Barry's Bay Wastewater System

Waterworks #110001854

Annual Report

Prepared For: The Township of Madawaska Valley

Reporting Period of January 1st – December 31st 2023

Issued: February 29th, 2024

Revision: 0

Operating Authority:

OCWA

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to meet the requirements set out in:

Document	Document #	Issue Date	Issue Number
Facility ECA	2702-7TKNBE	2009-08-31	N/A
ECA for Municipal Sewage Collection System	193-W601	2022-12-22	1

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1 Revision History

Date	Rev#	Revisions	Revised By
2023-02-29	0	Annual Report Issued	Kaylee Saar, OCWA

2 Operations and Compliance Reliability Indices

Compliance Event	Details
Ministry of Environment Inspections	0
Ministry of Labour Inspections	0
Non-Compliance	2 - See Operating Issues/Problems for details
Community Complaints	3 - See Summary of Complaints for details
Spills	1 - See Appendix B for details of Abnormal Sewage Discharge Events
Overflows	0
Bypass	0
Sewer Main Blockages	1 - Sewer main blockages 2 - Lateral blockages, See Summary of Complaints for details

3 Process Description

The Barry's Bay sewage collection system is a gravity fed collection system consisting of separated sewers and three pumping stations discharging to the wastewater treatment facility. The Barry's Bay wastewater treatment plant is a Class III treatment facility. The incoming wastewater receives primary treatment consisting of fine screen with screw auger and grinder. Secondary treatment is achieved through two sequencing batch reactors (SBR) equipped with a fixed decanter using the ISAM™ (Integrated Surge Anoxic Mix) system. Sludge is wasted to the ISAM™ tank while mixed liquor is returned to the SAM™ tank. One equalization tank (effluent tank) connected to both SBRs, provides equalization storage prior to filtration.

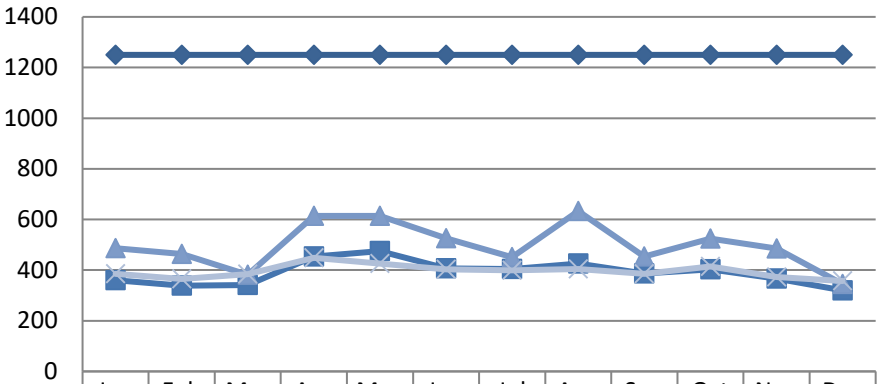
PAS-8 (Polyaluminum sulfate) is used for phosphorus removal and is dosed in two locations within the process, at the SBR and pre-filtration. Soda ash is used for alkalinity control and is dosed in two locations within the process, at the inlet headworks and the SAM™ tank. Two UV banks provide disinfection, capable of peak flow rate of 4400 m^3/day. Effluent is discharged to Kamaniskeg Lake.
Activated sludge, which has been removed from the SBR's, is pumped into a 100 m^3 two-celled aerobic sludge digester. Activated sludge that is stabilized (or digested) is sent to a 350 m^3 storage tank. Supernatant from the biosolids holding tank is returned to head of plant. Sludge is hauled offsite for land application.

4 Treatment Flows

The annual average daily flow for 2023 was 390 m^3/d, which represents 31% of the facility's 1250 m^3/d rated capacity.

4.1 Raw Flow (m^3/d)

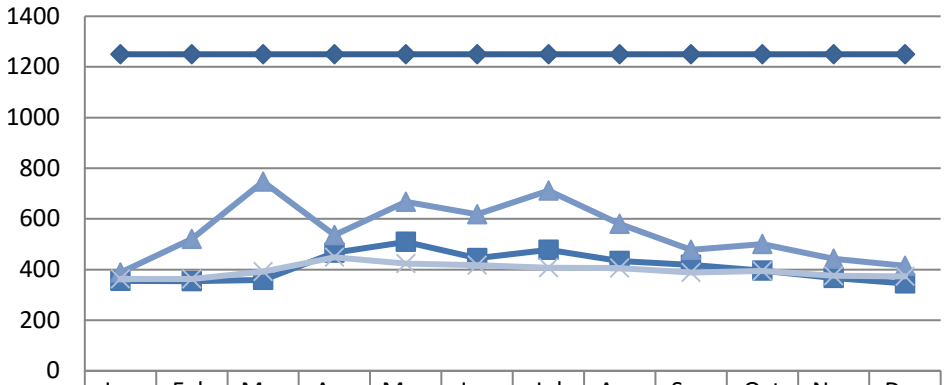
4.1.1 2023 Raw Flow



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Average Daily Flow (m3/d)	360	339	341	453	475	407	405	426	387	403	367	320
Maximum Daily Flow (m3\d)	487	464	382	614	614	525	451	633	453	524	485	345
5 year avg. (m3/d)	385	365	384	449	425	402	399	405	385	415	372	357

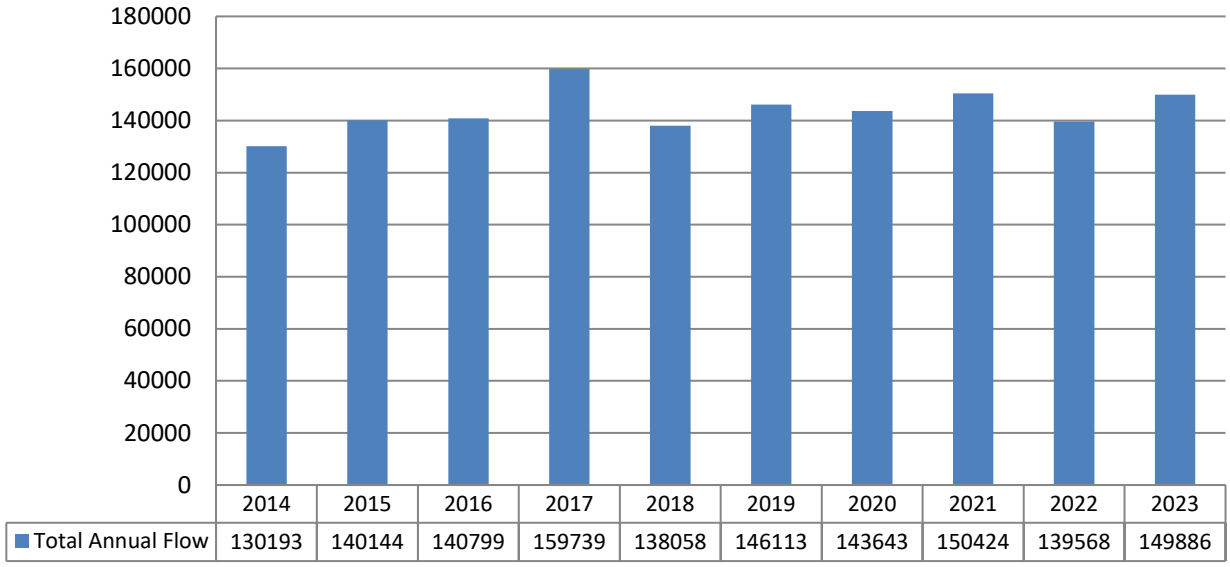
4.2 Effluent Flow (m^3/d)

4.2.1 2023 Effluent Flow



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
Avg Daily Flow (m3/d)	355	354	359	466	509	445	477	434	418	395	367	345
Max Daily Flow (m3/d)	388	521	747	536	667	618	712	580	478	500	442	414
5 year avg. (m3/d)	363	363	392	448	423	417	406	405	388	395	375	373

4.2.2 *Annual Effluent Flow Comparison (m^3)*



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Annual Flow	130193	140144	140799	159739	138058	146113	143643	150424	139568	149886

4.3 Imported Sewage

4.3.1 *Leachate Flow (m^3/d)*

There was no leachate accepted at this facility in 2023.

4.3.2 *Septage Flow (m^3/d)*

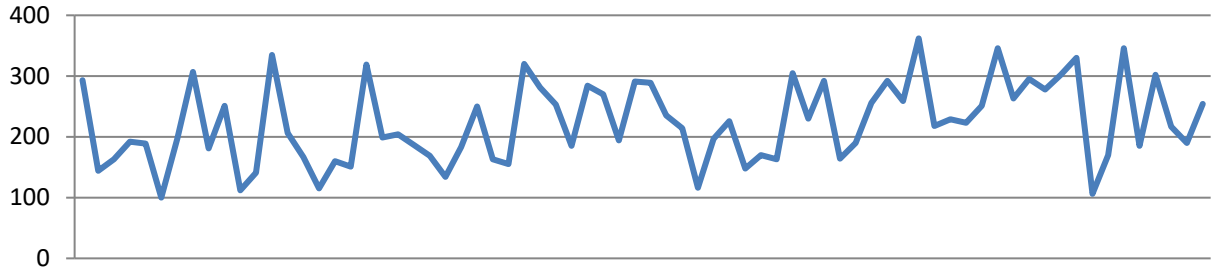
There was no septage accepted at this facility in 2023.

5 Raw Sewage Quality

5 Year Average Trends for Raw Sewage Quality are graphed below:

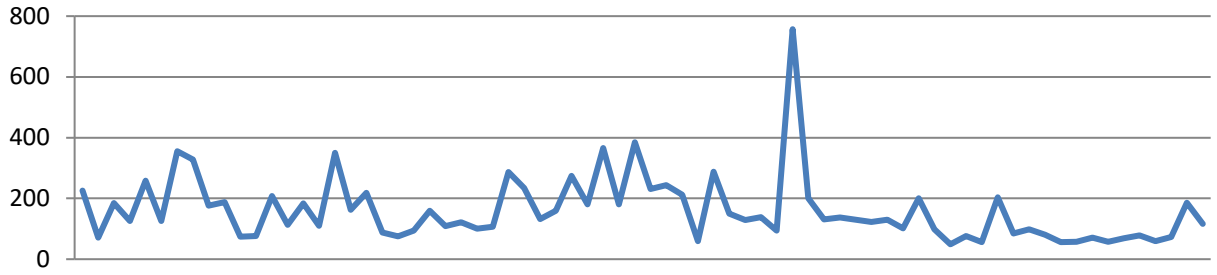
5.1 Biochemical Oxygen Demand (5 Day)

The graph below represents the monthly average of BOD_5 measured in mg/L from 2018-2023.



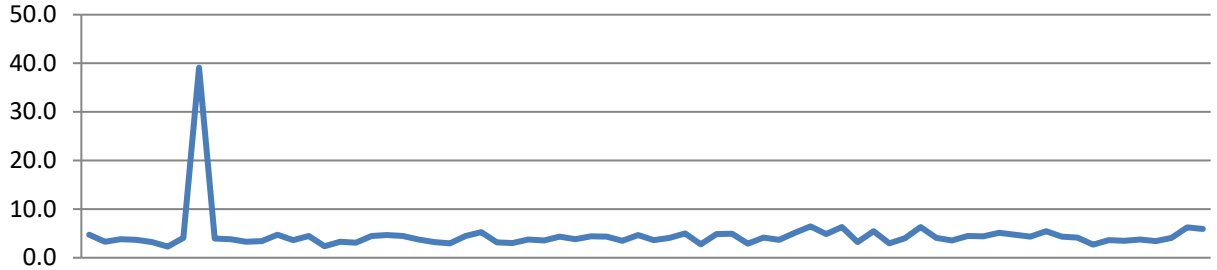
5.2 Total Suspended Solids

The graph below represents the monthly average of TSS measured in mg/L from 2018-2023.



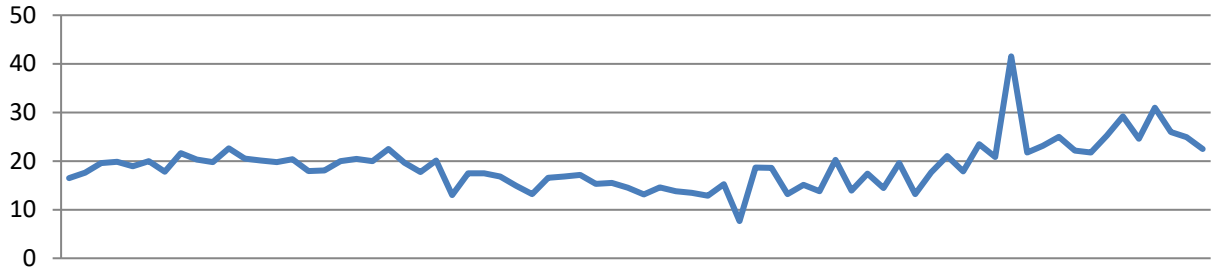
5.3 Total Phosphorus

The graph below represents the monthly average of TP measured in mg/L from 2018-2023.



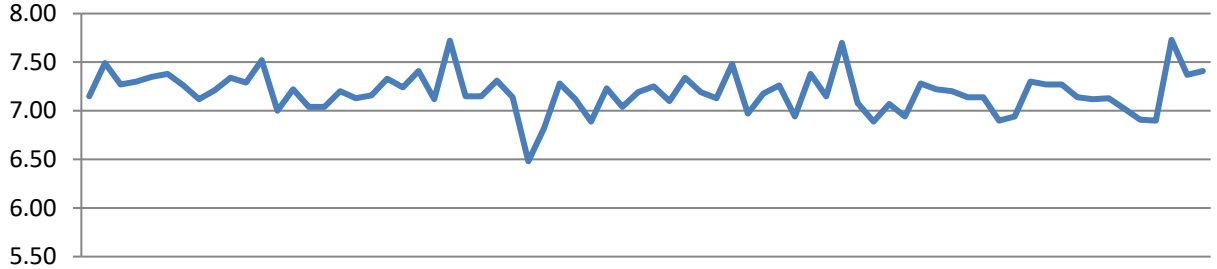
5.4 Total Ammonia Nitrogen

The graph below represents the monthly average of TAN measured in mg/L from 2018-2023.



5.5 pH

The graph below represents the monthly average of pH from 2018-2023, there is no measured unit for pH.



6 Effluent Quality

In 2023, the monthly average concentrations of the carbonaceous biochemical oxygen demand ($CBOD_5$) and the monthly geometric mean density of the E.Coli remained below the effluent objectives and limits outlined in the facility's ECA. Additionally the effluent pH remained within the limits and objectives of the ECA. However, the monthly average concentrations of the total suspended solids (TSS) exceeded the facility's ECA objective twice and the monthly average concentrations of the total ammonia nitrogen (TAN) exceeded the facility's ECA objective four times. There were no limit exceedances for TSS or TAN. The monthly average concentrations of the total phosphorus (TP) exceeded the facility's ECA objective seven times and exceeded the ECA limit twice. See the Operating Issues/Problems section of this report for further details.

The Federal Government also regulates the effluent flow, and the monthly average $CBOD_5$ and total suspended solids in the effluent under the Federal Fisheries Act. The results are submitted to Environment and Climate Change Canada's effluent regulatory reporting information system, under wastewater systems effluent regulations (WSER) on a quarterly basis.

Effluent results from the Barry's Bay wastewater treatment facility for 2023 are tabulated on pages 7-11 of this report.

6.1 Effluent Quality Assurance and Control Measures Taken

This system is part of OCWA's Madawaska Cluster. The cluster is supported by the Eastern Regional Hub, and corporate resources. Operational Services are delivered by OCWA staff that live and work in the community. The systems are operated to meet compliance with applicable regulations. The system has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents and are updated as required. These documents are also part of OCWA's Quality & Environmental Management System.

The process is reviewed and maintained by certified operators. These operator's complete in-house rounds and testing to monitor the process. All Sampling and analysis follow approved methods and protocols for sampling, analysis and recording as specified in the Ministry's Procedure F-10-1, "Procedures for Sampling and Analysis Requirements for Municipal and Private Sewage Treatment Works", the Ministry's publication, "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" and the publication, "Standard Methods for the Examination of Water and Wastewater".

All final effluent samples collected during the reporting period to meet legislated sampling requirements are submitted to SGS Lakefield Research Ltd. laboratory in Lakefield, Ontario for analysis, with the exception of disinfection residuals and temperature. SGS Lakefield Research Ltd. has been deemed accredited by the Canadian Association for Laboratory Accreditation (CALA), meeting strict provincial guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, the Ontario Clean Water Agency is ensuring appropriate control measures are undertaken during sample analysis. The disinfection residuals and temperature parameters are analyzed in the field at the time of sample collection by certified operators, to ensure accuracy and precision of the results obtained.

OCWA uses several computer systems which include:

- Process Data Management (PDM)
    - This database program consolidates all operational data from a variety of sources including field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis.
- Maximo – OCWA's Work Management System (WMS)
    - This program is used to track and schedule maintenance activities for all equipment in the system. It is also used to assign tasks for specific operational tasks.
- Wonderware (OUTPOST5)/SCADA
    - Wide-area SCADA system allows for process optimization and data logging, process trending, remote alarming.

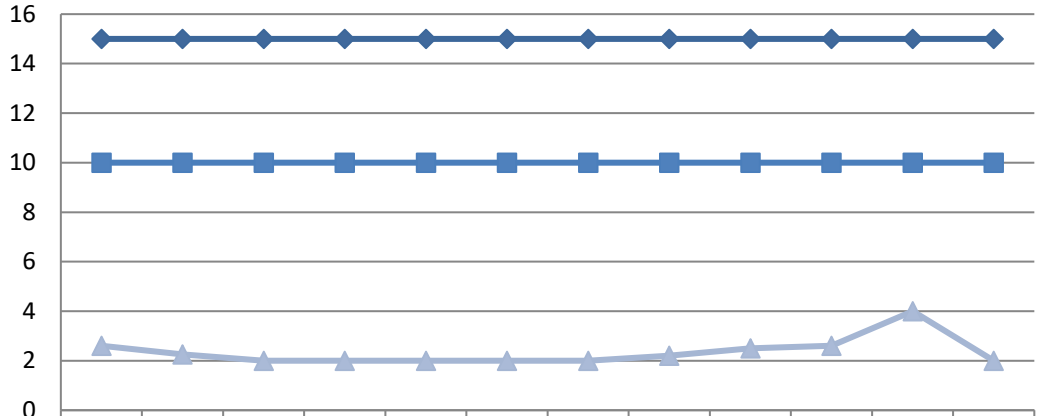
The operations team also has access to a network of operational compliance and process specialists to assist for emerging process issues. This aids in establishing additional control measures to ensure a quality effluent product.

Detailed individual sample results for both raw sewage and final effluent can be requested from the operating authority.

6.2 CBOD5

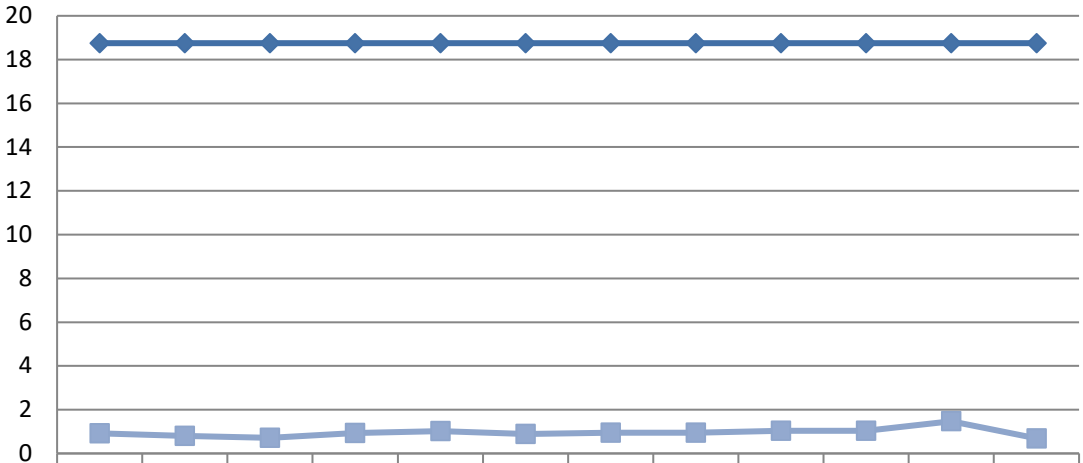
There was no Compliance Objective or Compliance Limit exceedance for this parameter.

6.2.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	15	15	15	15	15	15	15	15	15	15	15	15
Objective (mg/L)	10	10	10	10	10	10	10	10	10	10	10	10
Average (mg/L)	3	2	2	2	2	2	2	2	3	3	4	2

6.2.2 Loading (kg/d)

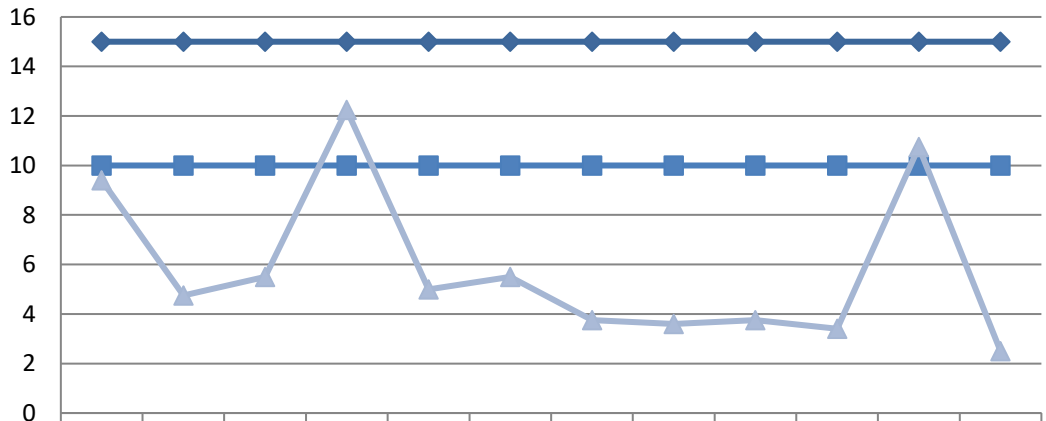


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (kg/d)	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75
Average (kg/d)	0.92	0.80	0.72	0.93	1.02	0.89	0.95	0.95	1.04	1.03	1.47	0.69

6.3 Total Suspended Solids

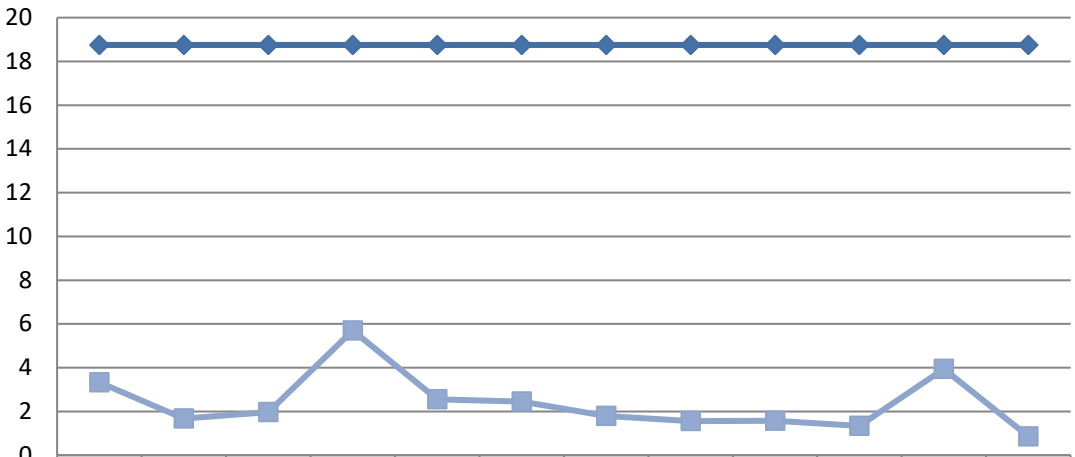
There were two Compliance Objective exceedances but no Compliance Limit exceedance for this parameter, see Operational Issues/Problems section of this report for details.

6.3.1 Concentration (mg/L



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	15	15	15	15	15	15	15	15	15	15	15	15
Objective (mg/L)	10	10	10	10	10	10	10	10	10	10	10	10
Average (mg/L)	9	5	6	12	5	6	4	4	4	3	11	3

6.3.2 Loading (kg/d)

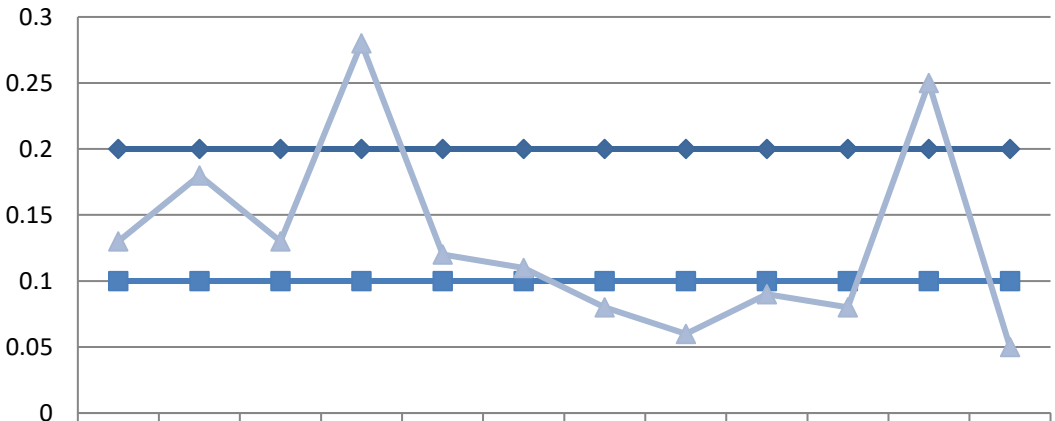


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (kg/d)	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75
Average (kg/d)	3.33	1.68	1.97	5.70	2.55	2.45	1.79	1.56	1.57	1.34	3.94	0.86

6.4 Total Phosphorus

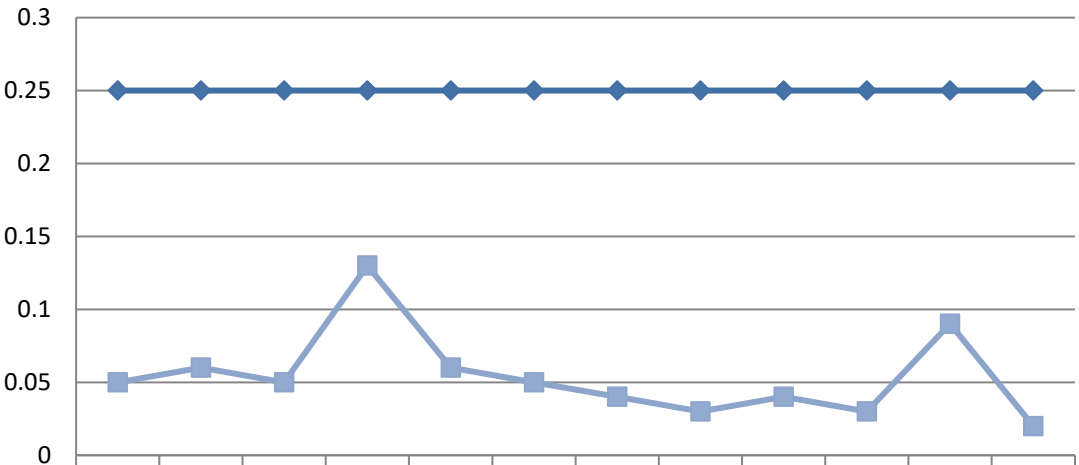
There were seven Compliance Objective and two Compliance Limit exceedances for this parameter, see Operational Issues/Problems section of this report for details.

6.4.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Objective (mg/L)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Average (mg/L)	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1

6.4.2 Loading (kg/d)

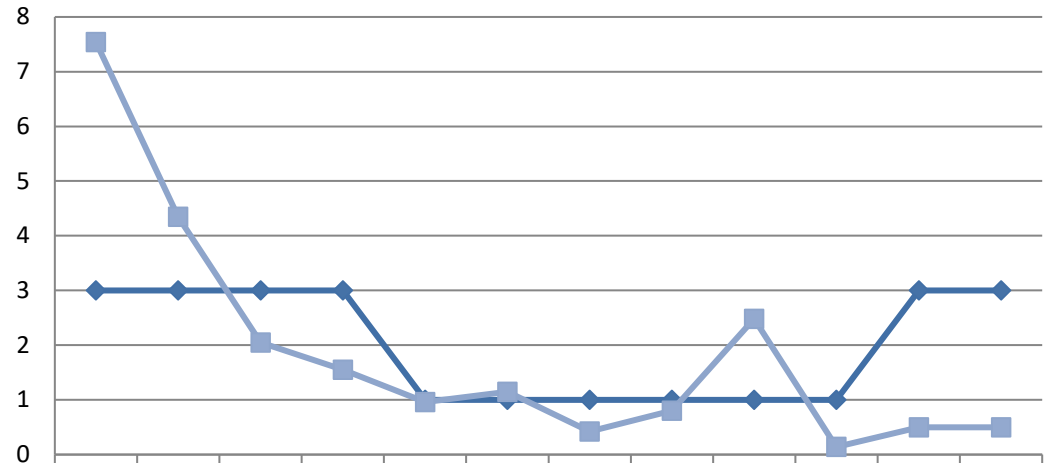


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (kg/d)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Average (kg/d)	0.05	0.06	0.05	0.13	0.06	0.05	0.04	0.03	0.04	0.03	0.09	0.02

6.5 Total Ammonia Nitrogen

There were four Compliance Objective exceedances for this parameter, see Operational Issues/Problems section of this report for details. There is no Compliance Limit for this parameter.

6.5.1 Concentration (mg/L)

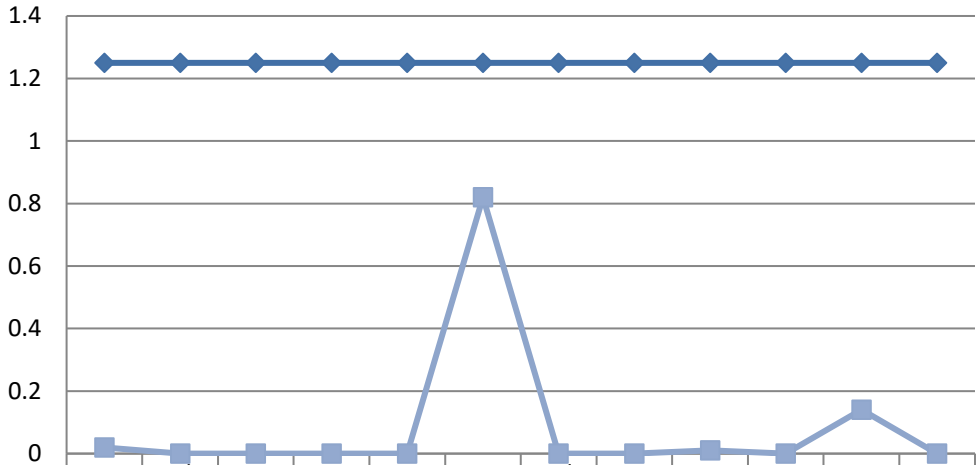


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Objective (mg/L)	3	3	3	3	1	1	1	1	1	1	3	3
Average (mg/L)	8	4	2	2	1	1	0	1	2	0	1	1

6.6 Un-Ionized Ammonia/Nitrogen/TKN

There was no Compliance Limit exceedance for this parameter, there is no Compliance Objective for this parameter.

6.6.1 Concentration (mg/L)

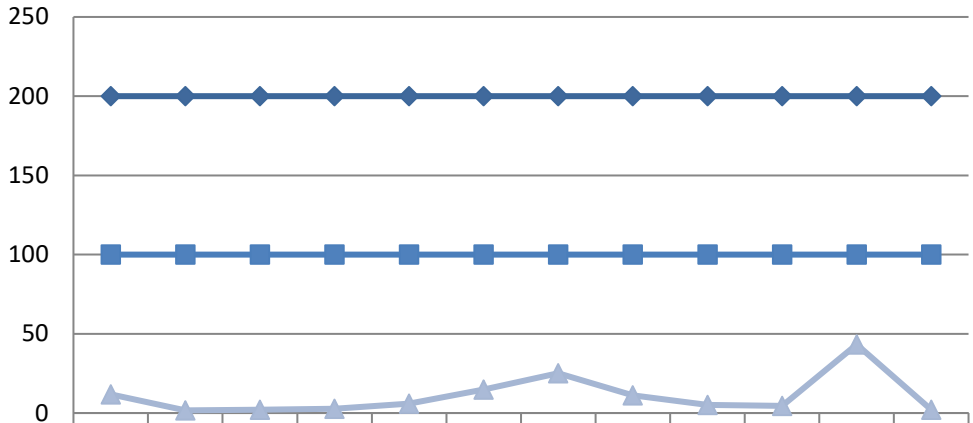


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Federal Limit (mg/L)	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
Average (mg/L)	0.020	0.000	0.000	0.000	0.000	0.820	0.000	0.000	0.010	0.000	0.140	0.000

6.7 E-coli

There was one Compliance Objective and one Compliance Limit exceedance for this parameter, see Operational Issues/Problems section of this report for details.

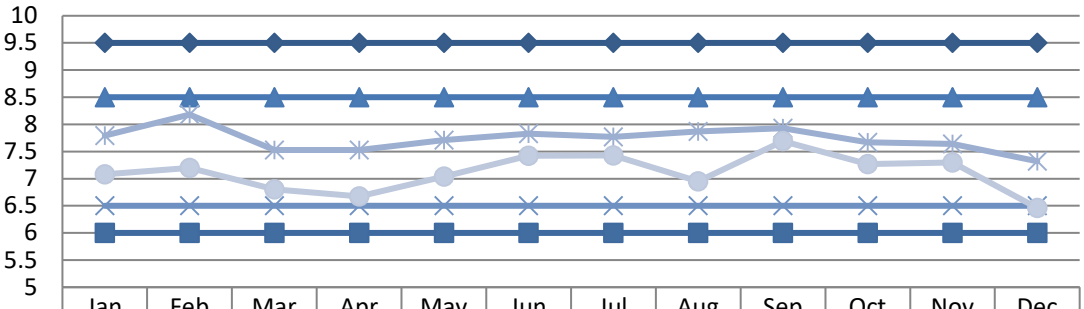
6.7.1 Geometric Mean (CFU/100mL)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (CFU/100 mL)	200	200	200	200	200	200	200	200	200	200	200	200
Objective (CFU/100 mL)	100	100	100	100	100	100	100	100	100	100	100	100
Average (CFU/100 mL)	12	2	2	3	6	15	25	11	5	4	43	2

6.8 pH

pH is to remain in the range of 6-9. Each instance the pH is outside of that range is reported as a non-compliance.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Limit	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Min Limit	6	6	6	6	6	6	6	6	6	6	6	6
Max Objective	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Min Objective	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Monthly Max	7.79	8.18	7.53	7.53	7.71	7.83	7.77	7.87	7.93	7.67	7.64	7.32
Monthly Min	7.08	7.2	6.8	6.67	7.04	7.42	7.43	6.95	7.69	7.27	7.3	6.46

6.9 Acute Lethality

There were four (4) samples collected in 2023 and tested for acute lethality (Rainbow Trout and Daphnia Magna). This sampling is required both provincially and federally. Results are displayed as % mortality. An adverse result is a > 50% mortality rate.

There was no Compliance Limit exceedance for this parameter.

Quarter	Rainbow Trout	Daphnia Magna
1st Quarter	0%	0%
2nd Quarter	0%	0%
3rd Quarter	0%	0%
4th Quarter	0%	0%

7 Operating Issues/Problems

During the 2023 reporting year the operational issues experienced were a result of the PAS-8 dosing line freezing in January and February and the fouling of the tertiary filters in March, April, May and June. As a result of the PAS-8 line freezing a new chemical dosing line and heat trace was installed. In May of 2023 the Parksons Dynasand tertiary filters were inspected by the manufacturer in an effort to improve the quality of the effluent. The technician noted that the use of both filters at the current flow rates received by the sewage treatment plant should stop to ease the accumulation of solids in the filter beds by providing a more rapid changeover of the filter bed sand. By taking one of the filter cells offline the flow rate being placed on the filter bed would provide a more even and constant distribution of influent flow. This is desirable as the filters are designed to run at laminar flow rate, not an intermittent flow rate. It was recommended to probe the filter cells with an "air lance" to find and break up the clumping of the media at least once a week and to soon replace the filter media.

Operations staff have shut down one of the two filter beds, began to regularly air lance the filter in operation, and have began the process of obtaining quotes to replace the filter media. Historically the plant regularly experiences ammonia objective exceedances, this trend continued in 2023. Efforts to combat the effluent exceedances as a result of the operating issues in are detailed below.

7.1 Effluent Quality Non-Compliance Summary

The effluent objectives are based on current requirements in the facility's Environmental Compliance Approval (ECA). ECA objective exceedances are non-reportable, and are used as an operational target. As the operating authority we shall use our best efforts to operate the facility in a manner that ensures the objectives are not exceeded in the treated effluent.

In the 2023 reporting year, the final effluent experienced objective exceedances more than 50% of the time during the year for total phosphorus. There were two objective exceedances with total suspended solids, and four objective exceedances with total ammonia nitrogen. The plant did not experience deterioration in the final effluent with CBOD5 and E.Coli measuring consistently below the objectives set

out in the facility's ECA. Additionally the plant's influent flow remained below 50% of the rated capacity in 2023. At this time no proactive actions are suggested. The plant's pH ranged from 6.64 – 8.18 and suggests that the alkalinity needed to settle out solids and phosphorus did not remain consistent. An effort to stabilize the alkalinity and further stabilize the ammonia loading will continue in the 2024.

The following table is a summary of objective and limit exceedances and the efforts made to meet the objectives and corrective actions taken when the limit was exceeded.

Date	Exceedance of	Objective	Limit	Value	Corrective Action
January 2023	Total Ammonia monthly average concentration	3 mg/L	N/A	7.5 mg/L	Increased aeration Time
	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.13 mg/L	Thaw frozen PAS-8 dosing line
February 2023	Total Ammonia monthly average concentration	3 mg/L	N/A	4.4 mg/L	Increased aeration Time
	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.18 mg/L	Thaw frozen PAS-8 line, re-insulated and installed heating element
March 2023	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.13 mg/L	Pumped down and inspected Tertiary filters
April 2023	Total Suspended Solids monthly average concentration	10 mg/L	15 mg/L	12 mg/L	After an single elevated sample result staff cleaned the equalization tank, tertiary filters themselves and UV disinfection trough
	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.28 mg/L	
May 2023	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.12 mg/L	Tertiary filters inspected by manufacturer
June 2023	Total Ammonia monthly average concentration	1 mg/L	N/A	1.2 mg/L	"Air Lanced" tertiary filters to remove any biofilm contaminating the effluent.
	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.11 mg/L	
September 2023	Total Ammonia monthly average concentration	1 mg/L	N/A	2.5 mg/L	Increased aeration Time

Date	Exceedance of	Objective	Limit	Value	Corrective Action
November 2023	Total Suspended Solids monthly average concentration	10 mg/L	15 mg/L	11 mg/L	"Air Lanced" tertiary filters to remove any biofilm contaminating the effluent. Increased SBR biomass as colder weather slows biological activity to improve phosphorus removal
	Total Phosphorus monthly average concentration	0.1 mg/L	0.2 mg/L	0.25 mg/L	

7.2 Summary of Abnormal Sewage Discharge Events

Abnormal Discharge Events include Bypass', Overflows, Diversions and Spills of Sewage. Summary Details are included in Appendix B.

7.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m3)	Start Date and Time	End Date and Time
There were no Spill events reported during the reporting period.					

8 Maintenance

Routine planned maintenance activities are scheduled in WMS and include:

- Inspect, adjust and calibrate process control equipment to ensure proper operation of pumps, chemical feeders, and all other equipment installed at the facilities.
- Carry out a routine maintenance program including greasing and oiling as specified in the lubrication schedule.
- Perform day-to-day maintenance duties to equipment including checking machinery and electrical equipment when required.
- Maintain an equipment inventory
- Maintain accurate records of work conducted, activities, and achievements.

Planned maintenance activities are communicated to the person responsible for completing the task through the issuance of WMS work orders. Work orders are automatically generated on a schedule as determined based on manufacturer's recommendations and site specific operational and maintenance needs and are assigned directly to the appropriate operations personnel. This schedule is set up by the designated WMS Primary. Work orders are completed and electronically entered into WMS by the person responsible for completing the task. Unplanned maintenance is conducted as required.

8.1 Normal Maintenance and Repairs

Work Order	Details
3290885	Manufacturer leaned and inspected tertiary filter

Work Order	Details
3621299	Replaced grinder cone pieces and auger shear and brushes at headworks
3285412	Replaced UV sleeves and bulbs in all four banks as needed
3340950	Cleaned and inspected PAS-8 bulk storage tank
3341973	Cleaned and inspected equalization tank
3480119	Third Party calibration, testing and repair of DO Probe
3665817	Camera work in collection system on Inglis Street
3623401	Replaced heat trace cables for chemical lines exposed to cold weather
3432012	Raised maintenance hole 101 from 12' below grade by installing three risers

8.2 Emergency Maintenance and Repairs

Work Order	Details
3205699	Replaced generator thermostat and block heater
3290332	Replaced generator fuel primer
3434601	Replaced generator batteries and terminal cables

8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
Influent Flow Meter	July 13, 2023	N/A
Supernatant Flow Meter	July 13, 2023	N/A
Sludge Hauling Flow Meter	July 13, 2023	N/A
Effluent Flow Meter	February 16, 2023	N/A
Collection System Flow Meter	No collection system flow meter	N/A

8.4 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
There were no authorized alterations made to the collection system during the reporting period.		

8.5 Notice of Modifications

Date	Process	Modification	Status
There were no modifications made to the treatment facility or the collection system during the reporting period.			

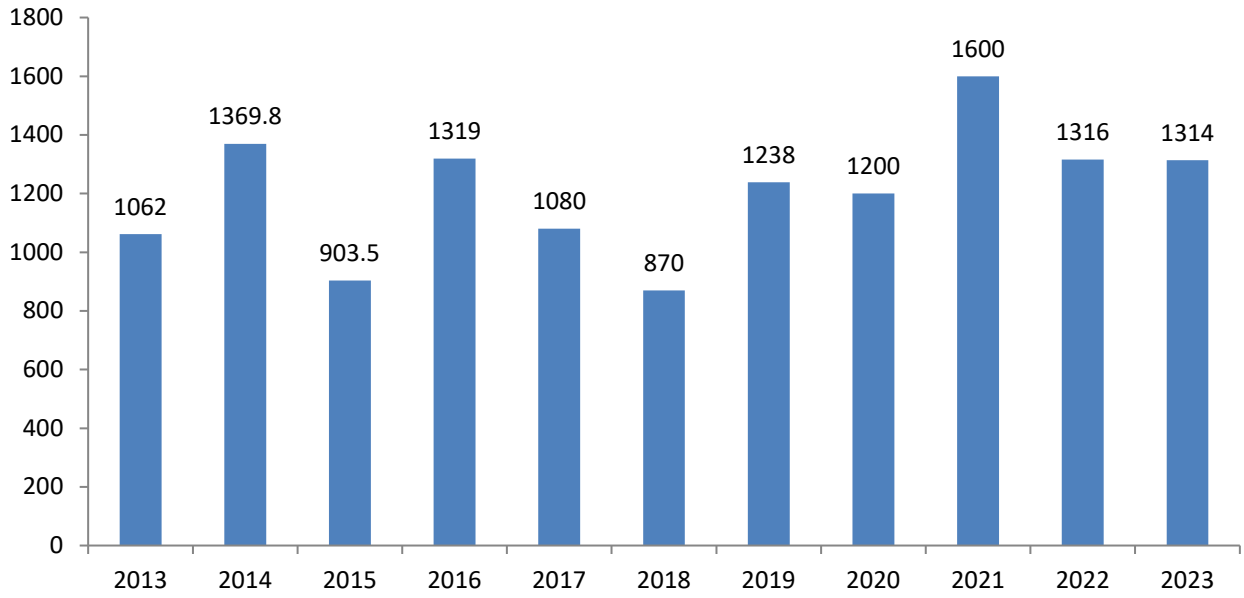
9 Sludge Generation

In 2023, a total of 1314 m^3 of liquid biosolids was hauled offsite by GFL Environmental Inc. and utilized as soil conditioner or hauled to processing facility. It is anticipated that approximately the same volume of sludge will be generated in 2024.

9.1 Sludge Disposal Summary

Date	Disposal Location	Approval Number	Total Volume (m^3)
April 24, 2023	GFL Storage Facility	ECA# S-3708-42	40
April 25, 2023	GFL Storage Facility	ECA# S-3708-42	44
May 1, 2023	GFL Storage Facility	ECA# S-3708-42	120
May 2, 2023	GFL Storage Facility	ECA# S-3708-42	120
May 4, 2023	GFL Storage Facility	ECA# S-3708-42	40
June 12, 2023	GFL Storage Facility	ECA# S-3708-42	160
July 10, 2023	GFL Storage Facility	ECA# S-3708-42	190
August 18, 2023	GFL Storage Facility	ECA# S-3708-42	120
October 6, 2023	GFL Storage Facility	ECA# S-3708-42	160
October 20, 2023	GFL Storage Facility	ECA# S-3708-42	80
November 29, 2023	Thompson, Brian - Home	NSAM #24243	120
November 30, 2023	Thompson, Brian - Home	NSAM #24243	120
Total Annual Volume (m^3)			1314

9.2 Annual Comparison (m^3/year)



9.3 Quality

The biosolids sampling results are summarized in Appendix A. All results met the established guidelines.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
26 Lane Street	01/16/2023	Sewer Blockage	Investigate flow at manhole above and below home, flow present, instruct homeowner to contact plumber
9 Pinecrest Avenue	03/16/2023	Sewer Blockage	Investigate flow at manhole above and below home, flow present, instruct homeowner to contact plumber
Manhole near SPS #2 (Peter Street)	06/06/2023	Sewer Blockage	Blockage found between manholes before station. Pumped grey water from manhole to station, until the line could be flushed and the blockage could be removed

Appendix A

Appendix A - Biosolids Quality Report

Biosolids Quality Report

Facility: BARRY'S BAY WASTEWATER TREATMENT FACILITY

Solids & Nutrients **Period: 01/01/2023 to 12/31/2023** **Works: 5979 / Digestor Type: Aerobic**

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Solids & Nutrients | **Metals & Criteria** | **Last 4 Samples**

Facility Works Number:	110001854	Receiver:	Kamaniskeg Lake
Facility Owner:	Municipality: Madawaska Valley Township	Service Population:	1055
Facility Classification:	Class 3 Wastewater Treatment	Total Design Capacity:	1250 m3/day

Note: all parameters in this report are derived from the Bslq Station

Month	Hauled Vol. (m^3)	Total Solids (mg/L)	Volatile Solids (mg/L)	Total Phosphorus (mg/L)	Total Ammonia Nitrogen (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Total Kjeldahl Nitrogen (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Parameter Short Name	HauledVol	TS	VS	TP	NH3p_NH4p_N	NO3-N	NO2-N	TKN	Calculation in Report	K
T/S	IH Month.Total	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	- no T/S	Lab Published Month Mean
Jan		31,500.00	23,600.00	730.00	165.00	0.30	0.20	1,880.00	82.65	45.00
Feb		56,500.00	44,300.00	1,400.00	133.00	0.30	1.50	2,910.00	66.65	68.00
Mar		49,600.00	39,150.00	1,365.00	277.00	1.65	0.20	2,280.00	139.33	70.50
Apr	84.00	65,000.00	49,900.00	920.00	207.00	0.30	2.00	3,110.00	103.65	34.00
May	280.00	32,300.00	23,700.00	1,080.00	147.00	0.30	0.20	1,950.00	73.65	71.00
Jun	160.00	70,200.00	52,600.00	1,990.00	567.00	3.00	3.00	3,620.00	285.00	70.00
Jul	190.00	35,300.00	26,900.00	772.00	273.00	3.00	3.00	2,040.00	138.00	48.00
Aug	120.00	31,600.00	24,500.00	694.00	289.00	3.00	3.00	1,840.00	146.00	46.00
Sep		28,500.00	21,300.00	656.00	392.00	3.00	3.00	1,590.00	197.50	50.00
Oct	240.00	30,400.00	22,600.00	640.00	497.00	3.00	3.00	1,820.00	250.00	47.00
Nov	240.00	27,000.00	19,700.00	830.00	476.00	3.00	3.00	1,810.00	239.50	65.00
Dec		26,000.00	19,500.00	682.00	347.00	3.00	3.00	1,620.00	175.00	57.00
Average	187.71	40,325.00	30,645.83	979.92	314.17	1.99	2.09	2,205.83	158.08	55.96
Total	1,314.00	483,900.00	367,750.00	11,759.00	3,770.00	23.85	25.10	26,470.00	1,896.93	671.50

Note: all parameters in this report are derived from the Bslq Station

Month	Arsenic (mg/L)	Cadmium (mg/L)	Cobalt (mg/L)	Chromium (mg/L)	Copper (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Lead (mg/L)	Selenium (mg/L)	Zinc (mg/L)
Parameter Short Name	As	Cd	Co	Cr	Cu	Hg	Mo	Ni	Pb	Se	Zn
T/S	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean	Lab Published Month Mean
Jan	0.10	0.02	0.03	0.30	15.00	0.06	0.16	0.26	0.30	0.10	15.00
Feb	0.10	0.03	0.06	0.46	24.00	0.11	0.25	0.42	0.40	0.10	19.00
Mar	0.10	0.03	0.06	0.55	23.00	0.10	0.23	0.45	0.40	0.15	18.00
Apr	0.10	0.04	0.06	0.53	24.00	0.11	0.12	0.51	0.50	0.10	18.00
May	0.10	0.02	0.05	0.42	18.00	0.07	0.18	0.42	0.40	0.10	14.00
Jun	0.10	0.04	0.09	1.60	32.00	0.11	0.95	1.00	0.60	0.20	24.00
Jul	0.10	0.02	0.04	0.32	12.00	0.04	0.13	0.28	0.20	0.10	11.00
Aug	0.10	0.01	0.03	0.27	12.00	0.03	0.12	0.23	0.20	0.10	10.00
Sep	0.10	0.01	0.03	0.26	12.00	0.04	0.11	0.21	0.20	0.10	10.00
Oct	0.10	0.01	0.03	0.27	11.00	0.04	0.11	0.21	0.20	0.10	9.00
Nov	0.10	0.02	0.04	0.33	15.00	0.06	0.13	0.27	0.30	0.10	11.00
Dec	0.10	0.01	0.03	0.26	13.00	0.04	0.11	0.21	0.20	0.10	10.00
Average	0.10	0.02	0.05	0.46	17.58	0.07	0.22	0.37	0.33	0.11	14.08
Max. Permissible Metal Concentrations (mg/kg of Solids)	170.00	34.00	340.00	2,800.00	1,700.00	11.00	94.00	420.00	1,100.00	34.00	4,200.00
Metal Concentrations in Sludge (mg/kg)	2.48	0.53	1.13	11.50	436.04	1.67	5.37	9.24	8.06	2.79	349.25

Biosolids Quality Report

Facility: BARRY'S BAY WASTEWATER TREATMENT FACILITY

Last 4 Samples

Period: 01/01/2023 to 12/31/2023

Works: 5979 / Digestor Type: Aerobic

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Solids & Nutrients **Metals & Criteria** **Last 4 Samples**

Note: all parameters in this report are derived from the Bslq Station

Parameter Short Name	Time Series	09/06/2023	10/04/2023	11/07/2023	12/05/2023	Average	Metal Concentrations in Sludge (mg/kg)	Max. Permissible Metal Concentrations (mg/kg of Solids)
As (mg/L)	Lab Published	0.10	0.10	0.10	0.10	0.10	3.57	170
Cd (mg/L)	Lab Published	0.01	0.01	0.02	0.01	0.01	0.50	34
Co (mg/L)	Lab Published	0.03	0.03	0.04	0.03	0.03	1.16	340
Cr (mg/L)	Lab Published	0.26	0.27	0.33	0.26	0.28	10.01	2800
Cu (mg/L)	Lab Published	12.00	11.00	15.00	13.00	12.75	455.76	1700
Hg (mg/L)	Lab Published	0.04	0.04	0.06	0.04	0.04	1.56	11
Mo (mg/L)	Lab Published	0.11	0.11	0.13	0.11	0.12	4.11	94
Ni (mg/L)	Lab Published	0.21	0.21	0.27	0.21	0.23	8.04	420
Pb (mg/L)	Lab Published	0.20	0.20	0.30	0.20	0.23	8.04	1100
Se (mg/L)	Lab Published	0.10	0.10	0.10	0.10	0.10	3.57	34
Zn (mg/L)	Lab Published	10.00	9.00	11.00	10.00	10.00	357.46	4200
E.Coli Dry Wt (cfu/g)	Lab Published	115,789.00	125,000.00	118,519.00	246,154.00	143,348.47	E. Coli average is the GMD	
TS (mg/L)	Lab Published	28,500.00	30,400.00	27,000.00	26,000.00	27,975.00		
VS (mg/L)	Lab Published	21,300.00	22,600.00	19,700.00	19,500.00	20,775.00		
TP (mg/L)	Lab Published	656.00	640.00	830.00	682.00	702.00		
NO2-N (mg/L)	Lab Published	3.00	3.00	3.00	3.00	3.00		
TKN (mg/L)	Lab Published	1,590.00	1,820.00	1,810.00	1,620.00	1,710.00		
K (mg/L)	Lab Published	50.00	47.00	65.00	57.00	54.75		
NH3p_NH4p_N (mg/L)	Lab Published	392.00	497.00	476.00	347.00	428.00		
NO3-N (mg/L)	Lab Published	3.00	3.00	3.00	3.00	3.00		

Appendix B

Appendix B - Details of Abnormal Sewage Discharge Events

Event Details Summary

Facility Bypass

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no bypass events reported during the reporting period.								

Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no overflow events reported during the reporting period.								

Collection Overflow

There are no authorized overflow locations in this system.

Spills of Sewage

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
06/06/2023	Manhole near SPS#2 (Peter Street)	Blockage found between manholes before station. Pumped grey water from manhole to station, until the line could be flushed and the blockage could be removed. Reported to SAC (#1-3IJDCL)	Less than 1	8:47 am	9:30 am	43 min	N/A	No

Collection System Monitoring Data

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
There were no samples collected as there were no overflow events.						

Appendix C

Appendix C - ECA Annual Report Requirements

Facility ECA #2702-7TKNBE **Section 10 (6)**	**Section in Report**
a. A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the Works;	Treatment Flows Effluent Quality
b. A description of any operating problems encountered and corrective actions taken;	Operating Issues and Problems
c. A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;	Maintenance
d. A summary of any effluent quality assurance or control measures undertaken in the reporting period;	Effluent Quality
e. A summary of the calibration and maintenance carried out on all effluent monitoring equipment; and	Maintenance
f. A description of efforts made and results achieved meeting the Effluent Objectives of Condition 6	Operating Issues and Problems Effluent Quality
g. A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;	Sludge Generation
h. A summary of any complaints received during the reporting period and any steps taken to address the complaints;	Summary of Complaints
i. A summary of all By-pass, spill or abnormal discharge events; and	Operating Issues and Problems Appendix B
j. Any other information the District Manager requires from time to time	

Collection ECA #193-W601 **Schedule E**	**Section in Report**
4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.	Operating Issues and Problems
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	Operating Issues and Problems
4.6.5 Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.	Maintenance
4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	Summary of Complaints
4.6.7 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.	Maintenance
4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: a) Dates; b) Volumes and durations; c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and	Operating Issues and Problems Appendix C

Collection ECA #193-W601 **Schedule E**	**Section in Report**
total Kjeldahl nitrogen, and sampling results for E.coli; d) Disinfection, if any; and e) Any adverse impact(s) and any corrective actions, if applicable.	
4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable: a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted. b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines. c) An assessment of the effectiveness of each action taken. d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives. e) Public reporting approach including proactive efforts.	Maintenance Operating Issues and Problems