

# Prescott Wastewater System

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Waterworks # 110001122

## Annual Report

Prepared For: Town of Prescott

Reporting Period of January 1<sup>st</sup> – December 31<sup>st</sup> 2023

Issued: March 12<sup>th</sup>, 2024

Revision: 0

Operating Authority:



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

Document	Document #	Issue Date	Issue Number
Facility ECA	6996-9ZYNWH	October 5, 2015	N/A
CLI ECA	161-W601	August 15, 2022	N/A

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## 1 Revision History

Date	Rev#	Revisions	Revised By
March 12, 2024	0	Annual Report Issued	PCT

## 2 Operations and Compliance Reliability Indices

Compliance Event	Details
Ministry of Environment Inspections	There was no MECP inspection in 2023.
Ministry of Labour Inspections	There was no MOL inspection in 2023.
Non-Compliance	There were no non-compliances in 2023.
Community Complaints	There were no community complaints in 2023.
Spills	There were no spills in 2023.
Overflows	There were 2 overflow events in 2023 <ul style="list-style-type: none"> <li>• Details referenced in the report</li> </ul>
Bypass	There were no bypass events in 2023.

## 3 Process Description

Prescott’s sewage collection system is a gravity fed collection system consisting of combined sanitary and storm sewers. Five pumping stations pump wastewater from the collection system to the wastewater treatment facility.

Prescott’s wastewater treatment plant is a Class III treatment facility. Raw sewage is pumped to the facility from an onsite pumping station (SPS #6), which is equipped with an influent bar screen and three dry well pumps. Wastewater passes through the inlet headworks where solids are removed using a mechanical rotary screen and conveyor. Grit is then removed using two parallel vortex grit separators. Aluminum sulphate is injected downstream of the grit separators to assist in phosphorous removal. The wastewater then enters three parallel, continuous-flow Sequencing Batch Reactors (SBRs) which operate with automated cycles (air off, air on, settle, and decant). Each SBR is equipped with a fine bubble aeration system, submersible mixer, variable speed effluent decanter and sludge removal pump. Effluent decanted from the SBRs enters an equalization tank where a pinch valve acts to ensure consistent flow through the UV disinfection system. The UV disinfection system consists of one channel with two units, one duty and one standby. Following disinfection, the effluent passes through an outfall chamber where grey water is recovered for plant processes before discharging to the St. Lawrence River.

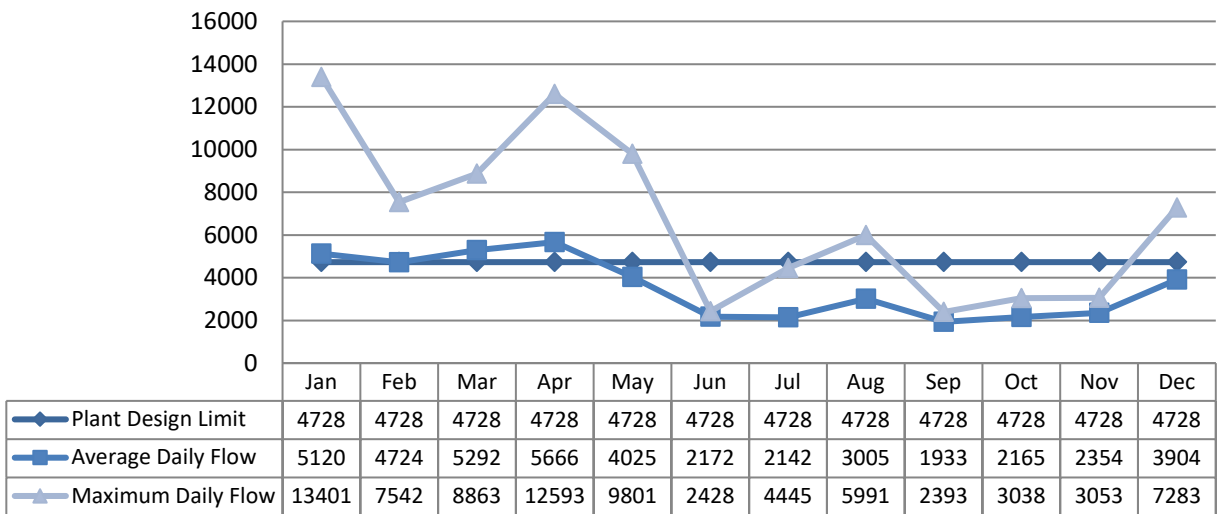
Activated sludge, which has been removed from the SBRs, is pumped to a two-stage aerobic digester equipped with a coarse bubble aeration system and manual decant arms. Activated sludge is stabilized

(or digested) and dewatered, with the supernatant returning to the plant headworks. Digested sludge is then pumped to one of two large holding tanks, each equipped with a coarse bubble aeration system and manual decant arm, where further dewatering occurs. From the holding tanks, liquid sludge can be pumped to one of two large drying beds or hauled offsite for land application.

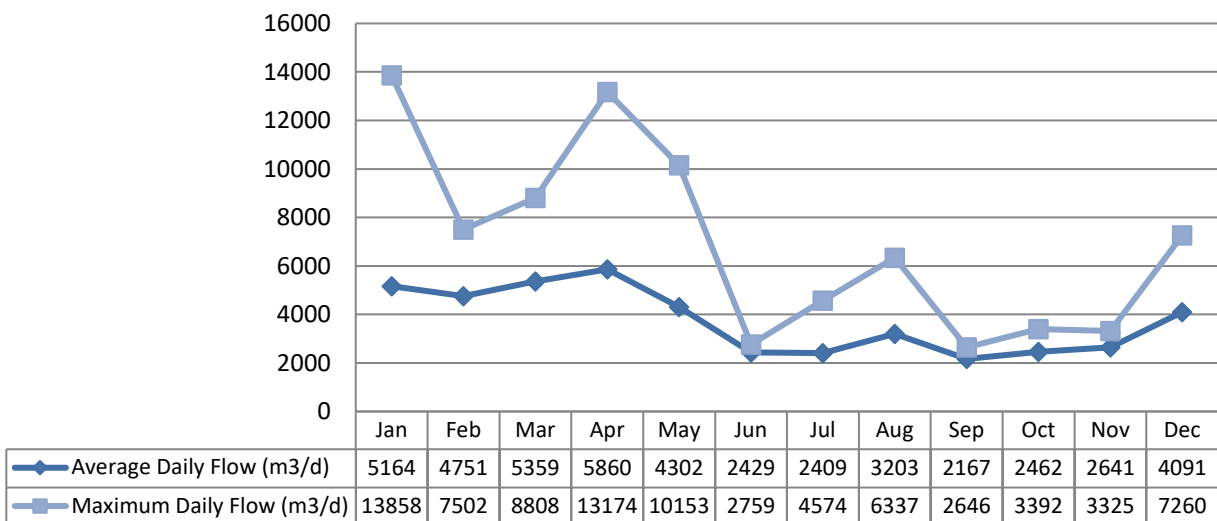
## 4 Treatment Flows

The hydraulic flows reaching the treatment facility in 2023 averaged 3538 m<sup>3</sup>/day which represents 75% of the 4,728 m<sup>3</sup>/day design.

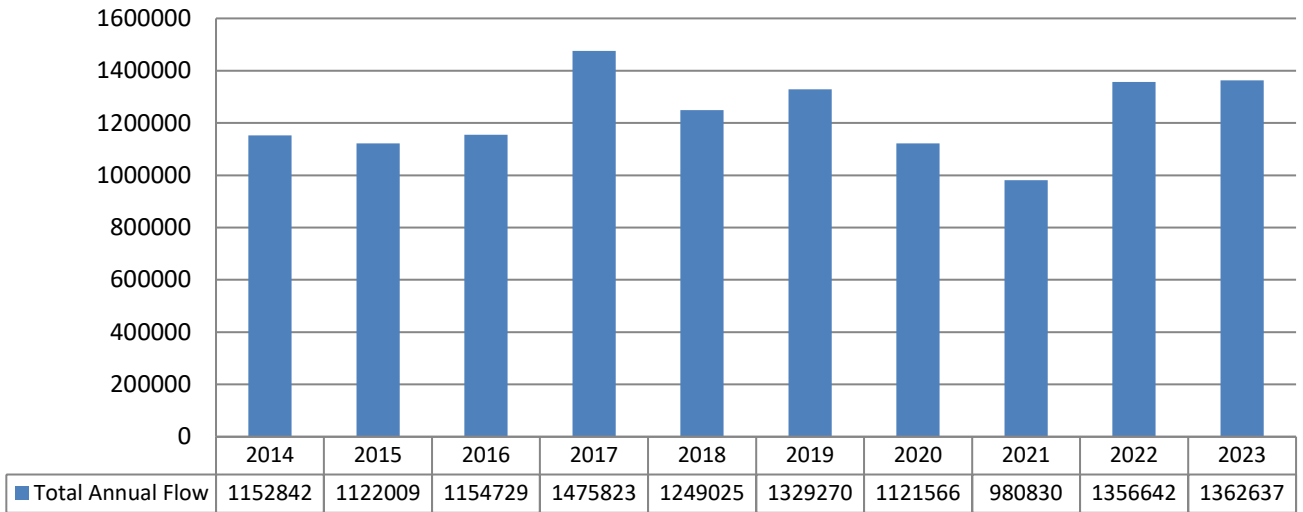
### 4.1 Raw Flow (m<sup>3</sup>/d)



### 4.2 Effluent Flow (m<sup>3</sup>/d)



4.2.1 Annual Comparison (m3)



4.3 Imported Sewage

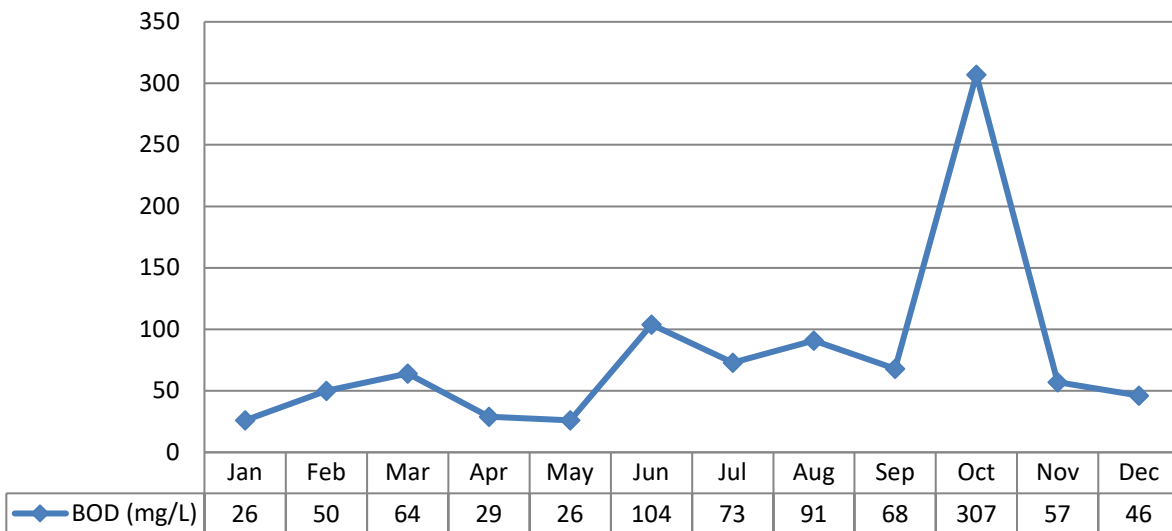
There is no imported sewage accepted at the treatment facility.

5 Raw Sewage Quality

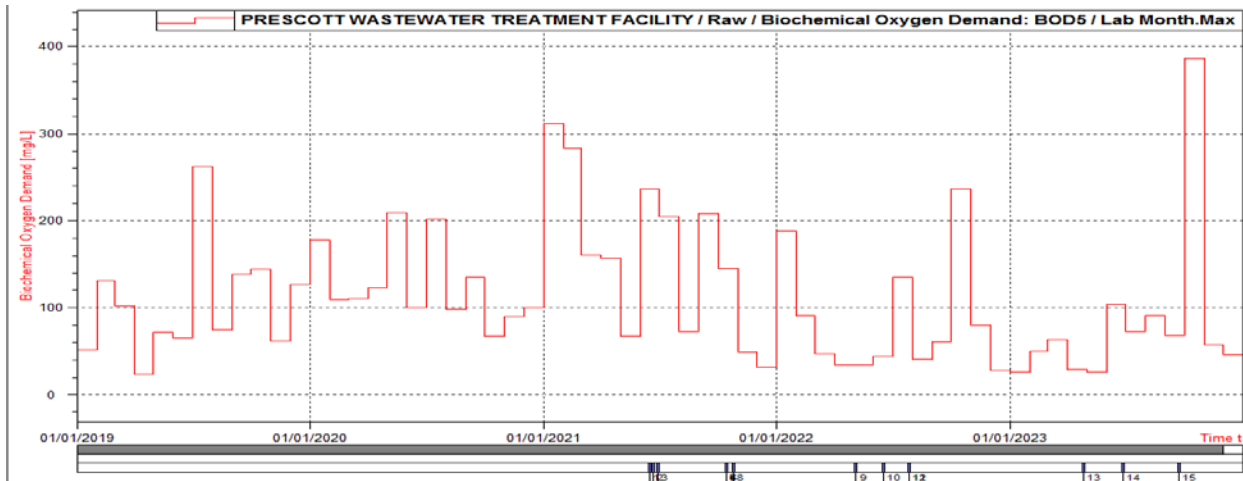
Results of raw sewage concentrations are available in the Facility Performance Assessment Report in Appendix A.

5.1 Influent Trending

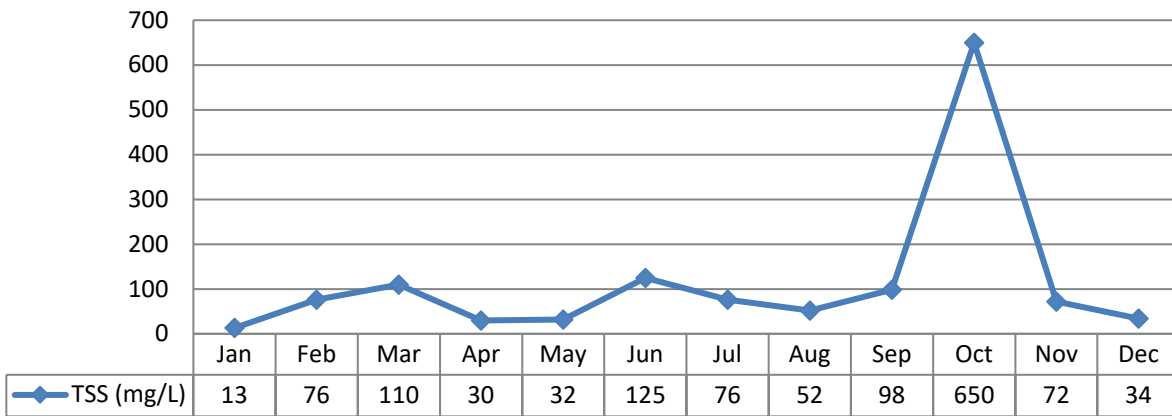
5.1.1 BOD (mg/L)



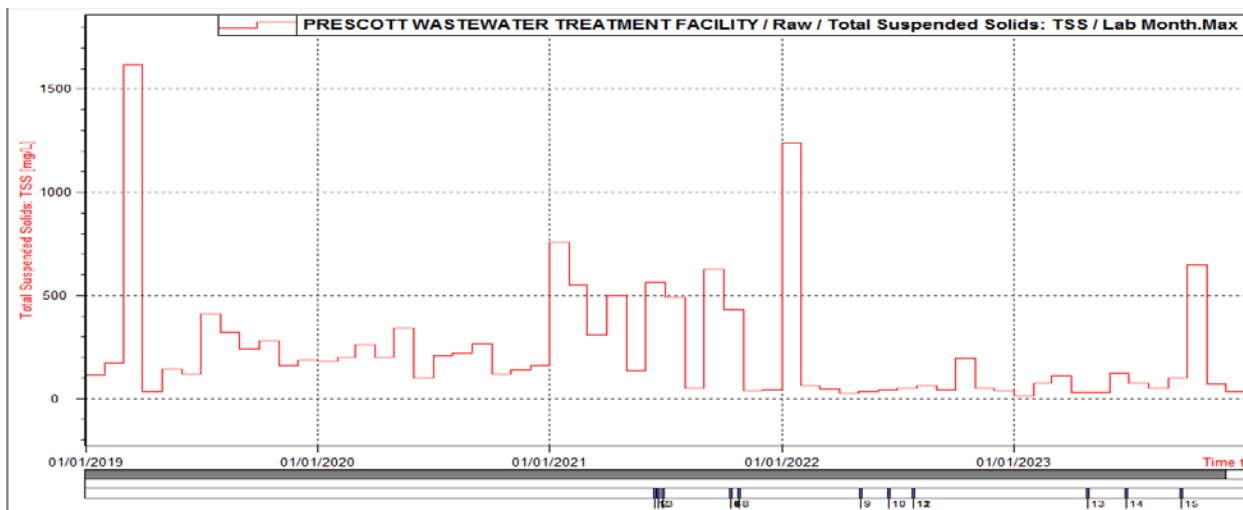
5.1.2 5-year Trend BOD5 (mg/L)



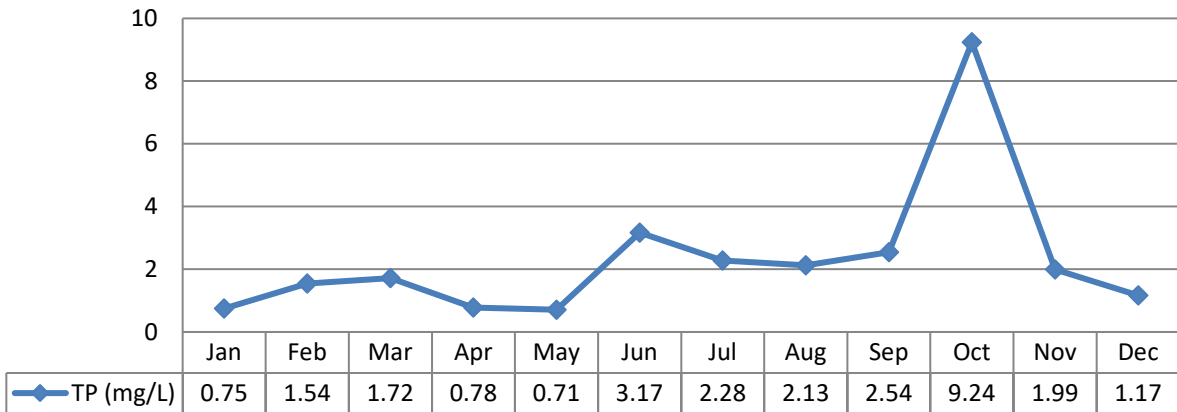
5.1.3 Total Suspended Solids (mg/L)



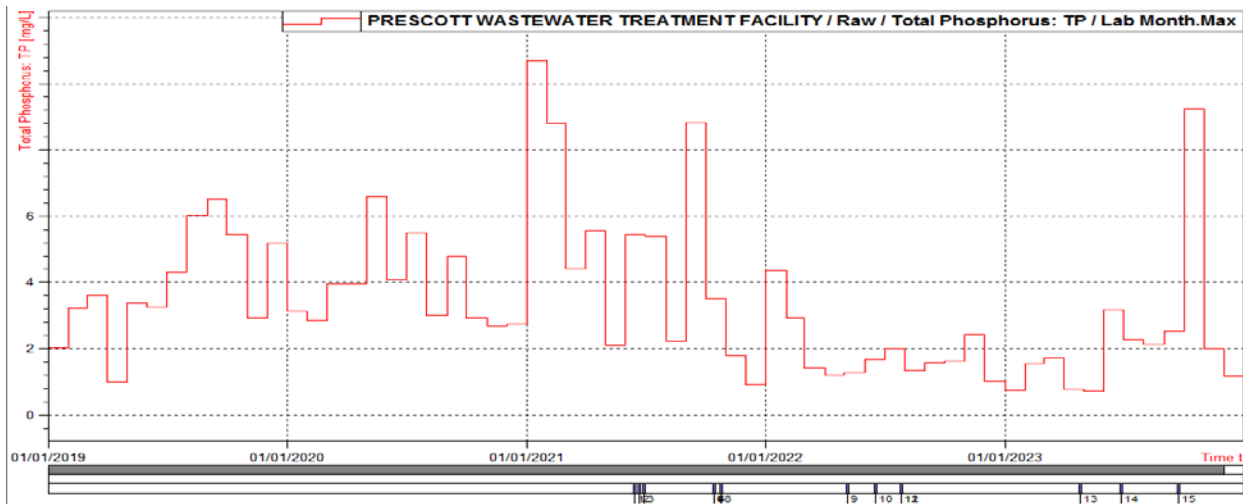
5.1.4 5-year Total Suspended Solids (mg/L)



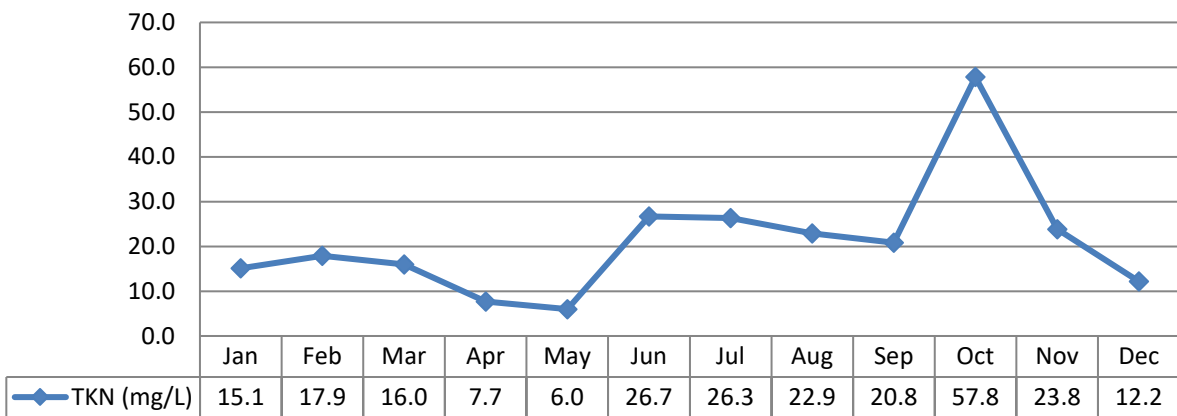
5.1.5 Total Phosphorus (mg/L)



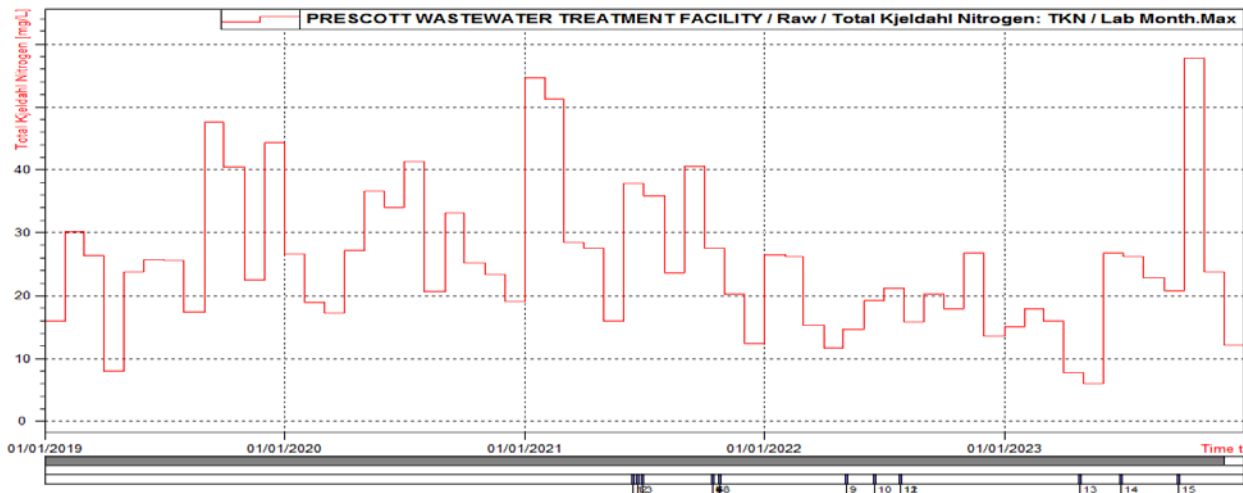
5.1.6 5-year Total Phosphorus (mg/L)



5.1.7 Total Kjeldahl Nitrogen (TKN) (mg/L)



5.1.8 5-year Total Kjeldahl Nitrogen (TKN)



5.2 Imported Waste Quality

There is no imported sewage accepted at the treatment facility.

5.3 Imported Waste Quality

There was no imported waste in 2023.

6 Effluent Quality

The monthly average concentrations of the carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), total ammonia nitrogen (TAN), and total phosphorus (TP) remained below the effluent objectives and limits outlined in the facility’s ECA during 2023. In addition, the effluent pH remained within the limits and objectives throughout the year. The geometric mean density of E. Coli in the effluent also remained within the ECA limit and objective in 2023.

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.

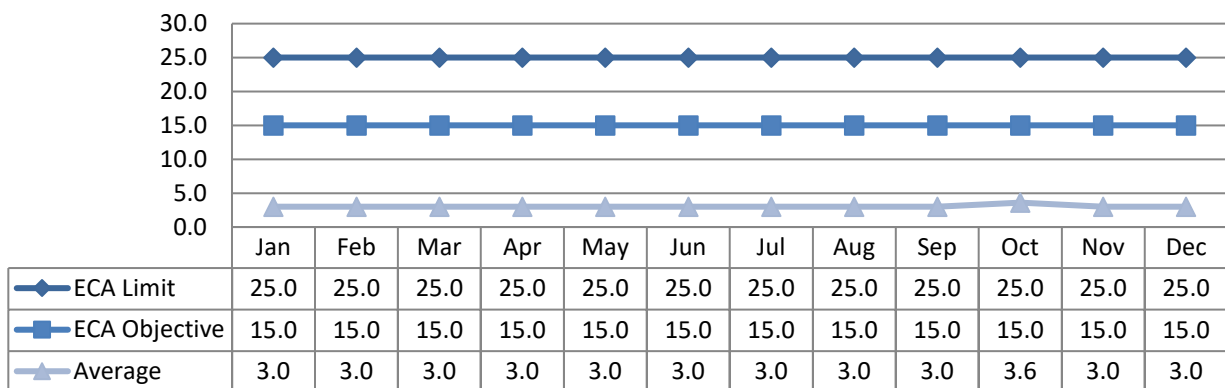
The operations team also has access to a network of operational compliance and process specialists to assist for emerging process issues. This aids in establishing additional control measures to ensure a quality effluent product.

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

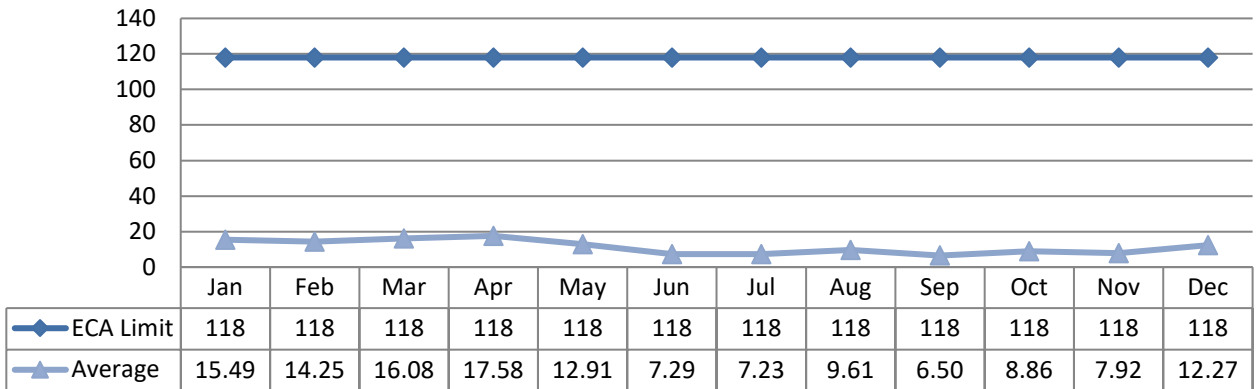
## 6.2 CBOD5 (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

### 6.2.1 Concentration (mg/L)



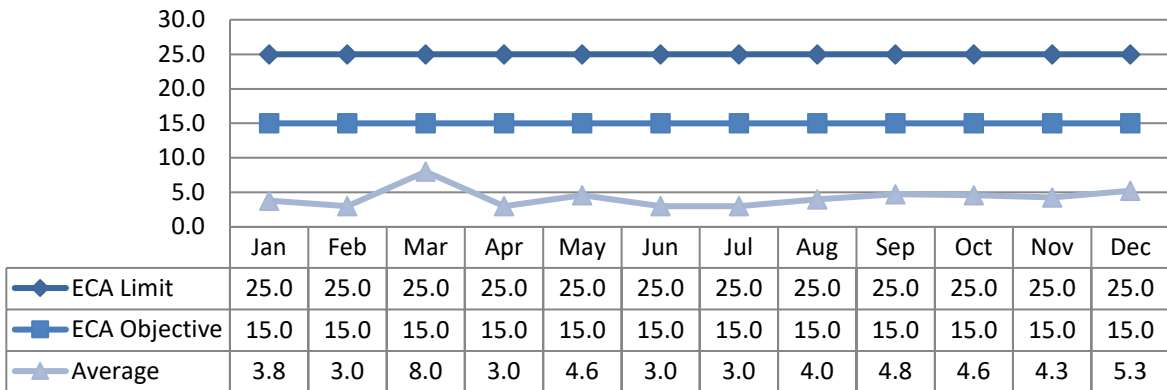
6.2.2 Loading (kg/d)



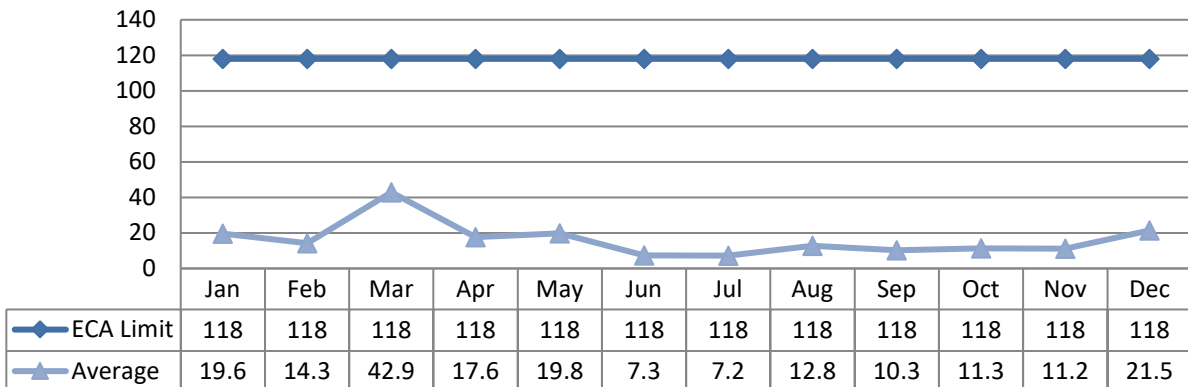
6.3 Total Suspended Solids (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

6.3.1 Concentration (mg/L)



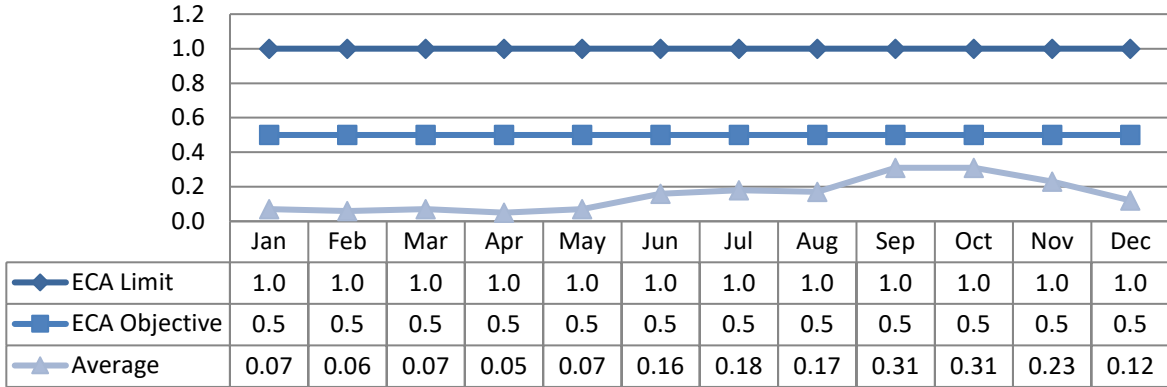
6.3.2 Loading (kg/d)



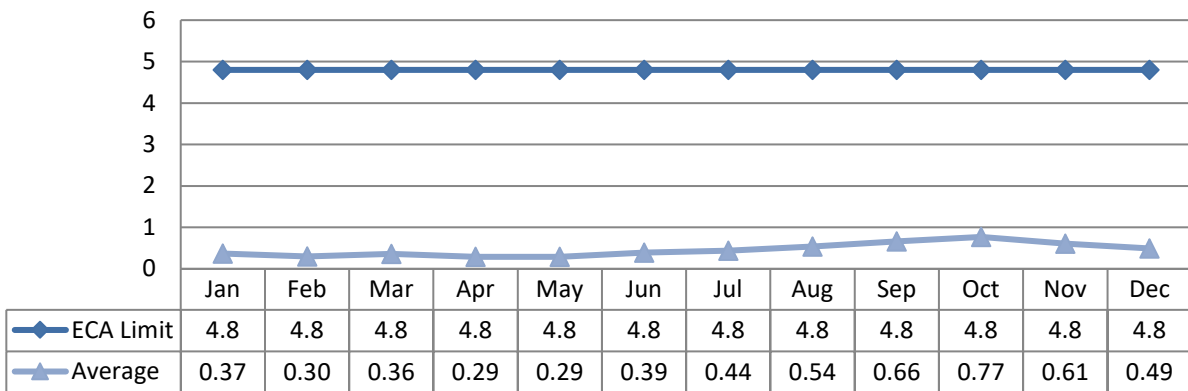
### 6.4 Total Phosphorus (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

#### 6.4.1 Concentration (mg/L)



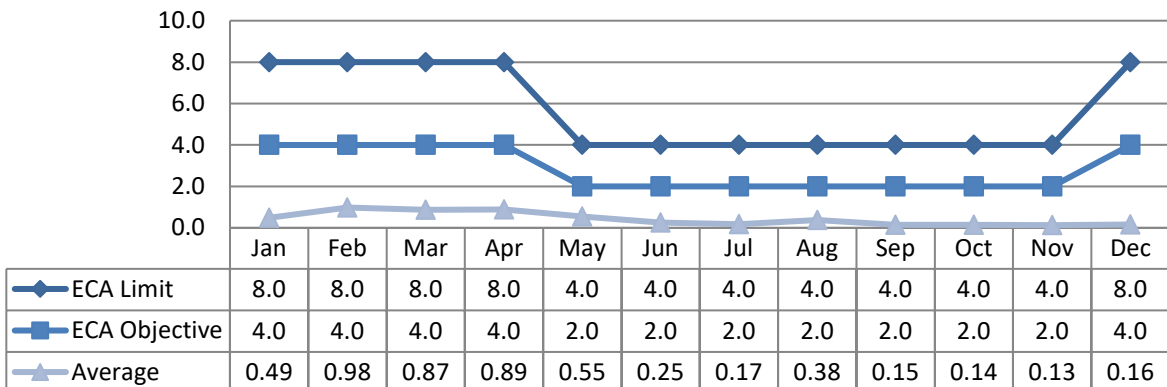
#### 6.4.2 Loading (kg/d)



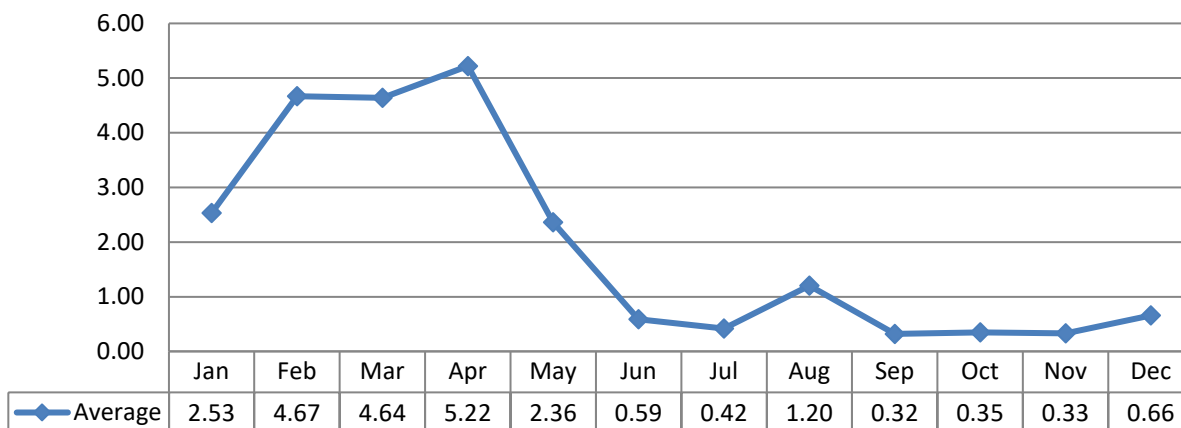
### 6.5 Total Ammonia Nitrogen (mg/L)

Compliance Limit and Objective for this parameter was met in 2023.

#### 6.5.1 Concentration (mg/L)



6.5.2 Loading (kg/d)



6.6 Acute Lethality

There was one (1) sample 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.

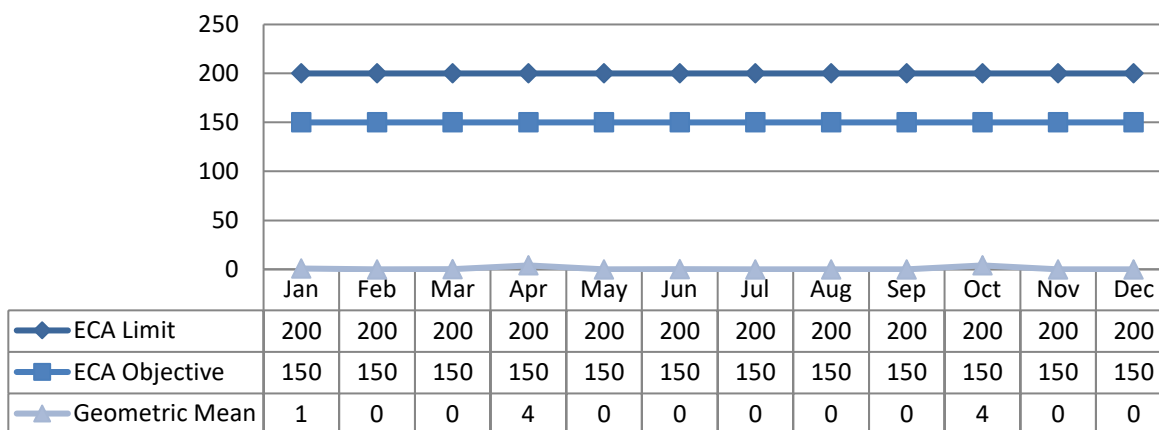
The Federal and Provincial limit for this parameter was met in 2023.

Date	Rainbow Trout	Daphnia Magna
July 26, 2023	0%	0%

6.7 E-coli (cfu/100mL)

Compliance Limit and Objective for this parameter was met in 2023.

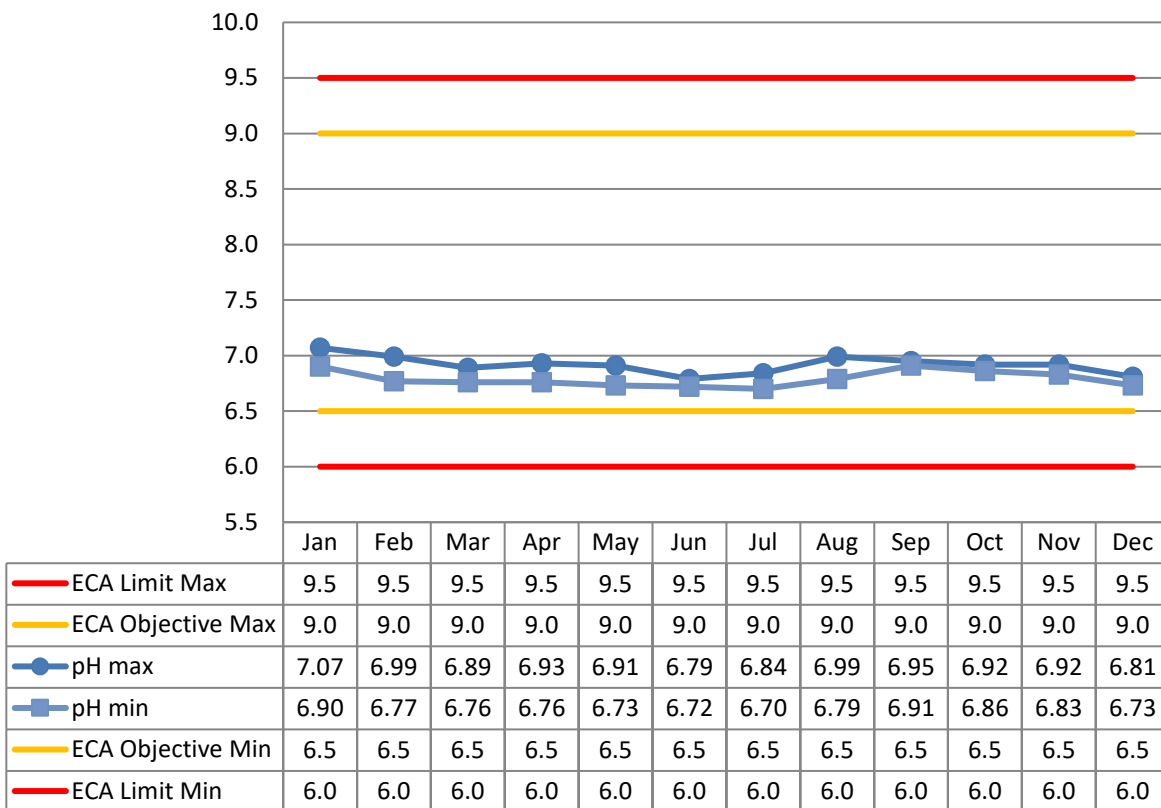
6.7.1 Geometric Mean (cfu/100mL)



### 6.8 pH

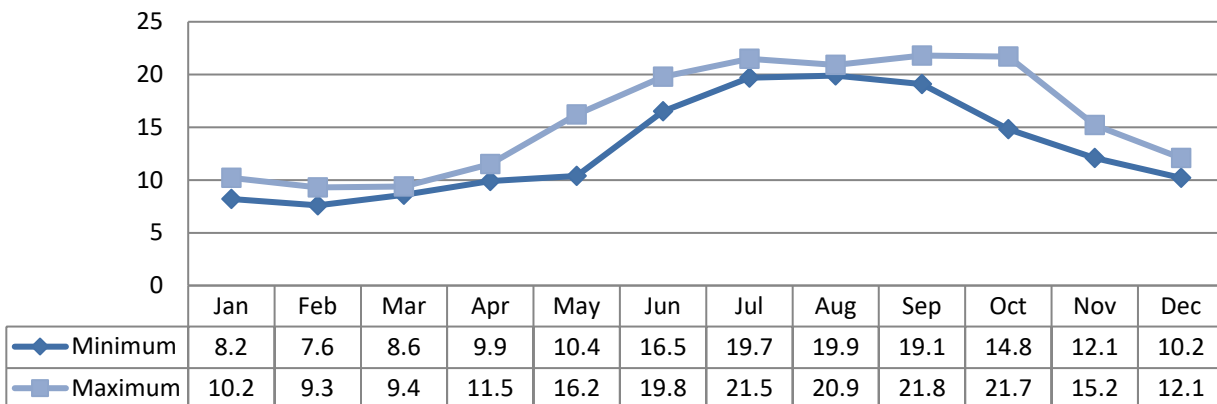
Compliance Limit range for this parameter is 6.0 – 9.5. The parameter was met in 2023. Each instance the pH is outside of that range is reported as a non-compliance.

Compliance Objective range for this parameter is 6.5-9. The parameter was met in 2023.



### 6.9 Temperature (°C)

There are no compliance limits or objectives defined for Effluent.



## 7 Operating Issues/Problems

There were no significant operating issues/problems to report on in 2023.

### 7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Objective	Value	Corrective Action
There were no effluent non-compliances in 2023.				

### 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 spills (other than sewage) to report on in 2023.					

## 8 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.

### 8.1 Normal Maintenance and Repairs

Work Order	Details
3571209	Drying bed sludge and grease removal
3386516	Routine HVAC maintenance

Work Order	Details
3203637	Multiranger 200 HMI and transducer purchased
3203618	Hazardous gas detector repaired
3621196	Lamp driver kit for UV system
3527442	SBR Blower #1 rebuilt
3526567	Repair bushing on SBR #3 valve actuator
3525451	Grit chamber check valve replaced
3481755	Ladder installed in SBR #3 chamber
3481756	SBR #3 tank cleaned and inspected
3432934	Hach DR1900 analyzer purchased
3426451	Sludge tank 2 cleaned, inspected, diffusers replaced
3424190	Platform installed in digester tank 2
3423077	Ladder installed in digester tank 2
3340332	Repairs made to WAS control panel
3203623	Administration building roof inspection and report
3434975	Water pump replacement, generator SPS #5
3203598	Boundary St SPS pump #1 rebuild
3338289	PLC work at SPS #3

### 8.2 Emergency Maintenance and Repairs

Work Order	Details
3575460	Emergency VFD replacement at SPS #3

### 8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
FIT-103 Sludge Loading Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-102 Supernatant Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-101 RAS/WAS Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-104 Sewage Influent Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-301 Plant Effluent Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-701 SPS #5 Flow	April 3 <sup>rd</sup> , 2023	None.
FIT-01 SPS #3 Flow	April 27 <sup>th</sup> , 2023	None.
FIT-01 SPS #4 Flow	April 27 <sup>th</sup> , 2023	None.

### 8.4 Authorized Alterations in Collection System

Work Order	Details	Significant Drinking Water Threat (Y/N)
N/A	Extension of existing sanitary sewer from the new arena to Next Polymers entrance	N

### 8.5 Notice of Modifications

Date	Process	Modification	Status
There were no modifications to the collection system made in 2023.			

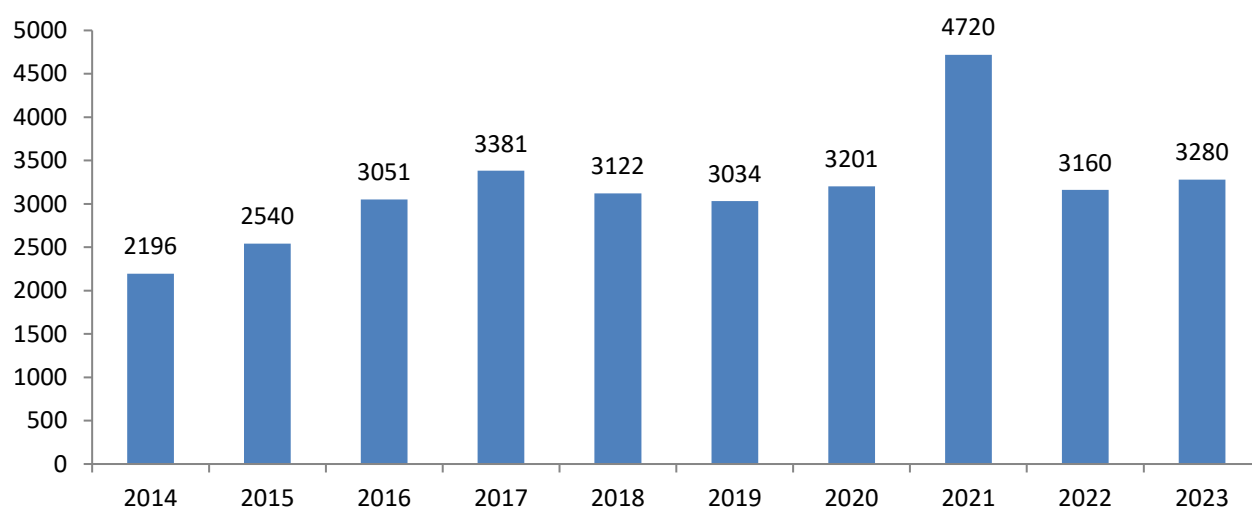
## 9 Sludge Generation

### 9.1 Sludge Disposal Summary

Date	Disposal Location	Approval #	Volume (m3)
05/15/23	Edwardsburgh/Cardinal, Brouseville, Concession 3, Lot 2 and 3	ECA# H480300	400
05/16/23	Edwardsburgh/Cardinal, Brouseville, Concession 3, Lot 2 and 3	ECA# H480300	520
05/17/23	Edwardsburgh/Cardinal, Brouseville, Concession 3, Lot 2 and 3	ECA# H480300	520
05/18/23	Edwardsburgh/Cardinal, Brouseville, Concession 3, Lot 2 and 3	ECA# H480300	440
05/19/23	Edwardsburgh/Cardinal, Brouseville, Concession 3, Lot 2 and 3	ECA# H480300	320
10/16/23	South Dundas, Matilda, Concession 6, Lot 32	ECA# H480300	400
10/17/23	South Dundas, Matilda, Concession 6, Lot 32	ECA# H480300	480
10/18/23	South Dundas, Matilda, Concession 6, Lot 32	ECA# H480300	200

In 2023, a total of 3,280 m3 of liquid bio-solids was hauled offsite by GFL and was utilized as soil conditioner. Of this, 2200 m3 was hauled to May (NASM Submission ID #23351), and the remaining 1080 m3 was hauled in October (NASM Submission ID #22432). It is anticipated that approximately the same volume of sludge will be generated in 2024.

### 9.2 Annual Comparison (m3/year)



It is anticipated that sludge volumes will remain similar to the 2023 volumes.

### 9.3 Sludge Quality

Sludge quality reports are available in Appendix C



## 10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
There were no complaints to report in 2023.			

# Appendix A

## Appendix A – Performance Assessment Report

### ONTARIO CLEAN WATER AGENCY PERFORMANCE ASSESSMENT REPORT

OWNER: TOWN OF PRESCOTT  
 PROJECT: PRESCOTT WWTP  
 WORKS NUM.: 110001122  
 DESCRIPTION: THREE SEQUENTIAL BATCH REACTORS AND AEROBIC SLUDGE DIGESTION

YEAR: 2023  
 WATER COURSE: ST. LAWRENCE  
 DESIGN CAPACITY: 4,728 m<sup>3</sup>/d

MONTH	RAW			TREATED			RAW				SLUDGE		
	Total Flow m <sup>3</sup>	Avg Day Flow m <sup>3</sup>	Max Day Flow m <sup>3</sup> /d	Effluent Flow m <sup>3</sup>	Effluent Avg Flow m <sup>3</sup>	Effluent Max Flow m <sup>3</sup> /d	Avg Raw BOD (mg/L)	Avg Raw TSS (mg/L)	Avg Raw PHOS. (mg/L)	Avg. Raw TKN (mg/L)	Sludge to Drying Beds m <sup>3</sup>	Liquid Sludge Hauled m <sup>3</sup>	Dry Sludge Hauled Metric Tonnes
JAN	158708	5120	13401	160096	5164	13858	26	13	0.75	15.1	228	0	0
FEB	132286	4724	7542	133024	4751	7502	50	76	1.54	17.9	0	0	0
MAR	164045	5292	8863	166121	5359	8808	64	110	1.72	16	0	0	0
APR	169971	5666	12593	175804	5860	13174	29	30	0.78	7.7	245.3	0	0
MAY	124768	4025	9801	133373	4302	10153	26	32	0.71	6	61.1	2200	0
JUN	65147	2172	2428	72856	2429	2759	104	125	3.17	26.7	90	0	0
JUL	66405	2142	4445	74674	2409	4574	73	76	2.28	26.3	0	0	0
AUG	93153	3005	5991	99305	3203	6337	91	52	2.13	22.9	0	0	66.82
SEPT	57980	1933	2393	65016	2167	2646	68	98	2.54	20.8	0	0	0
OCT	67128	2165	3038	76325	2462	3392	307	650	9.24	57.8	0	1080	0
NOV	70632	2354	3053	79223	2641	3325	57	72	1.99	23.8	0	0	0
DEC	121023	3904	7283	126820	4091	7260	46	34	1.17	12.2	109.4	0	0
TOTAL	1,291,244			1,362,637							734	3280	67
AVG		3,542			3,737		78	114	2.34	21			
MAX			13,401			13,858							
CRITERIA		4,728	16,000										
COMPLIANCE		YES	YES										

Comments: Average raw BOD, TP and TSS based on 24hr composite sample results

### 2023 - PRESCOTT WWTP EFFLUENT SAMPLING MONTHLY AVERAGES

MONTH	DATE	CBOD <sub>5</sub> (mg/L)	TSS (mg/L)	TP (mg/L)	NH <sub>3</sub> (mg/L)	E. Coll (CFU/100ml)
January	03-Jan-23	< 3	5	0.17	0.11	340
	10-Jan-23	< 3	5	0.05	0.62	2
	17-Jan-23	< 3	3	0.05	0.88	2
	24-Jan-23	< 3	3	0.03	0.33	3
	31-Jan-23	< 3	3	0.06	0.51	0
	Monthly Average	3.0	3.8	0.07	0.49	1
Compliant?	YES	YES	YES	YES	YES	
February	07-Feb-23	< 3	< 3	0.05	1.72	0
	14-Feb-23	< 3	< 3	0.04	0.55	0
	21-Feb-23	< 3	3	0.06	0.63	1
	28-Feb-23	< 3	< 3	0.1	1.03	3
	Monthly Average	3.0	3.0	0.06	0.98	0
	Compliant?	YES	YES	YES	YES	YES
March	07-Mar-23	< 3	3	0.05	0.85	3
	14-Mar-23	< 3	18	0.07	0.53	12
	21-Mar-23	< 3	8	0.06	0.81	0
	28-Mar-23	< 3	< 3	0.09	1.27	1
	Monthly Average	3.0	8.0	0.07	0.87	0.14
	Compliant?	YES	YES	YES	YES	YES
April	04-Apr-23	< 3	3	0.04	1.86	1
	11-Apr-23	< 3	3	0.06	0.94	45
	18-Apr-23	< 3	< 3	0.06	0.05	1
	25-Apr-23	< 3	3	0.04	0.71	7
	Monthly Average	3.0	3.0	0.05	0.89	4
	Compliant?	YES	YES	YES	YES	YES
May	02-May-23	< 3	< 3	0.06	0.94	4
	09-May-23	< 3	4	0.04	0.76	9
	16-May-23	< 3	< 3	0.07	0.22	0
	23-May-23	< 3	3	0.08	0.74	0
	30-May-23	< 3	10	0.09	0.08	0
	Monthly Average	3.0	4.60	0.07	0.55	0
Compliant?	YES	YES	YES	YES	YES	
June	06-Jun-23	< 3	3	0.16	0.08	1
	13-Jun-23	< 3	< 3	0.17	0.18	0
	20-Jun-23	< 3	3	0.16	0.07	2
	27-Jun-23	< 3	< 3	0.15	0.65	1
	Monthly Average	3.0	3	0.16	0.25	0.21
	Compliant?	YES	YES	YES	YES	YES
July	04-Jul-23	< 3	< 3	0.12	0.20	4
	11-Jul-23	< 3	< 3	0.12	0.16	2
	18-Jul-23	< 3	< 3	0.22	0.14	0
	25-Jul-23	< 3	< 3	0.27	0.19	2
	Monthly Average	3.0	3	0.18	0.17	0
	Compliant?	YES	YES	YES	YES	YES
August	01-Aug-23	< 3	6	0.24	0.15	0
	08-Aug-23	< 3	< 3	0.28	1.13	27
	15-Aug-23	< 3	< 3	0.09	0.15	1
	22-Aug-23	< 3	4	0.1	0.17	0
	29-Aug-23	< 3	4	0.14	0.28	0
	Monthly Average	3.0	4.00	0.17	0.38	0
Compliant?	YES	YES	YES	YES	YES	
September	05-Sep-23	< 3	5	0.2	0.19	0
	12-Sep-23	< 3	4	0.14	0.11	0
	19-Sep-23	< 3	4	0.32	0.12	1040
	26-Sep-23	< 3	6	0.56	0.17	3
	Monthly Average	3.0	4.75	0.31	0.15	0
	Compliant?	YES	YES	YES	YES	YES
October	03-Oct-23	6	< 3	0.35	0.18	10
	10-Oct-23	< 3	< 3	0.35	0.12	89
	17-Oct-23	< 3	8	0.23	0.15	1
	24-Oct-23	< 3	6	0.34	0.13	1
	31-Oct-23	< 3	< 3	0.30	0.13	2
	Monthly Average	3.6	4.6	0.31	0.14	4
Compliant?	YES	YES	YES	YES	YES	
November	07-Nov-23	3	8	0.31	0.21	0
	14-Nov-23	< 3	3	0.24	0.14	0
	21-Nov-23	< 3	< 3	0.18	0.07	0
	28-Nov-23	< 3	< 3	0.2	0.08	1
	Monthly Average	3.0	4.25	0.23	0.13	0
	Compliant?	YES	YES	YES	YES	YES
December	05-Dec-23	< 3	< 3	0.15	0.09	1
	12-Dec-23	< 3	7	0.13	0.14	0
	19-Dec-23	< 3	8	0.12	0.23	13
	27-Dec-23	< 3	3	0.08	0.19	0
	Monthly Average	3.0	5.25	0.12	0.16	0
	Compliant?	YES	YES	YES	YES	YES

# Appendix B

## Appendix B – Details of Abnormal Sewage Discharge Events

### Facility Bypass

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There was no facility bypass to report in 2023.								

### Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There was no facility overflow to report in 2023.								

### Collection Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
01/05/23	SPS #5 (600 King St. E)	Collection system overflow due to heavy rains.	500	23:30	02:00	2h30min	St. Lawrence River	Stabilized chlorine pucks
04/05/23	SPS #5 (600 King St. E)	Collection system overflow due to heavy rains.	3625	16:00	23:15	7h15min	St. Lawrence River	Stabilized chlorine pucks

### Spills of Sewage

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
There were no spills of sewage to report in 2023.								

**Collection System Monitoring Data**

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
January 5, 2023	SPS # 5 (600 King St. E)	500	CBOD5	10	48.08	None.
			Total Suspended Solids	33	158.65	
			Total Phosphorus	0.46	2.21	
			Total Ammonia Nitrogen (TAN)	1.94	9.33	
			E.Coli	122,000		

Event Date	Event Location	Volume (m3)	Parameter	mg/L	Source Loading	Any Adverse Impacts & Corrective Actions
April 5, 2023	SPS # 5 (600 King St. E)	3625	BOD	21	90.6	None.
			BOD	29		
			Total Suspended Solids	51	415	
			Total Suspended Solids	178		
			Total Phosphorus	0.81	5.8	
			Total Phosphorus	2.41		
			Total Kjeldahl Nitrogen (TKN)	5.4	31.5	
			Total Kjeldahl Nitrogen (TKN)	12.0		
			E.Coli	270,000		
E.Coli	40,000					

# Appendix C

## Appendix C - Biosolids Quality Report

### 2023 - PRESCOTT WWTP MONTHLY AEROBIC BIOSOLIDS CONCENTRATION RATIO

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ammonia	43	24.8	53.25	203.0	52	55	67	80	135.5	51.50	217.5	21.5
Nitrate	1	0	1	0	1	0	1.05	0.95	0.35	0.20	0.45	12.25
Ammonia + Nitrate	44	25.0	54.2	203.2	53.0	55.4	68.05	80.95	135.85	52	218.0	33.8
Total Phosphorus	478	1060	396	866	1268	601.0	757.5	828.5	783	983	651.5	651.5
Total Solids	34250	31400	24600	37500	27450	33200.0	35850	29800	26300	21500	22950	22050
Aluminum	1070	885	743	1630	1205	1065.0	1612.5	1480	1065	1275	1039	965
Arsenic	0.20	0.25	0.25	0.35	0.20	0.25	0.3	0.3	0.2	0.25	0.2	0.2
Cadmium	0.03	0.03	0.03	0.04	0.03	0.03	0.035	0.03	0.03	0.03	0.03	0.03
Chromium	0.66	0.52	0.37	0.88	0.72	0.89	0.99	0.915	0.625	0.74	0.63	0.755
Cobalt	0.07	0.07	0.05	0.10	0.08	0.06	0.08	0.085	0.06	0.06	0.06	0.08
Copper	9.57	7.46	5.99	13.45	9.85	10.13	13.4	12.3	9.5	11	9.375	9.725
Lead	0.75	0.50	0.35	0.85	0.60	0.75	0.9	0.8	0.65	0.65	0.65	0.6
Mercury	0.02	0.02	0.01	0.02	0.00	0.01	0.0085	0.0115	0.011	0.01	0.01	0.0065
Molybdenum	0.27	0.27	0.16	0.34	0.25	0.26	0.32	0.32	0.27	0.29	0.265	0.32
Nickel	0.57	0.47	0.43	0.98	0.66	0.72	0.87	0.765	0.585	0.61	0.53	0.56
Selenium	0.15	0.20	0.15	0.25	0.20	0.15	0.2	0.2	0.15	0.15	0.15	0.15
Zinc	13.15	10.20	7.45	16.25	12.20	12.25	15.75	15	11.65	13.0	11.6	12.85

Metals ratio = mg metals/kg solids

	Metal/Solids Ratio (Sludge)												Limit
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Arsenic	5.84	7.96	10.16	9.33	7.29	7.53	8.37	10.07	7.60	11.63	8.71	9.07	170
Cadmium	0.88	0.96	1.22	0.93	1.09	0.90	0.98	1.01	1.14	1.40	1.31	1.36	34
Chromium	19.3	16.4	15.0	23.3	26.2	26.8	27.6	30.7	23.8	34.19	27.45	34.24	2800
Cobalt	1.90	2.23	2.03	2.53	2.73	1.81	2.23	2.85	2.28	2.79	2.61	3.63	340
Copper	279	237	243	359	359	305	374	413	361	496.51	408.50	441.04	1700
Lead	21.90	15.92	14.23	22.67	21.86	22.59	25.10	26.85	24.71	30.23	28.32	27.21	1100
Mercury	0.48	0.51	0.28	0.57	0.13	0.27	0.24	0.39	0.42	0.47	0.44	0.29	11
Molybdenum	7.74	8.60	6.30	9.07	8.93	7.83	8.93	10.74	10.27	13.49	11.55	14.51	94
Nickel	16.64	14.81	17.28	26.13	23.86	21.69	24.27	25.67	22.24	28.14	23.09	25.40	420
Selenium	4.38	6.37	6.10	6.67	7.29	4.52	5.58	6.71	5.70	6.98	6.54	6.80	34
Zinc	384	325	303	433	444	369	439	503	443	602.33	505.45	582.77	4200

Sludge is Acceptable	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
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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 - ECA Annual Report Requirements

<b>Facility ECA # 6996-9ZYNWH Section 10(6)</b>	<b>Section in Report</b>
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) Description of any operating problems encountered and corrective actions taken	Section 8 – Operating Problems/Issues
c) Summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works	Section 9 – Maintenance
d) Summary of any effluent quality assurance or control measures undertaken in the reporting period	Section 6 – Effluent Quality
e) Summary of the calibration and maintenance carried out on all effluent monitoring equipment	Section 9.3 – Flow Meter Calibrations
f) Description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6	Section 8 – Operating Problems/Issues
g) 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 where the sludge was disposed	Section 10 – Sludge Generation
h) Summary of any complaints received during the reporting period and any steps taken to address the complaints	Section 11 – Summary of Complaints
i) Summary of all By-pass, spill or abnormal discharge events	Appendix D, Section 8 – Operating Problems/Issues
j) Copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification	Section 9 – Maintenance
k) Report summarizing all modifications completed as a result of Schedule B, Section 3	Section 9 - Maintenance
l) Any other information the Water Supervisor requires from time to time	N/A
<b>Collection ECA # 161-W601 Schedule E</b>	
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

<p>4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:</p> <ul style="list-style-type: none"> <li>a) Dates;</li> <li>b) Volumes and durations;</li> <li>c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli;</li> <li>d) Disinfection, if any; and</li> <li>e) Any adverse impact(s) and any corrective actions, if applicable.</li> </ul>	<p>Operating Issues and Problems Appendix B</p>
<p>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:</p> <ul style="list-style-type: none"> <li>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.</li> <li>b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.</li> <li>c) An assessment of the effectiveness of each action taken.</li> <li>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.</li> <li>e) Public reporting approach including proactive efforts.</li> </ul>	<p>Maintenance Operating Issues and Problems</p>