Corporation of the City of Quinte West

Youngs Cove Wastewater Treatment Plant

2023 Annual Performance Report

A Natural Attraction

Executive Summary

The Youngs Cove Wastewater Treatment Plant (YCWWTP), assigned Ministry of the Environment (MOE) Registration number 120004002, was assumed by Quinte West in January of 2024. The Wastewater Treatment Plant (WWTP) has been assigned Amended Environmental Compliance Approval (ECA) number 1065-C6VQ45 issued on January 21, 2022. The residential digesters (Clearford Clarifiers), associated Sanitary Laterals and Collection Mains, and the main Sewage Pumping Station (SPS) are assigned ECA number 6351-ARBM5Y, issued on September 22, 2017. The WWTP facility is described as a Membrane Bioreactor treatment type facility. The Works consist of a main Sewage Pumping Station located at 49 Wellers Way designed to collect wastewater flow from the entire Development Area (DA). A headworks screening building, equipped with two parallel 0.5 mm wedge wire rotary brush screens, gravity discharge to two (2) interconnected in-ground Equalization Tanks complete with three (3) feed pumps discharging to two (2) in-ground aeration tanks. The in-ground aeration tanks are each equipped with two (2) submersible pumps discharging to the MBR tanks. Each MBR tank is populated with one membrane module consistent with Phase 1A description in the ECA, capable of treating up to 105 cu.m/day. Each MBR tank is equipped with two (2) permeate extraction pumps, and a waste activated sludge pump. Effluent disinfection is accomplished through UV Disinfection with two (2) parallel UV units dedicated to each MBR tank, and one common spare. Phosphorus removal is achieved by dosing Aluminum Sulfate. Alkalinity adjustment is achieved through dosing sodium hydroxide. An in-ground Digester captures waste activated sludge. Sludge disposed of in this tank, is hauled by a certified waste hauler to the Trenton WWCS for further processing at the WWTP.

The annual reporting requirements as per the ECA, have been listed below:

a) *A summary and interpretation of all Influent and Imported Sewage monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;*

b) A summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c) A summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

d) A summary of all operating issues encountered and corrective actions taken;

e) A summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

f) A summary of any effluent quality assurance or control measures undertaken;

g) A summary of the calibration and maintenance carried out on all Influent, and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

h) A summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for proactive actions if any are required under the following situations:

i. When any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

ii. When the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

i) A tabulation of the volume of sludge generated, 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;

j) A summary of any complaints received and any steps taken to address the complaints;

k) A summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and sills within the meaning of Part X of EPA and abnormal discharge events;

l) A summary of all Notices of Modifications to Sewage Works completed under Paragraph 1.d. Of Condition 10, including a report on status of implementation of all modifications.

m) A summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted; and

n) Any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es)/equipment groups in the Proposed Works.

Summary and Interpretation of Monitoring Data

Final Effluent parameter monitoring - with Limits									
Month	**[CBOD5]** *(mg/L)*	**[TSS]** *(mg/L)*	**[TP]** *(mg/L)*	**[TAN]** *(mg/L)*	**GMD E.Coli** *(cfu/100mL)*	**Acute Lethality RBT** *(% Mortality)*	**Acute Lethality DM** *(% Mortality)*	**pH - MIN**	**pH - MAX**
	Limit: 5.0 mg/L; Objective: 2.0 mg/L	*Limit: 5.0 mg/L; Objective: 2.0 mg/L*	*Limit: 0.1 mg/L; Objective: 0.04 mg/L*	*See TAN section for limits*	*Limit: 200 cfu/100mL; Object.: 100 cfu/100mL*	Non-lethal	Non-lethal	*Limit: 6.0*	*Limit: 9.5*
January	2.0	1.0	0.03	0.10	2.0	0	0	6.55	6.86
February	2.0	1.3	0.03	0.10	2.0			6.65	6.89
March	2.0	1.4	0.03	0.12	2.0			6.60	6.84
April	2.0	1.0	0.03	0.10	1.7	0	0	6.64	6.88
May	2.0	1.0	0.04	0.14	2.0			6.59	6.88
June	2.0	1.3	0.04	0.10	2.0			6.52	6.89
July	2.0	1.3	0.07	0.28	1.7	0	0	6.60	6.88
August	2.0	1.2	0.05	0.10	2.0			6.55	6.84
September	2.0	1.0	0.03	0.10	2.0			6.52	7.15
October	2.0	1.0	0.04	0.10	2.0	0	3.3	6.57	6.91
November	2.0	2.2	0.03	0.10	2.0			6.63	6.89
December	2.0	1.8	0.03	0.25	2.0			6.46	6.90
Annual Avg	**2.0**	**1.3**	**0.04**	**0.13**	**1.9**			**6.57**	**6.90**

Final Effluent parameter monitoring - without Limits			
	Unionized Ammonia (mg/L)	**Dissolved Oxygen** (mg/L)	**Temperature** (deg.C)
January	0.001	9.09	17.04
February	0.001	8.56	15.85
March	0.001	9.48	15.65
April	0.001	9.03	16.24
May	0.001	8.73	17.89
June	0.001	8.33	20.15
July	0.001	7.44	22.94
August	0.001	7.50	22.56
September	0.001	7.92	21.90
October	0.001	7.76	21.21
November	0.001	8.03	19.40
December	0.001	8.38	18.05
Annual Avg	**0.001**	**8.35**	**19.07**

Monthly Average Effluent Waste Loadings				
Month	**CBOD5** *(kg/d)*	**Total Suspended Solids** *(kg/d)*	**Total Phosphorus** *(kg/d)*	**Total Ammonia Nitrogen** *(kg/d)*
	Limit: 1.05 kg/d	*Limit: 1.05 kg/d*	*Limit: 0.021 kg/d*	*Limit: 0.42 kg/d (May 10 - November 30), 1.05 kg/d (December 1 - April 30)*
January	0.10	0.05	0.002	0.005
February	0.10	0.06	0.002	0.005
March	0.10	0.07	0.002	0.006
April	0.09	0.04	0.001	0.004
May	0.08	0.04	0.002	0.006
June	0.10	0.06	0.002	0.005
July	0.12	0.07	0.004	0.016
August	0.12	0.07	0.003	0.006
September	0.13	0.07	0.002	0.007
October	0.13	0.06	0.002	0.006
November	0.12	0.13	0.002	0.006
December	0.12	0.11	0.002	0.016
Annual Avg	**0.11**	**0.07**	**0.002**	**0.007**

Raw Sewage Monthly Average Concentrations

	Monthly Average BOD5 Concentration *(mg/L)*	Monthly Average Total Suspended Solids Concentration *(mg/L)*	Monthly Average Total Phosphorus Concentration *(mg/L)*	Monthly Average Total Kjeldahl Nitrogen Concentration *(mg/L)*	Total Ammonia Nitrogen *(mg/L)*	Alkalinity[1] *(mg/L)*
January	178.3	56.5	6.3	53.8	51.7	
February	172.8	91.3	6.0	56.4	54.0	180.0
March	165.6	62.0	5.6	53.9	50.6	116.7
April	221.5	62.8	6.5	60.7	57.7	205.0
May	222.2	79.0	6.0	60.2	57.0	230.0
June	192.0	118.0	7.0	62.0	60.2	240.0
July	140.8	162.8	7.4	74.4	64.8	228.0
August	232.4	96.2	7.4	54.8	51.8	210.0
September	128.3	103.3	5.5	44.5	42.5	172.5
October	103.8	133.5	5.8	50.7	47.3	226.0
November	97.0	249.6	10.2	55.2	48.4	180.0
December	166.8	77.0	5.4	49.6	47.6	186.7
Annual Avg	**168.4**	**107.7**	**6.6**	**56.3**	**52.8**	**197.7**

[1] Raw Sewage was not tested for Alkalinity in the month of January

	Facility Influent Flow Monitoring			**Facility Effluent Flow Monitoring**		
Month	**Average Daily Influent Flow** *(cu.m/day)*	**Month Max Daily Influent Flow** *(cu.m/day)*	**Total Influent Flow** *(cu.m/month)*	**Average Daily Effluent Flow** *(cu.m/day)*	**Month Max Daily Effluent Flow** *(cu.m/day)*	**Total Effluent Flow** *(cu.m/ month)*
	Rated Capacity: 266 cu.m/day	*Peak Rated Capacity: 266 cu.m/day*				
January	50	79	1560	51	80	1567
February	50	62	1397	50	59	1400
March	51	73	1574	51	60	1594
April	45	62	1336	44	59	1324
May	43	55	1335	42	87	1311
June	49	62	1461	50	64	1499
July	57	70	1758	58	81	1807
August	55	71	1700	59	72	1817
September	63	76	1890	66	74	1993
October	59	74	1823	63	77	1940
November	54	59	1633	54	59	1624
December	60	78	1875	60	78	1866
	Annual Avg = 53 cu.m./day	**Annual Max = 79 cu.m./day**	**Total Influent = 19,342 cu.m.**	**Annual Avg = 54 cu.m./day**	**Annual Max = 87 cu.m./day**	**Total Effluent = 19,743 cu.m.**

Summary of Bypass, Spill, or Abnormal Discharge Event(s)

There were no Bypasses, Spills, or Abnormal Discharge Events that occurred during the reporting period.

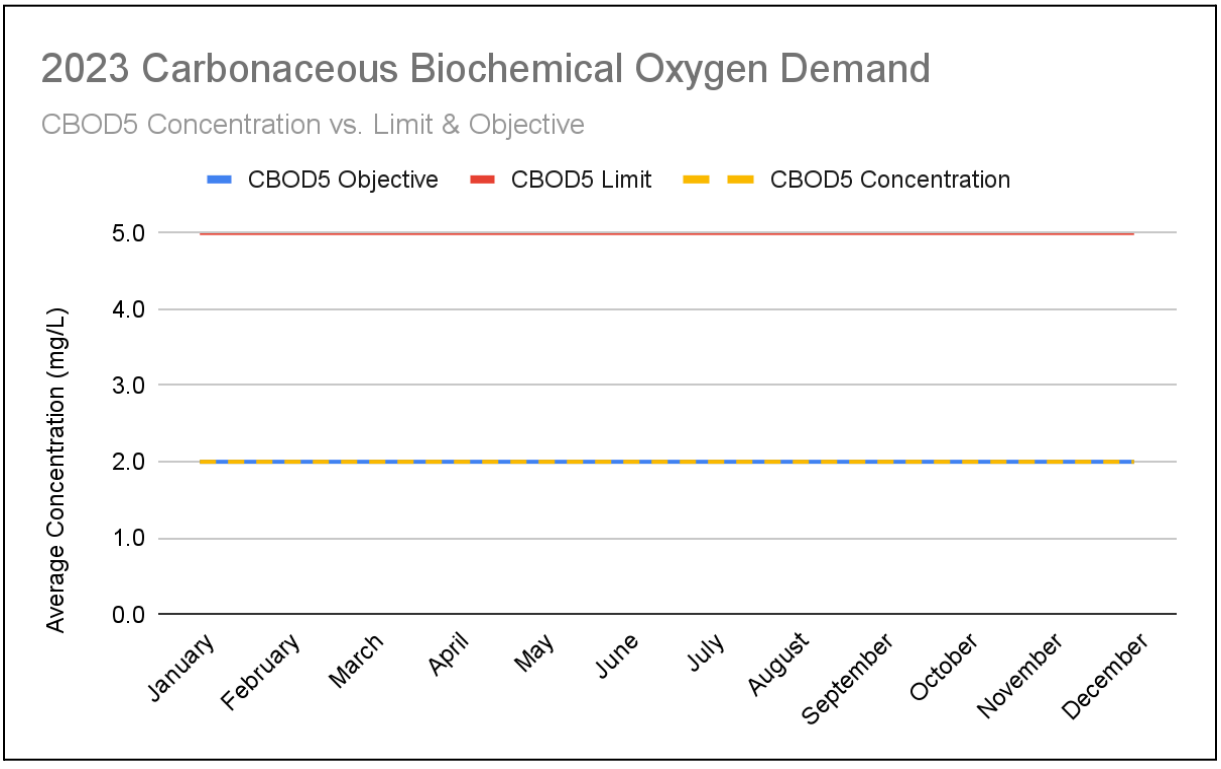
Summary of Operating Problems throughout Monitoring Period

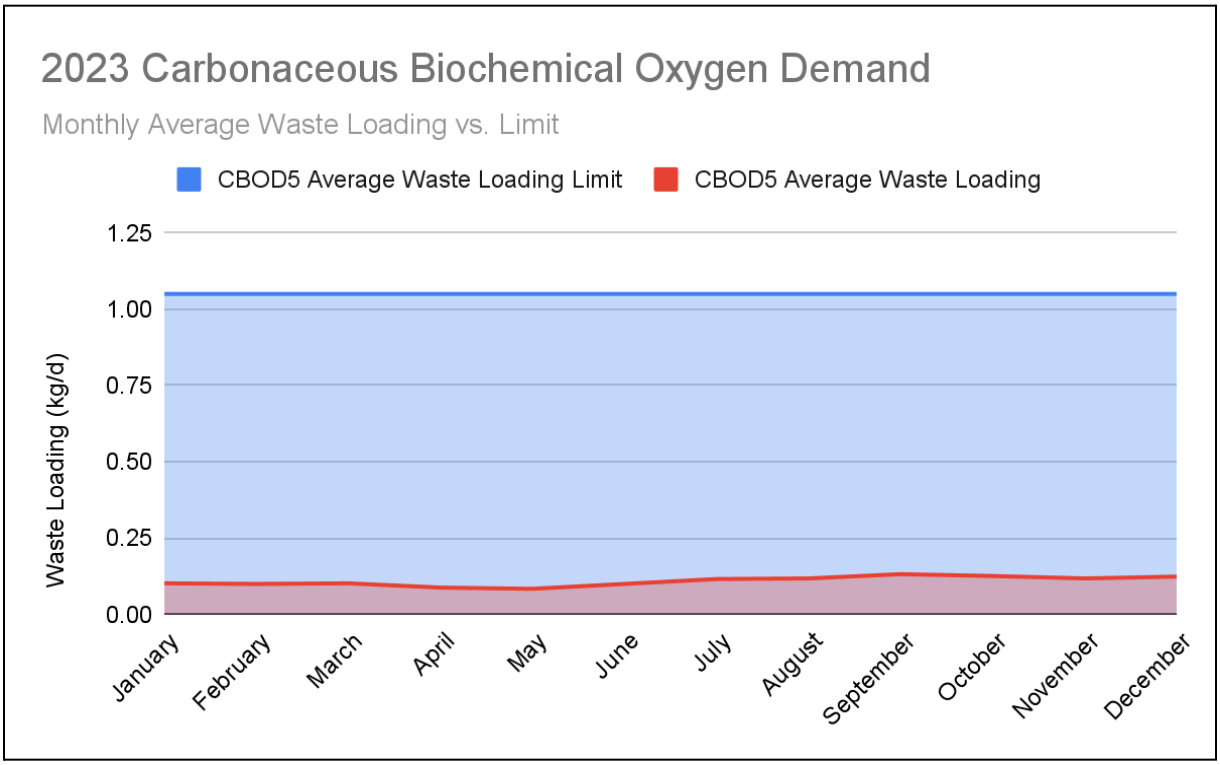
There were no operational problems encountered during the reporting period.

Analysis of Final Effluent Monitoring Dataset

Carbonaceous Biochemical Oxygen Demand (CBOD5) / Biochemical Oxygen Demand (BOD5)

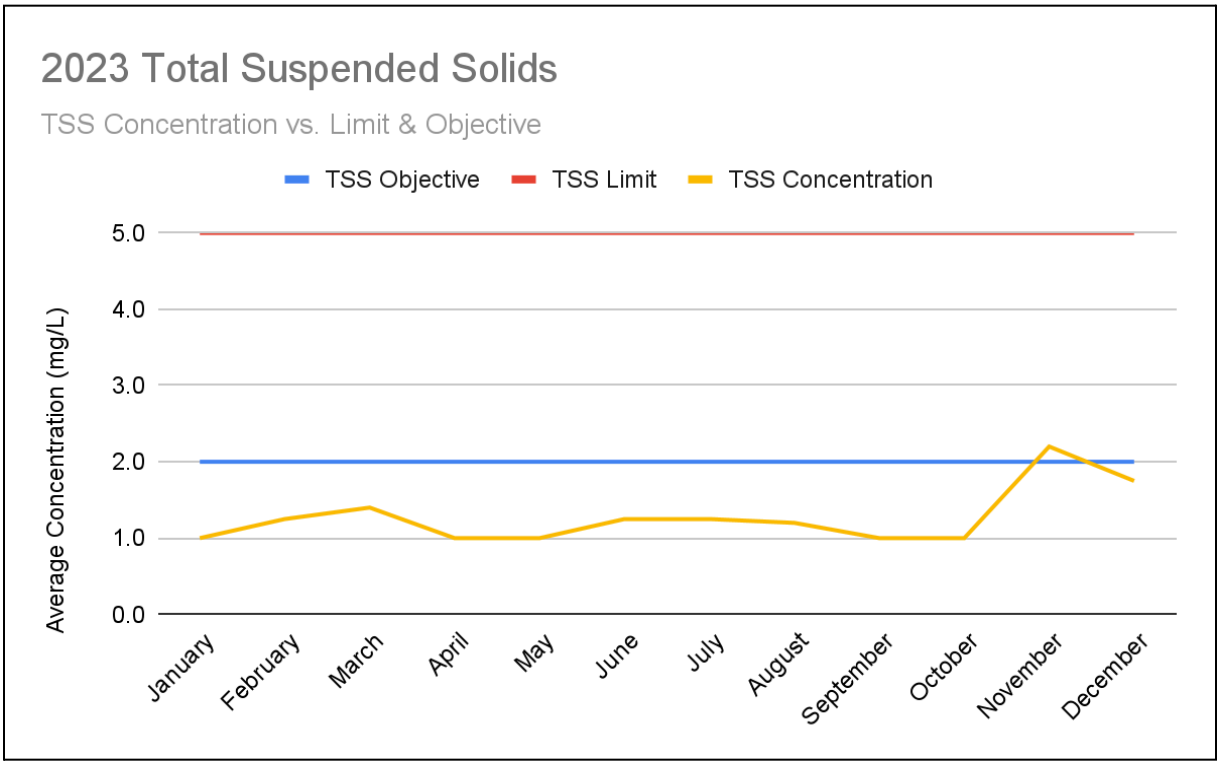
The following two Figures depict facility CBOD5 performance throughout the reporting period. The facility generally operates efficiently and maintains monthly average Effluent concentrations and waste loadings below the Effluent Objectives and Limits. The Method Detection Limit (MDL) for CBOD5 is 2.0 mg/L, which reflects in the results. The Annual Average Concentration of CBOD5 was 2.0 mg/L.

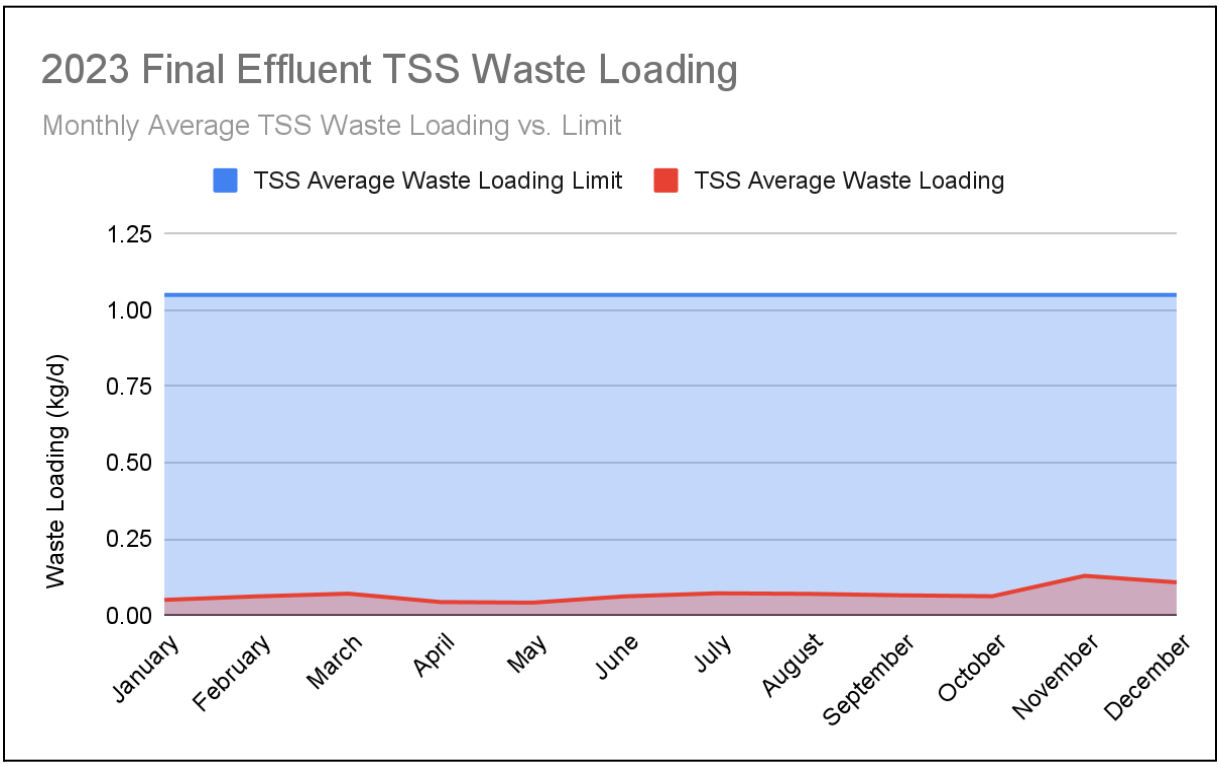




Total Suspended Solids (TSS)

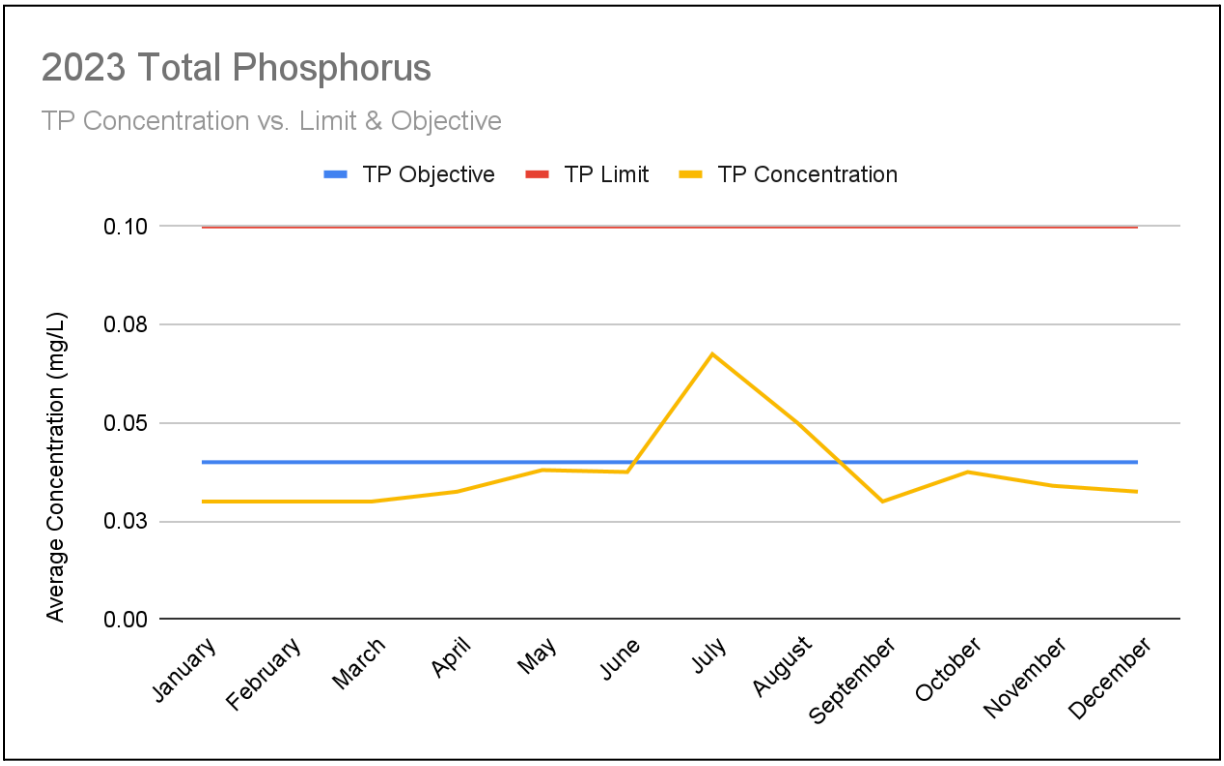
As depicted in the chart below, the facility was able to maintain compliance with the Effluent Limits and Objectives established by the ECA for TSS. The next chart in this section depicts the Monthly Average Waste Loading. As flows are quite low, there is a negligible monthly average waste loading calculated for each month of the monitoring period. Notably, the TSS concentration in November exceeds the Objective as outlined in the ECA, it is theorized that one monthly sample result could be anomalous.

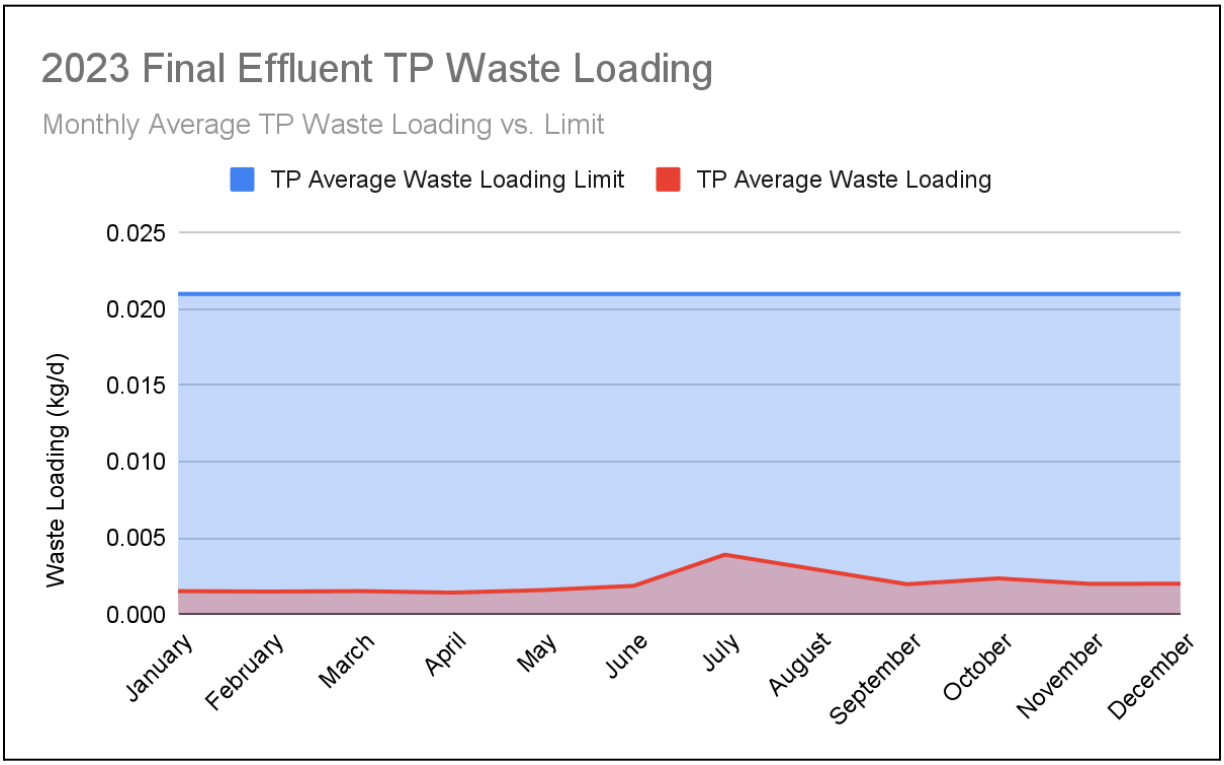

2023 Total Suspended Solids
TSS Concentration vs. Limit & Objective
TSS Objective
TSS Limit
TSS Concentration
Average Concentration (mg/L)
5.0
4.0
3.0
2.0
1.0
0.0
January
February
March
April
May
June
July
August
September
October
November
December


2023 Final Effluent TSS Waste Loading
Monthly Average TSS Waste Loading vs. Limit
TSS Average Waste Loading Limit
TSS Average Waste Loading
Waste Loading (kg/d)
1.25
1.00
0.75
0.50
0.25
0.00
January
February
March
April
May
June
July
August
September
October
November
December

Total Phosphorus (TP)

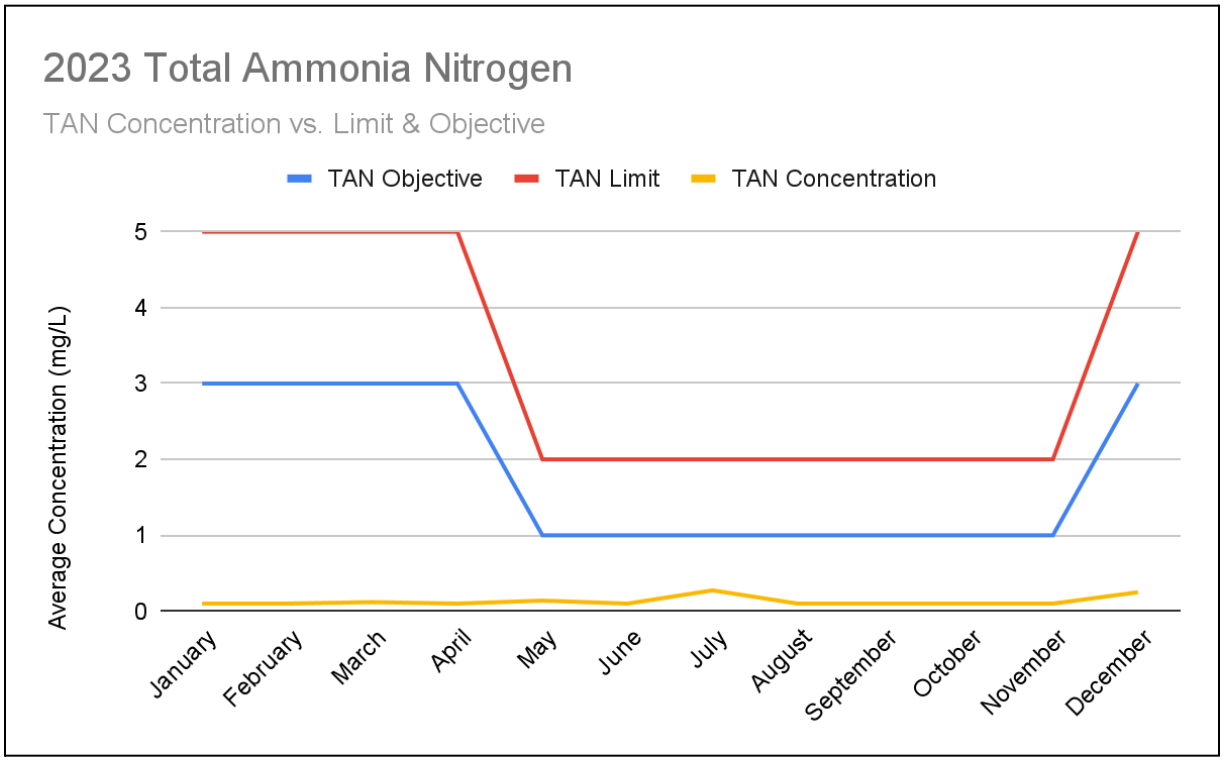
The following two figures depict monthly average TP concentrations and loadings in relation to their respective Effluent Limits and Objectives. Apparent in the following chart is that the facility was not able to operate below the Effluent Objective through the months of July and August. The increased average during these two months can be attributed to seasonal temperature swings which can make controlling phosphorus removal more difficult. As depicted in the second chart, the monthly average waste loading is consistently measured below the Effluent Limit as monthly average daily flows are still quite low at this facility.

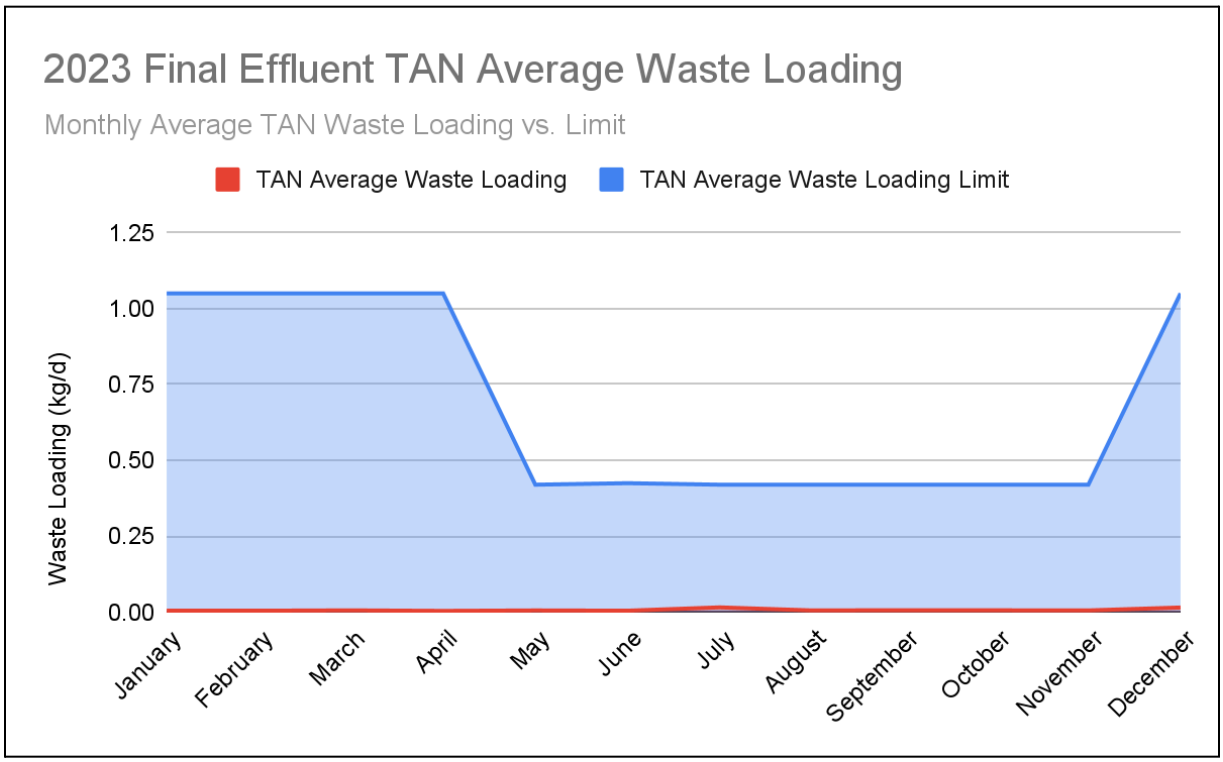




Total Ammonia Nitrogen (TAN) - Ammonia (NH_3) / Ammonium (NH_4^+)

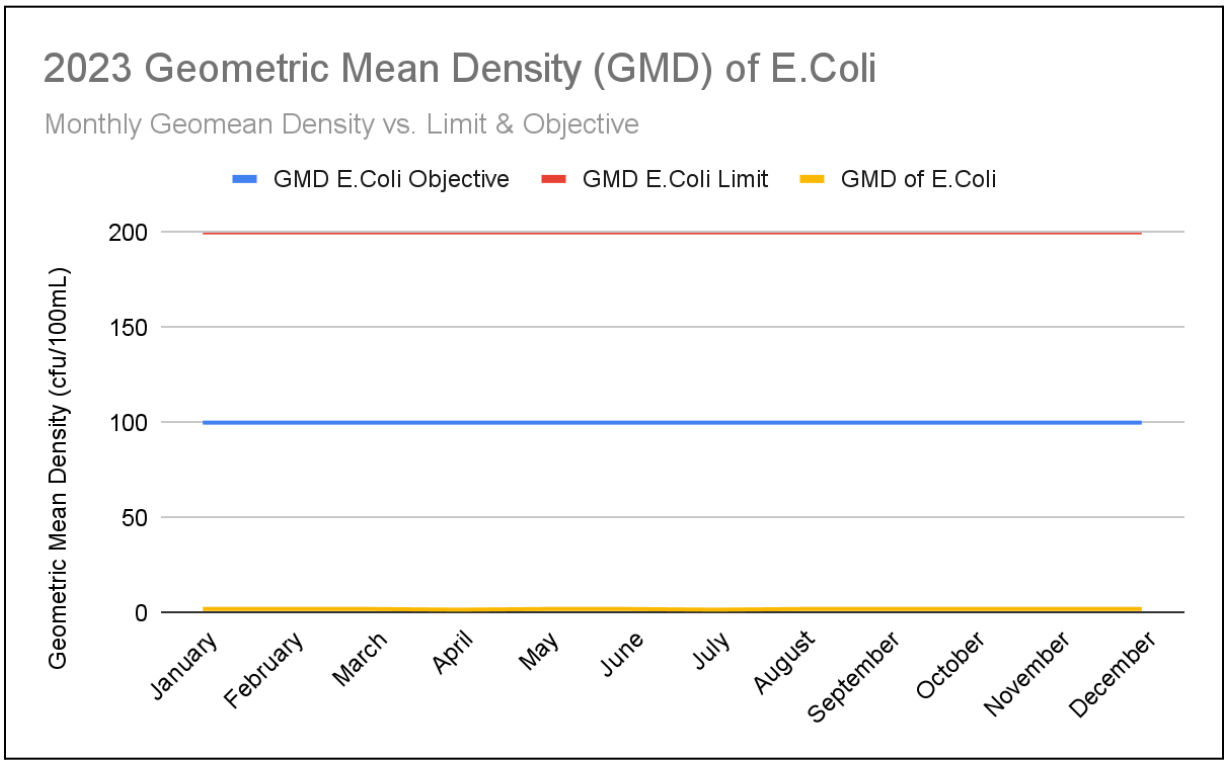
The following charts outline the monthly average TAN concentrations and respective waste loadings throughout the monitoring period. Apparent in both charts is that the facility operates very well in the nitrification process early on in the operation of the facility, even with the high strength raw sewage TKN concentrations. The raw sewage characteristics will be discussed further in the raw sewage section of this report.


2023 Total Ammonia Nitrogen
TAN Concentration vs. Limit & Objective
TAN Objective
TAN Limit
TAN Concentration
Average Concentration (mg/L)
5
4
3
2
1
0
January
February
March
April
May
June
July
August
September
October
November
December


2023 Final Effluent TAN Average Waste Loading
Monthly Average TAN Waste Loading vs. Limit
TAN Average Waste Loading
TAN Average Waste Loading Limit
Waste Loading (kg/d)
1.25
1.00
0.75
0.50
0.25
0.00
January
February
March
April
May
June
July
August
September
October
November
December

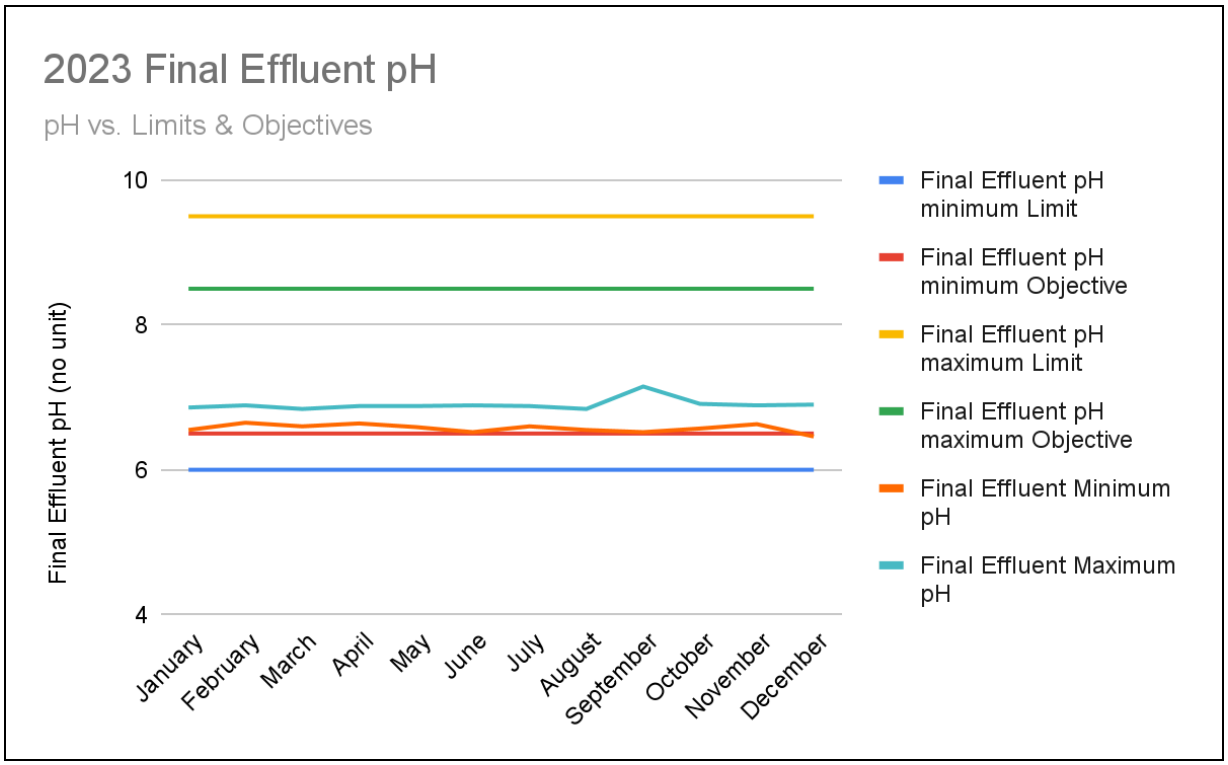
Geometric Mean Density of E. Coli

The UV disinfection system is sized for full build-out at 13.5 m^3/hr capacity consisting of two duty and one common standby UV system per membrane tank. It is apparent from the chart below that the UV system is functioning as designed to provide full disinfection. Further, it is important to note that the membranes themselves act as a natural barrier as the membrane pore size is smaller than E.Coli bacteria, therefore these organisms can not pass through the membrane.



Final Effluent pH

Approximately 239 samples were collected of the Final Effluent throughout the reporting period, and pH measurement taken. As illustrated in the following chart, the Final Effluent pH was consistently measured between the allowable Limits identified in Schedule B and C of the ECA. Effluent pH measurements are performed by the Operators generally on a daily basis, normally Monday to Friday. It is important to note that pH measurements used to determine compliance with the ECA have no quality assurance/ quality control (QA/QC) measures in place, other than routine calibration procedures of the pH probe.

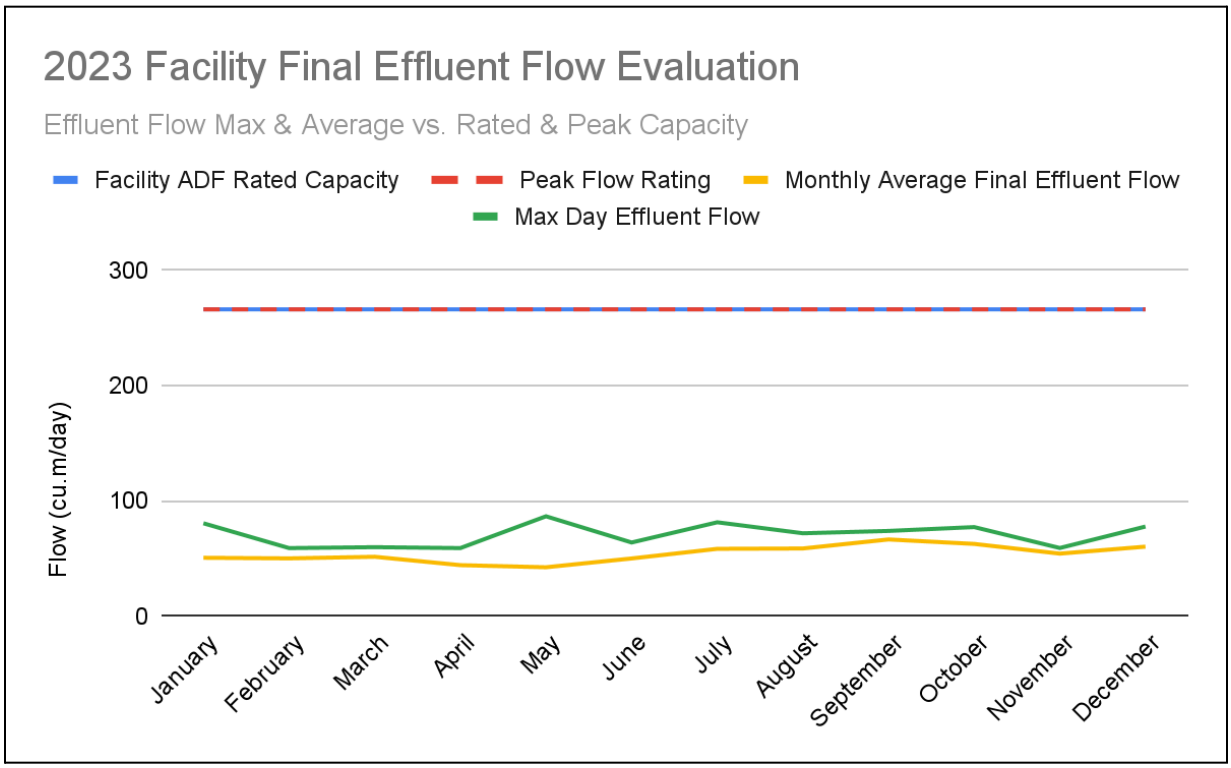


Acute Lethality to Rainbow Trout and Daphnia Magna

The City contracts all Acute Lethality testing to *Nautilus Environmental*. The quarterly results from the samples collected in January yielded 0% mortality in Daphnia Magna (DM) at 100% Effluent Concentration and 0% mortality in Rainbow Trout (RBT) at 100% Effluent Concentration. In April the quarterly results from the samples collected in April and July yielded 0% mortality in DM, and 0% mortality in RBT. Lastly, in October results yielded 3.3% mortality in DM and 0% mortality in RBT.

Final Effluent Flows

The construction of the Works has been completed to full build-out. However, the Works is currently operating under the rated capacity consistent with construction Phase 2A, shown below at 266 cu.m/ day. Demonstrated in the figure below, the monthly average and max day effluent flow remains well below the rated capacity of the Works. As the Development area continues to expand, and more homes are occupied, we will expect to see an increase in final effluent flows.



Raw Sewage Characterization

The Young's Cove Wastewater Collection System (WWCS) consists of the following components:

- Each residential lot has a proprietary Clearford Clarifier with minimum 48hr retention and an approximate 4.1 cubic meter capacity, to provide sufficient volume for sludge storage and digestion;
- Small bore technology sanitary sewer system, gravity feeding the Sewage Pumping Station located at 49 Wellers Way; and
- Sewage Pumping Station equipped with two submersible sewage pumps (duty/standby) each rated at 9.23 L/s at 11.01m TDH.

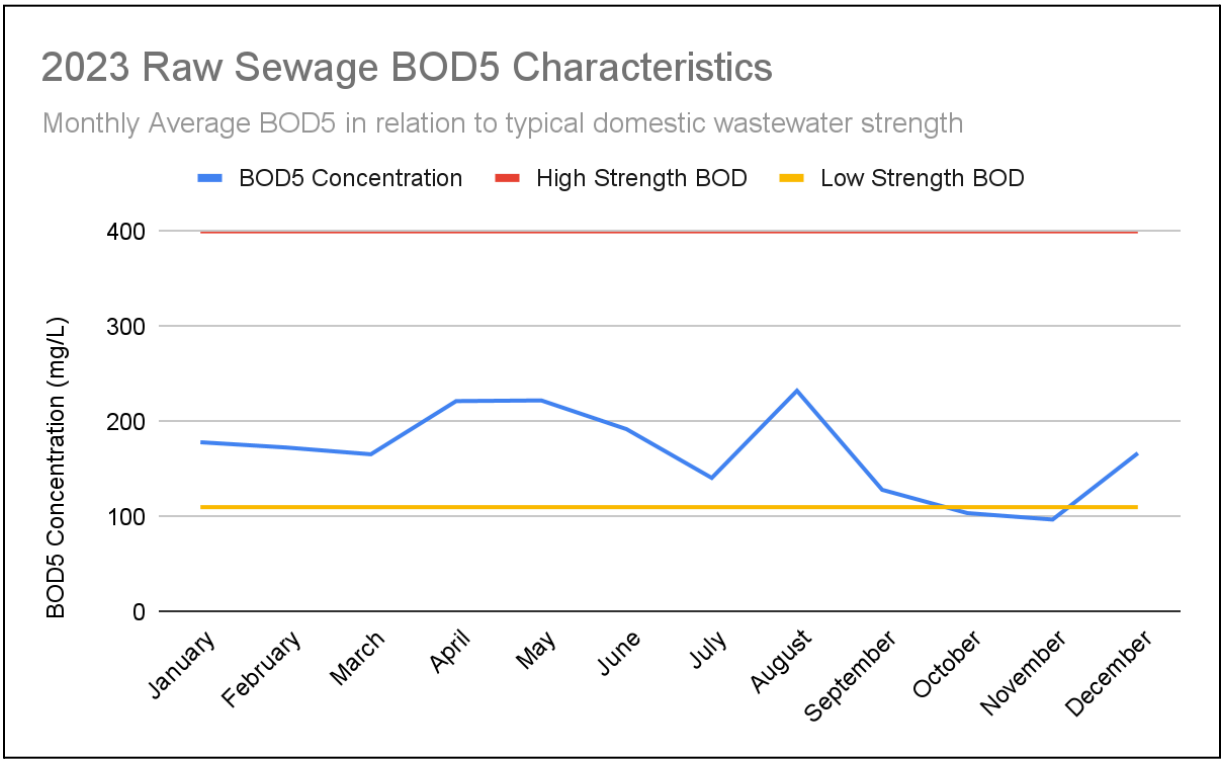
Raw Sewage characteristics for the facility differ from other typical domestic wastewater sources. The *Clearford Clarifiers* in place at each property are designed to remove solids at the source, and perform primary and partial secondary treatment before liquid effluent is discharged to the sanitary mains.

Further, according to *Clearford Water Systems*, the Digesters should be capable of reducing TSS and BOD by 75% respectively.

Outlined in the charts below are monthly average concentrations measured in raw sewage over the last year, along with associated trendlines. Also plotted on the charts are the typical 'high' and 'low' strengths for the associated contaminants in raw wastewater, as measured in a sample of untreated domestic wastewater. These figures were cited from an online publication that refers to the Metcalf and Eddy Inc. *Wastewater Engineering and Treatment Reuse*. (Metcalf and Eddy Inc. 20).

Raw Sewage Biological Oxygen Demand (BOD5)

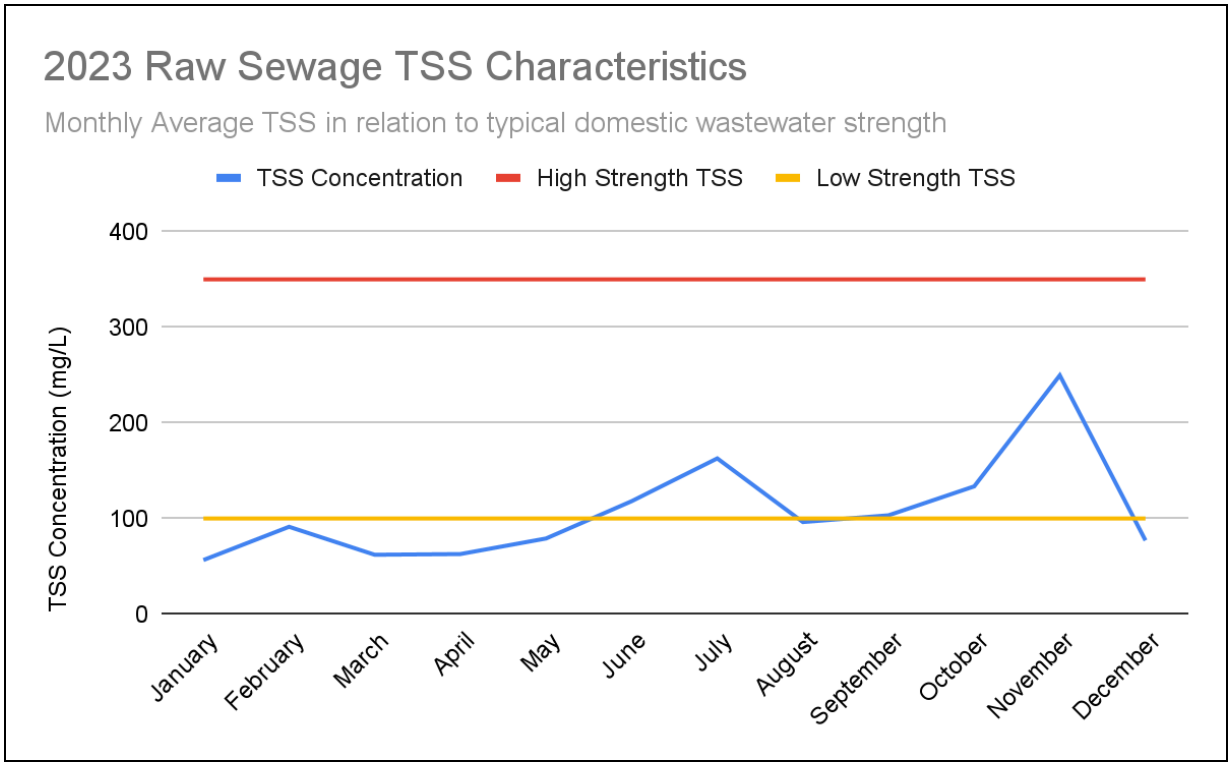
The chart below depicts a fluctuation of BOD5 levels in the raw sewage entering the plant. The annual average BOD5 concentration was 168.4 mg/L. Comparatively the 2022 annual average BOD concentration was 220.2 mg/L.



Raw Sewage Total Suspended Solids (TSS)

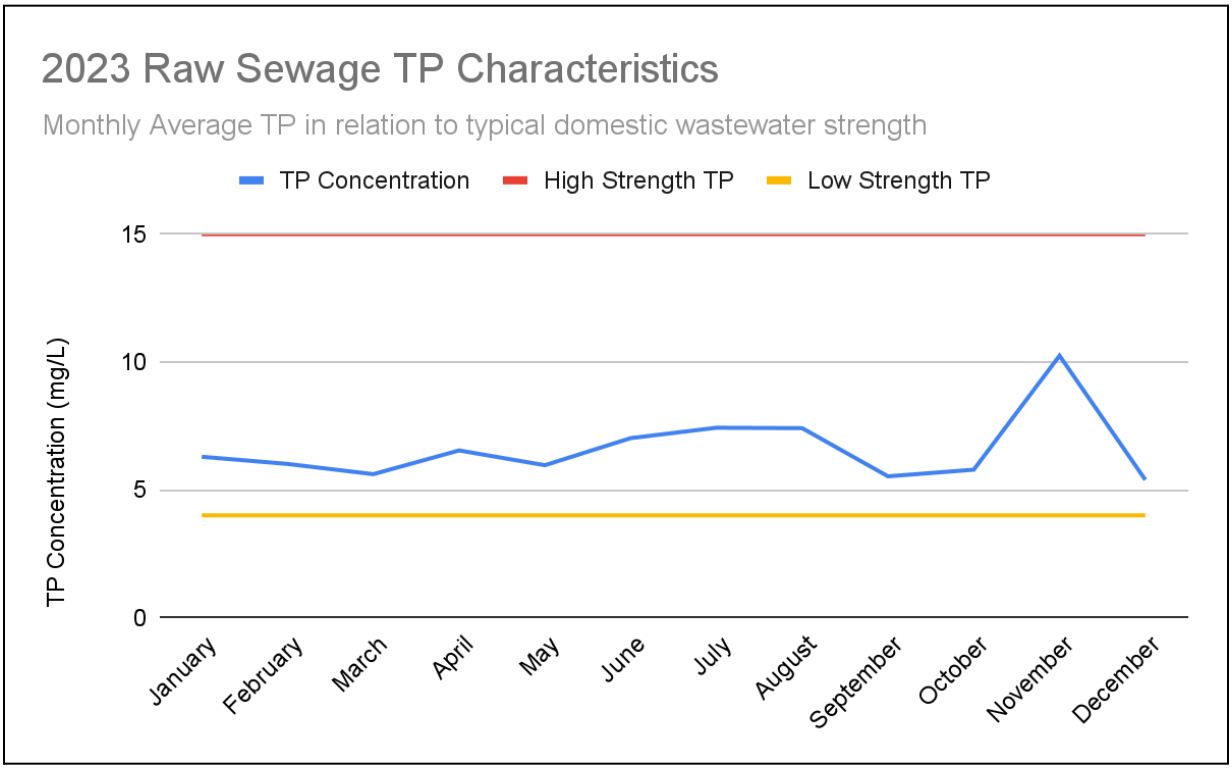
In review of the chart below, raw sewage concentrations of TSS saw greater fluctuation in the second part of 2023. The spike in November can be attributed to an anomaly in the results obtained from the sample collected on November 8, 2023. Significantly lower TSS concentrations were found recorded on the in-house lab results from November 6, 2023, and sample results received from the lab before and after.

Solids removal from *ClearDigest* tanks on each residential property began last year in the systems third year of operation and continued this year has begun to take place this year. This process involved the City engaging a certified waste hauler to pump out residential tanks, and haul material to the Trenton WWTP for further processing.



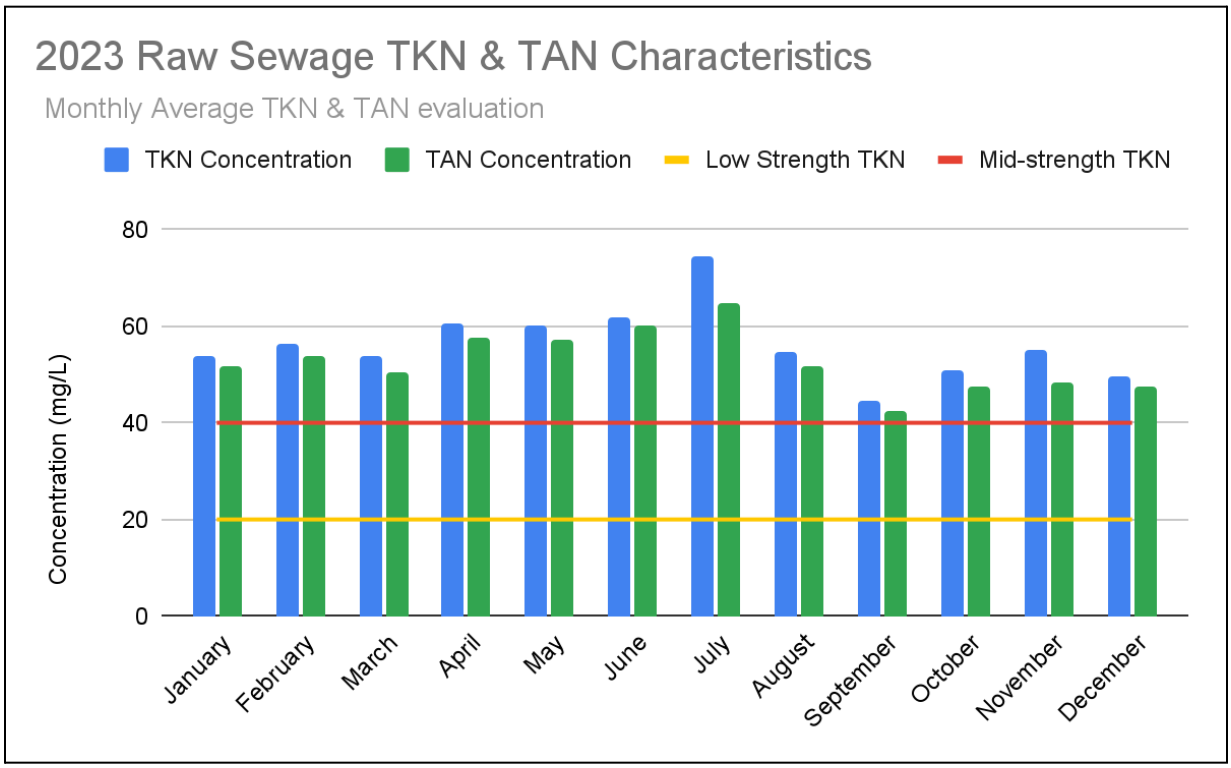
Raw Sewage Total Phosphorus (TP)

Total Phosphorus concentrations in raw sewage measured relatively stable between 4 and 8 mg/L for the bulk of the monitoring period, with the exception of the month of November. The increased TP concentration in November can be attributed to an anomaly in the results obtained from the sample collected on November 8, 2023. The results depicted below according to Metcalf and Eddy indicate a relatively low to mid strength concentration of Phosphorus in a domestic wastewater supply.



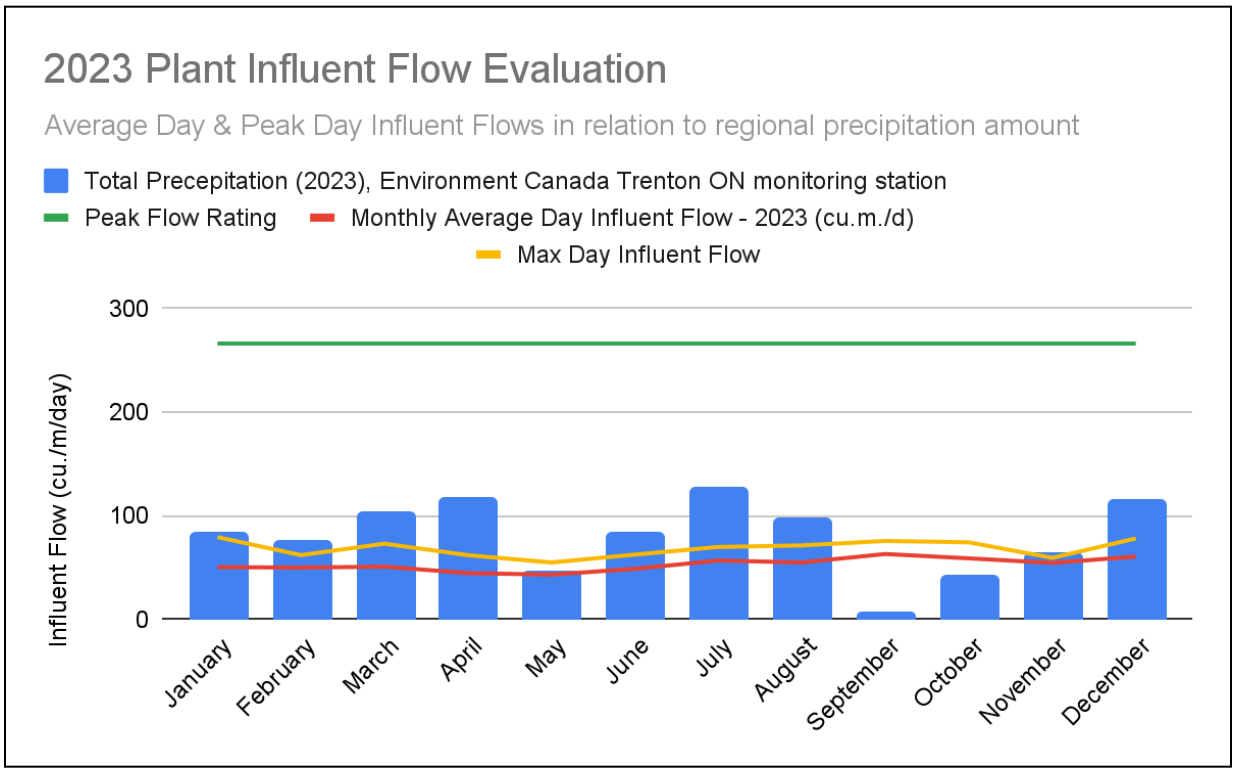
Raw Sewage Total Kjeldahl Nitrogen (TKN) / Total Ammonia Nitrogen (TAN)

Total Kjeldahl Nitrogen (TKN) is the sum of organic nitrogen, and Total Ammonia Nitrogen (TAN) - Total Ammonia Nitrogen is the sum of Ammonia and Ammonium. According to Metcalf and Eddy, the TKN is considered to be in the range of high strength concentration. Over the course of the monitoring period, TAN has accounted for an average 94% of the raw sewage TKN. This may indicate that the residential digesters are converting organic nitrogen to ammonium. The Young's Cove WWTP is designed to facilitate nitrification, and is proving effective in its ability by meeting the Effluent Objectives consistently.



Facility Influent Flow Evaluation

Under the current ECA, the facility operated at approximately 20% of its Rated Capacity, during the reporting period. Note the rated capacity change in 2023 with the completion of Phase 2A treatment train upgrades, increasing the capacity to 266 cu.m/ day. Additionally, the facility upgrades completed in 2023 allow for the future rated capacity to the full build-out capacity of 420 cu.m/ day. Outlined in the chart below are Influent flows measured throughout the monitoring period, in relation to seasonal precipitation amounts.



Summary of Maintenance performed throughout Reporting Period

The City supports an active Preventative Maintenance (PM) program to ensure the facility is maintained in a fit state of repair. Outside of Preventative Maintenance, the following Reactive Maintenance activities were completed by staff:

- Chemical panels
- Aeration tank hatch modifications
- Septic Tank Cleanings
- Chemical tank and pipe modifications

Biosolids Management Summary

The onsite storage tank has a storage capacity of 77.4 cu. m. This tank was emptied periodically throughout the Reporting Period and disposed of in the Trenton Wastewater Collection System for further treatment at the Trenton Wastewater Treatment Plant. Approximately 68 cu.m was hauled from the facility in 2023. All material is hauled by a certified waste hauler on an as-needed basis.

Summary of Effluent Quality Assurance and Control Measures

The City collects samples from the Raw Sewage stream, Aeration Tanks, Membrane Tank and Final Effluent on a routine basis throughout the week. The City satisfies its regulatory compliance requirements by submitting a set of samples to an accredited laboratory, SGS Canada Inc. on a weekly basis, normally on Wednesday's throughout the Reporting Period. These sample results are manually entered into a spreadsheet and evaluated for compliance with the ECA. In addition to these samples, Operators perform in-house analysis for Total Suspended Solids, pH, temperature, alkalinity, dissolved reactive phosphorus, and Final Effluent Dissolved Oxygen. Sample results are entered into a spreadsheet for facility evaluation and process optimization. On an annual basis, the spectrophotometer is calibrated by a third party. Operators calibrate other instrumentation, such as the bench top pH meter, regularly.

Monitoring Schedule

The facility sampled in accordance with the ECA every Wednesday. In 2024, the facility will collect samples in accordance with the ECA, every Tuesday each week.

Flow Monitoring Equipment Calibration and Maintenance

Works Orders are generated on an annual basis to calibrate the facility Influent and Effluent Flow Meters. This calibration is completed by a third party contractor. The following figures are copies of the Calibration

Certificates for the Youngs Cove WWTP Effluent flow meters. The Youngs Cove Sewer Lift Station Calibration Certificate can be found in the Sanitary Collection Annual Report.

Tower Electronics Canada Inc.
Instrument Calibration Certificate

Customer:
The City of Quinte West
7 Creswell Drive
PO Box 490
Trenton, ON K8V 5R6

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type
Magnetic Flow Meter

Method of verification
EnH Field Check Verification/Calibration

Units: LPS
Zero: 0.00
Span: 20.00
Totalizer: M3

Meter Information

Date of Test:	2023-08-31
Location:	Youngs Cove SPS
Meter Under Test	Raw
Client Tag:	QW00007359
Manufacturer:	Endress & Hauser
Model:	Proto
Serial Number:	NC00A016000
Totalizer As Found:	75678.3m3
Totalizer As Left:	75684.9m3
Allowable Error%:	15

Programming Parameters:

DN Size:	100
Cal Factor:	1.6261
Zero:	0
Calibration Due:	Aug-24

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.990	0.000	0.250
5.000	5.000	5.050	8.027	0.250	0.337
10.000	10.000	9.980	11.995	0.100	0.042
15.000	15.000	14.947	15.991	0.265	0.056
20.000	20.000	20.005	19.989	0.025	0.055
			Average Error%	0.13	0.15
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	20.000	LPS
Start Totalizer	75682.400	M3
End Totalizer	75684.200	M3
Volume Simulated	1.800	M3
Time(Seconds)	90.400	
Calculated Totalizer(MUT)	1.808	
Error%	-0.442	
Result:	PASS	

Comments:
Unit passes verification.

Tower Electronics Canada Inc.
2687 Hwy 40
K0K 3M0
Wooler On
Canada

Email: Dan@Tecanada.ca
Website: www.tecanada.ca

Calibrations Service Sales
Temporary and Permanent Meter Installations
Instrumentation For Flow Level Pressure

Tower Electronics Canada Inc.
Instrument Calibration Certificate

Customer:
The City of Quinte West
7 Creswell Drive
PO Box 490
Trenton, ON K8V 5R6

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type
Magnetic Flow Meter

Meter Information

Date of Test:	2023-08-31
Location:	Youngs Cove SPS
Meter Under Test	QW 7277
Client Tag:	FIT701
Manufacturer:	Endress & Hauser
Model:	Proline
Serial Number:	P1066316000
Totalizer As Found:	20022.3m3
Totalizer As Left:	20024.2m3
Allowable Error%:	15
Programming Parameters:	
DN Size:	80
Cal Factor:	1.2373
Zero:	0
Calibration Due:	Aug-24

Method of verification
Ent Field Check Verification/Calibration

Units: LPS
Zero: 0.00
Span: 5.00
Totalizer: M3 **Flow Test**

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.986	0.000	0.350
1.250	1.250	1.246	7.990	0.080	0.125
2.500	2.500	2.514	11.974	0.280	0.217
3.750	3.750	3.755	15.933	0.100	0.419
5.000	5.000	4.998	19.921	0.040	0.395
			Average Error%	0.10	0.30
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	5.000	LPS
Start Totalizer	20023.500	M3
End Totalizer	20024.000	M3
Volume Simulated	0.500	M3
Time(Seconds)	99.000	
Calculated Totalizer(MUT)	0.495	
Error%	1.010	
Result:	PASS	

Comments:
Unit passes verification.

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Trenton, ON K8V 5R6

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type
Magnetic Flow Meter

Method of verification
EnH Field Check Verification/Calibration

Meter Information

Date of Test:	2023-08-31
Location:	Youngs Cove SPS
Meter Under Test	QW 7276
Client Tag:	FIT702
Manufacturer:	Endress & Hauser
Model:	Proline
Serial Number:	NC002616000
Totalizer As Found:	13907.4m3
Totalizer As Left:	13910.2m3
Allowable Error%:	15
Programming Parameters:	
DN Size:	80
Cal Factor:	1.2379
Zero:	0
Calibration Due:	Aug-24

Units: LPS
Zero: 0.00
Span: 5.00
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.996	0.000	0.100
1.250	1.250	1.251	7.913	0.014	1.088
2.500	2.500	2.499	11.951	0.020	0.408
3.750	3.750	3.732	15.979	0.360	0.131
5.000	5.000	4.993	19.991	0.140	0.045
			Average Error%	0.11	0.35
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	5.000	LPS
Start Totalizer	13909.500	M3
End Totalizer	13910.000	M3
Volume Simulated	0.500	M3
Time(Seconds)	99.000	
Calculated Totalizer(MUT)	0.495	
Error%	1.010	
Result:	PASS	

Comments:
Unit passes verification.

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Calibrations Service Sales
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Instrumentation For Flow Level Pressure.

Tower Electronics Canada Inc.
Instrument Calibration Certificate

Customer:
The City of Quinte West
7 Creswell Drive
PO Box 490
Trenton, ON K8V 5R6

Calibration by:
Don Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type
Magnetic Flow Meter

Method of verification
EnH Field Check Verification/Calibration

Meter Information

Date of Test:	2023-08-31
Location:	Youngs Cove SPS
Meter Under Test	QW 7829
Client Tag:	FIT703
Manufacturer:	Endress & Hauser
Model:	Proi0
Serial Number:	S901EA16000
Totalizer As Found:	11128.7m3
Totalizer As Left:	11129.8m3
Allowable Error%:	15
Programming Parameters:	
DN Size:	80
Cal Factor:	1.2356
Zero:	0
Calibration Due:	Aug-24

Units: LPS
Zero: 0.00
Span: 5.00
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.990	0.000	0.250
1.250	1.250	1.240	7.983	0.200	0.213
2.500	2.500	2.480	11.947	0.400	0.442
3.750	3.750	3.740	15.948	0.200	0.325
5.000	5.000	4.990	19.972	0.200	0.140
			Average Error%	0.20	0.27
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	5.000	LPS
Start Totalizer	11129.400	M3
End Totalizer	11129.800	M3
Volume Simulated	0.400	M3
Time(Seconds)	79.820	
Calculated Totalizer(MUT)	0.399	
Error%	0.226	
Result:	PASS	

Comments:
Unit passes verification.

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Tower Electronics Canada Inc.
Instrument Calibration Certificate

Customer:
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Trenton, ON K8V 5R6

Calibration by:
Dan Matchett

Standards:
Endress and Hauser Field Check S/N:0000551303 Cal Due April 2024

Instrument Type
Magnetic Flow Meter

Method of verification
EnH Field Check Verification/Calibration

Meter Information

Date of Test:	2023-08-31
Location:	Youngs Cove SPS
Meter Under Test	N/A
Client Tag:	FIT704
Manufacturer:	Endress & Hauser
Model:	Proi0
Serial Number:	5901ED16000
Totalizer As Found:	10803.2m3
Totalizer As Left:	10805.5m3
Allowable Error%:	15
Programming Parameters:	
DN Size:	150
Cal Factor:	1.2418
Zero:	0
Calibration Due:	Aug-24

Units: LPS
Zero: 0.00
Span: 5.00
Totalizer: M3

Flow Test

Sim Setting	Sim Flow LPS	Meter Display	Current Output	Disp Error%	mA Error %
0.000	0.000	0.000	3.991	0.000	0.225
1.250	1.250	1.260	7.983	0.200	0.213
2.500	2.500	2.478	11.959	0.440	0.342
3.750	3.750	3.742	15.965	0.160	0.219
5.000	5.000	4.950	19.881	1.000	0.595
			Average Error%	0.36	0.32
			Result:	PASS	PASS

Totalizer Test

Sim Flow Rate	5.000	LPS
Start Totalizer	10804.000	M3
End Totalizer	10805.400	M3
Volume Simulated	1.400	M3
Time(Seconds)	279.860	
Calculated Totalizer(MUT)	1.399	
Error%	0.050	
Result:	PASS	

Comments:
Unit passes verification.

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Notice of Modifications

There were no 'Notice of Modifications' forms submitted to the Ministry during this Reporting Period.

Summary of complaints received throughout the reporting period

There were no complaints received by City staff regarding the Young's Cove WWTP throughout the reporting period.

Procedure F-5-1 compliance

The City will continue to consult its Asset Management Planning modeling tools in conjunction with Capital Planning exercises to determine reconstruction projects. Sanitary Collection rehabilitation projects are identified in the Sanitary Collection System 2023 Annual Report.

As outlined in Summary of Bypass, Spill, or Abnormal Discharge Event(s), there were no bypasses, spills or abnormal discharges to report during this monitoring period.