

TEL. (705) 563-2375
FAX. (705) 563-2093

Le Centre Laitier du Nord

CORPORATION
DU OF



Dairy Centre of the North

P.O. BOX 546

CORPORATION

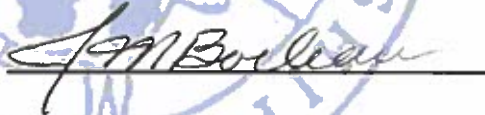
Village of Earlton Sewage System Annual & Performance REPORT FOR THE YEAR 2020

And copy of the Operating Procedures

MOE ECA, NUMBER 1369-ALYHHP

COUNCIL MEMBERS SIGNATURES

MAYOR:



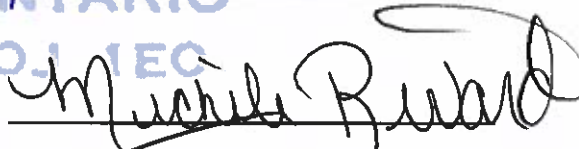
COUNCILOR:



COUNCILOR:



COUNCILOR:



COUNCILOR:





Village of Earlton Sewage System

January 08, 2021

ECA NUMBER 1369-ALYHHP

Annual & Performance Report

System Type; The system consist of three lagoon cells, (three [3] facultative lagoons {Cells #2 and 3} each with a SWD of 1.8 m and a freeboard of 0.6 m, having working volumes of 47,220 cub. m, and area of 3.38 ha. and one [1] {Cell #1} having a working volumes of 47,620 cub. m, and area of 3.80 ha. respectively.) It also has one [1] aeration Cell 73 m by 58 m (top of berm) with a SWD of 2.85 m and a freeboard of 0.6 m having a working volume of 5,415 cubic meter, equipped with an air diffusion grid system, to now be operated as a seasonal discharge system to coincide with higher receiving stream flows and create less of an impact on the environment. Allowable discharge periods on the ECA are April 01 to May 31, and September 15 to November 31 of each year, however, these entire periods are not necessarily required for discharge. The ECA for the system, limits the raw sewage flow into the lagoon to 743 m³/day (calculated on an average annual basis) and the flow out of the lagoon to a maximum of 3,024 m³/day (35 L/s) during the discharge period.

We are introducing Alum Sulphate to the raw sewage coming in to the lagoon cells at a rate of .22 L/min, or per 4.5 m³ (approx.).

Pump Station is equipped with a generator back up, which is manually operated and tested to run the plant every week as part of a maintenance program. Pumps consist of two electric 30 HP, belt driven centrifugal pumps, pumping at a rated capacity of 80 to 85 L/sec. at a TDH of 15.0 meters. Pump automatically alternate at each start up. The pump station status is being checked daily (weekends and Holidays also). Periodically, as part of regular maintenance, (every 3 months) the raw sewage screening basket is inspected and debris is removed as required. Once every six months, an inspection in the wet well area is done and the control floats and the sample injection line are cleaned and inspected. Flow records and time pump runs are being checked daily and logged at the plant, and compared with the ones that come in on the SCADA system, at the office for accuracy references.

As per the C of A, a record of any bypasses is logged and reported to the Moe's Spill Action Centre. A log book is kept indicating the time, duration, quantity of bypass and reason for occurrence. There were no by-passes in 2020.

Raw Sewage sampling is done monthly, usually done mid-month; sampling location is at the pumping station, using a 24 hour programmable composite sampler. Parameter for raw sewage is CBOD₅, Total Suspended Solids, Total Phosphorous, and Total Kjeldahl Nitrogen. Sample data results are attached at the end of the report.

Effluent Monitoring sampling normally consist of 4 grab samples prior to seasonal discharge, to be analyze for Hydrogen Sulphide and E-coli, CBOD5, Total Suspended Solids, Total Phosphorous, and Total Ammonia Nitrogen (Ammonia plus Ammonium). One sample is then taken at the start of the discharge process, then at 25%, 50%, 75%, and at the End of the discharge process. Samples are analyzed for CBOD5, Total Suspended Solids, Total Phosphorous, and Total Ammonia Nitrogen (Ammonia plus Ammonium), Hydrogen Sulphide, Un-ionized Ammonia and PH at 15°. Also pH and Temperature in the field at the time of sampling. Total amount of flow going out to the environment is to be monitored and logged at the time of each sampling.

Sample data result copies for the year 2020 can be viewed at the Water/Wastewater Office.

Post-Aeration System consist of an earthen cell with a working volume of 5415 m³, a small blower building, housing three positive displacement blowers, each rated to deliver 4.25 m³/min of air at 97.88 kPa absolute pressure; and piping and diffusers to deliver air into the effluent as it passes through the cell.

It is not intended that the post-aeration cell be used for storage, but rather, for retention time during discharge and, therefore, it should not be drained down except for maintenance purposes.

The aeration cell's sole purpose is to strip Hydrogen Sulphide (H₂S) prior to effluent discharge. Hydrogen Sulphide builds up under a lagoon's ice cover during the winter and is toxic to aquatic life, even at low concentrations, and, therefore, must be removed prior to discharge.

Flow meters are calibrated yearly and Alum Sulphate chemical pump flows are calibrated and logged monthly. The duty on the Alum sulphate pumps are rotated monthly and dosage calculation is adjusted and logged at the same time. Manhole near Alum building, where Alum sulphate is being injected, is being checked monthly to make sure it is working properly and not leaking.

The collection system is entirely flushed in three separate steps, in a three-year period. The entire collection system has been videoed by Ray Lachapelle (Private eye). Records of the sewer main section that has been flushed this year is kept in with the maintenance book records. Manholes are being inspected for structural damage in the summer months, and upgrade as needed.

The collection system is a CLASS 2 System and now requires Operators to write a Class 2 collection certification exam. Currently there are 3 operators who hold a Class 2 Collection and 1 Operator holds a Class 2 Treatment facility licence.

Lagoon Discharge Summary 2020

2020 Sewage Effluent Spring Discharge April. /May

March 9th, 2020- Started blower #2 to get rid of ice and Hydrogen Sulfide. Air is not flowing under ice yet. Air pressure at 5.05 psi.

March 12th, 2020: Still covered in ice but holes appearing through ice. Air pressure at 4.40 psi with 2 blowers on. Blowers will stay on for duration of spring discharge.

March 31th, 2020: - Took samples in aeration cell at 10:30, prior to discharge, sample # AB-31a for E.coli and sample # AB-31 b for H2S. Sample AB-32 a and AB-32 b for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia. Also 3 sets of samples were taken from Cell#1 at 11:10, Cell #2 at 10:55 and Cell#3 at 10:45, a total of 13 samples were sent for analysis for the same Parameters.

Aeration Cell:

PH: 8.26
Temp: -1.5°C

Result for sample # AB-31 a:

- E.coli: <5 “CFU/100ml”

Result for sample # AB-31 b:

- H2S : <0.02 “mg/L”
-

Result for sample # AZ-32a/32b:

- cBOD5 : 1.8 “mg/L”,
- Total Phosphorous : 0.132“mg/L”,
- Total Suspended Solids : 2 “mg/L”,
- Ammonia as NH3: 0.53“mg/L”.
- Un-Ionized Ammonia: 0.007

CELL #1:

PH: 7.29
Temp: -1.4°C

- E.coli: 6300000 “CFU/100ml”
- H2S : 0.93 “mg/L”
- cBOD5 : 27 “mg/L”,
- Total Phosphorous : 1.13 “mg/L”,
- Total Suspended Solids : 24 “mg/L”,
- Ammonia as NH3: 10.50 “mg/L”.
- Un-Ionized Ammonia: 0.015

CELL #2:

PH: 7.42

Temp: -1.3°C

- E.coli: 2700000 “CFU/100ml”
- H₂S : 0.24 “mg/L”
- cBOD₅ : 22 “mg/L”,
- Total Phosphorous : 0.654“mg/L”,
- Total Suspended Solids : 19 “mg/L”,
- Ammonia as NH₃: 6.10 “mg/L”.
- Un-Ionized Ammonia: 0.012

CELL #3:

PH: 7.59

Temp: -0.5°C

- E.coli: 2900000 “CFU/100ml”
- H₂S : 0.05 “mg/L”
- cBOD₅ : 6.5 “mg/L”,
- Total Phosphorous : 0.309“mg/L”,
- Total Suspended Solids : 18 “mg/L”,
- Ammonia as NH₃: 2.14 “mg/L”.
- Un-Ionized Ammonia: 0.007

April 14th, 2020: Flow Meter: 1895514. At 8:40 am started discharging in the environment.

Took a Start Sample (AB-33a & AB-33b, effluent) and sent it to AEL

to be analyze for cBOD₅, Total Phosphorous, Total Suspended Solids, Total Ammonia Nitrogen and H₂S. WSER (PH@15, Un-Ionized Ammonia).

Discharge rate was set at:

- 24.76 litres/second.
- Water temp. 1.1°C,
- PH : 8.22

❖ **Result for sample # AB-33a&AB-33b:**

- **cBOD5 : 2.0 “mg/L”,**
- **Total Phosphorous : 0.356 “mg/L”,**
- **Total Suspended Solids : 63 “mg/L”,**
- **Total Ammonia : 0.15 “mg/L”**
- **H2S :< 0.02 “mg/L”**
- **PH@15: 8.3**
- **Un-ionized Ammonia: 0.002 “mg/L”**

April 28, 2020:

At 8.33hrs, after 32218 m3 was discharge, took a 25% cell volume effluent sample (AB-36a & AB-36b, effluent) and sent it to AEL to be analyze for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia, Un-Ionized Ammonia(15degC) and pH(WSER)

Discharge rate was set to:

- **26.70 litres/second.**
- **Water temp. 1.5 °C,**
- **PH: 7.91**

❖ **Result for sample # AB-36a & AB-36b:**

- **cBOD5 : 6.0 “mg/L”,**
- **Total Phosphorous : 0.454 “mg/L”,**
- **Total Suspended Solids : 10.0 “mg/L”,**
- **Total Ammonia : 4.19 “mg/L”**
- **pH(WSER) : 8.0**
- **Un-Ionized Ammonia : 0.032 “mg/l”**
- **H2S : <0.02 mg/L**

May12, 2020- At 8:30hrs, after 70022 m3 was discharge, took a 50% cell volume Sample (AB-38a, AB-38b effluent) and sent it to AEL to be analyze for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia. Un-Ionized Ammonia (15degC) and pH (WSER).

Discharge rate was set to:

- **32.44 litres/second.**

- Water temp. 1.5°C,
- PH 8.42.

❖ **Result for sample # AB-38a, AB-38b:**

- cBOD5 : 7.5 “mg/L”,
- Total Phosphorous : 0.229 “mg/L”,
- Total Suspended Solids : 19.0 “mg/L”,
- Total Ammonia : 1.23 “mg/L”
- pH(WSER) : 8.29
- Un-Ionized Ammonia : 0.030 “mg/l”
- H2S : <0.02 mg/L

May 26, 2020- At 9:30hrs, after 107116 m3 was discharge, took a 75% cell volume effluent sample (Ab-39a, AB-39 b) and sent it to AEL to be analyzed for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia. Un-Ionized Ammonia (15degC) and pH (WSER) Discharge rate was set to:

- 31.91 litres/second.
- Water temp. 14.9°C,
- PH 8.07.

❖ **Result for sample # AB-39a, AB-39 b:**

- cBOD5 : 1.4 “mg/L”,
- Total Phosphorous : 0.121 mg/L”,
- Total Suspended Solids : 1.5 “mg/L”,
- Total Ammonia: 0.15“mg/L”
- pH(WSER) : 8.21
- Un-Ionized Ammonia : 0.005 “mg/l”
- H2S : <0.02 mg/L

May 29, 2020-At 8:30hrs, after 115328 m3 was discharged, the End sample was taken (AB-40a, AB-40b effluent) and was sent to AEL to be analyzed for Hydrogen Sulphide, cBOD5, Total Suspended Solids,

Total Phosphorous, Total Ammonia, NH₃. Discharge rate was set to:

- **30.80 litres/second.**
- **Water temp. 19.5°C**
- **PH 7.92**

❖ **Result for sample # AB-40a, AB-40b:**

- **cBOD₅ :0.7 “mg/L”,**
- **Total Phosphorous : 0.173“mg/L”,**
- **Total Suspended Solids : 1.5 “mg/L”,**
- **Total Ammonia : 0.05 “mg/L”**
- **pH(WSER) : 7.99**
- **Un-Ionized Ammonia :< 0.002 “mg/l”**
- **H₂S : <0.02 mg/L**

- **Total Spring Discharge: 115328 m³**
- **Flow Duration was 1104 hours = 46 days**
- **Average Flow was 29.02 l/sec. = 2507.33 m³/day**

Loading = $\frac{\text{Flow (m}^3\text{/day)} \times \text{concentration (mg/l)}}{1000} = \text{kg/day}$

CBOD₅ =8.83 kg/day

Total Suspended Solids = 47.64 kg/day

Total Phosphorous = 0.67 kg/day

Total Ammonia Nitrogen = 2.89 kg/day

2020 Sewage Effluent Fall Discharge September/November.

September 15, 2020 - Took samples in aeration cell at 10:55hrs, prior to discharge, sample # AB-45a for E.coli and sample # AB-45b for H₂S. Sample AB-46 a and AB-46b for cBOD₅, Total Phosphorous, Total Suspended Solids, Total Ammonia. Also 3 sets of samples were taken from Cell#1 at 11:15, Cell #2 at 11:25 and Cell#3 at 11:35, a total of 13 samples were sent for analysis for the same Parameters.

Aeration Cell:

PH: 7.53

Temp: 10.8°C

Result for sample # AB-45 a:

- E.coli: 5 "CFU/100ml"

Result for sample # AB-45 b:

- H₂S : <0.02 "mg/L"

Result for sample # AB-46a/46b:

- cBOD₅ : 3.1 "mg/L",
- Total Phosphorous : 0.463"mg/L",
- Total Suspended Solids : 5.0 "mg/L",
- Ammonia as NH₃: <0.01"mg/L".
- Un-Ionized Ammonia: <0.002

CELL #1:

PH: 7.60

Temp: 10.7°C

- E.coli: 275 "CFU/100ml"
- H₂S : <0.02 "mg/L"
- cBOD₅ : 1.2 "mg/L",
- Total Phosphorous : 0.264 "mg/L",
- Total Suspended Solids : 1.5 "mg/L",
- Ammonia as NH₃: 0.07 "mg/L".
- Un-Ionized Ammonia: <0.002

CELL #2:

PH: 7.50
Temp: 10.8°C

- **E.coli: 55 “CFU/100ml”**
- **H2S : <0.02 “mg/L”**
- **cBOD5 : 1.0 “mg/L”,**
- **Total Phosphorous : 0.498“mg/L”,**
- **Total Suspended Solids : 1.5 “mg/L”,**
- **Ammonia as NH3: 1.13 “mg/L”.**
- **Un-Ionized Ammonia: 0.007**

CELL #3:
PH: 8.54
Temp: 10.7°C

- **E.coli: 500 “CFU/100ml”**
- **H2S : <0.02 “mg/L”**
- **cBOD5 : 1.1 “mg/L”,**
- **Total Phosphorous : 0.281“mg/L”,**
- **Total Suspended Solids : 3.5 “mg/L”,**
- **Ammonia as NH3: <0.01 “mg/L”.**
- **Un-Ionized Ammonia: <0.002**

September 24, 2020: Measured flows in receiving waters- 0.6409 m³/sec and Blanche River at 6.30 m³/sec.

September 28, 2020: Flows in Blanche River at 21 m³/sec

September 28, 2020 - At 9:55 hrs. Flow meter reading (2010860) started discharging in the environment at a set rate of:

- **30.33 liters/second.**
- **Water temp. 11.1 °C,**
- **PH 7.28**

Startup Sample (AB-47a/47b effluent) and sent it to AEL to be Analyzed for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia, H2S. PH (WSRE), Un-Ionized Ammonia

Result for sample # AB-47a/47b:

- cBOD5 : 5.0 “mg/L”,
- Total Phosphorous : 1.27 “mg/L”,
- Total Suspended Solids : 47 “mg/L”,
- Ammonia as N: .0.35 “mg/L”.
- H2S : 0.05 “mg/L”
- PH(WSRE) : 7.01
- Un-Ionized Ammonia : <0.002 “mg/l”

Started Blowers to reduce H2S

October 13/2020- At 11:00hrs, after 37703 m3 was discharge, took a 25% Sample (AB-49a/ AB-49 b effluent) and sent it to AEL to be analyzed for H2S, cBOD5, Total Phosphorous, Total

Suspended

Solids, Total Ammonia. H2S. PH (WSRE), Un-Ionized Ammonia.

Discharge rate was set at:

- 27.21 liters/second.
- Water temp. 2.2°C,
- PH 7.91

Result for sample # AB-49a/AB-49b effluent:

- cBOD5 : 1.3 “mg/L”,
- Total Phosphorous : 0.338 “mg/L”,
- Total Suspended Solids : <1 “mg/L”,
- Ammonia as N: 1.13 “mg/L”.
- PH(WSRE) : 7.98
- Un-Ionized Ammonia : 0.009 “mg/l”
- H2S : <0.02 “mg/L”

October 27, 2020:- At 11:30hrs, after 72589 m3 was discharge, took a 50% Sample (AB-50a/50b effluent) and sent it to AEL to be analyzed for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia. H2S PH (WSRE), Un-Ionized Ammonia.

Discharge rate was set at:

- 29.12 liters/second.
- Water temp. 0.1 °C,
- PH 7.89

Result for sample # AB-50a/50b effluent:

- **cBOD5 : 1.5 “mg/L”,**
- **Total Phosphorous : 0.238 “mg/L”,**
- **Total Suspended Solids : 2.5 “mg/L”,**
- **Ammonia as NH3: 0.50 mg/L”.**
- **PH(WSRE) : 7.35**
- **Un-Ionized Ammonia : 0.003 “mg/l”**
- **H2S : 0.02 “mg/L”**

November 10, 2020- At 10:30hrs, after 108654 m3 was discharged, took a 75% Sample (AB-52a/52b effluent) and sent it to AEL to be analyzed for cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia H2S PH (WSRE), Un-Ionized Ammonia.

Discharge rate was set at:

- **29.90 liters/second.**
- **Water temp. 4.3 °C,**
- **PH 7.81**

Result for sample # AB-52a/52b, effluent:

- **cBOD5 : 1.8 “mg/L”,**
- **Total Phosphorous : 0.236 “mg/L”,**
- **Total Suspended Solids : 3.0 “mg/L”,**
- **Ammonia as N: 1.56 “mg/L”.**
- **PH(WSRE) : 6.35**
- **Un-Ionized Ammonia : 0.012 “mg/l”**
- **H2S : <0.02 “mg/L”**

November 27/2020- At 8:30hrs, after 150937 m3 was discharged, took an End Sample (AB-53a/AB-53b effluent) and sent it to AEL to be analyzed for; cBOD5, Total Phosphorous, Total Suspended Solids, Total Ammonia. H2S PH (WSRE), Un-Ionized Ammonia
Discharge rate was set to:

- **28.15 liters/second.**

- Water temp. 1.3°C,
- PH 7.71

Result for sample # AB-53a/AB-53b:

- cBOD5 : 1.1 “mg/L”,
- Total Phosphorous : 0.155 “mg/L”,
- Total Suspended Solids : < 1 “mg/L”,
- Total Ammonia: 1.67 “mg/L”
- PH(WSRE) : 7.68
- Un-Ionized Ammonia : 0.008 “mg/l”
- H2S :< 0.02 “mg/L”

Flow meter at the end of discharge {2161797}

Total Fall Discharge was 150937 m³

**Flow Duration was 1438.5 hours. = 59 days 22.5 hours
= 1438.5 hours**

Average Flow Rate was 29.15 l/sec. = 2518.56 m³/day

Loading = $\frac{\text{Flow (m}^3\text{/day)} \times \text{concentration (mg/l)}}{1000} = \text{kg/day}$

CBOD5 = 5.39 kg/day

Total Suspended Solids = 27.45 kg/day

Total Phosphorous = 1.13 kg/day

Total Ammonia Nitrogen = 2.62 kg/day

2020 Monthly Raw Sewage														
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec		
cBOD5 mg/l	78	120	78.3	58	47	70.1	78.5	84.1	77.3	72.2	5.2	75.5	844.2	70.35
Total Phosphorous mg/l	2.98	3.95	4.48	0.534	2.16	2.61	3.37	3.33	2.72	2.55	1.88	3.06	33.624	2.802
TSS mg/l	132	156	322	63	98	101	151	140	236	117	95	131	1742	145.1667
Total Kjeldahl Nitrogen (TKN)	31	31.8	35.9	7.3	20.9	20.9	29.6	26.1	22.6	27.6	14.6	27	295.3	24.60833
													Total	Average

Description of Design Objectives of ECA, NUMBER 1369-ALYHHP

DESIGN OBJECTIVES

1. The Owner shall design and operate the Sewage Treatment Plant in accordance with the following objectives:
 - a. Final Effluent parameters design objectives listed in the table(s) included in Schedule B;
 - b. Final Effluent is essentially free of floating and settable solids and does not contain oil or any other substance in amounts sufficient to create a visible film or sheen or foam or discoloration on the receiving waters.
 - c. Annual Average Daily Influent Flow is within the Rated Capacity of the Sewage Treatment Plant.

2. The Owner shall make an assessment of the issues and recommendations for pro-active actions if any is required under the following situations and include in the annual report to the Water Supervisor:
 - a. when any of the design objectives is not achieved more than 50% of the time in a year;
 - b. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

Schedule B

Final Effluent Design Objectives

Concentration Objectives

Final Effluent Parameter	Averaging Calculator	Objective (milligrams per litre unless otherwise indicated)
CBOD5	Seasonal Average Effluent Concentration	15.0 mg/L
Total Suspended Solids	Seasonal Average Effluent Concentration	15.0 mg/L
Total Phosphorus	Seasonal Average Effluent Concentration	0.5 mg/L
Total Ammonia Nitrogen	Monthly Average Effluent Concentration	10.0 mg/L (Apr 1 - Apr 30) 5.0 mg/L (May 1 - May 31) 5.0 mg/L (Sep 1 - Nov 30)
pH	Single Sample Result	6.5 - 8.5 inclusive
Hydrogen Sulphide	Single Sample Result	Non-detectable

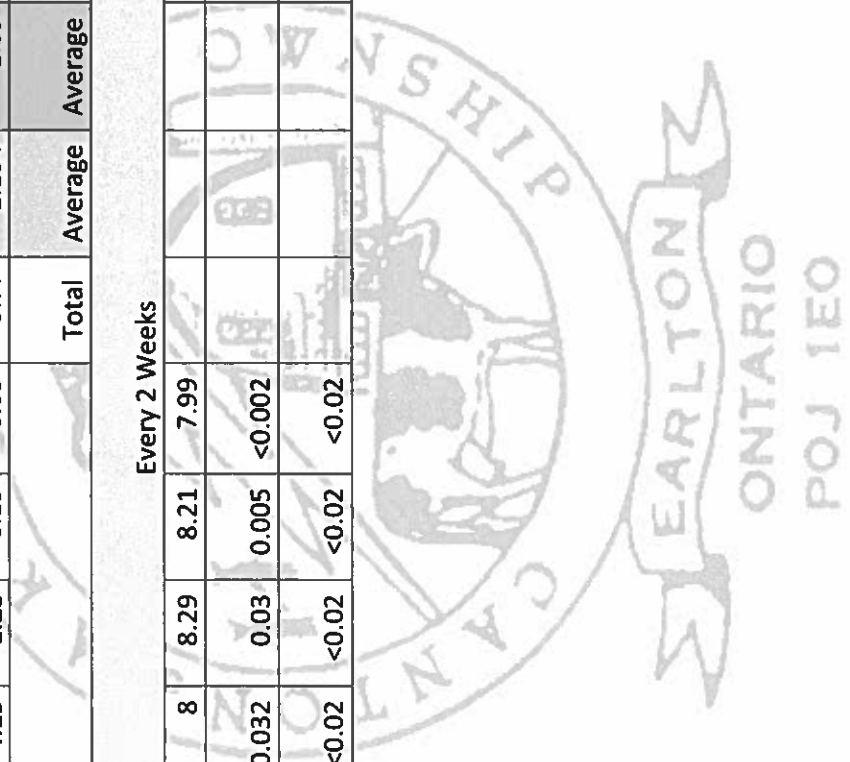
1-Design Objectives of Final Effluent has been met throughout the spring and fall discharge periods:

The spring and fall discharge, prior to discharge samples include sampling at all four (4) lagoons as per request from MOECC.

The following tables show the spring and fall Effluent results.

2020 Spring effluent discharge										C of A	C of A
	Prior	Start	25%	50%	75%	End	mg/l	mg/l	KG/Day		
cBOD5 mg/l	1.8	2.0	6	7.5	1.4	0.7	17.6	3.52	8.83		91.0 kg/d
Total Phosphorous mg/l	0.132	0.356	0.454	0.229	0.121	0.173	1.333	0.2666	0.67		3.02 kg/d
TSS mg/l	2	63	10	19	1.5	1.5	95	19	47.64		91.0 kg/d
Total Ammonia mg/l	0.53	0.15	4.19	1.23	0.15	0.05	5.77	1.154	2.89		30.2 kg/d
							Total	Average	Average		accepted/average

WSER. Spring 2020	Every 2 Weeks							
		8.3	8	8.29	8.21	7.99		
pH (15 deg. C)		8.3	8	8.29	8.21	7.99		
Un-ionized Ammonia	0.007	0.002	0.032	0.03	0.005	<0.002		
Hydrogen Sulphide	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		



2020 Fall effluent discharge										C of A	C of A
	Prior	Start	25%	50%	75%	End	mg/l	mg/l	KG/Day		
cBOD5 mg/l	3.1	5	1.3	1.5	1.8	1.1	10.7	2.14	5.39	<30 mg/l	91.0 kg/d
Total Phosphorous mg/l	0.463	1.27	0.338	0.238	0.236	0.155	2.237	0.4474	1.13	1.0 mg/l	3.02 kg/d
TSS mg/l	5	47	1	2.5	3	1	54.5	10.9	27.45	<30 mg/l	91.0 kg/d
Total Ammonia mg/l	<0.01	0.35	1.13	0.5	1.56	1.67	5.21	1.042	2.62	10 mg/l	30.2 kg/d
							Total	Average	Average	accepted/average	accepted/average

WSER. Fall 2020										
Every 2 Weeks										
pH (15 deg. C)		7.01	7.98	7.35	6.35	7.68				
Un-ionized Ammonia	<0.002	<0.002	0.009	0.003	0.012	0.008				
Hydrogen Sulphide	<0.02	0.05	<0.02	0.02	<0.02	<0.02				



2- Design objectives for Annual Average Daily Influent Flow being below 80% of the Rated Capacity:

As per previous years the Township of Armstrong has been repairing the collection system to restrict the infiltration of rain and snow melt in and around manholes and letters have been sent to residents on how to minimize the flow of water from their properties.

There is a negative effect on Influent Flow during the spring thaw in 2020 and also after some major rain events in the fall which is affecting the annual average considerably, but the results have shown some improvement from previous years.



The following is the Table of Annual Influent Flow.

2020 Raw sewage flow Monitoring (cub. Meters)

	Total	Average	Maximum	Total allow.	Over	%
Jan.	9947	320	371	23033	-13086	43.19%
Feb.	8362	288	350	21547	-13185	38.81%
Mar.	20847	672	3062	23033	-2186	90.51%
April	48204	1607	3827	22290	25914	216.00%
May	19143	618	1659	23033	-3890	83.11%
June	18013	600	2581	22290	-4277	80.81%
July	15319	494	1278	23033	-7714	66.51%
Aug.	11126	359	618	23033	-11907	48.35%
Sept.	14549	485	824	22290	-7741	65.27%
Oct.	24111	778	3322	23033	1078	104.68%
Nov.	19976	666	976	22290	-2314	89.62%
Dec.	11691	377	484	23033	-11342	50.75%
Total	221288			271195	-49907	
Average	18440.67	605.33	1612.67			81.47%
Maximum	48204	1607	3827			
Minimum	8362	288	350			

Annual average; 2011---- 94% of rated capacity
2012-----83% of rated capacity
2013-----91% of rated capacity
2014-----102% of rated capacity
2015-----87% of rated capacity
2016-----86% of rated capacity
2017-----92% of rated capacity
2018-----74.41% of rated capacity
2019-----91.91% of rated capacity
2020-----81.47% of rated capacity

Operating Issues:

The Annual average which is a concern is being monitored by Operators and repairs to manhole infiltration has been ongoing since 2013 with more effort on Public education on best practices in 2020.

Sludge:

A plan has been developed and the sludge was measured and recorded for all three Lagoons. 2016 Results showed very little accumulation in lagoons #2 & #3 and lagoon #1 however, which is the oldest lagoon had a little more sludge but was not a concern at this time.

2017 results showed no change in sludge accumulations from previous year.

2018 results also showed very little change in sludge accumulations.

2019 results showed on average a 1.5 inch increase in sludge at all 3 cells.

2020 results showed no changes from previous year.

Complaints:

There has been no complaints in 2020. Operators were called on a few occasions to investigate sewer backup in some residences but all problems were the responsibility of the homeowners as the issues were all found to be on their properties. We however supplied residents with parts and directions when necessary as per their requests.

Modifications:

No modifications were done in 2020.

Calibrations:

Calibrations of Flow meters and Auto Sampler were done in September 2020 by qualified operators and were showed to be in manufacturer's specifications.

Bypasses:

There were no Bypasses for the sewage system in 2020.

Other considerations:

The Township of Armstrong is committed to have Certified Operators and provide the necessary training through courses and on-the-job training while performing inspections and maintenance.

Performance Report Prepared by:

Guy Laurin

January 13/2021

Guy Laurin

Tel: 705-563-2375

Fax: 705-563-2093

Cell: 705-676-7703

Email: guy.laurin@armstrong.ca