Iroquois Wastewater System

Waterworks # 120000159

Annual Report

Prepared By The Municipality of South Dundas

Reporting Period of January 1st – December 31st 2024

Issued: March 4th, 2025

Revision: 0

Operating Authority:

The Municipality of SOUTH DUNDAS

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

Document	Document #	Issue Date	Issue Number
Facility ECA	9689-8MQHNK	October 25, 2011	N/A
ECA for Municipal Sewage Collection System	165-W601	June 2, 2023	1.0

Table of Contents

1 Revision History

Date	Rev#	Revisions	Revised By
March 04, 2024	0	Annual Report Issued	Chelsea Fletcher, PCT Municipality of South Dundas

2 Operations and Compliance Reliability Indices

Compliance Event	# of Events
Ministry of Environment Inspections	No MECP inspections in 2024.
Ministry of Labour Inspections	No MOL inspections in 2024.
Non-Compliance	No Non-compliance events in 2024.
Community Complaints	Received complaints were related to sewer main blockages in 2024.
Spills	No spill events in 2024.
Overflows/Bypass	No bypass or overflow event in 2024
Sewer main blockages	1 sewer main blockages in 2024 • Details referenced in the Complaints section of the report

3 Process Description

Iroquois's sewage collection system is a gravity fed sanitary sewage collection system. There are two pumping stations which pump wastewater from the collection system to the wastewater treatment facility.

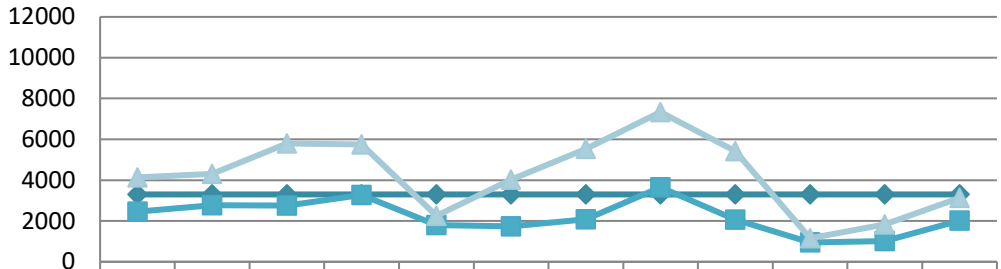
The Iroquois Wastewater Treatment Plant (WWTP) is a Class II wastewater treatment facility owned and operated by the Municipality of South Dundas. Raw sewage is pumped to the WWTP by the plant pumping station which is equipped with three submersible pumps. From the pumping station, wastewater passes through the inlet works, including mechanically cleaned fine screens and a grit removal and disposal system. Aluminum Sulphate is added to assist in phosphorous removal. The wastewater then moves through either of two parallel Sequencing Batch Reactors (SBRs) equipped with individual aeration systems, mixers, decanters and sludge removal pumps. Effluent decanted from the SBRs is treated by UV disinfection and subsequently passes through an outfall pipe to the St. Lawrence River.

Sludge removed from the SBRs is transferred to a waste activated sludge tank. From the tank, the sludge enters a rotary drum thickener. Polymer is added to assist with the thickening process. Thickened sludge is pumped to an Autothermal Thermophilic Aerobic Digestion (ATAD) system for stabilization. The ATAD system is equipped with an off-gas scrubber and biofilter to provide odour control. The digested sludge is then pumped to one of three biosolids storage tanks. From the storage tanks, biosolids are hauled off site to be utilized as soil conditioner.

4 Treatment Flows

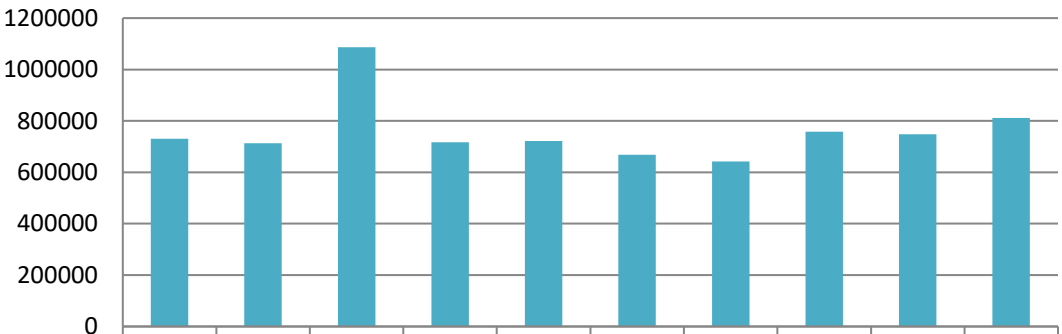
The hydraulic flows reaching the treatment facility in 2024 averaged 2,222 m^3/day which represents 67% of the 3,300 m^3/day design. Please see the Performance Assessment Reports attached in Appendix A for details.

4.1 Raw Flow (m3/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300	3300
Avg (m3/d)	2457	2763	2760	3274	1805	1739	2079	3649	2071	945	1017	2013
Max Flow (m3/d)	4128	4302	5799	5744	2258	4026	5531	7334	5415	1152	1825	3126

4.1.1 Annual Comparison (m3)



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Annual Flow	730754	713262	1087278	717171	722318	668007	642564	758152	747445	811009

4.2 Imported Sewage

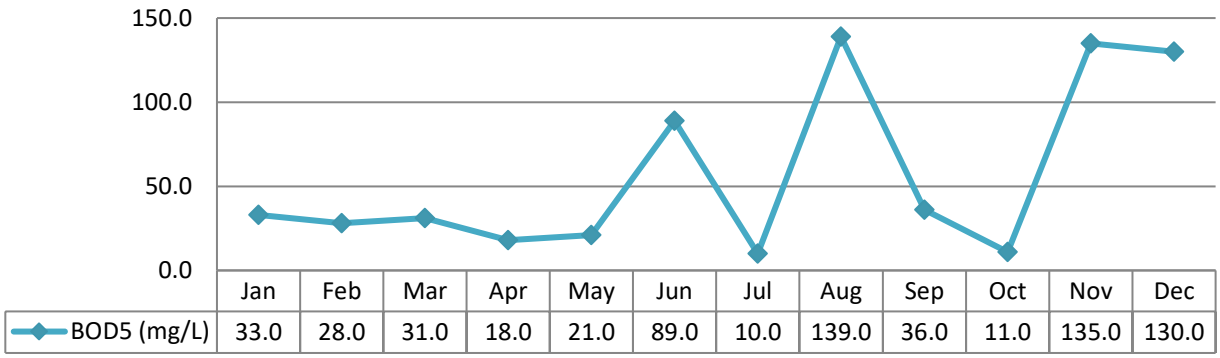
There is no imported sewage accepted at this facility.

5 Raw Sewage Quality

Current year minimum, maximum and averages are available in Appendix A – Performance Assessment Report.

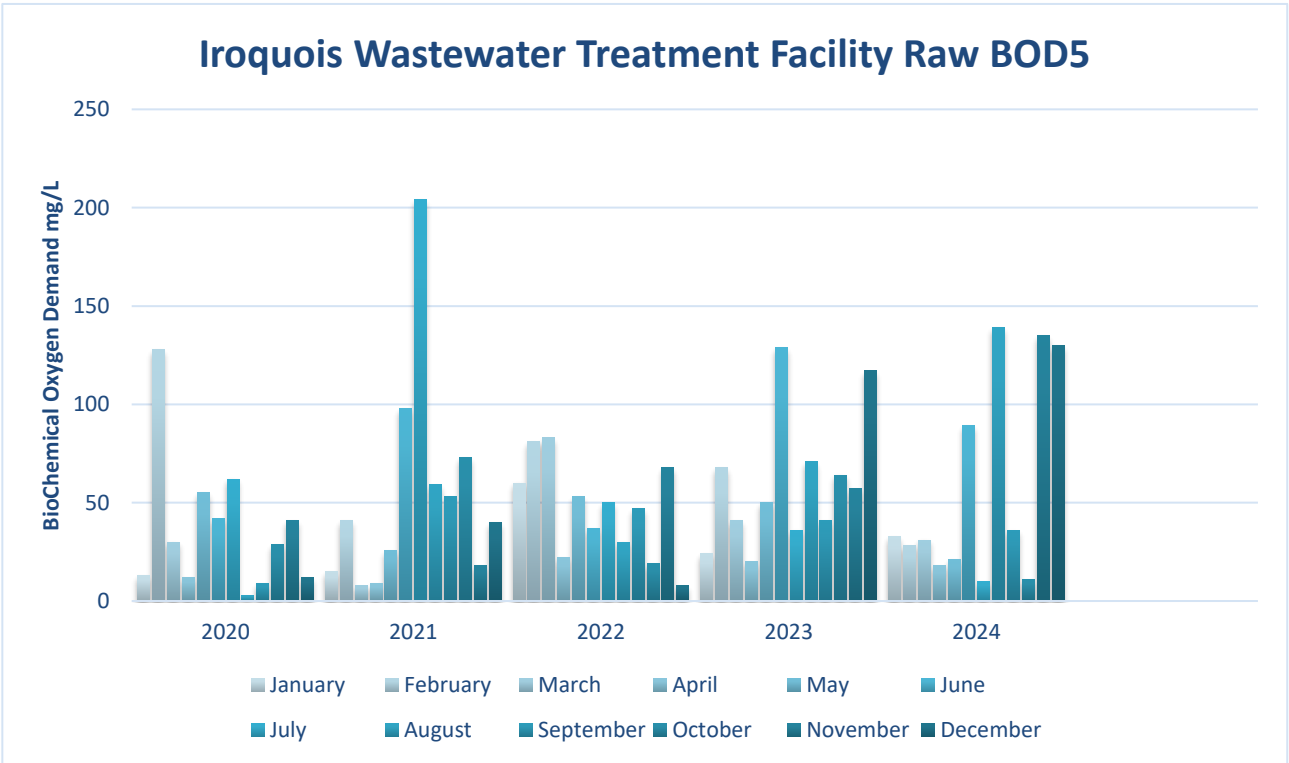
5.1 Influent Trending

5.1.1 BOD5 (mg/L)

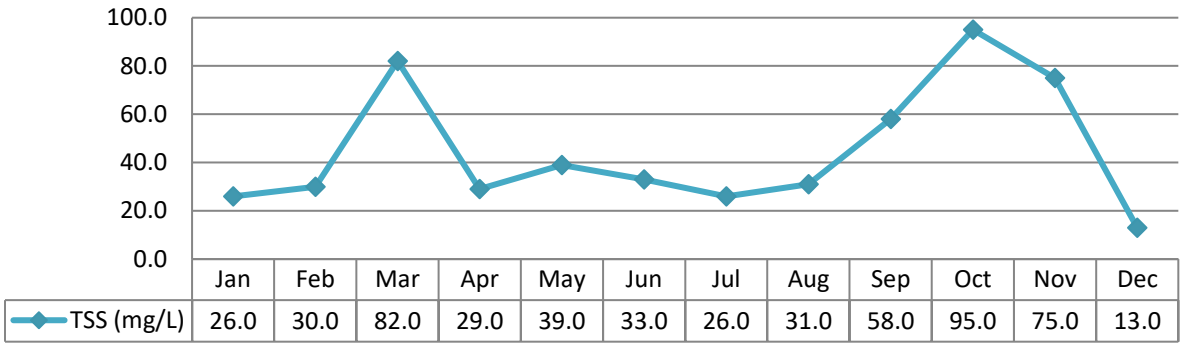


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BOD5 (mg/L)	33.0	28.0	31.0	18.0	21.0	89.0	10.0	139.0	36.0	11.0	135.0	130.0

5.1.2 5-year BOD5 (mg/L)

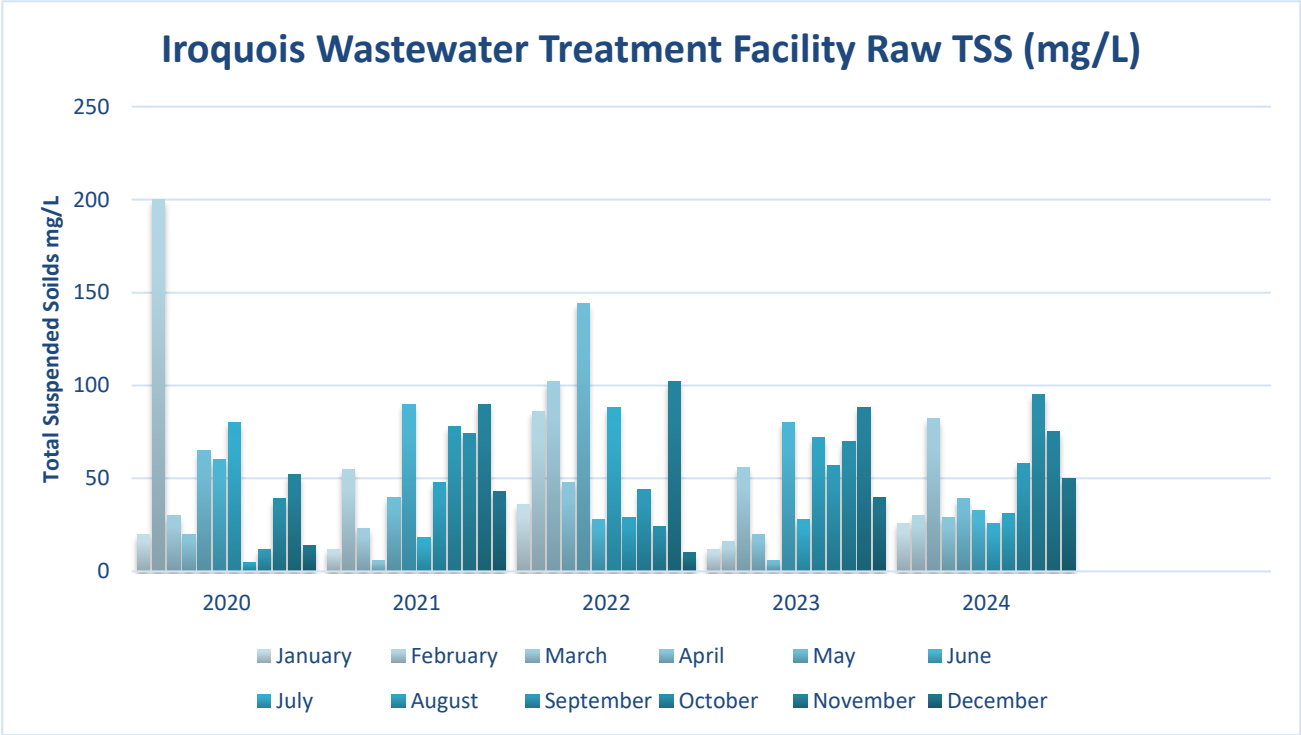


5.1.3 Total Suspended Solids (mg/L)

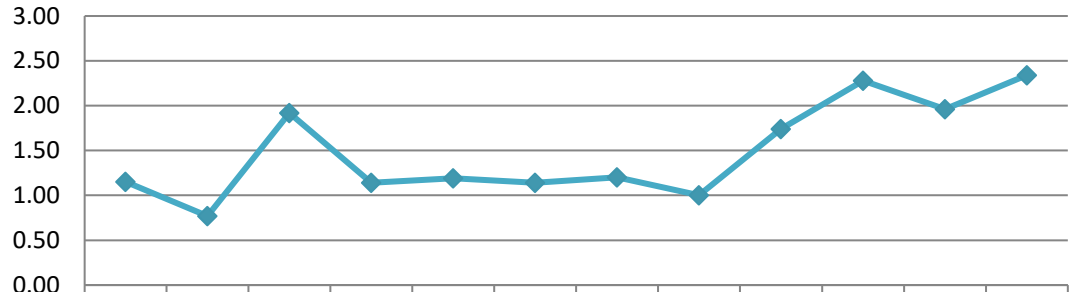


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TSS (mg/L)	26.0	30.0	82.0	29.0	39.0	33.0	26.0	31.0	58.0	95.0	75.0	13.0

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

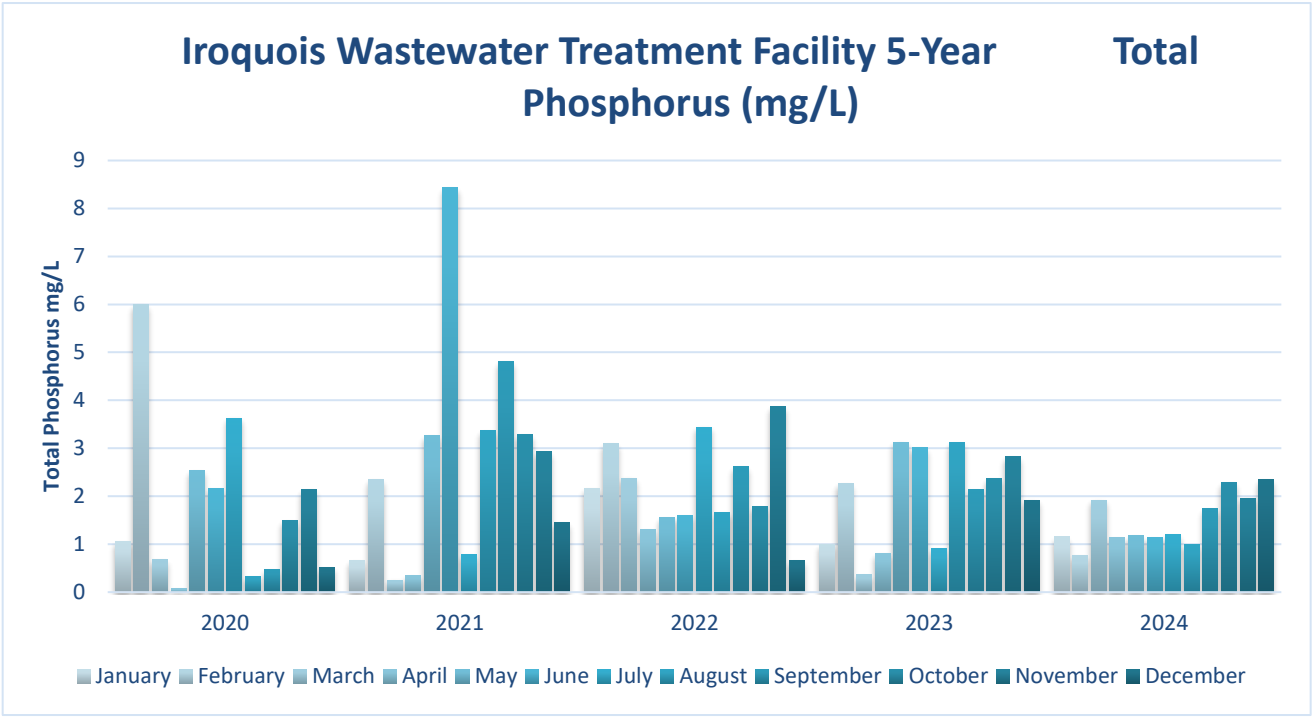


5.1.5 *Total Phosphorus (mg/L)*

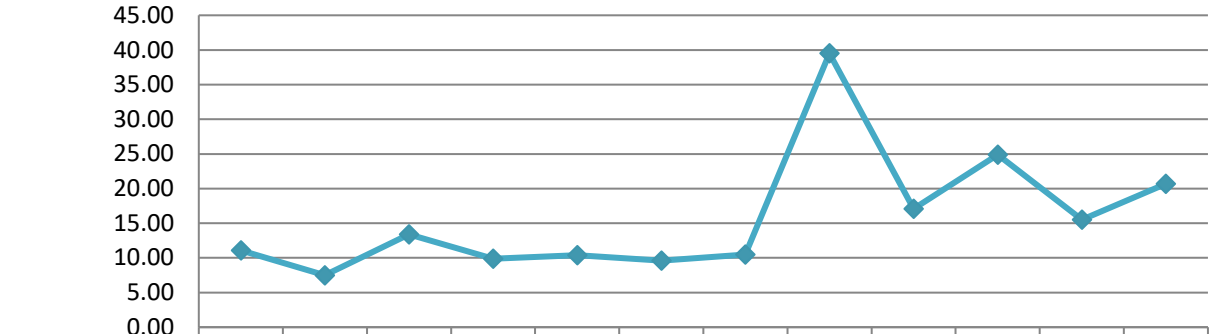


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total Phosphorus (mg/L)	1.15	0.77	1.92	1.14	1.19	1.14	1.20	1.00	1.74	2.28	1.96	2.34

5.1.6 *5-year Total Phosphorus (mg/L)*

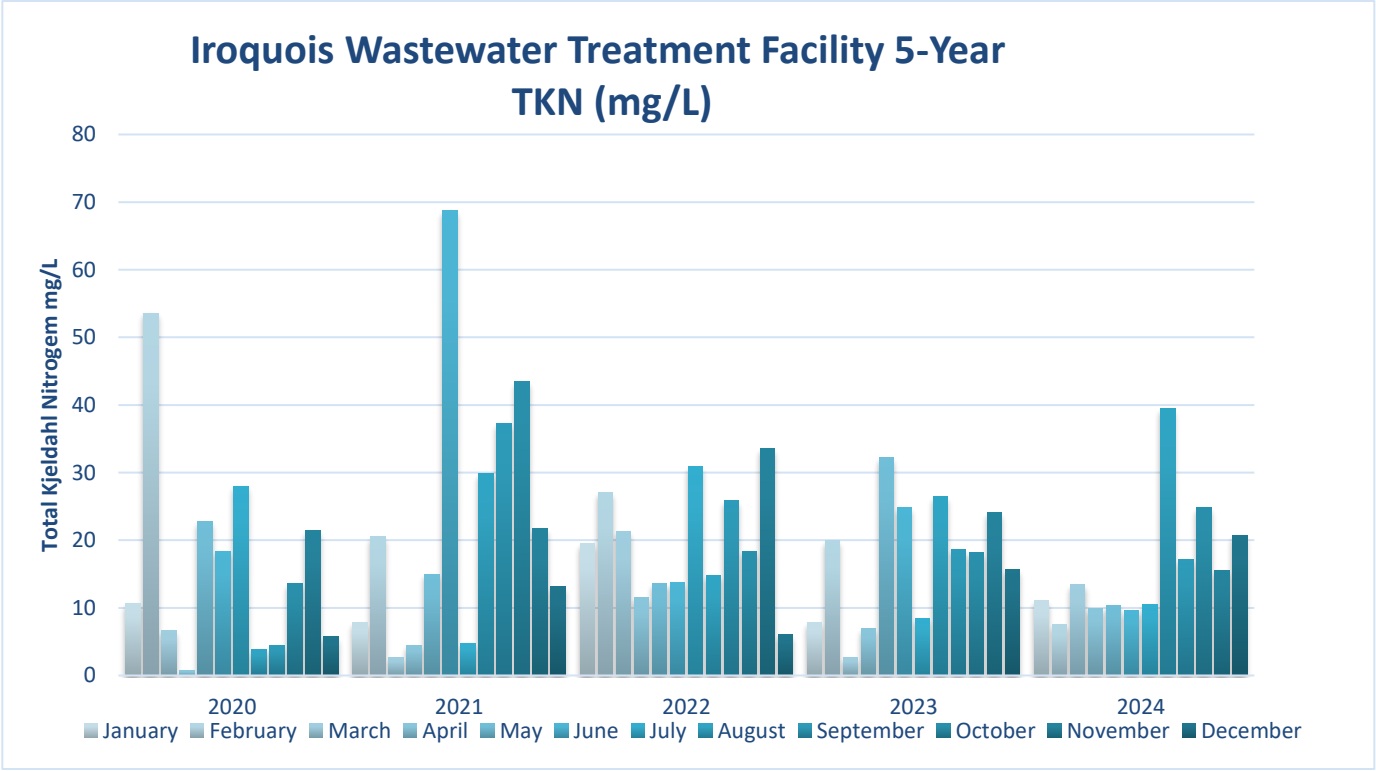


5.1.7 *Total Kjeldahl Nitrogen (TKN) (mg/L)*



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TKN (mg/L)	11.10	7.50	13.40	9.90	10.40	9.60	10.50	39.50	17.10	24.90	15.50	20.70

5.1.8 *5-year Total Kjeldahl Nitrogen (TKN) (mg/L)*



5.2 Imported Waste Quality

There is no imported sewage accepted at this facility.

6 Effluent Quality

The monthly average concentrations of carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), total ammonia nitrogen (TAN) remained below the effluent objectives and limits outlined in the facility's Certificate of Approval during 2024. The geometric mean density of E. coli in the effluent also remained below the ECA limit and objective in 2024. In addition, the effluent pH remained within the limits and objectives throughout the year. The monthly average for total phosphorus (TP) remained below the effluent limit outlined in the facility's Certificate of Approval in 2024.

Effluent results from the WWTP for 2024 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 the Municipality of South Dundas. Operational Services are delivered by staff employed by the Municipality. 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.

The process is reviewed and maintained by certified operators. These operators 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 Ottawa for analysis, with the exception of pH and temperature. Caduceon Ottawa 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, South Dundas 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.

South Dundas uses a data management system maintained by staff, which includes:

- SharePoint – Municipality of South Dundas Water/Wastewater Site.
  - This online database 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.

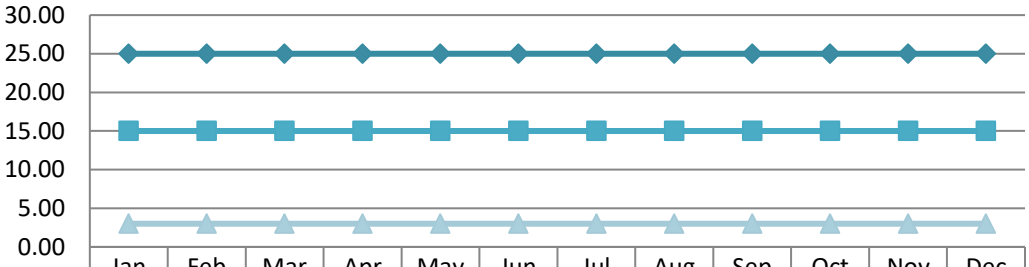
The operations team also has access to in-house Operational Compliance and Process Technicians (PCTs) to assist with emerging process issues. This aids in establishing additional control measures to ensure a quality effluent product.

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

6.2 CBOD5 (mg/L)

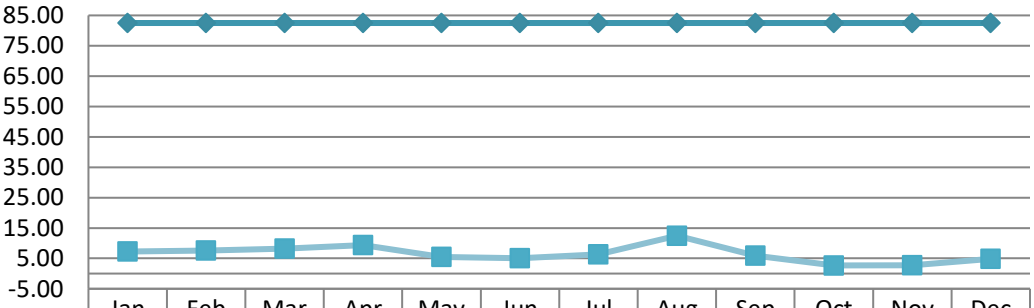
Compliance Limit and Objective for this parameter was met in 2024.

6.2.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
ECA Objective	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Average (mg/L)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

6.2.1.1 Loading (kg/d)

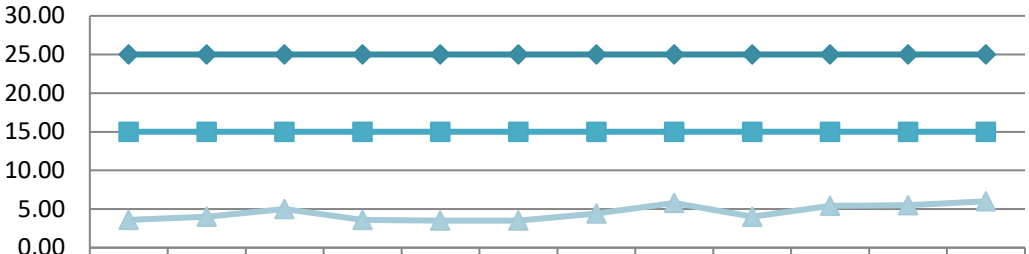


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50
Average (kg/d)	7.24	7.63	8.18	9.39	5.49	5.04	6.34	12.46	5.88	2.68	2.78	4.81

6.3 Total Suspended Solids (mg/L)

Compliance Limit and Objective for this parameter was met in 2024.

6.3.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
ECA Objective	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Average (mg/L)	3.60	4.00	5.00	3.60	3.50	3.50	4.40	5.80	4.00	5.40	5.50	6.00

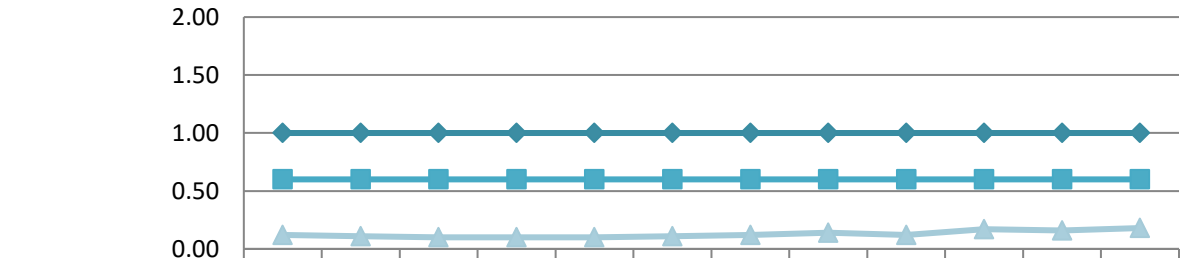
6.3.2 Loading (kg/d)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50	82.50
Average (kg/d)	8.68	10.17	13.64	11.27	6.40	5.88	9.30	23.88	7.83	4.82	5.10	9.62

6.4 Total Phosphorus (mg/L)

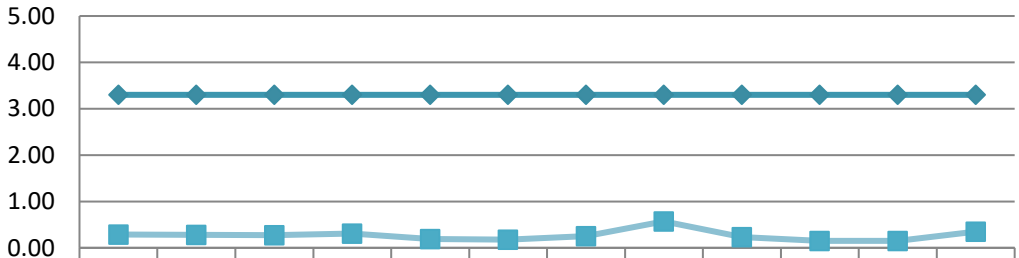
Compliance Limit for this parameter was met in 2024.

6.4.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
ECA Objective	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Average (mg/L)	0.12	0.11	0.10	0.10	0.10	0.11	0.12	0.14	0.12	0.17	0.16	0.18

6.4.2 Loading (kg/d)

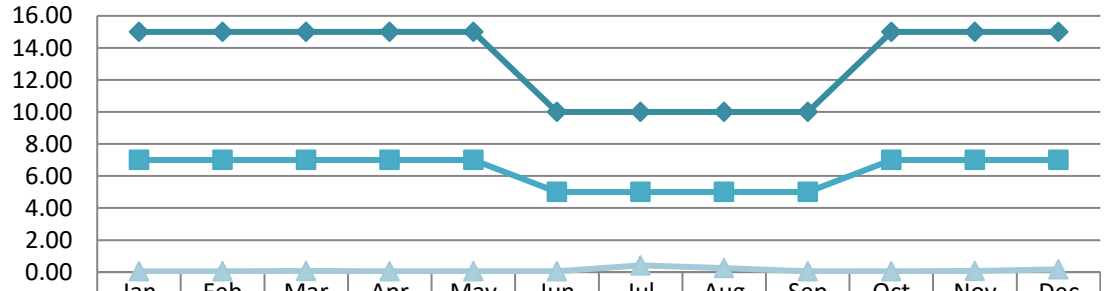


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Objective	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30	3.30
Average (kg/d)	0.29	0.28	0.27	0.31	0.19	0.18	0.25	0.57	0.23	0.15	0.15	0.35

6.5 Total Ammonia Nitrogen (mg/L)

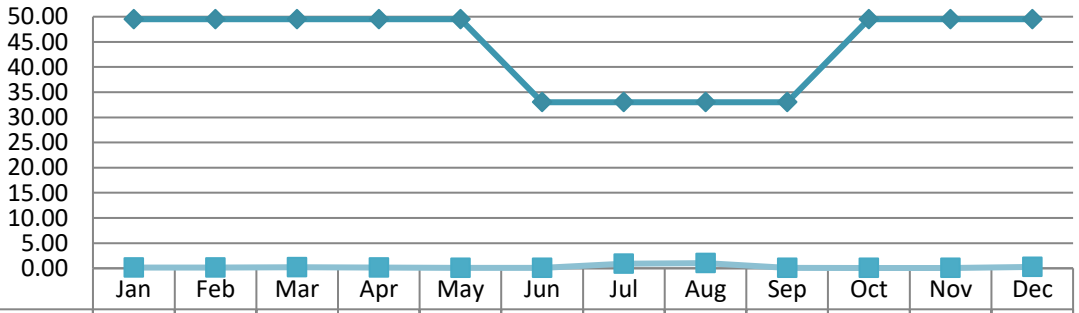
Compliance Limit and Objective for this parameter was met in 2024.

6.5.1 Concentration (mg/L)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit (mg/L)	15.00	15.00	15.00	15.00	15.00	10.00	10.00	10.00	10.00	15.00	15.00	15.00
ECA Objective (mg/L)	7.00	7.00	7.00	7.00	7.00	5.00	5.00	5.00	5.00	7.00	7.00	7.00
Average (mg/L)	0.05	0.05	0.08	0.05	0.06	0.06	0.42	0.25	0.05	0.06	0.07	0.18

6.5.2 Loading (kg/d)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit	49.50	49.50	49.50	49.50	49.50	33.00	33.00	33.00	33.00	49.50	49.50	49.50
Average (kg/d)	0.12	0.13	0.21	0.16	0.11	0.10	0.89	1.03	0.10	0.06	0.06	0.28

6.6 Acute Lethality

One effluent sample was collected in 2024 and tested for acute lethality to Rainbow Trout and Daphnia Magna. Results are displayed as % mortality. An adverse result is indicated by a > 50% mortality rate.

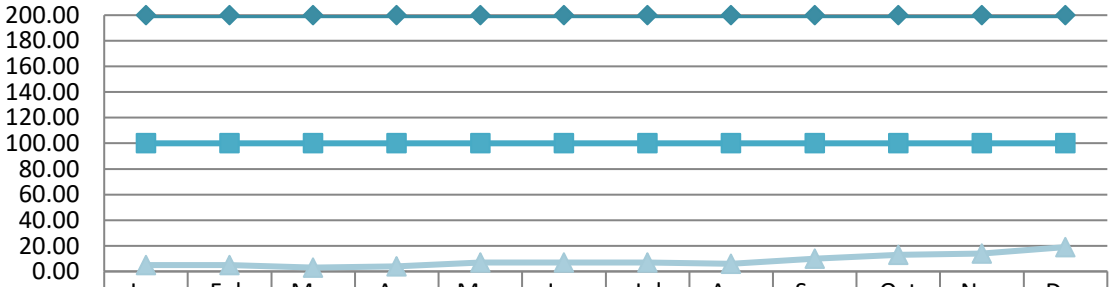
Compliance Limit for this parameter was met in 2024.

Date	Rainbow Trout	Daphnia Magna
01-09-2024	0%	0%

6.7 E-coli (cfu/100mL)

Compliance Limit and Objective for this parameter was met in 2024.

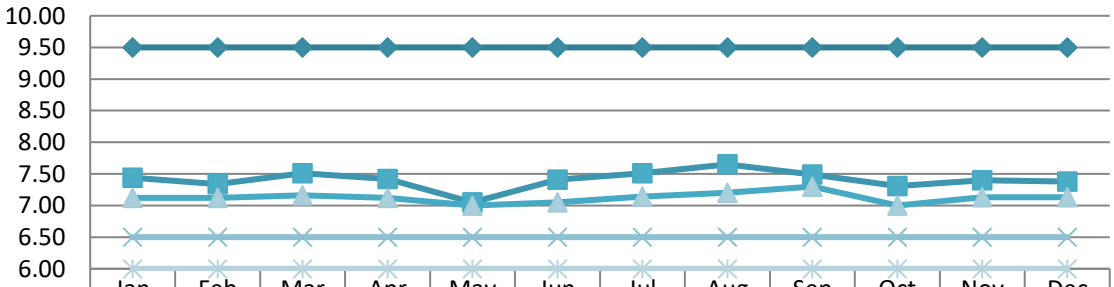
6.7.1 Geometric Mean (cfu/100mL)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECA Limit (mg/L)	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
ECA Objective (mg/L)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Average (mg/L)	5.00	5.00	3.00	4.00	7.00	7.00	7.00	6.00	10.00	13.00	14.00	19.00

6.8 pH

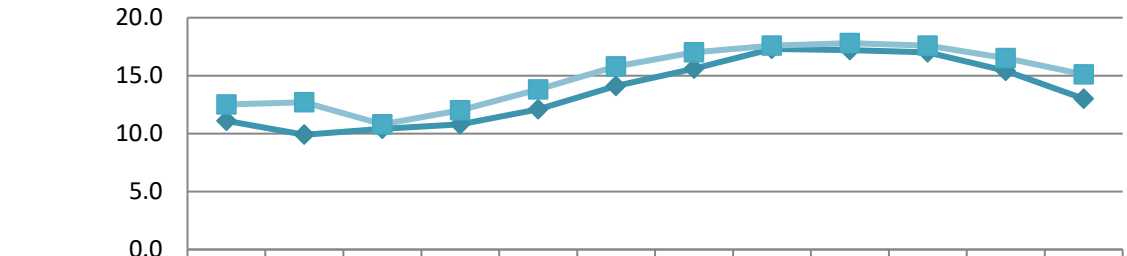
Compliance Limit range for this parameter is 6.0 – 9.5. The parameter was met in 2024. Each instance the pH is outside of that range is reported as a non-compliance.
Compliance Objective range for this parameter is 6.5-9.5. The parameter was met in 2024.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Limit/Objective	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50	9.50
Maximum	7.44	7.34	7.51	7.42	7.05	7.41	7.51	7.65	7.49	7.31	7.40	7.38
Minimum	7.12	7.12	7.16	7.12	7.00	7.05	7.14	7.20	7.30	7.00	7.13	7.13
Min Objective	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
Min Limit	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00

6.9 Temperature

There are no compliance limits or objectives defined for Effluent



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Minimum	11.1	9.9	10.4	10.8	12.1	14.1	15.6	17.3	17.2	17.0	15.4	13.0
Maximum	12.5	12.7	10.8	12.0	13.8	15.8	17.0	17.6	17.8	17.6	16.5	15.1

7 Operating Issues

There were no operating issues in 2024.

7.1 Effluent Quality Non-Compliance Summary

Date	Exceedance of	Limit	Value	Corrective Action
No Non-Compliance for the reporting period of 2024.				

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 of sewage to report in 2024.					

8 Maintenance

Routine planned maintenance activities:

- 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

Unplanned maintenance is conducted as required.

8.1 Normal Maintenance and Repairs

Maintenance/Repairs
- SCADA upgrades - Compactor Chute Modification - Replaced gas sensor elements - UV system upgrades and preventative maintenance - Process equipment cleanouts and oil changes

8.2 Emergency Maintenance and Repairs

Maintenance/Repairs	Details
No emergency repairs or maintenance made in 2024.	

8.3 Flow Meter Calibrations and Maintenance

Location	Date of Calibration	Additional Maintenance
FIT-401 Waste Sludge Basin 1	May 27th, 2024	None.
FIT-402 Waste Sludge Basin 2	May 27th, 2024	None.
FIT-305 Raw Sewage Influent Channel 1	May 27th, 2024	None.
FIT-306 Raw Sewage Influent Channel 2	May 27th, 2024	None.
FIT-304 Raw Waste Water Flow	May 27th, 2024	None.
FIT-302 P.S. Inlet Sewage Flow	May 27th, 2024	None.
FIT-301 Inlet Sewage Plant Pump Station Flow	May 27th, 2024	None.
FIT-303 Supernatant	May 27th, 2024	None.
FIT-501 UV Channel Flow	May 27th, 2024	None.

8.4 Authorized Alterations in Collection System

Alteration	Details	Significant Drinking Water Threat (Y/N)
No alterations made to the collection system in 2024.		

8.5 Notice of Modifications

Date	Process	Modification	Status
April 2024	Flowrate Study being conducted by EVB Engineering on behalf of the Municipality for	2 Blu-Siren Loggers mounted in 2 manholes	Ongoing until April of 2025

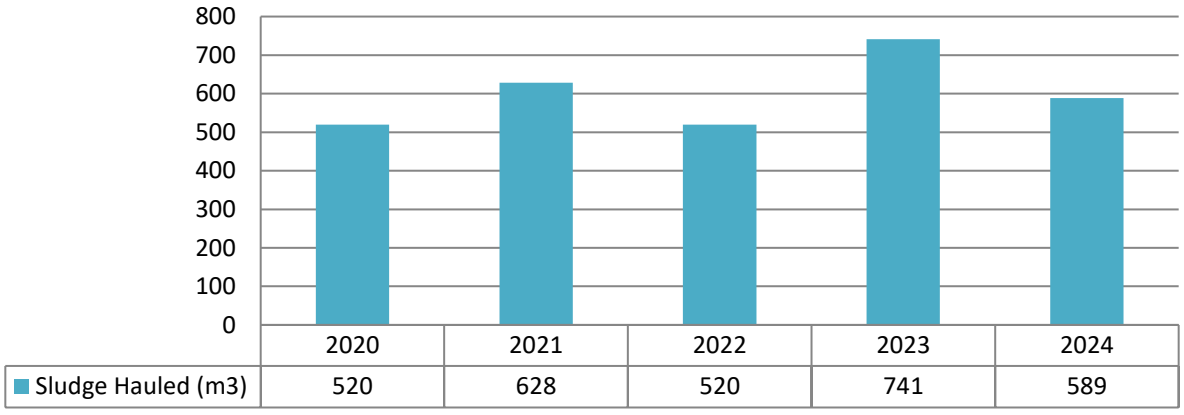
9 Sludge Generation

9.1 Sludge Disposal Summary

Date	Disposal Location	Approval Number	Total Volume (m3)
May 06 – June 13, 2024	D.E.S Digester Tank #4 12 Bath Road Iroquois, ON	ECA # H480300	431.23
October 07-08, 2024	D.E.S Digester Tank #4 12 Bath Road Iroquois, ON	ECA # 5948-7JRMAJ	157.36

In 2024, a total of 588.59 m^3 of liquid sludge was removed from Iroquois' WWTP. The sludge was removed from the WWTP by GFL in May/June/October. There is no NASM plan as all sludge was hauled to a holding tank for mixing. It is anticipated that approximately the same volume of sludge will be generated in 2025.

9.2 5 Year Annual Comparison (m3/year)



It is anticipated that sludge volumes will remain similar to the 2024 volumes.

10 Summary of Complaints

Location	Date	Nature of Complaint	Actions Taken
Ellis Dr	13/12/2024	Sewer main blockage	Flushed with hydro jet, returned back to normal service

Appendix A

Appendix A - Performance Assessment Report

IROQUOIS WWTP
PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: SOUTH DUNDAS
PROJECT: IROQUOIS WWTP
WORKS NUM.: 120000159
DESCRIPTION: TWO SEQUENTIAL BATCH REACTORS AND AEROBIC SLUDGE DIGESTION

YEAR: 2024
WATER COURSE: ST. LAWRENCE
DESIGN CAPACITY: 3,300 m^3/d

MONTH	RAW			TREATED			RAW				SLUDGE
	Total Flow m^3	Avg Day Flow m^3	Max Day Flow m^3	Total Flow m^3	Avg Day Flow m^3	Max Day Flow m^3	Raw BOD (mg/L)	Raw TSS (mg/L)	Raw PHOS. (mg/L)	Raw TKN (mg/L)	Liquid Sludge Hauled m^3
JAN	76,160	2,457	4,128	74,783	2,412	3,994	33	26	1.15	11.1	0
FEB	80,128	2,763	4,302	78,811	2,718	4,314	28	30	0.77	7.5	0
MAR	85,548	2,760	5,799	84,539	2,727	5,993	31	82	1.92	13.4	0
APR	98,234	3,274	5,744	97,027	3,234	5,845	18	29	1.14	9.9	0
MAY	55,962	1,805	2,258	56,703	1,829	2,257	21	39	1.19	10.4	199
JUN	52,156	1,739	4,076	52,060	1,735	3,929	89	33	1.14	9.6	232
JUL	64,447	2,079	5,531	65,535	2,114	5,767	10	26	1.20	1.2	0
AUG	113,110	3,649	7,334	128,739	4,153	7,449	139	31	1.00	39.5	0
SEPT	62,137	2,071	5,415	60,710	2,024	5,379	36	58	1.74	17.1	0
OCT	30,227	975	1,152	27,665	892	1,130	11	95	2.28	24.9	157
NOV	30,504	1,017	1,825	28,747	958	1,777	135	75	1.96	17.7	0
DEC	62,396	2,013	3,126	49,678	1,603	3,082	130	13.2	2.34	20.7	0
TOTAL	811,009			804,997							588
AVG		2,222			2,200		57	45	1.49	15.3	
MAX			7,334			7,449					
CRITERIA		**3,300**	**16,800**								
COMPLIANCE		**YES**	**YES**								

2024 - IROQUOIS WWTP EFFLUENT SAMPLING MONTHLY AVERAGES

MONTH	DATE	CBOD (mg/L)	TSS (mg/L)	TP (mg/L)	NH_3 (mg/L)	E. Coli (CFU/100ml)
January	01-03-2024	< 3	6	0.12	< 0.05	2
	01-09-2024	< 3	< 3	0.15	< 0.05	5
	01-16-2024	< 3	< 3	0.12	< 0.05	6
	01-23-2024	< 3	< 3	0.08	< 0.05	8
	01-30-2024	< 3	< 3	0.13	< 0.05	3
	Monthly Average	3.0	3.6	0.12	0.05	5
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
February	02-06-2024	< 3	5	0.11	< 0.05	4
	02-13-2024	< 3	< 3	0.13	< 0.05	10
	02-20-2024	< 3	4	0.11	< 0.05	3
	02-27-2024	< 3	4	0.09	< 0.05	4
	Monthly Average	3.0	4.0	0.11	0.05	5
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
March	03-05-2024	< 3	5	0.09	< 0.05	2
	03-12-2024	< 3	3	0.09	0.16	7
	03-19-2024	< 3	8	0.12	< 0.05	1
	03-26-2024	< 3	4	0.1	< 0.05	3
	Monthly Average	3.0	5.0	0.10	0.08	3
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
April	04-02-2024	< 3	< 3	0.11	< 0.05	4
	04-09-2024	< 3	< 3	0.08	< 0.05	3
	04-16-2024	< 3	3	0.1	< 0.05	2
	04-23-2024	< 3	6	0.1	< 0.05	5
	04-29-2024	< 3	< 3	0.1	< 0.05	6
	Monthly Average	3.0	3.6	0.10	0.05	4
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
May	05-07-2024	< 3	5	0.13	0.05	5
	05-14-2024	< 3	3	0.09	< 0.05	7
	05-21-2024	< 3	< 3	0.1	0.08	6
	05-28-2024	< 3	3	0.09	0.06	14
	Monthly Average	3.0	3.5	0.10	0.06	7
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
June	06-04-2024	< 3	4	0.1	< 0.05	8
	06-11-2024	< 3	< 3	0.12	< 0.05	9
	06-18-2024	< 3	< 3	0.09	< 0.05	5
	06-25-2024	< 3	4	0.11	0.08	6
	Monthly Average	3.0	3.5	0.11	0.06	7
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
July	01-07-2024	< 3	3	0.12	0.05	5
	09-07-2024	< 3	3	0.16	1.77	13
	16-07-2024	< 3	4	0.11	0.05	7
	23-07-2024	< 3	5	0.12	0.18	8
	31-07-2024	< 3	7	0.09	0.05	4
	Monthly Average	3.0	4.4	0.12	0.42	7
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
August	06-08-2024	< 3	3	0.14	0.05	2
	13-08-2024	< 3	4	0.17	0.8	10
	20-08-2024	< 3	9	0.13	0.09	9
	27-08-2024	< 3	7	0.11	0.05	7
	Monthly Average	3.0	5.8	0.14	0.25	6
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
September	03-09-2024	< 3	4	0.11	< 0.05	6
	10-09-2024	< 3	4	0.15	< 0.05	5
	17-09-2024	< 3	4	0.13	< 0.05	17
	24-09-2024	< 3	4	0.07	< 0.05	18
	Monthly Average	3.0	4	0.12	0.05	10
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
October	01-10-2024	< 3	6	0.14	0.07	22
	08-10-2024	< 3	6	0.27	< 0.05	10
	15-10-2024	< 3	5	0.12	0.05	13
	22-10-2024	< 3	5	0.2	0.08	31
	29-10-2024	< 3	5	0.12	0.06	5
	Monthly Average	3	5.4	0.17	0.06	13
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
November	05-11-2024	< 3	5	0.16	0.07	12
	12-11-2024	< 3	7	0.17	0.08	11
	19-11-2024	< 3	4	0.15	0.07	13
	26-11-2024	< 3	6	0.15	< 0.05	22
	Monthly Average	3.0	5.5	0.16	0.07	14
	Compliant?	**YES**	**YES**	**YES**	**YES**	**YES**
December	03-12-2024	< 3	3	0.16	< 0.05	15
	10-12-2024	< 3	8	0.27	0.63	25
	17-12-2024	< 3	7	0.38	< 0.05	16
	23-12-2024	3	4	0.12	< 0.05	23
	30-12-2024	< 3	8	0.15	0.1	15
	Monthly Average	3.0	6	0.22	0.18	19
	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
No By-Pass event to report in 2024								

Facility Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
No facility overflows to report in 2024.								

Collection Overflow

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
No overflows to report in 2023.								

Spills of Sewage

Date	Location	Details	Volume (m3)	Start Time	End Time	Duration (h)	Discharge Receiver	Disinfection Provided
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
There was no collection system overflow or spill to report in 2024.						

Appendix C

Appendix C – Biosolids Quality Report

2024 - IROQUOIS WWTP MONTHLY AEROBIC BIOSOLIDS CONCENTRATION RATIO

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Ammonia	1480	1300	1370	1540	1640	1650	3000	2760	2150	2320	1720	1390
Nitrate	1.2	1.2	0.4	2.1	1.5	0.5	1.2	1.4	0.2	0.4	0.4	0.4
Ammonia + Nitrate	1481	1301	1370	1542	1642	1651	3001	2761	2150	2320	1720	1390
Total Phosphorus	1230	942	1160	1100	1380	1300	1520	1470	1300	1250	1300	1400
Total Solids	16600	16500	26000	27200	18000	29300	30800	30800	31400	32400	30900	29700
Aluminum	1120	896	688	760	796.0	941.0	1080	1110	950	973	1290	1240
Arsenic	0.20	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.20
Cadmium	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.05
Chromium	1.73	1.52	1.28	1.42	1.44	1.95	2.06	1.91	2.38	1.98	2.30	2.44
Cobalt	0.14	0.11	0.08	0.08	0.08	0.10	0.11	0.09	0.12	0.12	0.15	0.16
Copper	47.70	35.60	30.30	28.00	28.10	39.50	39.10	34.50	38.40	37.50	41.10	39.20
Lead	0.90	1.00	0.80	0.60	0.60	0.90	0.90	0.80	1.00	0.80	0.90	0.90
Mercury	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01
Molybdenum	0.43	0.35	0.31	0.30	0.30	0.42	0.46	0.43	0.48	0.35	0.42	0.44
Nickel	1.00	0.85	0.74	0.80	0.82	1.04	1.05	0.96	1.52	1.10	1.17	1.33
Selenium	0.20	0.10	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Zinc	23.60	17.30	15.50	15.40	15.50	20.80	23.20	23.00	26.40	24.00	27.70	31.00

Metals ratio = mg metals/kg solids

	Metal/Solids Ratio (Sludge)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Limit
Arsenic	12.05	6.06	3.85	3.68	5.56	3.41	6.49	6.49	6.37	6.17	6.47	6.73	**170**
Cadmium	2.41	1.82	1.15	1.10	1.67	1.37	1.30	0.97	1.27	0.93	1.29	1.68	**34**
Chromium	104.2	92.1	49.2	52.2	80.0	66.6	66.9	62.0	75.8	61.1	74.4	82.2	**2800**
Cobalt	8.43	6.67	3.08	2.94	4.44	3.41	3.57	2.92	3.82	3.70	4.85	5.39	**340**
Copper	2873	2158	1165	1029	1561	1348	1269	1120	1223	1157	1330	1320	**1700**
Lead	54.2	60.6	30.8	22.1	33.3	30.7	29.2	26.0	31.8	24.7	29.1	30.3	**1100**
Mercury	0.66	0.30	0.31	0.22	0.33	0.27	0.26	1.30	0.22	0.25	0.36	0.27	**11**
Molybdenum	25.90	21.21	11.92	11.03	16.67	14.33	14.94	13.96	15.29	10.80	13.59	14.81	**94**
Nickel	60.2	51.5	28.5	29.4	45.6	35.5	34.1	31.2	48.4	34.0	37.9	44.8	**420**
Selenium	12.05	6.06	3.85	3.68	11.11	6.83	6.49	6.49	6.37	6.17	6.47	6.73	**34**
Zinc	1422	1048	596	566	861	710	753	747	841	741	896	1044	**4200**
Sludge is Acceptable	FALSE	FALSE	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 - ECA Annual Report Requirements

Facility ECA # 9689-8MQHNK **Section 10.6**	**Section in Report**
(a) A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7, including an overview of the success and adequacy of the Works;	Treatment Flows, Raw Sewage, Effluent Quality
(b) A description of any operating problems encountered and corrective actions taken;	Operating Issues and Problems
(c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;	Maintenance
(d) A summary of any effluent quality assurance or control measures undertaken in the reporting period;	Effluent Quality
(e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment; and	Flow Meter Calibrations
(f) A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 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;	Sludge Generation
(h) A summary of any complaints received during the reporting period and any steps taken to address the complaints;	Complaints
(i) A summary of all By-pass, spill or abnormal discharge events; and	Appendix B
(j) Any other information the District Manager requires from time to time.	N/A

Collection ECA # 165-W601 **Schedule E**	
4.6.3 If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.	Operating Issues and Problems
4.6.4 Includes a summary of any operating problems encountered and corrective actions taken.	Operating Issues and Problems
4.6.5 Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.	Maintenance
4.6.6 Includes a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.	Summary of Complaints
4.6.7 Includes a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.	Maintenance
4.6.8 Includes a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including: a) Dates; b) Volumes and durations; c) If applicable, loadings for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E.coli; d) Disinfection, if any; and e) Any adverse impact(s) and any corrective actions, if applicable.	Operating Issues and Problems Appendix B

Collection ECA # 165-W601 **Schedule E**	
4.6.9 Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable: a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted. b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines. c) An assessment of the effectiveness of each action taken. d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives. e) Public reporting approach including proactive efforts.	Maintenance Operating Issues and Problems