Merrickville Wastewater System

Waterworks # 110001729

Annual Report

Prepared For: Village of Merrickville-Wolford

Reporting Period of January 1st – December 31st 2022

Issued: February 21, 2023

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	1121-7YRQLF	January 18, 2010	N/A
ECA for Municipal Sewage Collection System	5838-7YHMN6	January 7, 2010	N/A

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1 Revision History

Date	Rev#	Revisions	Revised By
2023-02-21	0	Annual Report Issued	PCT

2 Operations and Compliance Reliability Indices

Compliance Event	Details
Ministry of Environment Inspections	No inspection in 2022
Ministry of Labour Inspections	No inspection in 2022
Non-Compliance	No Non-Compliances in 2022
Community Complaints	No community complaints in 2022
Spills	Spill of Digester Material -Details reference in report
Overflows	No overflows in 2022
Bypass	No bypass' in 2022
Diversion (if applicable)	No diversions in 2022

3 Process Description

The Merrickville Wastewater system utilizes an ISAM treatment system. This system incorporates a surge/anoxic mix tank to optimally control the process and it provides rapid and complete treatment. The surge tank provides flow and nutrient equalization to optimally provide treatment at the full range of flows and loadings.

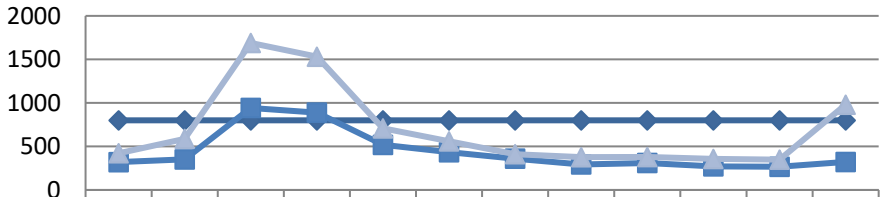
The secondary treatment process employs sequencing batch reactor (SBR) technology consisting of anaerobic tanks, anoxic tanks and a sequencing batch reactor. The SBR incorporates an anaerobic selector chamber which provides consistent phosphorous removal by subjecting the recirculated biomass to anaerobic conditions, forcing the release of phosphorous, but also creates soluble carbon as a food source for phosphorous removal through anaerobic conversion of settleable BOD to soluble carbon. Additionally, anaerobic sludge digestion occurs in the anaerobic selector chamber, reducing waste solids production by up to 65% for the entire secondary process.

Effluent is disinfected using Ultraviolet disinfection. Permanent Diesel generator is on-site to provide back-up power.

4 Treatment Flows

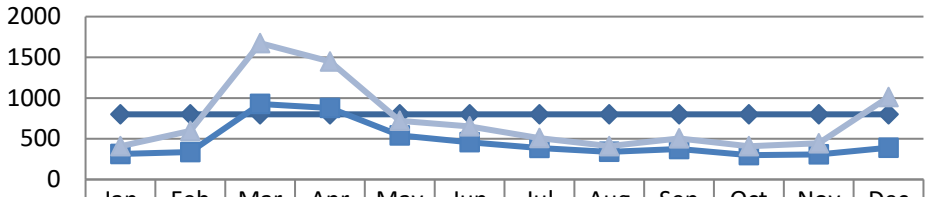
Annual average flow for 2022 was 440 m³/d which is 55% of the daily flow rated capacity of 800 m³/d. A flow reduction plan was established for 2018.

4.1 Raw Flow (m3/d)



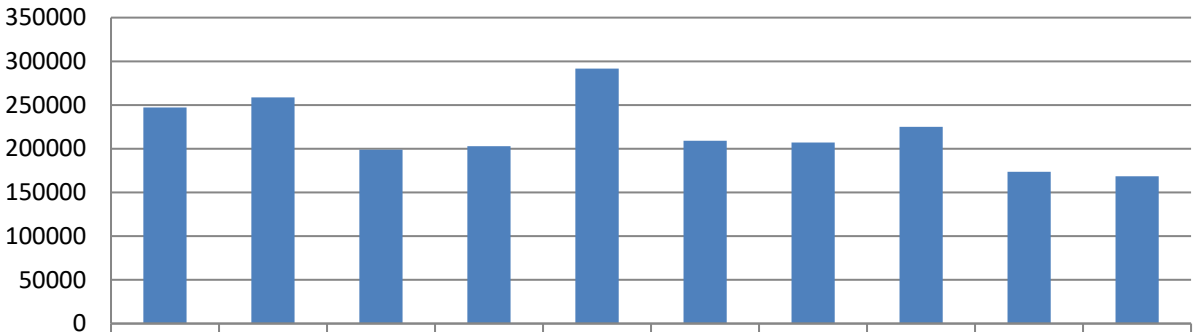
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	800	800	800	800	800	800	800	800	800	800	800	800
Average Daily Flow (m3/d)	320	351	942	889	518	433	360	293	310	271	267	321
Maximum Daily Flow (m3/d)	422	587	1689	1531	708	559	411	377	379	357	348	980

4.2 Effluent Flow (m3/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	800	800	800	800	800	800	800	800	800	800	800	800
Average Daily Flow (m3/d)	313	337	927	878	541	457	387	339	374	299	308	390
Maximum Daily Flow (m3\d)	408	596	1674	1449	721	652	508	409	505	408	445	1011

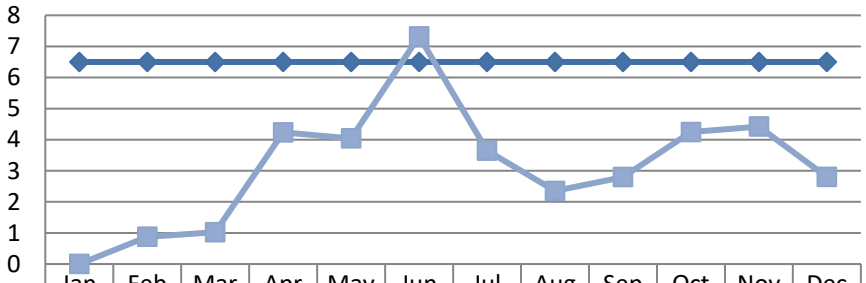
4.2.1 Annual Comparison (m3)



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Annual Flow	247235	258709	198948	202822	291715	209152	207174	225043	173530	168536

4.4 Imported Sewage

4.4.1 Septage Flow (m3/d)

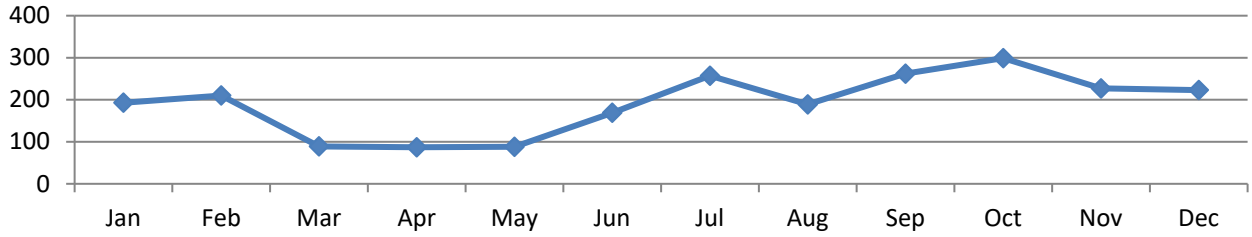


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Average Daily Flow (m3/d)	0.00	0.88	1.02	4.23	4.04	7.32	3.65	2.35	2.80	4.25	4.42	2.80

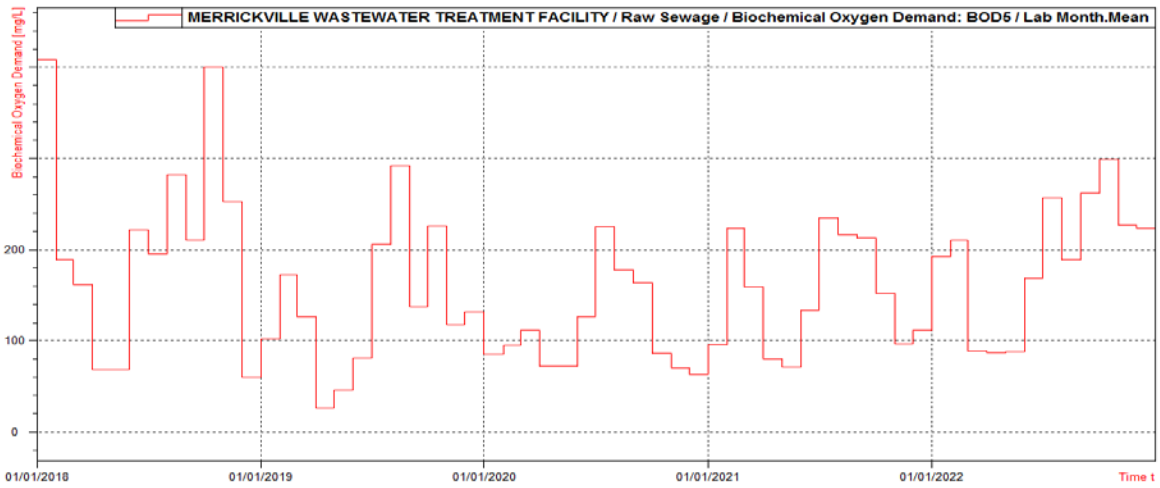
Septage flow was calculated using total m3 for the month divided by days in that month. The operator ensures no more than 6 m3 of septage is process per day. Therefore, with June having a larger amount of received septage, the actual processing of a portion of that septage would have come in July.

5 Raw Sewage Quality

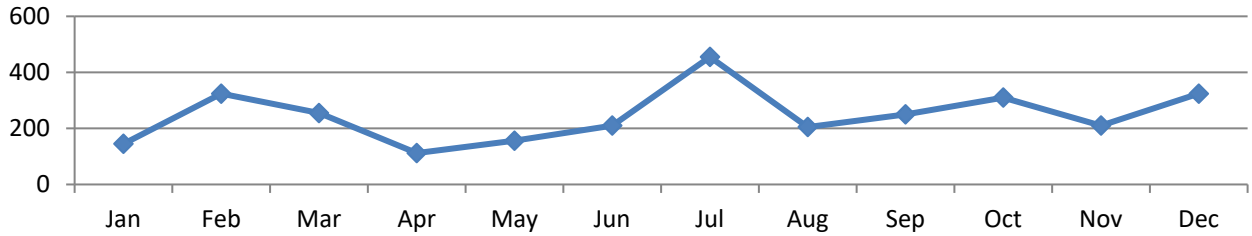
5.1 BOD5 (mg/L)



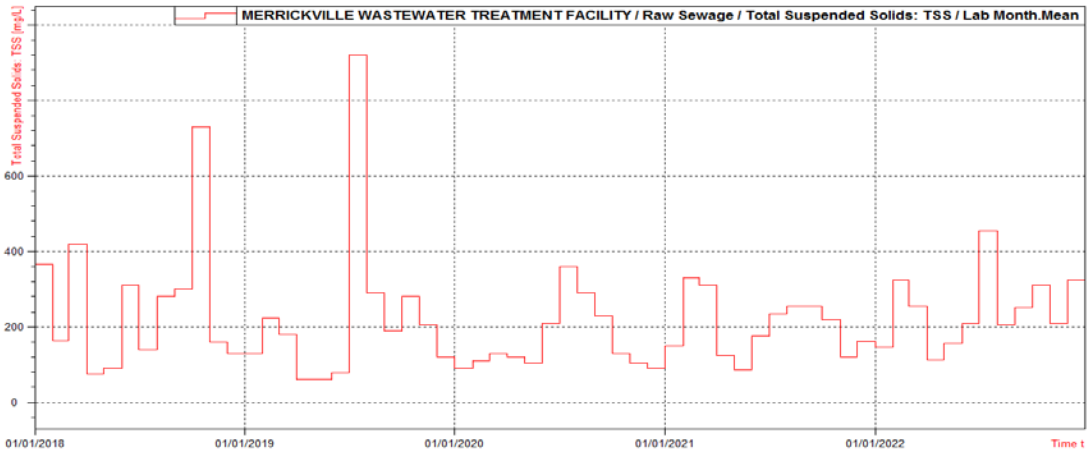
5.1.1 5-year BOD5 Trend



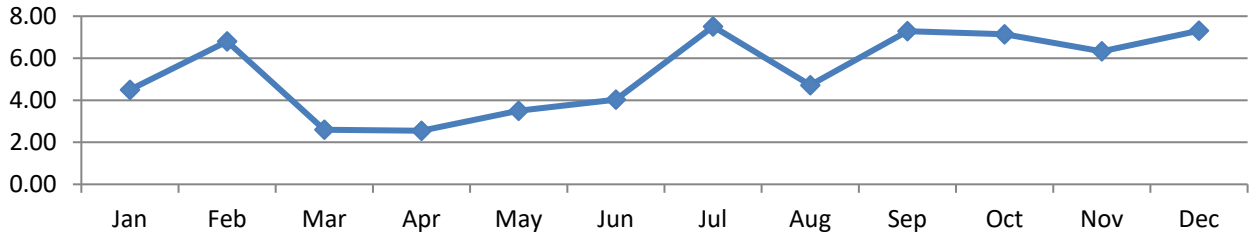
5.2 Total Suspended Solids (mg/L)



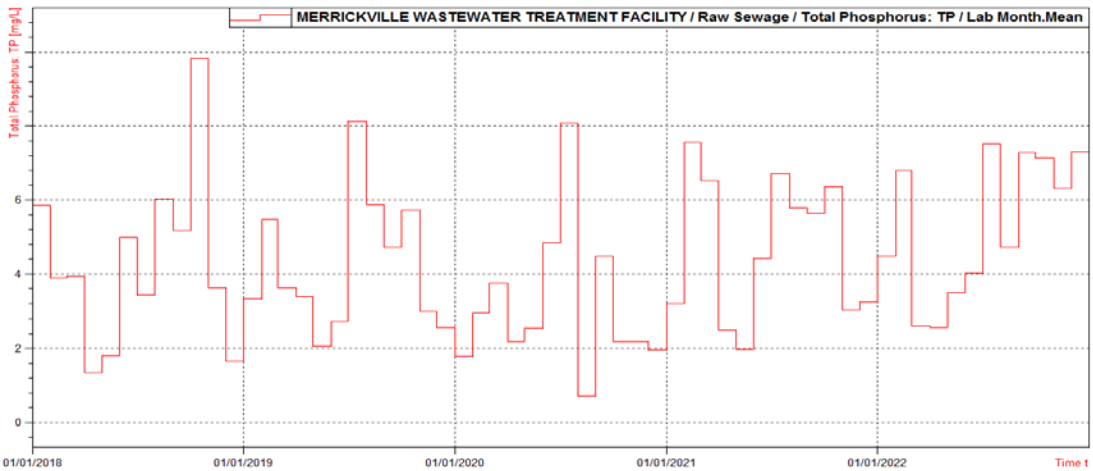
5.2.1 *5-year Total Suspended Solids Trend*



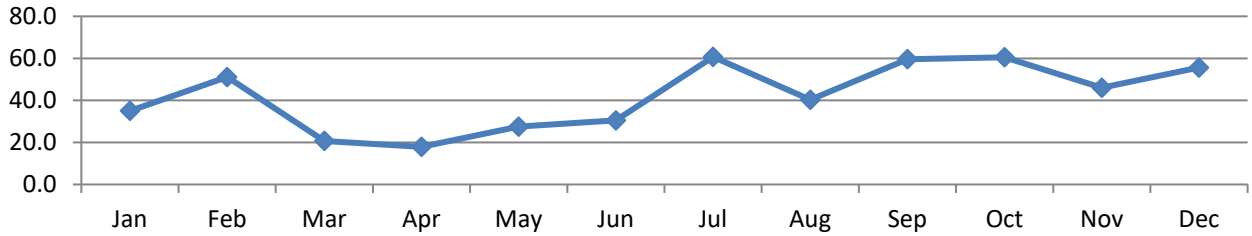
5.3 Total Phosphorus (mg/L)



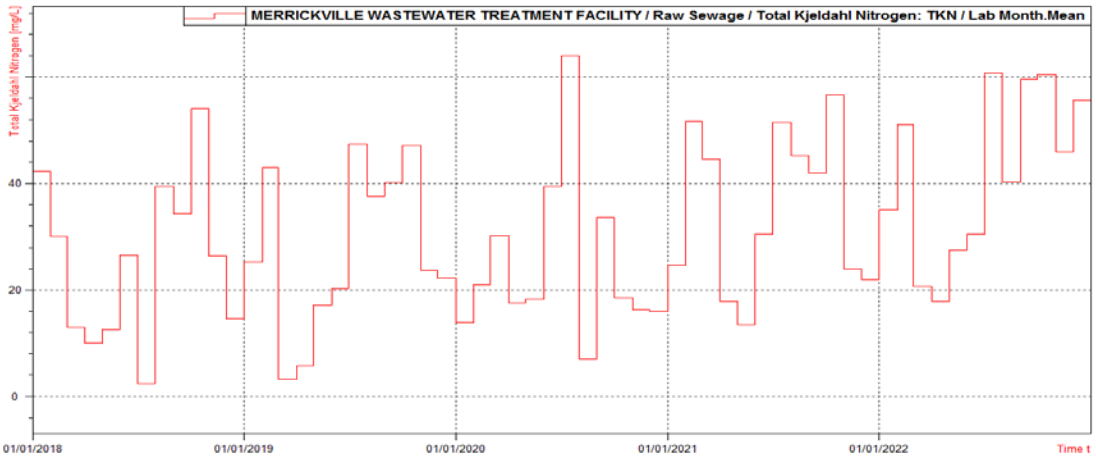
5.3.1 *5-year Total Phosphorus Trend*



5.4 Total Kjeldahl Nitrogen (mg/L)



5.4.1 5-year Total Kjeldahl Nitrogen Trend



5.5 Imported Waste Quality

No septage sampling requirements, as per the ECA.

6 Effluent Quality

The monthly average concentrations of carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), total phosphorus (TP) and total ammonia nitrogen (TAN) remained below the effluent limits outlined in the facility's Certificate of Approval during 2022. The geometric mean density of E. coli in the effluent also remained below the ECA limit and objective in 2022. In addition the effluent pH remained within the limits and objectives throughout the year.

Effluent results from the WWTP for 2022 are tabulated below. Additional data can be found in the Performance Assessment Reports attached in Appendix A.

6.1 Effluent Quality Assurance and Control Measures Taken

This system is part of OCWA's Seaway Valley 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 Caduceon Kingston for analysis, with the exception of pH and temperature. Caduceon Kingston 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 pH 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:

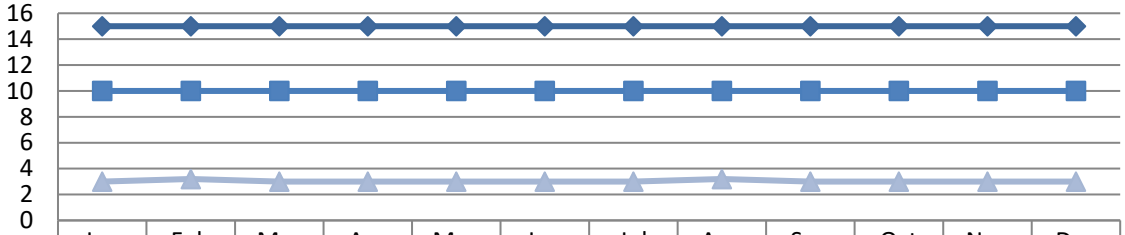
- Process Data Management (PDM)
  - This database program consolidates all operational data from a variety of sources including field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis.
- Maximo – OCWA's Work Management System (WMS)
  - This 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.

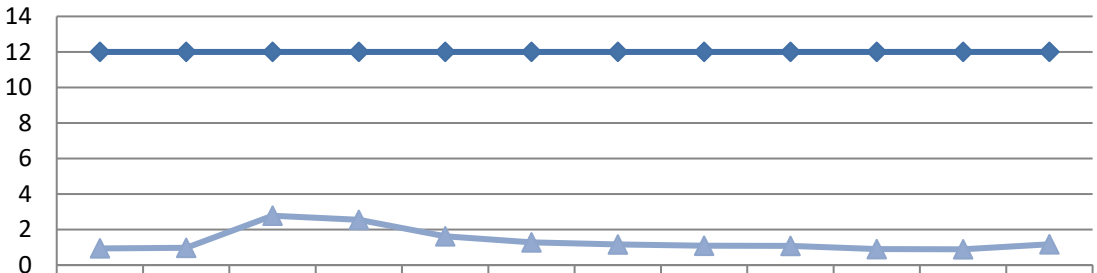
6.2 CBOD5 (mg/L)

The compliance limit and objective for this parameter was met in 2022.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	15	15	15	15	15	15	15	15	15	15	15	15
ECA Objective	10	10	10	10	10	10	10	10	10	10	10	10
Average	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.2	3.0	3.0	3.0	3.0

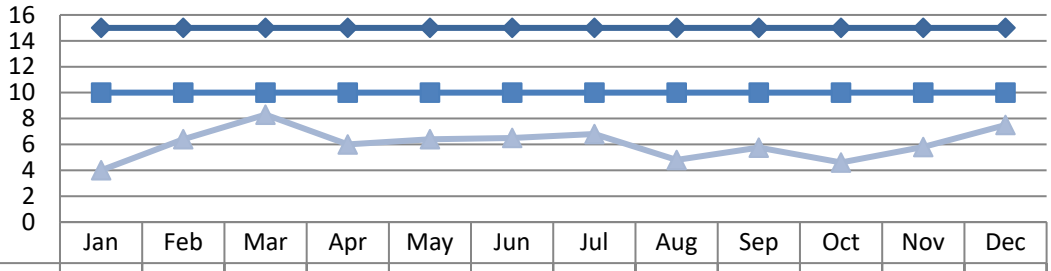
6.2.1 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	12	12	12	12	12	12	12	12	12	12	12	12
Average	0.94	0.97	2.78	2.55	1.62	1.28	1.16	1.09	1.08	0.90	0.89	1.17

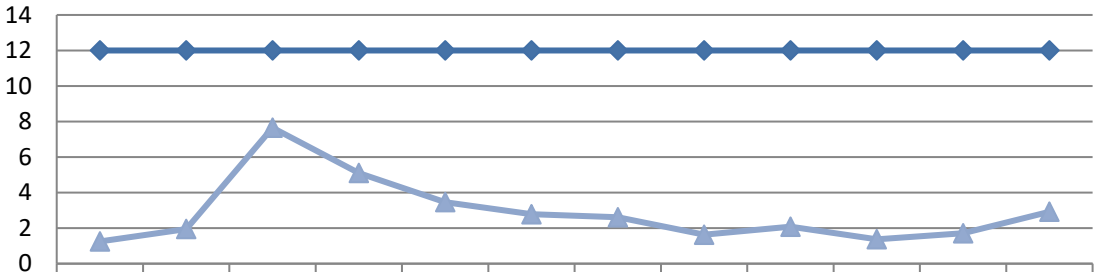
6.3 Total Suspended Solids (mg/L)

The compliance limit and objective for this parameter was met in 2022.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	15	15	15	15	15	15	15	15	15	15	15	15
ECA Objective	10	10	10	10	10	10	10	10	10	10	10	10
Average	4.0	6.4	8.3	6.0	6.4	6.5	6.8	4.8	5.8	4.6	5.8	7.5

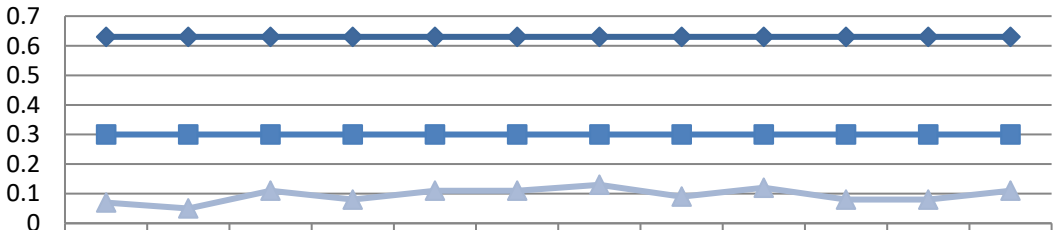
6.3.1 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	12	12	12	12	12	12	12	12	12	12	12	12
Average	1.25	1.95	7.65	5.10	3.46	2.78	2.61	1.63	2.08	1.37	1.71	2.92

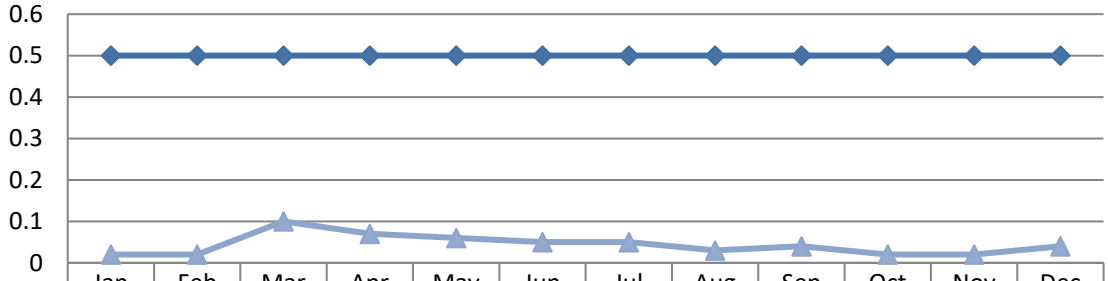
6.4 Total Phosphorus (mg/L)

The compliance limit and objective for this parameter was met in 2022.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
ECA Objective	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Average	0.07	0.05	0.11	0.08	0.11	0.11	0.13	0.09	0.12	0.08	0.08	0.11

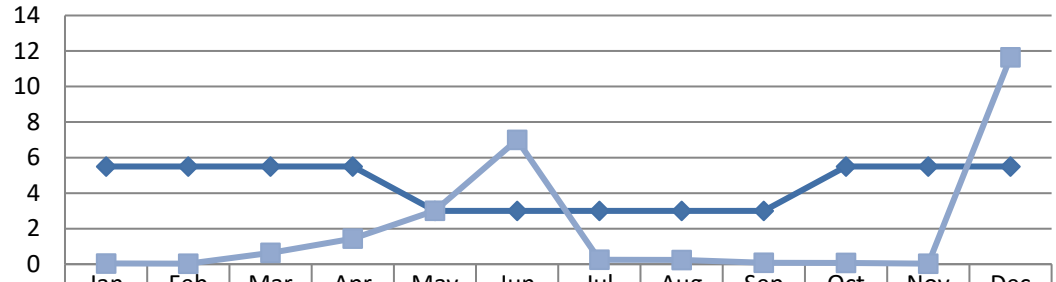
6.4.1 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Average	0.02	0.02	0.10	0.07	0.06	0.05	0.05	0.03	0.04	0.02	0.02	0.04

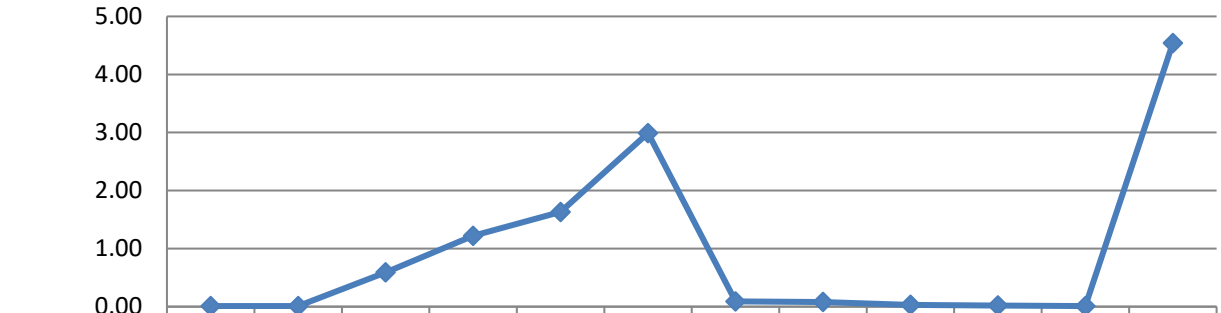
6.5 Total Ammonia Nitrogen (mg/L)

The compliance limit for this parameter was met in 2022, see Acute Lethality results below.



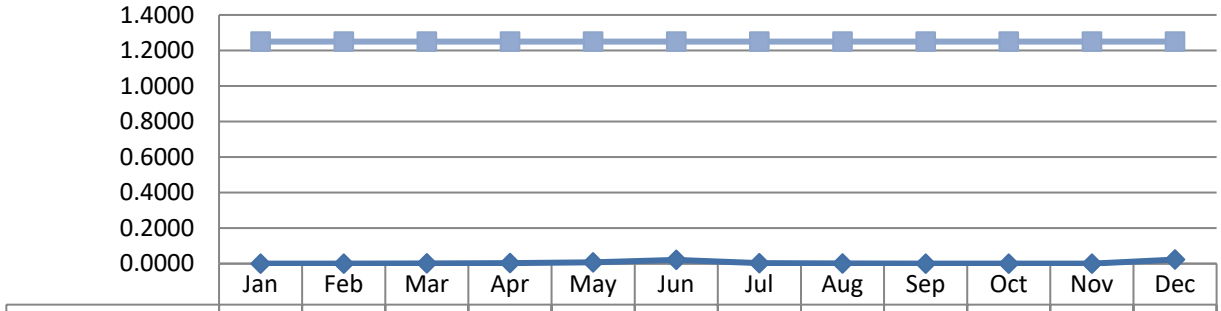
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Objective	5.5	5.5	5.5	5.5	3	3	3	3	3	5.5	5.5	5.5
Average	0.04	0.03	0.64	1.44	3.01	7.00	0.25	0.24	0.08	0.07	0.03	11.65

6.5.1 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average	0.01	0.01	0.59	1.22	1.63	2.99	0.09	0.08	0.03	0.02	0.01	4.54

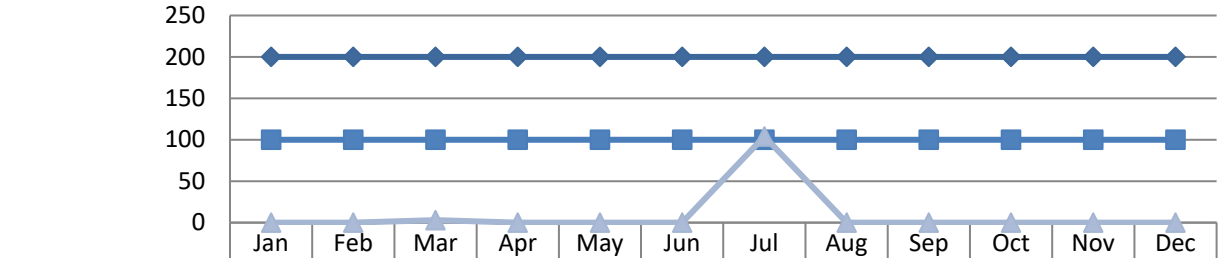
6.6 Un-Ionized Ammonia/Nitrogen/TKN (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average	0.0001	0.0001	0.0012	0.0031	0.0071	0.0214	0.0026	0.0008	0.0002	0.0001	0.0001	0.0228
Federal Limit	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25

6.7 E-coli (cfu/100mL)

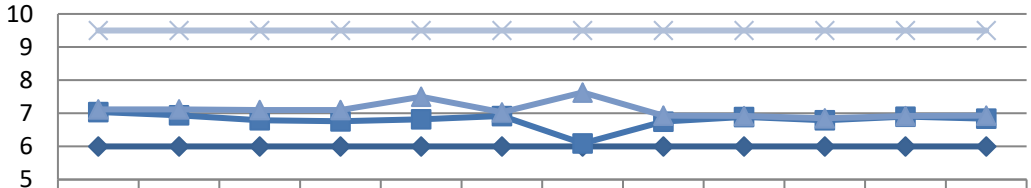
The compliance limit was met in 2022.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	200	200	200	200	200	200	200	200	200	200	200	200
ECA Objective	100	100	100	100	100	100	100	100	100	100	100	100
Average	0	0	3	0	0	0	104	0	0	0	0	0

6.8 pH

pH is to remain in the range of 6-9.5. 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
Minimum Limit	6	6	6	6	6	6	6	6	6	6	6	6
Minimum	7.04	6.94	6.79	6.76	6.82	6.92	6.09	6.75	6.89	6.79	6.9	6.84
Maximum	7.12	7.12	7.1	7.1	7.5	7.03	7.63	6.93	6.92	6.85	6.92	6.93
Maximum 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

6.9 Acute Lethality

There were two (2) samples collected in 2022 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.

The compliance limit for this parameter was met in 2022.

Date	Rainbow Trout	Daphnia Magna
03/15/2022	0%	0%
09/07/2022	0%	0%

7 Monitoring Schedule

The 2023 Calendar can be viewed in Appendix B.

7.1 Deviations

Date	Details	Cause of Deviation
There were no deviations to the sample schedule or any missed samples in 2022.		

8 Operating Issues/Problems

There are no other operating issues/problems outside the objective exceedances mentioned below.

8.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Objective	Value	Corrective Action
June 2022	TAN ECA Objective	3	7	Caused when cleaning/draining train #1, which overloaded tank #2 with solids. In future tank cleanings the process will be done differently to avoid overloading trains.
July 2022	E.coli ECA Objective	100	104	Caused when cleaning/draining train #1, which overloaded tank #2 with solids. In future tank cleanings the process will be done differently to avoid overloading trains.
December 2022	TAN ECA Objective	5.5	11.65	ISAM pump failure caused sludge blanket to increase. Temporary pump installed to move solids into digester. DO sensors failed, portable unit measuring daily.

8.2 Summary of Abnormal Sewage Discharge Events

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

8.3 Spills (Other than Sewage)

Date	Location	Details	Volume (m3)	Start Date and Time	End Date and Time
March 7, 2022	Merrickville STP	Digester material was discharged onto the ground. It is estimated that 4 m3 of material was recovered. A mechanical failure of a check valve caused the digester tank to overflow. SAC #7140-CEDK63	6	08:30	09:00

9 Maintenance

Routine planned maintenance activities are scheduled in WMS and include:

- Inspect, adjust and calibrate process control equipment to ensure proper operation of water distribution systems, 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.

9.1 Normal Maintenance and Repairs

Work Order	Details
2638165	UV maintenance
2638675	Process Pump #3 repairs
2638864	Rebuild digester pump
2774192	H&S Fall Arrest Equipment

9.2 Emergency Maintenance and Repairs

Work Order	Details
2636453	Surge protector module for generator building
3107699	Generator coolant leak repair
2774194	Effluent valve and actuator repair

9.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
FIT-701 Sludge	May 17, 2022	N/A
FIT-402 Final Effluent	May 17, 2022	N/A
FIT-501 Septage/Supernatant	May 17, 2022	N/A
FIT-305 Raw Sewage	May 17, 2022	N/A

9.4 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
No alterations made in collection system in 2022		

9.5 Notice of Modifications

Date	Process	Modification	Status
No modifications made in 2022			

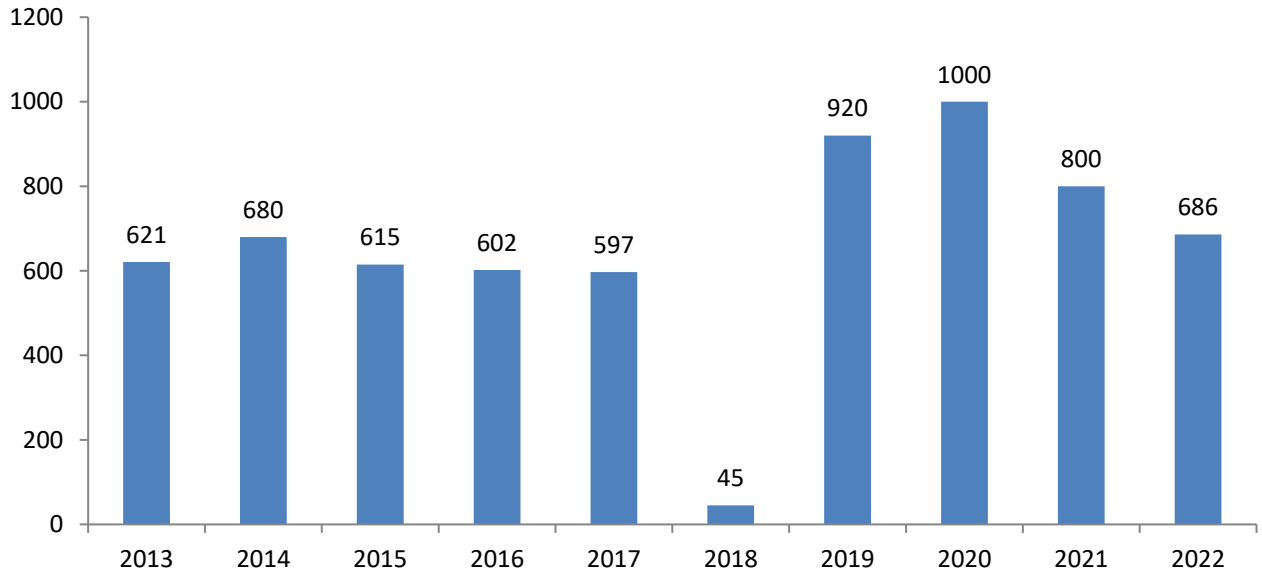
10 Sludge Generation

10.1 Sludge Disposal Summary

Date	Disposal Location	Approval Number	Total Volume (m3)
May 2022	Beckwith, Concession: 10, Lot 20	ECA #6069-5BXNTB	686

In 2022, a total of 686m3 of liquid bio-solids was hauled offsite by GFL and utilized as soil conditioner. It was spread in May (NASM Submission ID #24013). It is anticipated that approximately the same volume of sludge will be generated in 2022.

10.2 Annual Comparison (m3/year)



It is anticipated that sludge volumes will remain similar to the 2022 volumes. Note in 2018, there was limited hauling due to wet weather.

11 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
There were no complaints to report in 2022			

Appendix A

Appendix A - Imported Sewage Sample Results

The ECA indicates no sampling of septage is necessary.

Appendix B

Appendix B - 2023 Calendar

Merrickville Wastewater Treatment Plant - 2023

	Monthly Raw Sewage Composite	Weekly Effluent				Monthly Digested Sludge	Acute Lethality
January							---
February							
March							---
April							---
May							---
June							---
July							---
August							
September							---
October							---
November							---
December							---

Weekly Effluent Monitoring										
Composite Samples					Grab Samples					

Monthly Raw Sewage Monitoring Composite Samples: BOD, SS, TP, TKN

Monthly Digested Sludge: *E. coli*, % Moisture, Alkalinity as $CaCO_3$, N-NH_3 (Ammonia), N-NH_3 (unionized), NO_2 (nitrite), NO_3 (nitrate), pH, TKN, Phosphorus, Total Volatile Solids, Volatile Acids as Acetic Acid, Potassium, Aluminum, Arsenic, Cadmium, Mercury, Molybdenum, Nickel, Total Solids, Chromium, Cobalt, Copper, Lead, Selenium, Zinc

Weekly Effluent Composite Samples: BOD, SS, TP, Ammonia, Calculated Unionized Ammonia

Weekly Effluent Grab Samples: *E. coli*, pH, Temperature

Appendix C

Appendix C - Biosolids Quality Report

2022 - MERRICKVILLE STP MONTHLY AEROBIC BIOSOLIDS CONCENTRATION RATIO

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ammonia	263	260	179	277	181	153	312	390	440	307	543	556
Nitrate	1.0	1.0	2.5	1.9	1.0	1.3	1.0	1.0	1.0	1.0	1.0	1.3
Ammonia + Nitrate	264	261	182	279	182	154	313	391	441	308	544	557
Total Phosphorus	819	1660	71	215	1060	32	560	333	667	428	783	1210
Total Solids	52600	63300	4050	48300	65700	49300	60600	57800	66800	43200	46000	54900
Aluminum	1900	2630	76.30	1700	1960.0	1210.0	1100	965	1000	1790	1300	476
Arsenic	0.20	0.20	0.10	0.20	0.20	0.20	0.10	0.10	0.10	0.20	0.20	0.10
Cadmium	0.11	0.09	0.03	0.09	0.08	0.07	0.06	0.05	0.05	0.09	0.07	0.05
Chromium	1.27	1.69	0.05	1.32	1.31	1.18	1.00	0.97	0.78	1.72	1.43	0.79
Cobalt	0.52	0.57	0.03	0.54	0.46	0.44	0.50	0.43	0.25	0.62	0.71	0.42
Copper	40.30	58.30	1.94	41.00	41.20	35.90	30.50	26.80	24.00	47.90	40.90	21.10
Lead	1.60	2.10	0.10	1.60	1.80	1.60	1.20	1.10	1.40	2.10	1.70	1.00
Mercury	0.02	0.04	0.002	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.01
Molybdenum	0.81	1.07	0.05	0.83	0.86	0.76	0.65	0.60	0.50	1.08	0.90	0.51
Nickel	1.56	2.47	0.16	1.54	1.71	1.56	1.26	1.32	1.09	3.63	1.83	1.15
Selenium	0.40	0.60	0.10	0.30	0.40	0.30	0.30	0.20	0.20	0.40	0.40	0.20
Zinc	67.00	84.40	3.05	66.00	65.30	55.80	48.90	43.90	37.50	77.30	68.00	47.00

Metals ratio = mg metals/kg solids

	Metal/Solids Ratio (Sludge)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Limit
Arsenic	3.80	3.16	24.69	4.14	3.04	4.06	1.65	1.73	1.50	4.63	4.35	1.82	**170**
Cadmium	2.09	1.42	7.41	1.86	1.22	1.42	0.99	0.87	0.75	2.08	1.52	0.91	**34**
Chromium	24.1	26.7	12.3	27.3	19.9	23.9	16.5	16.8	11.7	39.8	31.1	14.4	**2800**
Cobalt	9.89	9.00	7.41	11.18	7.00	8.92	8.25	7.44	3.74	14.35	15.43	7.65	**340**
Copper	766	921	479	849	627	728	503	464	359	1109	889	384	**1700**
Lead	30.4	33.2	24.7	33.1	27.4	32.5	19.8	19.0	21.0	48.6	37.0	18.2	**1100**
Mercury	0.38	0.55	0.49	0.72	0.40	0.41	0.35	0.19	0.21	0.25	0.35	0.20	**11**
Molybdenum	15.40	16.90	12.35	17.18	13.09	15.42	10.73	10.38	7.49	25.00	19.57	9.29	**94**
Nickel	29.7	39.0	39.5	31.9	26.0	31.6	20.8	22.8	16.3	84.0	39.8	20.9	**420**
Selenium	7.60	9.48	24.69	6.21	6.09	6.09	4.95	3.46	2.99	9.26	8.70	3.64	**34**
Zinc	1274	1333	753	1366	994	1132	807	760	561	1789	1478	856	**4200**
Sludge is Acceptable	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

SOME ANALYSIS RESULTS EXPRESSED AS "<" (LESS THAN);HOWEVER, IN ORDER TO COMPLETE THE CALCULATION, ONLY THE NUMERIC VALUE WAS USED; THEREFORE THE AVG. CONC. IS GREATER THAN ACTUAL.

Appendix D

Appendix D - Details of Abnormal Sewage Discharge Events

Facility Bypass

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no bypass' to report in 2022								

Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no overflows to report in 2022								

Collection Overflow

There are no authorized overflow locations in this system under Table B4 and B5 of the CLI-ECA Draft.

Spills of Sewage

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no spills of sewage in 2022. The spill of digester material in March 2022 is detailed in Section 8.3 of this report								

Collection System Monitoring Data

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
There were no collection system overflows/bypass'/spills in 2022						

Appendix E

Appendix E - ECA Annual Report Requirements

Facility ECA # 1121-7YRQLF **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 ;	Section 6 – Effluent Quality
(b) A description of any operating problems encountered and corrective actions taken;	Section 8 – Operating Issues
(c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works ;	Section 9 - Maintenance
(d) A summary of any effluent quality assurance or control measures undertaken in the reporting period;	Section 6 – Effluent Quality
(e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment; and	Section 9.3 – Flow meter calibrations
(f) A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6.	Section 6 – 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;	Section 10 – Sludge Generation
(h) A summary of any complaints received during the reporting period and any steps taken to address the complaints;	Section 11 - Complaints
(i) A summary of all By-pass , spill or abnormal discharge events; and	Section 8 and Appendix D
(j) Any other information the District Manager requires from time to time.	N/A
Collection ECA # N/A	
N/A	N/A