45	0.14	7.03	0.27	4.10	8.80	16.50	6.80	30.00	0.00
Count	31	4	4	31	31	30	4	4	4	4	31	4	31	31	31	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/09/2019	6,728.00			156	6,728.00	101					0.1		2.4	16	6.6		
02/09/2019	6,687.00			177	6,687.00	101					0.07		2.4	16	6.7		
03/09/2019	7,408.00	90	2.43	186	7,408.00	123	2	0.064	0.05	5.92	0.05	2	2.8	16	6.7	10	
04/09/2019	7,251.00			182	7,251.00	125					0.11		3.2	16	6.7		
05/09/2019	6,959.00			165	6,959.00	110					0.09		1.2	16.5	6.7		
06/09/2019	6,676.00			148	6,676.00	104					0.06		1.2	16.5	6.8		
07/09/2019	6,846.00			145	6,846.00	108					0.2		2	16	6.7		
08/09/2019	6,601.00			151	6,601.00	102					0.08		2	16	6.6		
09/09/2019	6,854.00	73	2.05	200	6,854.00	143	2	0.02	0.012	6.67	0.23	2	2.8	16	6.6	10	
10/09/2019	10,110.00			135	10,110.00	147					0.19		2.4	16	6.7		
11/09/2019	8,938.00			136	8,938.00	139					0.14		2.8	16	6.6		
12/09/2019	10,596.00			164	10,596.00	234					0.09		1.2	15	6.7		
13/09/2019	17,630.00			85	17,630.00	236					0.06		2.8	15	6.7		
14/09/2019	13,924.00			81	13,924.00	191					0.08		3.6	15	6.6		
15/09/2019	11,825.00			81	11,825.00	158					0.11		2	15	6.6		
16/09/2019	10,642.00	26	1.14	88	10,642.00	152	2	0.023	0.014	4.4	0.07	2.3	2.4	15.5	6.7	10	
17/09/2019	11,737.00			125	11,737.00	192					0.15		3.2	16	6.7		
18/09/2019	14,341.00			59	14,341.00	206					0.2		2.8	16	6.7		
19/09/2019	12,731.00			70	12,731.00	174					0.31		10	15.5	6.9		
20/09/2019	11,717.00			64	11,717.00	163					0.17		4.4	15.5	6.8		
21/09/2019	11,345.00			77	11,345.00	157					0.22		3.2	15.5	6.8		
22/09/2019	10,804.00			79	10,804.00	146					0.11		5.6	15.5	6.8		
23/09/2019	10,146.00	32.3	1.23	104	10,146.00	143	2	0.053	0.02	3.84	0.1	3.6	4	15.5	6.7	10	
24/09/2019	10,993.00			133	10,993.00	205					0.1		4	15.5	6.8		
25/09/2019	14,432.00			60	14,432.00	199					0.2		8.4	15	6.7		
26/09/2019	12,406.00			96	12,406.00	169					0.11		1.6	15	6.6		
27/09/2019	12,436.00			87	12,436.00	168					0.09		2	15	6.6		
28/09/2019	11,546.00			125	11,546.00	157					0.13		3.6	15	6.6		
29/09/2019	10,967.00			85	10,967.00	150					0.07		1.6	15	6.7		
30/09/2019	14,642.00	48	1.67	96	14,642.00	193	2	0.024	0.022	4.34	0.09	2.4	2	15	6.7	680	
Total	315,918.00				315,918.00												0.00
Average	10,530.60	53.86	1.70	118.00	10,530.60	156.53	2.00	0.04	0.02	5.03	0.13	2.46	3.12	15.58	6.69	23.25	0.00
Minimum	6,601.00	26.00	1.14	59.00	6,601.00	101.00	2.00	0.02	0.01	3.84	0.05	2.00	1.20	15.00	6.60	10.00	0.00
Maximum	17,630.00	90.00	2.43	200.00	17,630.00	236.00	2.00	0.06	0.05	6.67	0.31	3.60	10.00	16.50	6.90	680.00	0.00
Count	30	5	5	30	30	30	5	5	5	5	30	5	30	30	30	5	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/10/2019	13,909.00			65	13,909.00	184					0.15		4	15	6.6		
02/10/2019	12,839.00			90	12,839.00	182					0.37		16	14.5	6.5		
03/10/2019	15,499.00			92	15,499.00	207					0.11		2.4	14.5	6.7		
04/10/2019	14,746.00			71	14,746.00	192					0.17		4	14.5	6.8		
05/10/2019	15,316.00			68	15,316.00	213					0.19		6.8	14.5	6.6		
06/10/2019	16,400.00			60	16,400.00	210					0.14		4.8	14	6.7		
07/10/2019	15,539.00			65	15,539.00	198					0.12		3.2	14.5	6.7		
08/10/2019	14,262.00	26	0.977	62	14,262.00	189	2	0.077	0.036	4.77	0.16	4.7	1.2	15	6.6	100	
09/10/2019	13,099.00			85	13,099.00	187					0.13		1.6	15	6.5		
10/10/2019	12,673.00			92	12,673.00	172					0.11		1.2	14.5	6.6		
11/10/2019	18,190.00			67	18,190.00	249					0.11		0.8	14.5	6.6		
12/10/2019	17,154.00			73	17,154.00	215					0.09		1.6	14	6.7		
13/10/2019	17,032.00			79	17,032.00	220					0.12		2	14	6.7		
14/10/2019	16,810.00			82	16,810.00	213					0.41		16	14	6.6		
15/10/2019	16,964.00			58	16,964.00	248					0.4		14.4	14	6.6		
16/10/2019	14,783.00			56	14,783.00	211					0.36		5.2	14	6.5		
17/10/2019	14,232.00	28.9	0.931	54	14,232.00	189	2.2	2.3	0.163	3.01	0.12	4.9	4.4	14	6.3	130	
18/10/2019	13,372.00			78	13,372.00	176					0.16		5.6	14	6.5		
19/10/2019	12,492.00			65	12,492.00	165					0.18		1.2	13.5	6.6		
20/10/2019	11,545.00			70	11,545.00	155					0.12		2.8	13.5	6.5		
21/10/2019	11,457.00	32	1.16	104	11,457.00	171	2.2	0.338	0.134	3.93	0.12	4.4	1.2	13	6.5	10	
22/10/2019	17,659.00			55	17,659.00	232					0.1		0.8	13	6.5	400	
23/10/2019	16,971.00			63	16,971.00	222					0.13		2	13	6.6		
24/10/2019	14,911.00			78	14,911.00	194					0.09		1.6	13	6.6		
25/10/2019	14,024.00			64	14,024.00	180					0.11		2.4	13	6.6		
26/10/2019	13,321.00			83	13,321.00	184					0.14		2	13	6.5		
27/10/2019	12,106.00			83	12,106.00	162					0.11		1.2	13	6.5		
28/10/2019	11,390.00	40	1.16	86	11,390.00	155	2	0.817	0.173	2.8	0.13	2.9	2.4	13	6.5	40	
29/10/2019	10,970.00			88	10,970.00	145					0.19		3.6	13	6.6		
30/10/2019	10,894.00			92	10,894.00	158					0.14		3.2	13	6.6		
31/10/2019	10,517.00			81	10,517.00	147					0.12		4.8	13	6.6		
Total	441,076.00				441,076.00												0.00
Average	14,228.26	31.73	1.06	74.48	14,228.26	191.13	2.10	0.88	0.13	3.63	0.16	4.23	4.01	13.82	6.58	73.05	0.00
Minimum	10,517.00	26.00	0.93	54.00	10,517.00	145.00	2.00	0.08	0.04	2.80	0.09	2.90	0.80	13.00	6.30	10.00	0.00
Maximum	18,190.00	40.00	1.16	104.00	18,190.00	249.00	2.20	2.30	0.17	4.77	0.41	4.90	16.00	15.00	6.80	400.00	0.00
Count	31	4	4	31	31	31	4	4	4	4	31	4	31	31	31	5	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/11/2019	10,074.00			90	10,074.00	141					0.21		3.2	13	6.6		
02/11/2019	10,056.00			99	10,056.00	143					0.12		4	13	6.5		
03/11/2019	10,192.00			103	10,192.00	138					0.15		2.8	13	6.5		
04/11/2019	9,478.00	42	1.34	114	9,478.00	135	2	0.715	0.111	3.67	0.16	3.7	1.2	13	6.5	40	
05/11/2019	9,252.00			106	9,252.00	134					0.14		2.4	12.5	6.4		
06/11/2019	9,250.00			106	9,250.00	142					0.14		2	12.5	6.5		
07/11/2019	8,953.00			99	8,953.00	126					0.07		2	12	6.5		
08/11/2019	8,971.00			118	8,971.00	131					0.19		2.4	12	6.4		
09/11/2019	8,829.00			256	8,829.00	130					0.23		4.4	12	6.4		
10/11/2019	8,319.00			102	8,319.00	121					0.1		1.2	12	6.4		
11/11/2019	8,174.00			91	8,174.00	118					0.12		4.8	12	6.4		
12/11/2019	8,150.00	52	1.62	123	8,150.00	121	2.3	0.957	0.094	4.66	0.15	4.8	2.4	12	6.4	10	
13/11/2019	8,235.00			104	8,235.00	130					0.32		7.2	12	6.3		
14/11/2019	7,866.00			62	7,866.00	119					0.18		1.6	12	6.5		
15/11/2019	7,592.00			107	7,592.00	116					0.16		2	12	6.4		
16/11/2019	7,891.00			93	7,891.00	130					0.14		2.4	12	6.5		
17/11/2019	7,684.00			134	7,684.00	112					0.14		3.2	12	6.4		
18/11/2019	7,609.00	82	2.11	121	7,609.00	115	2.5	0.688	0.089	4.88	0.12	3.7	2	12	6.4	30	
19/11/2019	7,424.00			132	7,424.00	108					0.16		2.8	12	6.4		
20/11/2019	7,518.00			113	7,518.00	120					0.24		8	11.5	6.6		
21/11/2019	7,367.00			121	7,367.00	156					0.11		1.6	11.5	6.6		
22/11/2019	7,487.00			120	7,487.00	110					0.12		5.2	11.5	6.5		
23/11/2019	7,679.00			123	7,679.00	115					0.2		7.2	11.5	6.4		
24/11/2019	7,400.00			106	7,400.00	108					0.12		2.8	11.5	6.4		
25/11/2019	7,455.00	56	2.4	114	7,455.00	113	2.7	0.525	0.082	4.72	0.1	5.3	3.6	11.5	6.3	20	
26/11/2019	7,233.00			159	7,233.00	108					0.12		3.6	11.5	6.3		
27/11/2019	7,445.00			145	7,445.00	122					0.16		3.6	11.5	6.3		
28/11/2019	7,167.00			120	7,167.00	107					0.21		4.8	11.5	6.3		
29/11/2019	7,009.00			136	7,009.00	108					0.19		4	11.5	6.4		
30/11/2019	7,338.00			129	7,338.00	114					0.22		6.4	11.5	6.4		
Total	245,097.00				245,097.00												0.00
Average	8,169.90	58.00	1.87	118.20	8,169.90	123.03	2.38	0.72	0.09	4.48	0.16	4.38	3.49	11.98	6.43	22.13	0.00
Minimum	7,009.00	42.00	1.34	62.00	7,009.00	107.00	2.00	0.53	0.08	3.67	0.07	3.70	1.20	11.50	6.30	10.00	0.00
Maximum	10,192.00	82.00	2.40	256.00	10,192.00	156.00	2.70	0.96	0.11	4.88	0.32	5.30	8.00	13.00	6.60	40.00	0.00
Count	30	4	4	30	30	30	4	4	4	4	30	4	30	30	30	4	0

**Fort Frances Wastewater Treatment Plant
Monthly Operations Summary**

2019	Raw Sewage				Final Effluent												Bypass Volume (m3)
	Raw Flow: Sum (m3/d)	BOD5 (mg/L)	Total Phosphorus (mg/L)	SS (mg/L) IH	Final Eff. Flow: Sum (m3/d)	Final Eff. Flow: Max. (L/s)	CBOD5 (mg/L)	NH3 + NH4 as N (mg/L)	Nitrite - N (mg/L)	Nitrate-N(mg/L)	Total Phosphorus (mg/L)	Suspended Solids (mg/L)	SS (mg/L) IH	Temperature (C)	pH	E. Coli. (cfu/100 mL)	
01/12/2019	7,029.00			119	7,029.00	105					0.11		2	11	6.4		
02/12/2019	6,958.00	86	2.35	128	6,958.00	106	2	0.631	0.073	5.16	0.13	3.2	2.4	11	6.3	130	
03/12/2019	6,835.00			146	6,835.00	102					0.21		2.8	11	6.3		
04/12/2019	7,017.00			135	7,017.00	123					0.24		6.8	11	6.3		
05/12/2019	6,705.00			156	6,705.00	103					0.09		2	10.5	6.2		
06/12/2019	6,649.00			132	6,649.00	101					0.09		2.8	10.5	6.2		
07/12/2019	6,994.00			146	6,994.00	110					0.14		3.2	10.5	6.3		
08/12/2019	6,674.00			136	6,674.00	100					0.11		4.4	10	6.3		
09/12/2019	6,498.00	69	1.92	131	6,498.00	99	2.2	0.858	0.124	5.68	0.09	6.8	3.2	10	6.3	290	
10/12/2019	6,400.00			140	6,400.00	99					0.1		4	10	6.3		
11/12/2019	6,646.00			190	6,646.00	105					0.18		5.2	10	6.2		
12/12/2019	6,504.00			134	6,504.00	101					0.11		1.2	10	6.2		
13/12/2019	6,500.00			139	6,500.00	101					0.13		7.2	10	6.2		
14/12/2019	6,537.00			142	6,537.00	101					0.09		6	10	6.3		
15/12/2019	6,477.00	91	2.24	163	6,477.00	100	2	1.72	0.217	5.48	0.12	2.4	2	10	6.3		
16/12/2019	6,406.00			146	6,406.00	99					0.13		2.8	10	6.2	660	
17/12/2019	6,287.00			158	6,287.00	94					0.11		3.6	9.5	6.4		
18/12/2019	6,659.00			137	6,659.00	113					0.14		2.4	10	6.2		
19/12/2019	6,341.00			164	6,341.00	102					0.09		4.4	9.5	6.3		
20/12/2019	6,233.00			196	6,233.00	94					0.07		4.4	9.5	6.3		
21/12/2019	6,507.00			172	6,507.00	102					0.15		6.4	9.5	6.3		
22/12/2019	6,210.00			165	6,210.00	98					0.09		4.4	9.5	6.3		
23/12/2019	6,084.00	94	2.67	175	6,084.00	95	3.2	2.88	0.159	4.16	0.11	6.8	2.8	9.5	6.3	50	
24/12/2019	6,154.00			164	6,154.00	98					0.09		3.6	10	6.5		
25/12/2019	6,170.00			344	6,170.00	93					0.1		2.8		6.6		
26/12/2019	5,882.00			171	5,882.00	96					0.13		4	9.5	6.5		
27/12/2019	5,957.00			210	5,957.00	97					0.11		2.4	9.5	6.5		
28/12/2019	6,148.00			222	6,148.00	99					0.09		3.6	9.5	6.5		
29/12/2019	5,930.00			177	5,930.00	94					0.12		5.6	9.5	6.5		
30/12/2019	5,873.00			236	5,873.00	95					0.11		4	9.5	6.5		
31/12/2019	5,783.00			211	5,783.00	92					0.1		2.8	9	6.6		
Total	199,047.00				199,047.00												0.00
Average	6,420.87	85.00	2.30	167.26	6,420.87	100.55	2.35	1.52	0.14	5.12	0.12	4.80	3.72	9.97	6.34	187.81	0.00
Minimum	5,783.00	69.00	1.92	119.00	5,783.00	92.00	2.00	0.63	0.07	4.16	0.07	2.40	1.20	9.00	6.20	50.00	0.00
Maximum	7,029.00	94.00	2.67	344.00	7,029.00	123.00	3.20	2.88	0.22	5.68	0.24	6.80	7.20	11.00	6.60	660.00	0.00
Count	31	4	4	31	31	31	4	4	4	4	31	4	31	30	31	4	0

Biosolids Quality Report

Ontario Clean Water Agency Time Series Info Report

Report extracted 14/02/2020 11:06

From: 01/01/2019 to 31/12/2019

Facility Org Number: 1103

Facility Works Number:

Facility Name: FORT FRANCES WASTEWATER TREATMENT FACILITY

Facility Owner: Municipality: The Corporation of the Town of Fort Frances

Facility Classification: Class 3 Wastewater Treatment

[illegible]

Flow Meter Calibrations

Instrument Verification Report

Ontario Clean Water Agency, 200 McIrvine Road, Fort Frances, ON

Test Date: August 24, 2019

Device: Miltronics OCM III 25C TS-2, Identifier # 120296126 HM

For: Plant Final Effluent flow as measured using a 12 inch Parshal flume

Table 1: Verification Data for Miltronics OCM and Final Effluent Parshal Flume

Measured Effluent Head (mm)	Indicated flow on OCM (L/s)	Calculated flow (L/s)	Percent error
195	55.3	56.7	-2.5
260	85.4	89.3	4.4
300	102.8	109.2	-5.9
395	160.8	165.9	-3.1
460	209.8	209.2	0.7

Notes: For the Parshal Flume: Flow rate, $Q \text{ (ft}^3/\text{s)} = 3.95 * (\text{Head}/((12)*(25.4)))^{1.522}$

Flow rate, $Q \text{ (L/s)} = Q \text{ (ft}^3/\text{s)} * 28.31 \text{ (L/ft}^3)$

Summary:

The error in indicated values for final effluent flow rate is within the range of +/- 10%.

The alarm condition for flow in excess of UV capability operated at 208 L/sec.



Geoff Pearce

Aug 24, 2019

O&M Team Lead

Ontario Clean Water Agency

Instrument Verification Report

Ontario Clean Water Agency, 200 McIlvaine Road, Fort Frances, ON

Test Date: July 9, 2019

Device: Miltronics Multiranger Plus XPS 10, Identifier 04-235-96-432 MU

For: Plant influent Bypass Overflow Level, as measured in Manhole #8

Detail:

- 1) Influent water level of 1.5 m was simulated with a fixture in manhole #8.
The bypass warning alarm (high level) was activated.
- 2) Influent water level of 1.954 m was simulated with a fixture in manhole #8.
The bypass high-high alarm was activated and a bypass flow value 0.07 m^3 was indicated.

Summary:

The DeltaV alarms response for bypass high level and bypass high-high level were tested and they both functioned as required.



Geoff Pearce

July 9, 2019

Ontario Clean Water Agency

Fort Frances, Ontario