



Wastewater Annual Report 2024

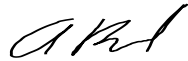


March 2025, Version 1.0

2024 Annual Wastewater Report

Version 1.0

Prepared by:

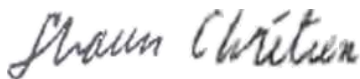


Andy Bilash
Manager of Wastewater Treatment

March 25, 2025

Date

Approved by:



Shawn Chretien
Director of Water Wastewater Treatment &
Compliance

March 25, 2025

Date

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Introduction to the Annual Wastewater Report

Under Environmental Compliance Approval (ECA) agreements issued by the Ministry of Environment, Conservation & Parks (MECP), the City is required to annually report on the values/parameters indicated in the ECA and made available to the District Manager by March 31st of the calendar year following the period being reported upon.

The City of Greater Sudbury (CGS) owns and operates ten (10) Wastewater Treatment Plants and four (4) Wastewater Lagoons each having their own distinct annual reporting requirements. To ensure compliance, the city will report on each facility separately. Individual facility annual performance reports are attached at the end of the report an appendix.

The Annual Wastewater Facility Annual Report is available to the public, free of charge by visiting the City of Greater Sudbury's Website <https://www.greatersudbury.ca/>

Azilda Wastewater Treatment

Annual Performance Report

The Azilda Wastewater Treatment Plant is an extended aeration process plant located at 564 St. Agnes Street, having a rated capacity of 3,300 m³/d discharging its effluent to Pilon Drain (known as Azilda Creek) and eventually into the Whitson River.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

Influent monitoring data, historical trending of sewage characteristics are reviewed monthly by compliance and plant supervisory staff. No abnormalities were observed for the Azilda WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers (ECOs) can be deployed to investigate and react as needed. Below is a table summarizing the yearly averages of recorded monitoring data.

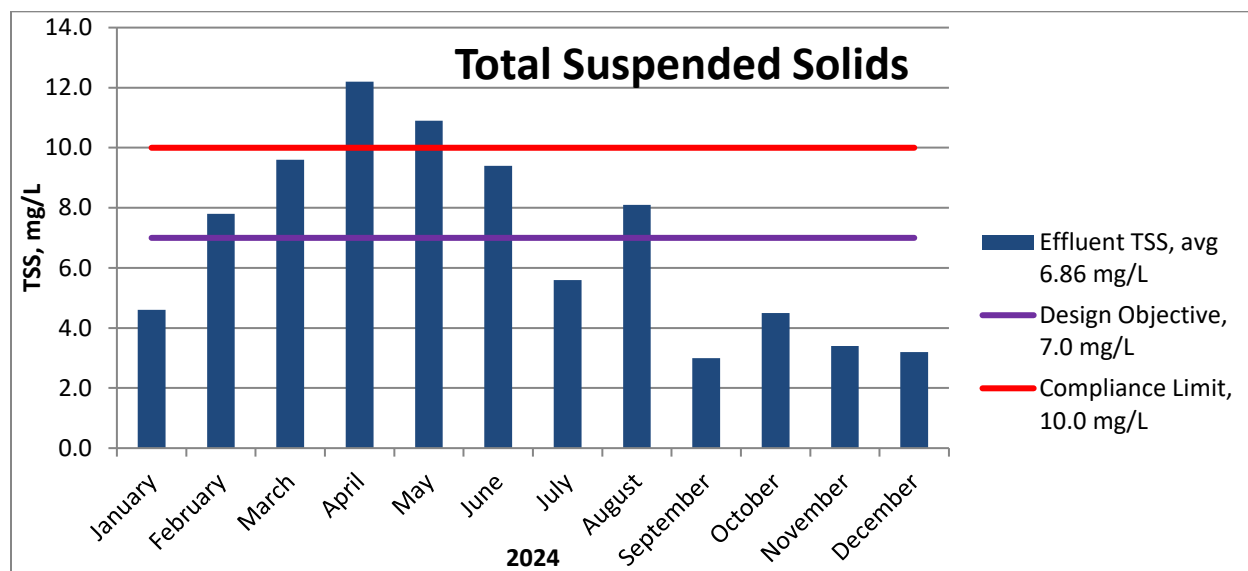
Influent	2024	2023	2022	2021	2020	2019
BOD₅ (mg/L)	123	134	188	155	131	143
CBOD₅ (mg/L)	96	109	164	144	106	117
TSS (mg/L)	138	147	157	126	108	117
TP (mg/L)	3.59	3.88	4.75	4.39	3.10	3.66
TKN (mg/L)	27.62	23.69	30.38	28.32	25.20	25.30

b. 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.

All effluent monitoring data is reviewed monthly by compliance and plant supervisory staff. For the Azilda WWTP, all parameters fell within plant design objectives with the exception of Total Suspended Solids for April and May due to the higher flows of spring runoff. Consistent monitoring and solids adjustment brought parameters back to normal.

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m³/d)	1780	2047	1650	1607	2125	2238
CBOD₅ (mg/L)	2.75	2.48	2.83	1.95	2.56	3.11
TSS (mg/L)	6.86	6.43	6.82	7.49	8.04	7.84
TP (mg/L)	0.29	0.21	0.19	0.31	0.28	0.31
Total Ammonia (mg/L)	1.27	4.06	2.27	2.26	1.68	1.74
E.coli (CFU/100 mL)	33	13	16	9	22	56
pH	6.60	6.77	6.54	6.8	7.00	6.83
Total Chlorine (mg/L) (dechlor)	0.006	0.011	0.014	0.009	NA	NA

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD ₅ (kg/d)	6.26	4.97	4.42	3.16	5.91	6.86
TSS (kg/d)	14.76	13.5	10.44	12.54	18.82	19.51
TP (kg/d)	0.57	0.38	0.29	0.5	0.64	0.68
Total Ammonia (kg/d)	3.1	7.09	2.2	3.4	4.0	3.3



c. Summary of all operating issues encountered, and corrective actions taken.

DATE	PARAMETER	Problem/Exceedance	CORRECTIVE ACTION TAKEN	PROBABLE CAUSE	DATE SENT to MECP
06-Feb-24	Total Phosphorus (TP)	Outside ECA Limit	Replaced Chemicals and repaired equipment	Mechanical Issues/Expired Chemicals	6-Feb-2024
05-Mar-24	Total Chlorine Residual	Outside ECA Limit	Added HTH & repaired equipment	Loose fitting	7-Mar-2024
15-Apr-24	OTHER	Outside ECA Limit	Reduced Chlorine added dechlor pucks	weather/increased cl2 feed	18-Apr-2024
30-Apr-24	Total Suspended Solids (TSS)	Outside ECA Limit	Adjust wasting and chemical feeds	Weather/runoff	6-May-2024
31-May-24	Total Suspended Solids (TSS)	Outside ECA Limit	Adjusted wasting	Over wasting	31-May-24
20-Aug-24	pH	Outside ECA Limit	Added Lime	Overdose of ferric	30-Aug-24
13-Sep-24	pH	Outside ECA Limit	adjusted chemical/added lime	temperature and ferric feed rate	7-Sep-2024

d. 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.

The operating and maintenance staff at the Azilda WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP. See tables below for details.

Corrective (25)		
Change Cl2 whips	install/hardwire for D.O TSS and Temp	Raw Sampler Maintenance repair pump
Chlorinator leak	Lab fan jammed	Replace belt
Clean shop	Leak in Ferric tank	replace heat trace
Effluent Booster Pump Cover emer. lighting in shop does not work	leak on input seal	Replace pendant
Extend Ferric Lines - Azilda fitting leaking	lime tote issue	Roof drain leak
Inspection - Warranty	Line frozen solid	Sampler is not functioning properly
Sludge Loading Pendant maintenance	Not sealing	several alarms on diesel generator
	Oversee/Assist GFL with Ferric Tank	

Regular Scheduled Maintenance (190 Completed)		
Pump Inspection (submersible)	D.O. Meter Calibration	Change Hydraulic filter
Diesel Engine Routine Annual	Clarifier/Aeration Tank and Skimmer	Snow Blower Maint
Pump Inspection (Non-Submersible)	Oil Change Routine	Chemical Pump Monthly Inspection
Flush and Clean	Check Oil	Chemical Pumps Bi-Annual PM
Chlorinator Yearly PM	Clean CL2 Chamber	Thermography Inspections
Diesel Generator Test (Monthly)	Filter/Belt Maintenance	Dechlor ORP Monthly Insp
Heater Inspection	Cl2 Air Monitor Calibrations	Dechlor HVAC Inspection
Change Battery	Clean and inspection of Tank/Chamber	Azilda 10 Ton Condenser Annual
Composite Sampler	Routine Equipment Maintenance	Cold Weather Preparations
Centrifugal Blower Inspection	Piping and Valves Drain Hoses	First Aid Box Inspections
Clarifier drive/Gearbox Routine	Spring Runoff Preparations	Lockout Station Inspection
Comminutor Inspection	Plants	Emerg. & Exit Lighting Insp.
Load Bank Test	SCBA Inspection (6 months)	Operation Manual Review
Air Compressor Mtce (quarterly)	Composite Sampler Inspection	House Cleaning
Air Compressor Mtce (annual)	By-Annual	Colorimeter Verification (monthly)
Motor Condition Monitoring	Chlorine Vacuum Regulators	Spill Kit Inspection (Quarterly)
Elec.	Yearly.	
Sensor calibration		

Regulated Works Orders (22 Completed)		
Backflow Preventer Test	Anchor Point Inspection	Operation Manual Review
Lifting Appliance Annual Insp	Monthly Safety Checks	Flow Meter Calibration

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and process monitoring. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to a monthly and annual performance report by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Azilda WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter Raw Tank #2 (FIT-102)	6/13/2024	CO1544-2406-38
Flow Meter Raw Tank #1 (FIT-101)	6/13/2024	CO1544-2406-37
Flow Meter, Bypass	6/13/2024	CO1544-2406-36
Flow Meter, Effluent	6/13/2024	CO1544-2406-35

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- 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 when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

For 2024 reporting year the wastewater treatment plant ran at approximately 54% of designed capacity. No increasing trend in deterioration of Final Effluent quality has been noticed when the annual average daily influent flow reaches 80% of the Rated Capacity. Design objectives were reached more than 50% of the time.

h. 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.

Azilda generated 4,132 m³ of waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	April	May	June
Loads	10	9	18	9	8	8
Vol m ³	397.33	357.53	445.68	294.13	328.46	331.26

	July	Aug	Sept	Oct	Nov.	Dec.
Loads	10	7	8	10	6	8
Vol m ³	402.44	280.83	328.03	405.89	244.28	315.55

i. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints recorded for Azilda WWTP for this reporting year.

- j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.**

There were no Bypasses or Overflows for the current reporting year.

- k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.**

There was no Notice of Modifications to Sewage Works completed for this reporting year.

- l. 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.**

Removed sediment and cleaned out ferric tank. Found ferric tank leak and repaired. Cleaned out grit channels multiple times as needed. Cleaned out Chlorine contact chamber.

- m. 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.**

Continued with capital project that commenced in 2022.

- n. Summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.**

There were no deviations to the monitoring schedule in the current reporting year and no monitoring changes required for the next reporting year.

Chelmsford Wastewater Treatment

Annual Performance Report

The Chelmsford Wastewater Treatment Plant is a conventional activated sludge plant located at 265 Laurette St Chelmsford, it consists of three separate plants referred to as A plant, B plant and C plant. With rated capacities of 4,000 m³/d for A plant, 4,000 m³/d for B plant and 10,200 m³/d for C plant for a total Peak Flow Rated Capacity of 18,200 m³/d, discharging effluent to the Whitson River.

a. A summary and interpretation of all monitoring data and a comparison to the compliance limits outlined in Compliance Limits Condition, including an overview of the success and adequacy of the Works.

Historical trending of influent and effluent data for the Chelmsford WWTP showed all parameters were within plant design objectives. Abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019
BOD ₅ (mg/L)	155.16	195.50	164.83	189.42	136.67	126.59
TSS (mg/L)	235	228	256	221	215	145
TP (mg/L)	3.85	3.22	3.22	3.32	3.20	3.12
TKN (mg/L)	23.37	24.60	22.47	26.58	23.85	35.69

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m ³ /d)	4491	4828	3552	4215	5344	5030
CBOD ₅ (mg/L)	3.78	3.12	4.72	2.92	3.89	3.51
TSS (mg/L)	7.42	8.03	7.43	5.58	6.18	7.55
TP (mg/L)	0.24	0.25	0.23	0.20	0.23	0.25
Total Ammonia (mg/L)	2.37	3.56	1.29	1.44	4.90	3.28
E.Coli (CFU/100 mL)	9474	2404	4278	2370	5950	5308
pH	6.65	6.90	6.77	7.19	7.35	6.87

b. Description of any operating problems encountered, and corrective actions taken.

Date	Parameter	Problem / Exceedance	Corrective Actions	Potential Cause	Date sent to MECP
01-Nov-23	Ammonia	Above ECA Limit	Configuration back to normal	Temperature and Plant configuration	23-Feb-2024

c. Summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

The operating and maintenance staff at the Chelmsford WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (33)

'A' Plant WAS valve not functioning Air Lock Bolt missing from guide rail Change level sensor or UV bank Discharge side Clean shop Collect and dispose of used oil from North Plants Cooling Pumps are plugged correct loose chain Guide rail for c east flyghts is bent H&S Inspection	Inspect WAS valve for A Plant Inspect/Correct Install GFCI in UV room Valve Exercise pipe in shop leaking Plant B Scum Box water is leaking into it. Pump failed Pump plugged repair leak repair the turnbuckles in B plant clarifier. Replace relay	Replace spring pin Replace UV bulbs Replace UV lamps that have reached end of life Air handle in A sludge tank Scum heating pipes Scum Pump Inspection Sump Pump not functioning correctly in dry well Trouble shoot UV Major alarm UV Major UV system Ballasts Inspect sampler
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Regular Scheduled Maintenance (295 Completed)

Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Diesel Generator Test (Monthly) UV Channel Online Clean & Insp UV Lamp Bi-weekly Composite Sampler Inspection Monthly Clarifier drive/Gearbox Routine Blower Inspection Diesel Engine 5 Year Inspection Maintenance	Motor Condition Monitoring Elec. D.O. Meter Calibration Clarifier/Aeration Tank and Skimmer Oil Change Routine Valve Exercise Clean CL2 Chamber Mechanical Bar Screen / Compactor Filter/Belt Maintenance Filter/Belt SCBA Inspection (6 months) Routine Equipment Maintenance Piping and Valves Drain Hoses Spring Runoff Preparations Plants	Composite Sampler Inspection By-Annual Spill Kit Inspection (Quarterly) Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM Thermography Inspections Chlorine Parts Inventory Cold Weather Preparations Grit Classifier Draining First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. Operation Manual Review House Cleaning Colorimeter Verification (monthly) AED monthly inspection UV lamp Assembly Monthly Clean and inspection of Tank/Chamber
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Regulated Works Orders (22 Completed)

Backflow Preventer Test Lifting Appliance Annual Insp Contract	Anchor Point Inspection Monthly Safety Checks High Voltage Gloves Testing	Lanyard Retractable Inspection (Annual) Operation Manual Review Flow Meter Calibration
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d. Summary of any effluent quality assurance or control measures undertaken in the reporting period.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week as well as samples collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by data clerk ensuring all information is accounted for. It is then sent to area supervisor for final review.

e. Summary of the calibration and maintenance carried out on all effluent monitoring equipment.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Chelmsford WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Effluent	6/11/2024	CO1544-2406-31
Flow Meter FIT-102 Chamber Plant 'A'	6/12/2024	CO1544-2406-32
Flow Meter FIT-103 Chamber Plant 'B'	6/12/2024	CO1544-2406-33
Flow Meter, FIT-101 Influent	6/11/2024	CO1544-2406-34

f. Condition description of efforts made, and results achieved in meeting the Design Objectives

For 2024 reporting year Chelmsford averaged approximately 68% of rated capacity and achieved its design objectives as listed in the ECA.

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.

Chelmsford generated 12140.59 m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	Apr	May	Jun
Loads	28	22	25	23	30	28
Vol m ³	1115.0	880.49	445.68	902.07	1164.6	1130.5
	Jul	Aug	Sep	Oct	Nov	Dec
Loads	26	24	21	29	19	28
Vol m ³	1061	974.2	847.39	1200.1	785.42	1096.5

g. Summary of any complaints received during the reporting period and any steps taken to address the complaints.

There were no complaints received for the Chelmsford WWTP during this reporting year

h. Summary of all By-pass, spill, or abnormal discharge events; and

There were no By-passes or spills reported at Chelmsford for this reporting year.

i. Any other information the Water Supervisor requires from time to time.

There is no further information required for this reporting year.

Coniston Wastewater Treatment

Annual Performance Report

The Coniston Wastewater Treatment Plant located at 121 Government Rd. Coniston is an activated sludge plant that utilizes an oxidation ditch in the process. The plant has a Peak Flow Rated Capacity of 3,000 m³/d, and discharges effluent to Coniston Creek.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed monthly by compliance and plant supervisory staff. No abnormalities were observed for the Coniston WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019
BOD ₅ (mg/L)	65	70	101	103	72	114
TSS (mg/L)	122	88	79	109	69	130
TP (mg/L)	2.93	3.11	3.41	3.62	3.10	3.98

b. 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.

All effluent monitoring data is graphed and reviewed monthly by compliance and plant supervisory staff. For the Coniston WWTP, all parameters fell within plant design objectives.

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m ³ /d)	1671	2095	1476	1298	1692	1730
CBOD ₅ (mg/L)	3.4	3.6	11	2.8	12.3	8.2
TSS (mg/L)	7.55	9.78	13.50	6.07	15.79	15.73
Total Residual Chlorine (mg/L)	0.72	0.68	0.73	0.67	0.84	0.76

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD ₅ (kg/d)	5.34	8.15	16.57	N/A	N/A	N/A
TSS (kg/d)	13.20	21.57	20.85	7.76	22.79	29.29

c. Summary of all operating issues encountered, and corrective actions taken.

Date	Parameter	Corrective Action Taken	Probable Cause	Date Sent
20-Jan-24	Total Chlorine Residual	Repaired faulty equipment	Switch over regulator failure	24-Jan-24

d. 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.

The operating and maintenance staff at the Coniston WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (25)		
Clarifier making noise	UPS failure Coniston	Lights Lunchroom
Have Old Cl2 line removed in basement	Chlorine Leak air leak	repair hole from Cl2 room
Grease 2 Ditch Gate Valves	#2 Chlorinator leaking whip connection	Repair heater
Replace Windsock		replace block heater
Insulation on Sludge Tank. Top needs repairs	Chlorine Leak Alarm	Install railing
Repair hinge on Back Door	replace battery	Check operation of Raw sampler
	replace generator bldg heater	Light bulb on CL2 alarm
	Office Light Switch repair	

Regular Scheduled Maintenance (152 Completed)		
Pump Inspection (submersible)	D.O. Meter Calibration	Thermography Inspections
Pump Inspection (Non-Submersible)	Clean CL2 Chamber	SCBA Annual Certification
Chlorinator Yearly PM	Cl2 Air Monitor Calibration	Cold Weather Preparations
Diesel Generator Test (Monthly)	UPS load test	First Aid Box Inspections
Composite Sampler Inspection Monthly	Piping and Valves Drain Hoses	Lockout Station Inspection
Clarifier drive/Gearbox Routine	Spring Runoff Preparations	Emerg. & Exit Lighting Insp.
Load Bank Test	Plants	Operation Manual Review
Blower Inspection	SCBA Inspection (6 months)	House Cleaning
Motor Condition Monitoring Elec.	Composite Sampler Inspection By-Annual	Colorimeter Verification (monthly)
Snow Blower Maintenance	Chlorine Vacuum Regulators Yearly.	Sodium Bisulphite P-Traps
	Spill Kit Inspection (Quarterly)	

Regulated Works Orders (25 Completed)		
Backflow Preventer Test	Anchor Point Inspection	Lanyard Retractable Inspection (Annual)
Lifting Appliance Annual Insp Contract	Monthly Safety Checks	Operation Manual Review
	Flow Meter Calibration	

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Coniston WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Process, No.2 Effluent	6/11/2024	CO1544-2406-14
Flow Meter, Process, No. 1 Raw	6/11/2024	CO1544-2406-15

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- 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 when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

For 2024 reporting year Coniston WWTP averaged approximately 56% of rated capacity and achieved its design objectives as listed in the ECA.

h. 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.

Coniston generated 3508.14m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan.	Feb.	Mar.	Apr.	May	June
Loads	4	7	10	9	8	7
Vol m ³	157.84	268.86	366.59	355.53	311.78	277.93
	July	Aug	Sept.	Oct.	Nov.	Dec.
Loads	8	9	9	6	6	6
Vol m ³	324.55	359.5	361.85	240.32	249.39	234

i. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints recorded for Coniston WWTP for this reporting year.

j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

Date	Duration	Type of Occurrence	Receiving Stream ID	VOL (m ³)	Level of Treatment Received	Reason for Event
05-Mar-24	52 hrs	Plant bypass: flow exceeds design capacity	Coniston Creek	6604.0	Disinfection	Spring run-off
04- Apr-24	82.5 hrs	Plant bypass: flow exceeds design capacity	Coniston Creek	6225.0	Disinfection	Spring run-off
12-Apr-24	48 hrs	Plant bypass: flow exceeds design capacity	Coniston Creek	3941.0	Disinfection	Spring run-off
29-Apr-24	12 hrs	Plant bypass: flow exceeds design capacity	Coniston Creek	1175.0	Disinfection	Spring run-off

- k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.**

There were no Notice of Modifications to Sewage Works for this reporting year.

- l. 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.**

No major changes for the current reporting year.

Capital upgrades needed have been identified and added to capital plans.

- m. 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.**

No current construction projects.

- n. Summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.**

There were no deviations to the monitoring schedule in the current reporting year, and no monitoring changes required for the next reporting year.

Dowling Wastewater Treatment

Annual Performance Report

The Dowling Wastewater Treatment Plant located at 62 Riverside Dr. Dowling is an extended aeration activated sludge plant, having a Peak Flow Rated Capacity of 3,200 m³/d, discharging effluent to the Onaping River.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed monthly by compliance and plant supervisory staff. No abnormalities were observed for the Dowling WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019
BOD ₅ (mg/L)	16	23	43	28	40	42
TSS (mg/L)	37	48	45	46	44	40
TP (mg/L)	0.90	0.98	1.12	0.97	0.94	1.32

b. 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.

Monthly, all effluent monitoring data is graphed and reviewed by compliance and plant supervisory staff. For the Dowling WWTP, all parameters fell within plant design objectives and compliance limits.

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m ³ /d)	2965	2614	1506	1951	1825	2069
CBOD ₅ (mg/L)	2.47	2.50	2.93	2.57	3.38	N/A
TSS (mg/L)	5.49	5.24	4.62	3.93	5.28	6.84
TP (mg/L)	0.46	0.49	0.44	0.47	0.48	0.54
E.coli (CFU/100 mL)	12	17	17	22	24	52
pH	6.59	6.69	6.57	6.72	6.77	6.73
Total Residual Chlorine (mg/L)	0.9	0.68	0.60	0.63	0.64	0.58

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD ₅ (kg/d)	7.45	7.66	4.63	6.92	6.15	15.23
TSS (kg/d)	15.95	14.10	7.05	7.54	9.47	14.57
TP (kg/d)	1.36	1.26	0.66	0.91	0.85	1.05

c. Summary of all operating issues encountered, and corrective actions taken.

There were no abnormal operating issues for this reporting year.

d. 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.

The operating and maintenance staff at the Dowling WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (20)		
All Outside lights on all the time Change Batt. on the RAW Sampler clarifier drive gearbox replacement Emergency lights out Fan in Garage Gearbox inspection Monitor first delivery	Need new a/c unit installed in lab Need new ballast installed in lab Need new disconnect switch installed oil bubbling in blower 2 Possible air leak pump tripped	Rebuild pump Replace disconnect for heater Replace locker room heater Replace suction tubing plus heat trace Sodium Bisulphite pump speed error The bypass cannot be opened Walden Plant visit setup

Regular Scheduled Maintenance (181 Completed)		
Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Chlorinator Yearly PM Diesel Generator Test (Monthly) Composite Sampler Inspection Monthly Comminutor Inspection Load Bank Test Blower Inspection Motor Condition Monitoring Elec. D.O. Meter Calibration Check Oil Clean CL2 Chamber	Lanyard Retractable Inspection (Annual) Filter/Belt Maintenance Cl2 Air Monitor Calibration Clean and inspection of Tank/Chamber Piping and Valves Drain Hoses Spring Runoff Preparations Plants SCBA Inspection (6 months) Composite Sampler Inspection By-Annual Chlorine Vacuum Regulators Yearly. Spill Kit Inspection (Quarterly) Clean Bar Screens Monthly	Dechlor ORP Monthly Insp Dechlor HVAC Inspection Open channel weir measurement verification Cold Weather Preparations First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. Operation Manual Review House Cleaning Colorimeter Verification (monthly) Sodium Bisulphite P-Traps Thermography Inspections Chemical Pumps Bi-Annual PM

Regulated Works Orders (38 Completed)		
Backflow Preventer Test Lifting Appliance Annual Insp Contract	Anchor Point Inspection Monthly Safety Checks Flow Meter Calibration	Lanyard Retractable Inspection (Annual) Operation Manual Review

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Dowling WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, RAS	6/12/2024	CO1544-2406-39
Flow Meter, WAS	6/12/2024	CO1544-2406-40
Flow Meter, Plant Bypass	6/12/2024	CO1544-2406-41
Flow Meter, Process	6/12/2024	CO1544-2406-42

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- 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 when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

For 2024 reporting year Dowling WWTP averaged approximately 93% of rated capacity and achieved its design objectives as listed in the ECA.

The plant has been listed on the capital works plan for updates and upgrades.

h. 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.

Dowling generated 2,000 m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan.	Feb	Mar	Apr	May	June
Loads	4	5	7	7	5	4
Vol m ³	157.21	268.86	181.77	197.84	189.51	151.4
	July	Aug	Sept	Oct	Nov	Dec
Loads	4	5	4	5	4	4
Vol m ³	162.12	200.03	160.11	203.62	160.43	159.78

i. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints received for Dowling in this reporting year.

j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

There were no By-passes or spills reported at Dowling for this reporting year.

k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

There were no Notice of Modifications to Sewage Works for this reporting year.

l. 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.

Raw grit channels and Chlorine contact chamber were cleaned to allow for maximum flow through. Rebuilt the last of three raw pumps to allow for efficient pumping power.

m. 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.

No current construction projects.

n. Summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

There were no deviations to the monitoring schedule in the current reporting year. The average daily flows were above 2500 m³ for 2024 and this triggers the Federal Acute Lethality sampling requirement. As a precaution CGS continued with quarterly sampling throughout 2024 and the samples resulted in no kills. So, for the 2025 sampling year CGS is moving into the reduced sampling for Acute Lethality which is a yearly sample.

Falconbridge Wastewater Treatment

Annual Performance Report

The Falconbridge Wastewater Treatment Plant located at Hodge St., Falconbridge is a low-rate biological filter and wetland polishing system, having a Rated Capacity of 909 m³/d, discharging effluent to NIR creek and eventually to the Coniston creek.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed monthly by compliance and plant supervisory staff. No abnormalities were observed for the Falconbridge WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019	2018
BOD ₅ (mg/L)	137	145	195	199	168	186	215
TSS (mg/L)	132	119	120	120	88	116	150
TP (mg/L)	5.61	6.82	6.40	7.54	6.83	6.68	7.39

b. Summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, and loading. including an overview of the success and adequacy of the Works.

Monthly, all effluent monitoring data are graphed and reviewed by compliance and plant supervisory staff. For the Falconbridge WWTP all parameters fell within plant design objectives and compliance limits.

Effluent	2024	2023	2022	2021	2020	2019	2018
Avg Daily Flow (m ³ /d)	316	297	292	308	316	250	364
BOD ₅ (mg/L)	1.66	1.62	1.72	2.79	1.62	3.28	1.49
TSS (mg/L)	2.79	3.14	3.33	3.13	2.92	3.56	3.83
TP (mg/L)	0.05	0.03	0.20	0.13	0.04	0.27	0.04
TKN (mg/L)	0.45	0.50	0.47	0.80	1.17	0.72	1.14
Total Ammonia (mg/L)	0.16	0.20	0.25	0.43	0.25	0.17	0.65
Nitrite (mg/L)	0.12	0.19	0.06	0.09	0.09	0.70	0.09
Nitrate (mg/L)	0.19	0.25	0.22	0.19	0.21	0.36	0.50
E.coli (CFU/100 mL)	647	508	2629	1138	1071	265	376

c. Summary of all operating issues encountered, and corrective actions taken.

There were none for this reporting year.

d. 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.

The operating and maintenance staff at the Falconbridge WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (3)		
Post Signage	Repair exit signs	Emerg. Light repair

Regular Scheduled Maintenance (6 Completed)	
Clean and inspection of Tank/Chamber	Piping and Valves Drain Hoses
Cold Weather Preparations	Operation Manual Review

Regulated Works Orders (4 Completed)	
Backflow Preventer Test	Flow Meter Calibration

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct rounds which are recorded on checklists. On site flow monitoring record continuous trending for various flows. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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 or recommended by the manufacturer.

The calibration of flow meters was conducted by a third-party contractor. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Process	6/11/2024	CO1544-2406-17

g. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints recorded for Falconbridge in the current reporting year.

h. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

There were no Bypasses or overflows for Falconbridge in the current reporting year.

i. Summary of all Notice of Modifications to Sewage Works completed.

There were no modifications to the sewage works for this reporting year.

j. 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.

No changes for this reporting year.

Levack Wastewater Treatment

Annual Performance Report

The Levack Wastewater Treatment Plant located at 45 High St., Levack, is an extended aeration activated sludge plant having a Peak Flow Rated Capacity of 5,675 m³/d, discharging effluent to the Onaping River.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed monthly by compliance and plant supervisory staff. No abnormalities were observed for the Levack WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

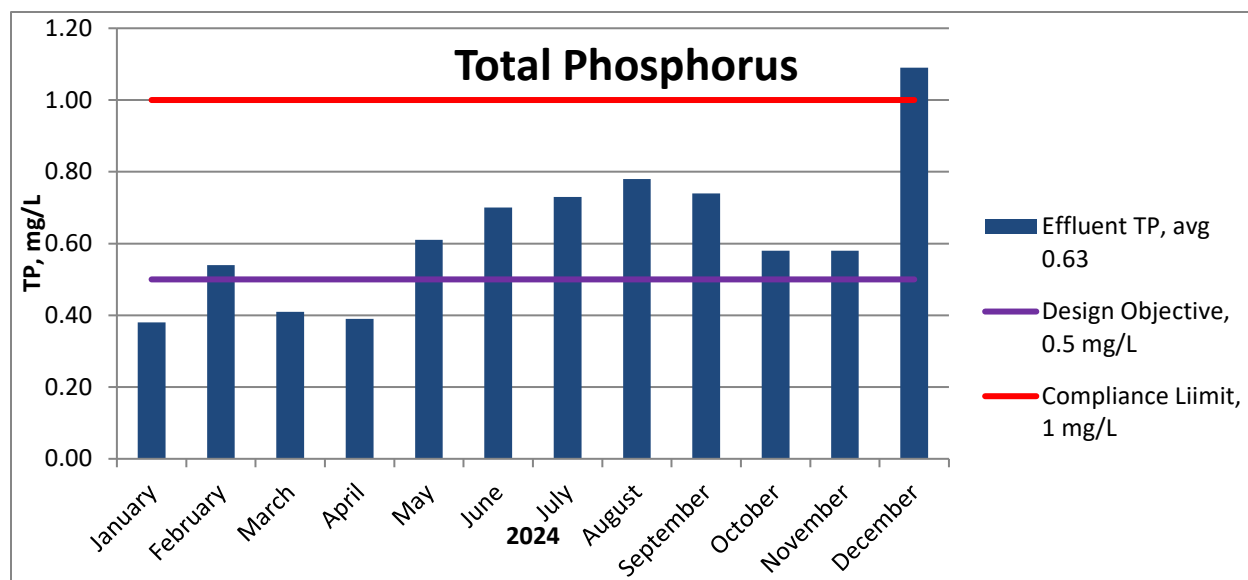
Influent	2024	2023	2022	2021	2020	2019
BOD ₅ (mg/L)	108	100.5	139.8	148.8	126.8	N/A
TSS (mg/L)	163	132	87	173	147	201
TP (mg/L)	4.43	3.75	3.73	5.98	3.65	3.68
TKN (mg/L)	23.29	23.91	26.18	29.59	39.33	27.08
Total Ammonia (mg/L)	18.99	42.63	22.53	23.16	18.34	23.18

b. 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.

All effluent monitoring data is graphed and reviewed annually by compliance and plant supervisory staff. For the Levack WWTP all parameters fell within plant design objectives and compliance limits. Apart from Total Phosphorus for the month of December due to mechanical failure.

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m ³ /d)	870	1031	875	831	1073	863
CBOD ₅ (mg/L)	2.74	3.21	3.03	2.73	3.04	2.88
TSS (mg/L)	7.94	7.61	6.63	6.61	6.96	6.15
TP (mg/L)	0.63	0.37	0.37	0.47	0.46	0.45
E.coli (CFU/100 mL)	5	3	4	5	8	6
Total Residual Chlorine (mg/L)	0.60	0.70	0.70	0.69	0.58	0.69

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD ₅ (kg/d)	2.51	3.27	2.58	2.34	3.18	2.34
TSS (kg/d)	6.94	8.23	5.76	5.59	7.45	5.08
TP (kg/d)	0.54	0.38	0.33	0.40	0.49	0.38



c. Summary of all operating issues encountered, and corrective actions taken.

DATE	PARAMETER	Problem/Exceedance	CORRECTIVE ACTION TAKEN	PROBABLE CAUSE	DATE SENT to MECP
26-Jun-24	NA	Process Upset from Unknown Substance	Preventative inspections completed. CI and Residential Inspections. Education and Outreach regarding	Suspected discharge of petroleum hydrocarbons in collection system	NA
31-Dec-24	Total Phosphorus (TP)	Above ECA Limit	Replaced Chemical feed hose	Mechanical Issue	6-Feb-2024

d. 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.

The operating and maintenance staff at the Levack WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (12 Completed)		
Blower 1 VFD issue Check out low temp Grit is getting stuck after the first section Intrusion Alarm not functioning	Lower skimmer arm for the summer Need new VFD Old Ferric System to be disconnected and removed RAS flowmeter not reading correctly	Replace door safety sensor replace fitting for hosing Replace head house heater Roof Leak

Regular Scheduled Maintenance (182 Completed)		
Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Chlorinator Yearly PM Diesel Generator Test (Monthly) Load Bank Test	Oil Change Routine Clean CL2 Chamber Mechanical Bar Screen / Compactor Filter/Belt Maintenance Cl2 Air Monitor Calibration UPS load test	Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM Thermography Inspections Dechlor ORP Monthly Insp Dechlor HVAC Inspection Cold Weather Preparations

Classifier Maintenance Routine Blower Inspection Diesel Engine 5 Year Inspection Motor Condition Monitoring Elec. D.O. Meter Calibration Clarifier/Aeration Tank and Skimmer	Piping and Valves Drain Hoses Spring Runoff Preparations Plants SCBA Inspection (6 months) Composite Sampler Inspection Chlorine Vacuum Regulators Spill Kit Inspection (Quarterly)	First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. House Cleaning Colorimeter Verification (monthly) Overhead Door Inspection
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Regulated Works Orders (27 Completed)		
Backflow Preventer Test Lifting Appliance Annual Insp Contract	Flow Meter Calibration Anchor Point Inspection	Monthly Safety Checks Operation Manual Review

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Levack WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Effluent	6/12/2024	CO1544-2406-43

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- 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 when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

For 2024 reporting year Levack WWTP averaged approximately 38% of rated capacity and achieved its design objectives as listed in the ECA.

h. 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.

Levack generated 2126.8 m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into a class A biosolid. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	April	May	June
Loads	5	4	4	5	4	4
Vol (m ³)	209.85	157.03	162.39	203.18	160.46	164.41
	July	Aug	Sept	Oct	Nov	Dec
Loads	5	4	4	5	3	5
Vol (m ³)	204.79	167.72	166.43	205.07	124.22	201.25

i. Summary of any complaints received, and any steps taken to address the complaints.

Incident Location	Subject	Corrective Action
Levack WWTP	callback request- strong sewer smell	Hosed down tanks and closed headworks door

j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

There were no Bypasses or overflows for Levack in the current reporting year.

k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

There were no modifications to the sewage works for this reporting year.

l. 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.

Installed VFD controls to both blowers to allow for better process control. Cleaned both sides of Chlorine contact chamber to continue to maximize disinfection and flow through.

m. 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.

No Changes or updates.

n. Summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

There were no deviations to the monitoring schedule in the current reporting year, and no monitoring changes required for the next reporting year.

Lively Wastewater Treatment

Annual Performance Report

The Lively Wastewater Treatment Plant located at 231 First Ave, Lively is an extended aeration process plant having a Peak Flow Rated Capacity of 3,000 m³/d, discharging effluent to Meatbird Creek.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed monthly by compliance and plant supervisory staff. There were no abnormalities seen for the Lively WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental compliance officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019	2018
BOD ₅ (mg/L)	113	122	136	106	77	147	131
TSS (mg/L)	123	209	120	91	87	126	138
TP (mg/L)	3.27	3.32	3.99	3.67	3.21	3.31	4.02
TKN (mg/L)	28.31	21.67	32.14	25.29	27.31	27.63	34.63

b. 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.

All effluent monitoring data is graphed and reviewed annually by compliance and plant supervisory staff. For the Lively WWTP all parameters fell within plant design objectives and compliance limits.

Effluent	2024	2023	2022	2021	2020	2019	2018
Avg Daily Flow (m ³ /d)	1579	1975	1752	1252	832	1146	1602
CBOD ₅ (mg/L)	4.10	5.11	6.64	2.19	4.66	4.66	2.54
TSS (mg/L)	6.61	8.40	10.62	7.93	10.72	12.21	8.26
TP (mg/L)	0.36	0.31	0.44	0.37	0.73	0.51	0.36
E.coli (CFU/100 mL)	3	5	7	6	28	115	22
pH	6.74	11.32	6.69	7.01	7.09	6.86	6.94
Total Residual Chlorine (mg/L)	0.88	0.93	0.85	0.81	0.83	0.81	0.67

Effluent (Loading)	2024	2023	2022	2021	2020	2019	2018
CBOD ₅ (kg/d)	6.18	10.34	9.95	2.74	2.73	5.74	3.80
TSS (kg/d)	9.62	16.75	17.52	10.16	8.07	15.62	13.17
TP (kg/d)	0.52	0.61	0.71	0.46	0.53	0.58	0.56

c. Summary of all operating issues encountered, and corrective actions taken.

DATE	PARAMETER	Problem/ Exceedance	CORRECTIVE ACTION TAKEN	PROBABLE CAUSE	DATE SENT to MECP
04-Oct-24	pH	Below ECA Limit	Added lime and continuous sampling	Unknown substance came through plant	07-Oct-24
25-Oct-24	pH	Below ECA Limit	Added lime and continuous sampling increased and monitored Chlorine	Unknown substance came through plant	30-Oct-24
26-Oct-24	pH	Below ECA Limit	Added lime and continuous sampling increased and monitored Chlorine	Unknown substance came through plant	30-Oct-24
27-Oct-24	pH	Below ECA Limit	Added lime and continuous sampling increased and monitored Chlorine	Unknown substance came through plant	30-Oct-24
24-Sep-24	Various Samples	No samples taken	Education & Training	Operator Error	01-Nov-24
06-Nov-24	NA	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
09-Nov-24	pH	Below ECA Limit	Added Lime	Unknown substance came through plant	14-Nov-24
10-Nov-24	pH	Below ECA Limit	Added Lime	Unknown substance came through plant	14-Nov-24
11-Nov-24	pH	Below ECA Limit	Added Lime	Unknown substance came through plant	14-Nov-24
12-Nov-24	pH	Below ECA Limit	Added Lime	Unknown substance came through plant	14-Nov-24
22-Nov-24	NA	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
22-Nov-24	pH	Below ECA Limit	Added Lime	Unknown substance came through plant	25-Nov-24
06-Dec-24	NA	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
10-Dec-24	NA	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA

d. 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.

The operating and maintenance staff at the Lively WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (12)		
Check 2 light fixtures in Chlorine room Clean out / Repairs at Lively WWTP	Lighting in chlorine room Rebuild comminutor Reset blower Install Proper Clarifier Disconnect	Sump Pump Maintenance Transmitter Failure Wire in Grindex to drain clarifier clarifier issues

Regular Scheduled Maintenance (105 Completed)		
Pump Inspection (submersible) Chlorinator Yearly PM Centrifugal Blower Inspection Clarifier drive/Gearbox Routine D.O. Meter Calibration Clarifier/Aeration Tank and Skimmer Sanitary Ejector Routine Clean CL2 Chamber Cl2 Air Monitor Calibration Exercise Valves Piping and Valves Drain Hoses	Aeration Filter Check Spring Runoff Preparations Plants SCBA Inspection (6 months) Composite Sampler Inspection By-Annual Chlorine Vacuum Regulators Yearly. Spill Kit Inspection (Quarterly) Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM	Cold Weather Preparations First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. Operation Manual Review House Cleaning Colorimeter Verification (monthly) Sodium Bisulphite P-Traps Thermography Inspections

Regulated Works Orders (20 Completed)		
Backflow Preventer Test Lifting Appliance Annual Insp Contract	Flow Meter Calibration Anchor Point Inspection	Monthly Safety Checks Operation Manual Review

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Lively WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Diversion chamber	6/12/2024	CO1544-2406-19
Flow Meter, Effluent	6/12/2024	CO1544-2406-20

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- **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 when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.**

For 2024 reporting year Lively WWTP averaged approximately 99% of rated capacity and achieved its design objectives as listed in the ECA.

Excess flow above rated capacity can be diverted to the Walden WWTP

h. 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.

Lively generated 2,152.57m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	Apr	May	June
Loads	5	7	8	7	3	0
Vol (m³)	199.45	276.32	303.76	269.59	115.43	0
	July	Aug	Sept	Oct	Nov	Dec
Loads	1	1	0	9	6	8
Vol (m³)	39.28	38.93	0	361.78	239.94	308.09

i. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints received for this reporting year.

j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.

Date	Duration	Type of Occurrence	Receiving Stream ID	VOL (m ³)	Level of Treatment Received	Reason for Event
12-Apr-24	69 hrs	Plant Bypass	Meatbird creek	9110.6	Disinfection	Spring Run off /Heavy Rain
29-Apr-24	4 hrs	Plant Bypass	Meatbird creek	1633.0	Disinfection	Heavy Rain

k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

There were no modifications to the sewage works for this reporting year.

l. 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.

Entire plant was taken down during the summer. Aeration Tanks and clarifiers were cleaned. Airlines and diffusers were repaired or replaced as needed. Skimmers and return sludge guns were repaired some valves were replaced as needed.

m. 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.

Received \$34.9M grant from the provincial government towards a \$70M project to increase overall capacity in the collection system, including Anderson and Jacob lift stations, and the Walden WWTP with the ultimate goal of decommissioning Lively WWTP after completion. All future wastewater from the Lively area will be treated at Walden WWTP.

n. Summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year.

There were no deviations to the monitoring schedule in the current reporting year, and no monitoring changes required for the next reporting year.

Sudbury Wastewater Treatment

Annual Performance Report

The Sudbury Wastewater Treatment Plant located at 1271 Kelly Lake Rd. Sudbury is a hybrid of a conventional activated sludge treatment plant and a high-rate treatment plant, having a Peak Flow Rated Capacity of 159,250 m³/d, discharging effluent to junction Creek and eventually into Kelly Lake.

a. Summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 2.8 or Condition 2.9, including an overview of the success and adequacy of the Works.

All effluent monitoring data is graphed and reviewed by compliance and plant supervisory staff. For the Sudbury WWTP all parameters fell within plant design objectives and compliance limits.

Influent	2024	2023	2022	2021	2020	2019
BOD₅ (mg/L)	97	118.58	160.17	186.17	133.58	139.58
TSS (mg/L)	181	192	234	291	171	183
TP (mg/L)	3.37	3.39	3.44	3.07	2.41	2.96
TKN (mg/L)	19.54	20.20	24.68	29.61	20.60	22.27
Alkalinity (mg/L as CaCO₃)	179	191.50	194.75	188.67	171.75	145.83

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m³/d)	53195	54493	49299	47313	58778	60629
CBOD₅ (mg/L)	6.30	6.08	6.85	6.82	5.46	6.04
TSS (mg/L)	12.22	11.86	11.48	10.53	11.09	11.75
TP (mg/L)	0.48	0.51	0.53	0.46	0.37	0.43
Free Ammonia as Nitrogen (µg/L)	142.52	230.10	111.80	141.37	51.83	35.28
TKN (mg/L)	15.60	11.81	14.26	15.71	14.44	13.18
Nitrite (mg/L)	0.14	0.16	0.33	0.55	0.62	1.35
Nitrate (mg/L)	0.50	0.49	0.45	0.41	0.54	0.93
Alkalinity (mg/L as CaCO₃)	154.4	155.40	154.58	152.49	145.74	143.13
E.coli (CFU/100 mL)	11	26	13	5	47	27
pH	6.91	6.81	6.72	6.93	7.00	7.00
Total Residual Chlorine (mg/L)	0.6	0.50	0.60	0.57	0.71	0.80

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD₅ (kg/d)	352.98	372.35	347.71	319.03	334.84	351.79
TSS (kg/d)	666.63	693.35	588.01	493.31	658.18	730.53
TP (kg/d)	26.28	28.37	25.72	21.71	22.45	26.51

b. Description of any operating problems encountered, and corrective actions taken.

DATE	Problem/ Exceedance	CORRECTIVE ACTION TAKEN	PROBABLE CAUSE	DATE SENT to MECP
29-Aug-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
11-Sep-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
24-Sep-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
26-Sep-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
27-Sep-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA

c. Summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

The operating and maintenance staff at the Sudbury WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (247)		
#4 Blower not functioning properly 15 sets of lights are not working in the headhouse. Septage Pump Septage Pump O/L 3rd Floor Pumpstation - leaking pipes Accompany Eaton, troubleshoot Sub Stn issues Add hose and waterline to grit area in the headhouse adjust louvers Blower #3 Fault Blower #4 not functioning properly Blower not functioning properly blower smokes while in operation blowers not working boiler leaking boiler leaks Boiler Maintenance with Ainsworth tech bracket broken/loose on 2b piping cable pulled out of connector change all chlorine whips Change belt Change Belts on AHU	Filters in alarm Fire Exit signs fix leak Fix lighting in Lab flange leaking Flange Leaking tunnel to new section flowmeter not reading correctly fuel level gauge incorrect Gas monitor display indicating missing sensor, General clean up Grey Double Axle Trailer Jack Stand broken Harmonic filter fan on left side not working Health and Safety Inspection (SP) hose ruptured/ leaking Hydraulic valve adjustment ignition and key get very hot melts wires Ignition switch smoking in alarm not working Input Shaft for race way gear box leaking install 7.5hp in RV dump to replace 5 hp Install Base for HH Sump Pump Install door stops where needed	pump not working pit flooding pump seal broken leaking flooding pit Rad in men's washroom leaking Recoat beam recoat beam Red light at top of submersible pump panel is on Relamp Pump Stn elevator lighting Remove inspect repair or replace Repair 6" valve Repair bracket Repair broken hood latch Repair broken valve on waterline repair coolant leak Repair emergency lights in basement repair hose reel Repair Emergency lighting Repair second unit heater in electrical shop repair shop heater fan motor Repair waterline at the back of the building repair yard lights Replace 611 lower decanting hose with piping

<p>Change Lighting over bar screen stairway fire / smoke detector in alarm check air valve operation through SCADA Check and replace bolts as needed Check Compressor in Pump Station Check emergency lights on south outside wall Check heat trace, green light not on Check hour meter on SCADA Check LIT-1543 Thickened tank level Check operation for clarifier #2 Check operation of classifier Check operation of compressor Check operation of pump Check operation of Septage Auger Check pump for overload Check pump pinch tube Check RAS pump #2 Check SCC-201 screw conveyor for fault alarm check smoke detector in generator room Check SP1521 for pump overload Chemical signage Chlorine whip line leaking Classifier leaking Clean / Organize Electrical Shop Clean / Organize Vehicle Clean LS Sea Can Clean sea cans for charcoal rupture indicator and clear hose rupture message Clean truck Clean up Mechanical shop Clean up storage in SS bldg Construct Odour control UV Racks Core Drill Drain holes for hosing Correct labeling delivery equalizing valves leak Disconnect electrical for roofers DM van - new tires Door handle for MCC Electrical room Door issues Effluent guard in Clarifier #1 effluent trough Emerg lighting at ramp near old mechanical shop Emerg lighting top floor SS bldg</p>	<p>Install ends on Unistrut Install Eyewash Stations Install new septage pump Install shelving and inventory filters Inventory VFDs Investigate & Repair Issue Investigate and repair flowmeter issue Investigate and Repair Leak at Check Valve label ferric lines Label cable trays Leak in Chlorine Vestibule Room Leaking from sampler pump hose. Left bulb for emergency light in MCC room Left light in basement tunnel near old section is burnt level reading 0.51 constantly. Lift and check operation of pump Lift pump light fixtures - repair/replace Lights not working exterior SS Building Loading valve for both poly tanks is leaking polymer. Loading valve for both poly tanks is leaking polymer. Look into operation of the HVAC unit low flow alarm Men's Bathroom Urinal Flushing Handle Mixer in alarm Mixer in fail to start alarm Modify Waste Oil and Coolant Tanks motor not turning move to pump station no start/electrical North Side Auger Assembly not working in alarm doors to the bin in the septage building is broken. Organize substn overload PI-1733 is tripping out after being reset. PI-1733 vent fan in overload alarm Pick up new door for boiler room Pipe slow leak. Plastic water pipes corner piece broken Plug Panel Holes in MCC Poly pump #2 not functioning</p>	<p>Replace bearing replace belts Replace Belts on Unit Replace brushes on Auger Replace corroded bolts on backflow preventer Replace emergency Light replace faulty shut off for green hose in men's dry Replace GFI on catwalk replace hose replace hot water tank effluent bldg Replace hour meter replace lenses on lab lights Replace motor in Vent Fan in chlorinator room Replace overhead lighting as needed Replace photo eye for yard lights replace sensor replace transmitter Replace Ultima X series Gas Monitor in Sludge Bldg Replace/Repair Emergency Lighting Requires new serpentine belt and tensioner Rewire compressor as needed RV Dump Potable water pipe leaking Sampler not pulling sample effectively. Scum Heater Clarifier \$6 Septage Pump 1521 install Septage Receiving eye wash station is broken. Sludge mixer 1542 fail to st/sp. Sludge Mixer 1544 goes into alarm Sludge mixer fail to st/sp. Sump Pp Install - Pumpstation Sump pump plugged switch to effluent water Throttling valve for ferric Transfer Tools/Supplies to new vehicle - Mike Transactor 12011 switch is broken Troubleshoot actuator Troubleshoot SWWTP Gen transfer issue Troubleshoot with Eaton Unit in alarm Valve Stem Cover Ventilation Fan Low Pressure ventilation in chlorinator room not working</p>
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Emergency Light on main floor of plant Emergency lighting in substation generator building. Emergency lighting between old and new section Emergency lights below require maintenance Control Power Failure leaking water	Potential leak in boiler room Prep 'A' Screw Auger for shipment Pump 152 needs maintenance flow meter reading is not showing on SCADA pump in alarm not working pump in alarm not working Pump in Overload pump is seized	When reset mixer will trip and go into alarm. Wire plug for contractor Working on bar screens with Jeppesen Yard Loader will not Run Filter inventory Pump leaking water Pump not functioning properly Extend Hose connection near grit classifier area
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Regular Scheduled Maintenance (1653 Completed)		
Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Flush and Clean Chlorinator Yearly PM Diesel Generator Test (Monthly) Heater Inspection Change Battery Composite Sampler Inspection Monthly Centrifugal Blower Inspection Clarifier drive/Gearbox Routine Comminutor Inspection Load Bank Test Air Compressor Mtce (quarterly) Air Compressor Mtce (annual) Motor Condition Monitoring Elec. Sensor calibration Contract Review Get contract ready for issuing	D.O. Meter Calibration Clarifier/Aeration Tank and Skimmer Oil Change Routine Check Oil Clean CL2 Chamber Filter/Belt Maintenance Cl2 Air Monitor Calibration Clean and inspection of Tank/Chamber Routine Equipment Maintenance Piping and Valves Drain Hoses Spring Runoff Preparations Plants SCBA Inspection (6 months) Composite Sampler Inspection By-Annual Chlorine Vacuum Regulators Yearly Weekly Hosing Head House Bin Area	Change Hydraulic filter Snow Blower Maint Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM Thermography Inspections Dechlor ORP Monthly Insp Dechlor HVAC Inspection Azilda 10 Ton Condenser Annual Cold Weather Preparations First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. Operation Manual Review House Cleaning Colorimeter Verification (monthly) Spill Kit Inspection (Quarterly) AED monthly inspection Turbo blower Switchover Operators Manway Inspection

Regulated Works Orders (136 Completed)		
Lifting Appliance Annual Insp Contract Calibration Lab Equipment (yearly)	Flow Meter Calibration Anchor Point Inspection High Voltage Gloves Testing Backflow Preventer Test	Monthly Safety Checks Operation Manual Review Lanyard Retractable Inspection (Annual)

d. Summary of any effluent quality assurance or control measures undertaken in the reporting period.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

e. Summary of the calibration and maintenance carried out on all effluent monitoring equipment.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Sudbury WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter Aeration FIT #1	6/11/2024	CO1544-2406-01
Flow Meter Aeration FIT #2	6/11/2024	CO1544-2406-02
Flow Meter Aeration FIT #3	6/11/2024	CO1544-2406-03
Flow Meter Aeration FIT #4	6/11/2024	CO1544-2406-04
Flow Meter, Effluent (SWWTP)	6/11/2024	CO1544-2406-05
Flow Meter 1A, Influent	6/10/2024	CO1544-2406-06
Flow Meter 2A, Influent	6/10/2024	CO1544-2406-07
Flow Meter 3A, Influent	6/10/2024	CO1544-2406
Flow Meter 1B, Influent	Due to flow meter maintenance issues in 2024, flows were captured using alternate flow meters. New flow meter is ordered for 2025	
Flow Meter 2B, Influent	6/13/2024	CO1544-2406-10
Flow Meter 3B, Influent	6/10/2024	CO1544-2406-11

f. Description of efforts made, and results achieved in meeting the Effluent Objectives of Condition 2.7.

Taking two final clarifiers offline for low flow seasons allowed for an optimized sludge retention time which led to a more efficient process. Upgrading or replacing sludge tank mixers. Installed new headhouse sump and drainage. Upgraded septage pumps. Plan to install new sludge grinder.

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 to where the sludge was disposed.

Sudbury generated 64,464 m³ of waste sludge which was pumped to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

h. Summary of any complaints received during the reporting period and any steps taken to address the complaints.

There were no process or odour related complaints for this reporting year.

i. Summary of all By-pass, Plant Overflow, Overflow, spill, or abnormal discharge events.

Date	Duration	Type of Occurrence	Receiving Stream ID	VOL (m ³)	Level of Treatment Received	Reason for Event
06-Mar-24	16 hrs	Plant Bypass	Junction Creek	33665.0	Disinfection	Spring Runoff/Rain
09-Mar-24	13.5 hrs	Plant Bypass	Junction Creek	33665.0	Disinfection	Spring Runoff/Rain
12-Apr-24	39.5 hrs	Plant Bypass	Junction Creek	153287	Disinfection	Spring Runoff/Heavy Rain

j. Any other information the Water Supervisor requires from time to time.

There were no deviations to the monitoring schedule in the current reporting year.

Average daily flows continued to be above 50,000 in 2024 therefore Acute Lethality testing and monthly sampling regime will continue for 2025.

- k. Copy of all Notices of Modification submitted to the Water Supervisor, with a status report on the implementation of Limited Operational Flexibility outlined under Schedule C of this Approval.**

There were no modifications to the sewage works for this reporting year.

Valley East Wastewater Treatment

Annual Performance Report

The Valley East Wastewater Treatment Plant located at 1861 Yorkshire Dr. Val Caron is a Conventional Activated Sludge process plant, having a Peak Flow Rated Capacity of 11,365 m³/d, discharging effluent to a 8 km forcemain to the Vermillion River.

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.

All effluent monitoring data is graphed and reviewed by compliance and plant supervisory staff. For the Valley East WWTP all parameters fell within plant design objectives and compliance limits.

Influent	2024	2023	2022	2021	2020	2019	2018
BOD₅ (mg/L)	163	231.10	187.67	189.25	155.83	133	171.80
TSS (mg/L)	218	219	210	203	169	160	163
TP (mg/L)	5.33	4.40	4.46	3.20	3.09	3.84	2.63
TKN (mg/L)	34.61	33.78	46.14	33.43	28.83	26.21	43.38

Effluent	2024	2023	2022	2021	2020	2019	2018
Avg Daily Flow (m³/d)	4345	4465	4376	4571	5368	6566	5436
CBOD₅ (mg/L)	3.34	4.81	6.73	4.28	5.71	6.53	9.29
TSS (mg/L)	6.19	8.17	9.92	9.72	7.88	7.97	7.11
TP (mg/L)	0.56	0.62	0.63	0.63	0.54	0.66	0.60
Total Ammonia (mg/L)	23.65	22.30	21.60	25.63	23.48	17.47	18.56
E.coli (CFU/100 mL)	23	14	15	59	33	43	64
Total Residual Chlorine (mg/L)	1.0	0.91	0.80	0.74	0.77	0.78	0.75
pH	6.86	6.38	6.85	7.36	7.25	7.05	7.25

b. Description of any operating problems encountered, and corrective actions taken.

DATE	Problem/ Exceedance	CORRECTIVE ACTION TAKEN	PROBABLE CAUSE	DATE SENT to MECP
06-Jun-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA
30-Dec-24	Process Upset at WWTP from Unknown Substance	ECOs completed ICI Inspections to determine origin of issue	Dumping of Hydrocarbons in collection system	NA

c. Summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming part of the Works.

The operating and maintenance staff at the Valley East WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (60)		
Add Power fail relay for load shed side Backflushing airline not working for girl classifier Blower not operating properly Blown fuse blown fuse, investigate cause Broken flight broken water line Chains are off sprocket on #2 Primary Chattering in panel when putting pumps in HAND Check valve appears to stay in closed position Check valve leaking Check valve not opening Chlorine solution line leak Clean and installed racking in C-can correct well pump Desiccant needs to be replaced Relocate Electrical (Secondary Clarifier) Wiring at side door to blower building	Door won't open Ferric pump issues fix Grit Air lift Plugged Heat Trace - Sludge loading / Samplers inspect chain slipping Investigate blower issue Meet Hydro Meet Hydro One Pipe leaking in kitchen Plant shut down Plant Shut down - VE/VFD Pump noisy Pump tripped Raw sludge flow meter Rebuild drive relamp garage repair booster pump piping Repair Ferric line repair heat trace line smoke from blower Solenoid not working Unit not functioning Sludge loading valve leaking	repair heat trace line Repair light sensor (men's washroom) repair potable water lines repair secondary chlorine solution line repair well water lines Repair/replace valve in Effluent chamber replace clips/pin and tighten chain replace disconnect Replace door safety sensor Replace doors on small shed Replace strainer units Replace windsock reset Grindex receptacle screw press issue Seal pressure canister losing pressure Seal pressure canister losing pressure set up temporary forcemain Sludge loading Pendant not functioning

Regular Scheduled Maintenance (278 Completed)		
Pump Inspection (submersible) Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Chlorinator Yearly PM Diesel Generator Test (Monthly) Change Battery Composite Sampler Inspection Monthly Clarifier drive/Gearbox Routine Load Bank Test Air Compressor Mtce (quarterly) Air Compressor Mtce (annual) Classifier Maintenance Routine Blower Inspection Diesel Engine 5 Year Inspection Composite Sampler Inspection By-Annual	Motor Condition Monitoring Elec. Filter/Strainer Clean/Change Out Clarifier/Aeration Tank and Skimmer Check Oil K 0153 Mechanical Bar Screen / Compactor Filter/Belt Maintenance Booster Pump Maintenance Cl2 Air Monitor Calibration Clean and inspection of Tank/Chamber Exercise Valves Piping and Valves Drain Hoses Aeration Filter Check Spring Runoff Preparations Plants	Chlorine Vacuum Regulators Yearly. Spill Kit Inspection (Quarterly) Overhead Door Inspection Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM Thermography Inspections VE Aeration Blower Oil & Filter Change VE Monthly Blower Gearbox Breather Check L0070 First Aid Box Inspections Lockout Station Inspection Emerg. & Exit Lighting Insp. House Cleaning Colorimeter Verification (monthly)

Regulated Works Orders (29 Completed)		
Calibration Lab Equipment (yearly) Anchor Point Inspection High Voltage Gloves Testing	Flow Meter Calibration Backflow Preventer Test Lifting Appliance Annual Insp Contract	Lanyard Retractable Inspection (Annual) Operation Manual Review Safety Checks

d. a summary of any effluent quality assurance or control measures undertaken in the reporting period.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

e. a summary of the calibration and maintenance carried out on all effluent monitoring equipment; and

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Valley East WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Raw Sewage	6/13/2024	CO1544-2406-44
Flow Meter, Sludge Transfer	6/13/2024	CO1544-2406-45
Flow Meter Effluent.	6/15/2024	CO1544-2406-46

f. a description of efforts made, and results achieved in meeting the Effluent Objectives of Condition 6.

Cleaned and inspected one primary clarifier including broken flight replacement and one secondary clarifier. Rebuilt clarifier drive on second secondary clarifier. Cleaned grit tank and inspected to maximized flow. Rebuilt sludge loading/mixing valve. Replaced effluent chamber isolation valve. Installed a RAS VFD on one RAS pump to allow for better process control.

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.

Valley East generated 16,148.13 m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	Apr	May	June
Loads	39	28	36	33	34	32
Vol (m ³)	1547.26	1105.81	1411.12	1292.06	1315.21	1270.14
	July	Aug	Sept	Oct	Nov	Dec
Loads	41	34	32	39	28	34
Vol (m ³)	1632.6	1358.62	1250.79	1542.96	1125.83	1295.73

h. a summary of any complaints received during the reporting period and any steps taken to address the complaints.

There were no process or odour complaints for this reporting year

i. a summary of all By-pass, spill, or abnormal discharge events.

Date	Duration	Type of Occurrence	Receiving Stream ID	VOL (m ³)	Level of Treatment Received	Reason for Event
19-Sep-24	30 mins	Spill	Not impacted	5	HTH disinfection/clean up	Equipment failure

j. 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.

There were no modifications to the sewage works for this reporting year.

k. Report summarizing all modifications completed as a result of Schedule B, Section 3.

There have been no modifications for this reporting year.

l. Any other information the Water Supervisor requires from time to time.

No other information is required at this time.

Walden Wastewater Treatment

Annual Performance Report

The Walden Wastewater Treatment Plant located at 1425 MR 55 Naughton, is an extended aeration process plant, having a Peak Flow Rated Capacity of 8,000 m³/d, discharging effluent to Junction Creek and eventually into Simon Lake.

a. Summary and interpretation of all Influent, monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

All influent monitoring data, historical trending of sewage characteristics and flow rates are graphed and reviewed by compliance and plant supervisory staff. No abnormalities were observed for the Walden WWTP for this reporting year. If abnormal influent issues occur, CGS Environmental Compliance Officers can be deployed to investigate and react as needed.

Influent	2024	2023	2022	2021	2020	2019
BOD ₅ (mg/L)	108	284	160	135	102	154
TSS (mg/L)	156	211	184	112	74	130
TP (mg/L)	3.17	3.39	3.79	3.48	2.76	3.14
TKN (mg/L)	28.54	29.37	28.60	33.08	24.44	24.96

b. 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.

All effluent monitoring data is graphed and reviewed by compliance and plant supervisory staff. For the Walden WWTP all parameters fell within plant design objectives and compliance limits.

Effluent	2024	2023	2022	2021	2020	2019
Avg Daily Flow (m ³ /d)	2655	2453	2247	2106	2621	2801
CBOD ₅ (mg/L)	2.24	2.28	2.33	2.48	2.15	2.68
TSS (mg/L)	4.78	7.58	7.38	8.05	7.31	7.50
TP (mg/L)	0.38	0.34	0.38	0.40	0.34	0.38
E.coli (CFU/100 mL)	2	5	3	3	7	39
pH	6.54	6.87	6.70	6.91	6.75	6.79
Total Residual Chlorine (mg/L)	0.9	0.94	0.70	0.76	0.77	0.70

Effluent (Loading)	2024	2023	2022	2021	2020	2019
CBOD ₅ (kg/d)	6.26	6.53	5.49	5.26	5.91	7.34
TSS (kg/d)	12.16	19.54	16.61	17.10	18.83	21.31
TP (kg/d)	1.03	0.85	0.85	0.82	0.90	1.07

c. Summary of all operating issues encountered, and corrective actions taken.

There were no operating issues encountered for this reporting year

d. 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.

The operating and maintenance staff at the Walden WWTP conducts scheduled and emergency maintenance of the WWTP equipment. The City of Greater Sudbury utilizes a Computerized Maintenance Management System (CMMS) known as Antero to issue work orders and maintain records for regular maintenance and emergency repair at the WWTP.

Corrective (42)		
repair blower belt replacement needs new coupling Troubleshoot blower and repair Repair pump Modify Sludge loading drain. Repair pump blockage WAS Remove potential obstruction Relocate C Can Set up for Site Visit - Walden Water leak Secure railing on stairway Secure mixer to lime tank Lime Tote Valve - Walden Repair Mixer Damper Motor from Ductwork off of Generator	Replace camlock fitting Secure Airlift Pipe repair check valve Control Flow for Pickard Construction Replace Eyewash Station in the Headhouse automatic bar screen making knocking noise. repair blower #1 RAS troubleshoot VFD, PUMP Repair scum trough heater Install new panel to run power to Bisulphite C can Troubleshoot pump troubleshoot and the problem is in VFD	Troubleshoot test switch Replace Heater Replace Electric Heaters in Basement Replace light bulbs Repair lighting Repair HH heater Look into lime mixer tripping Lime Mixer not functioning Reverse phasing on electric mixer motor Replace chlorine whip Repair outside lights Check operation of sensor Fix or replace replace backflow

Regular Scheduled Maintenance (181 Completed)		
Pump Inspection (submersible) Diesel Engine Routine Annual Pump Inspection (Non-Submersible) Diesel Generator Test (Monthly) Heater Inspection Composite Sampler Inspection Monthly Centrifugal Blower Inspection Clarifier drive/Gearbox Routine Progressive Cavity Pump Inspection Load Bank Test Air Compressor Mtce (quarterly) Air Compressor Mtce (annual) Classifier Maintenance Routine Blower Inspection Diesel Engine 5 Year Inspection	Mechanical Bar Screen / Compactor Mtc Filter/Belt Maintenance Cl2 Air Monitor Calibration Battery Load Inspection Clean and inspection of Tank/Chamber Exercise Valves Piping and Valves Drain Hoses Spring Runoff Preparations Plants SCBA Inspection (6 months) Composite Sampler Inspection By-Annual D.O. Meter Calibration Drive Train Inspection Filter/Strainer Clean/Change Out	Chlorine Vacuum Regulators Yearly. Spill Kit Inspection (Quarterly) Chemical Pump Monthly Inspection Chemical Pumps Bi-Annual PM Thermography Inspections Cold Weather Preparations First Aid Box Inspections Lockout Station Inspector Emerg. & Exit Lighting Insp. Operation Manual Review House Cleaning Colorimeter Verification (monthly) Sodium Bisulphite P-Traps Motor Condition Monitoring Elec.

Regulated Works Orders (32 Completed)		
Backflow Preventer Test Lifting Appliance Annual Insp Contract	Flow Meter Calibration Anchor Point Inspection	Monthly Safety Checks Operation Manual Review

e. Summary of any effluent quality assurance or control measures undertaken.

Operations conduct daily rounds which are recorded on checklists. SCADA systems record continuous trending for various flows and processes. Lab analysis is performed several times per week in addition to samples being collected and sent out for third party testing. Plant monthly reports are created containing flow, in house lab results and third-party lab results. This data is transferred to monthly and annual performance reports by a data clerk ensuring all information is accounted for. It is then sent to the area supervisor for final review.

f. 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.

The calibration of flow meters is conducted annually by an accredited third-party company in accordance with the requirements of the Walden WWTP ECA. Records and certificates are kept electronically. Calibrations completed on monitoring equipment is summarized below.

Flow Meter	Date Calibrated	Certificate number
Flow Meter, Influent	6/12/2024	CO1544-2406-21
Flow Meter, Effluent	6/12/2024	CO1544-2406-22
Flow meter, Bypass	6/12/2024	CO1544-2406-23
Flow meter RAS	6/11/2024	CO1544-2406-24
Flow meter WAS	6/11/2024	CO1544-2406-25

g. Summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

- 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.
- when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.

For 2024 reporting year Walden WWTP averaged approximately 59% of rated capacity and achieved its design objectives as listed in the ECA.

h. 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.

Walden generated 5,509 m³ of Waste sludge which was brought to the Sudbury Biosolids facility and processed into class A biosolids. A similar volume is anticipated for the next reporting period.

Month	Jan	Feb	Mar	Apr	May	June
Loads	14	9	13	13	14	14
Vol (m ³)	576.76	364.75	525.69	524.8	574.68	578.77
	July	Aug	Sept	Oct	Nov	Dec
Loads	21	13	10	13	9	10
Vol (m ³)	870.28	537.55	404.69	459.24	371.7	403.07

i. Summary of any complaints received, and any steps taken to address the complaints.

There were no complaints reported for this reporting year.

- j. Summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events.**

There were no bypasses or spills for this reporting year.

- k. Summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.**

There were no modifications to the sewage works for this reporting year.

- l. 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.**

Received \$34.9M grant from the provincial government towards a \$70M project to increase overall capacity in the collection system, including Anderson and Jacob lift stations, and the Walden WWTP with the ultimate goal of decommissioning Lively WWTP after completion.

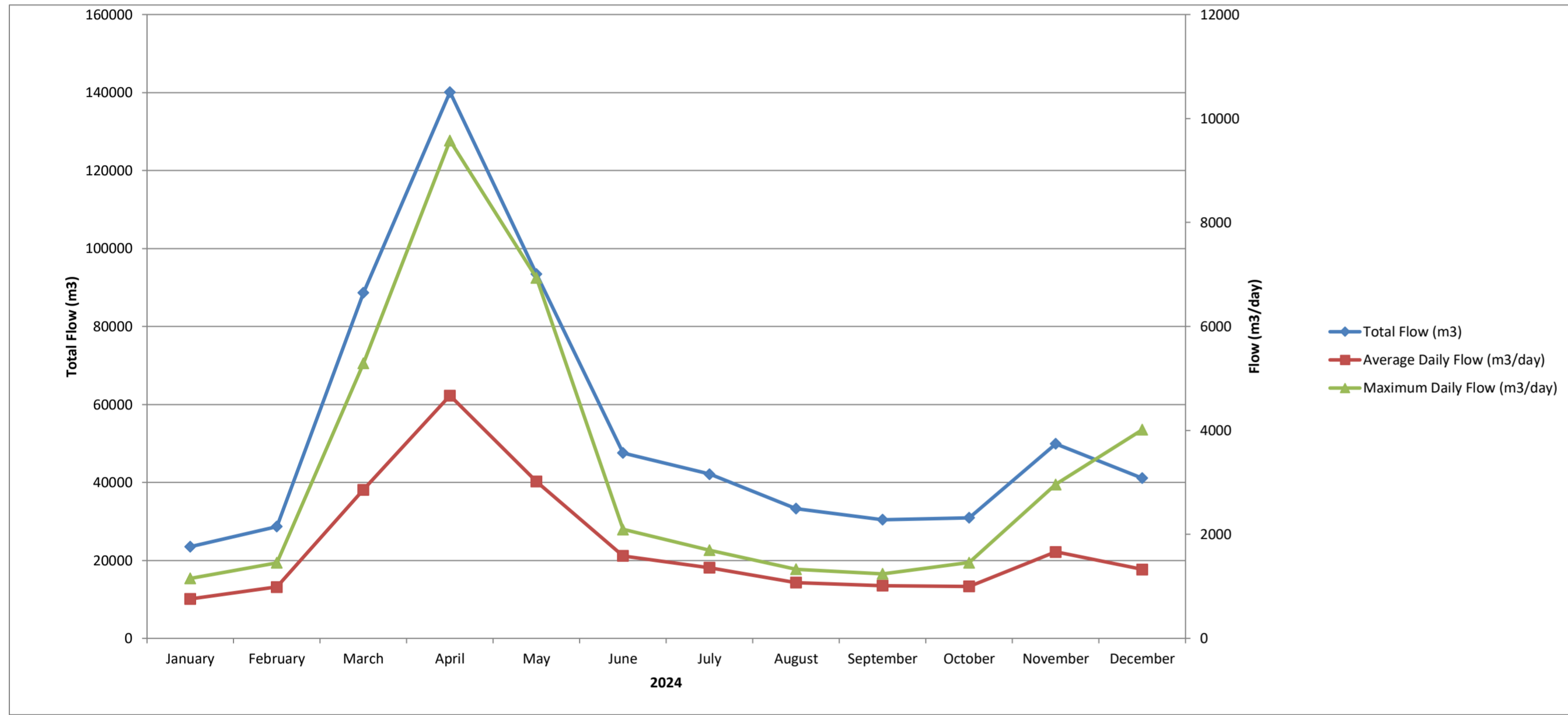
Appendices

- Azilda Plant Performance Report
- Azilda Annual Sludge Report
- Chelmsford Plant Performance Report
- Chelmsford Annual Sludge Report
- Coniston Annual Performance Report
- Coniston Annual Sludge Report
- Dowling Annual Performance Report
- Dowling Annual Sludge Report
- Falconbridge Annual Performance Report
- Levack Annual Performance Report
- Levack Annual Sludge Report
- Lively Annual Performance Report
- Lively Annual Sludge Report
- Sudbury Annual Metals Report
- Sudbury Annual Performance Report
- Sudbury Annual Sludge Report
- Valley East Annual Performance Report
- Valley East Annual Sludge Report
- Walden Annual Performance Report
- Walden Annual Sludge Report



2024 Azilda Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity	BOD ₅ Raw	CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-ionized Ammonia	TKN		Nitrate	Nitrite	pH		Alkalinity		Chlorine		Dechlorination		E.Coli Geomean	
	Total	Avg Day	Max Day			Raw	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading		Plant	Raw			Effluent	Raw	Effluent	Raw	Effluent	Raw	Residual	Total		Loading
	m ³	m ³ /d	m ³ /d	10 ³ m ³	mg/L	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	µg/L	mg/L	mg/L	mg/L	mg/L	Raw	Effluent	mg/L	mg/L	Kg	mg/L	mg/L	Kg/day		
January	23510	758	1153	0.000	160	152	2.0	1.52	98.7%	141	4.6	3.49	96.7%	5.2	0.21	0.16	96.0%	30.36	0.62	0.47	98.0%	2.41	34.3	0.2	25.0	0.1	7.1	6.6	266	68.4	200.8	0.9	0.016	0.01	3	
February	28679	989	1452	0.000	165	136	2.2	2.18	98.4%	123	7.8	7.71	93.7%	4.4	0.27	0.27	93.9%	26.08	0.93	0.92	96.4%	8.74	24.8	0.7	24.1	0.1	7.4	6.5	257	76.9	94.9	0.8	0.009	0.01	6	
March	88644	2859	5289	0.000	36	26	4.7	13.44	81.9%	50	9.6	27.45	80.8%	1.5	0.39	1.12	74.0%	6.56	1.91	5.46	70.9%	57.84	7.5	2.8	9.0	0.1	7.5	6.9	256	207.6	182.0	0.8	0.002	0.01	20	
April	140118	4671	9576	4.712	34	33	5.1	23.82	84.5%	75	12.2	56.98	83.7%	1.5	0.40	1.87	73.3%	8.36	2.25	10.51	73.1%	35.94	10.5	3.8	7.6	0.5	7.8	6.9	269	204.8	261.5	0.7	0.004	0.02	16	
May	93445	3014	6935	0.255	60	53	5.5	16.58	89.6%	79	10.9	32.86	86.2%	2.1	0.30	0.90	85.7%	17.47	4.34	13.08	75.2%	78.11	16.3	4.4	9.8	0.6	7.8	6.9	282	193.7	192.4	0.8	0.002	0.01	14	
June	47571	1586	2097	0.000	101	73	2.3	3.65	96.8%	118	9.4	14.91	92.0%	3.8	0.35	0.55	90.8%	31.63	0.68	1.08	97.9%	6.74	31.1	0.6	27.2	0.4	7.6	6.5	285	141.9	157.4	0.9	0.002	0.00	16	
July	42123	1359	1695	0.000	186	114	1.0	1.36	99.1%	185	5.6	7.61	97.0%	4.3	0.40	0.54	90.7%	29.72	0.19	0.26	99.4%	1.70	30.2	0.8	29.5	0.2	0.2	6.4	290	111.4	221.8	0.7	0.008	0.01	6	
August	33244	1072	1331	0.000	157	84	3.8	4.08	95.5%	209	8.1	8.69	96.1%	4.8	0.29	0.31	94.0%	41.13	3.08	3.30	92.5%	24.89	43.0	4.5	33.10	2.1	7.6	6.3	291	61.5	203.4	0.8	0.011	0.01	13	
September	30431	1014	1243	0.000	205	174	1.4	1.42	99.2%	198	3.0	3.04	98.5%	3.6	0.18	0.18	95.0%	44.15	0.19	0.19	99.6%	0.85	46.5	0.9	36.80	0.1	7.2	6.4	330	77.3	170.2	0.8	0.003	0.00	54	
October	30912	997	1457	0.000	173	132	1.1	1.10	99.2%	224	4.5	4.49	98.0%	5.3	0.30	0.30	94.3%	39.00	0.25	0.25	99.4%	2.38	37.8	0.5	32.70	0.6	6.9	6.4	276	74.9	174.3	0.8	0.003	0.00	116	
November	49920	1664	2962	0.000	89	87	2.5	4.16	97.1%	126	3.4	5.66	97.3%	3.3	0.22	0.37	93.3%	21.53	0.09	0.15	99.6%	0.82	26.2	2.5	20.50	0.3	7.4	6.8	295	122.2	240.5	0.7	0.009	0.01	61	
December	41123	1327	4014	0.000	113	89	1.4	1.86	98.4%	125	3.2	4.24	97.4%	3.3	0.19	0.25	94.2%	22.68	0.71	0.94	96.9%	5.29	23.4	0.3	20.83	1.08	7.3	6.6	287	114.6	234.4	0.8	0.005	0.01	65	
Total	649720			4.967					95.2%				92.7%				88.9%				91.7%															
Average		1780		0.414	123	96	2.75	6.26	94.9%	138	6.86	14.76	93.1%	3.59	0.29	0.57	89.6%	26.56	1.27	3.1	91.6%	18.8	27.62	1.85	23.01	0.50	6.82	6.60	282	121		0.79	0.006	0.01	33	



Plant Type: Extended Aeration
Design Capacity: 3300 m³/day
Population Served: 4,105

Compliance Parameters:

	Concentration	Loading	
CBOD	10 mg/L	33 kg/day	} *Monthly Avg *Annual Avg (Concentration) (Loading) Monthly Geometric Mean
TSS	10 mg/L	33 kg/day	
Total Phosphorus	0.6 mg/L	2.0 kg/day	
Total Ammonia (as N)	5 mg/L	16.5 kg/day	
pH	6.0 to 9.5 inclusive, at all times		
E.Coli	200 col/100 mL		



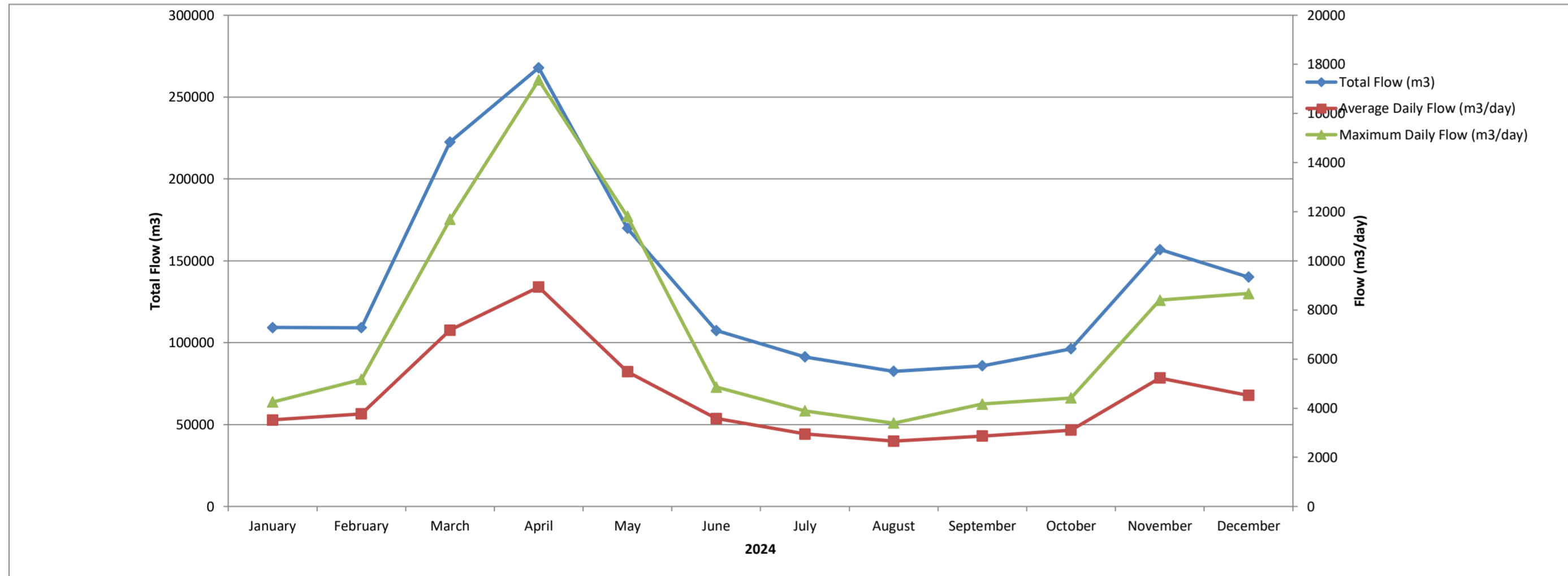
2024 Azilda Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	40.3	27.0	138.0	24.4	2.24	23.4	27.4	178.0	48.4	na	96.0	42.6	58.9
Nitrate (as N)	0.00	0.00	0.50	4.41	0.43	12.40	0.00	0.30	0.00	na	0.00	0.00	1.64
Nitrite (as N)	0.20	0.00	0.30	0.22	0.00	1.40	0.00	0.00	0.00	na	0.00	0.00	0.19
Potassium	75	70	116	19	14	37	27	83	49	na	87	51	57
TKN	1190	557	1510	117	94	191	260	756	435	na	812	886	619
Total Phosphorus	124	203	115	19	13	13	25	548	15	na	226	310	146
Total Solids	17800	15800	27700	2640	2210	5710	5710	21600	19300	na	22100	15400	14179
Arsenic	0.07	0.04	0.20	0.00	0.06	0.02	0.02	0.09	0.06	na	0.07	0.06	0.06
Cadmium	0.0104	0.0064	0.0301	0.0015	0.0037	0.0026	0.0037	0.0206	0.0132	na	0.0142	0.0099	0.0106
Chromium	0.20	0.12	0.48	0.03	0.12	0.05	0.07	0.39	0.24	na	0.22	0.16	0.19
Cobalt	0.312	0.126	0.537	0.013	0.043	0.035	0.058	0.269	0.216	na	0.184	0.148	0.176
Copper	4.9	3.0	9.5	0.7	2.0	1.0	2.2	9.6	6.6	na	7.3	5.3	4.7
Lead	0.109	0.055	0.228	0.014	0.056	0.026	0.045	0.189	0.147	na	0.137	0.095	0.100
Mercury	0.003	0.000	0.009	0.000	0.002	0.000	0.000	0.003	0.003	na	0.004	0.002	0.002
Molybdenum	0.06	0.05	0.17	0.00	0.02	0.00	0.02	0.09	0.05	na	0.06	0.05	0.05
Nickel	0.66	0.28	1.28	0.10	0.54	0.15	0.18	0.79	0.63	na	0.61	0.58	0.53
Selenium	0.043	0.027	0.142	0.000	0.015	0.012	0.020	0.081	0.029	na	0.071	0.054	0.045
Zinc	5.33	3.82	10.30	0.91	2.40	1.82	2.46	12.30	7.23	na	10.30	6.72	5.78
Sample Date	Jan.3/24	Feb.7/24	Mar.6/24	Apr.3/12	May.1/24	Jun.5/24	July2/24	Aug.13/24	Sep.5/24	na	Nov.6/24	Dec.3/24	



2024 Chelmsford Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity	BOD ₅ Raw	CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-ionized Ammonia	TKN		Nitrate		Nitrite		pH		Alkalinity		E.Coli Geomean
	Total	Avg Day	Max Day			Raw	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading		Plant	Raw	Effluent	Effluent	Effluent	Raw	Effluent	Raw	Effluent		
	m ³	m ³ /d	m ³ /d			10 ³ m ³	mg/L	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L		kg/d	Efficiency	mg/L	mg/L	mg/L	mg/L	Raw	Effluent	mg/L	mg/L	
January	109229	3524	4255	0.000	130	94	5.5	19.38	94.1%	249	9.4	33.12	96.2%	6.1	0.53	1.87	91.3%	26.50	7.65	26.95	71.1%	69.33	27.50	7.30	8.91	0.46	7.4	6.7	265	143	1888		
February	109188	3765	5170	0.000	325	250	4.8	18.07	98.1%	433	9.8	36.90	97.7%	6.7	0.36	1.36	94.6%	24.60	4.42	16.64	82.0%	40.82	33.20	5.03	11.48	0.06	7.4	6.6	250	134	11339		
March	222566	7180	11690	0.000	120	66	5.3	38.05	91.9%	163	7.2	51.69	95.6%	2.9	0.28	2.01	90.3%	4.90	2.88	20.68	41.2%	49.08	9.20	3.30	7.18	0.05	7.4	6.9	271	205	61174		
April	267935	8931	17360	0.000	67	52	4.5	40.19	91.3%	94	12.0	107.17	87.2%	1.6	0.18	1.61	88.8%	12.50	3.49	31.17	72.1%	54.48	14.70	3.70	6.04	0.05	7.6	7.1	248	212	28359		
May	169925	5481	11810	0.000	51	58	4.2	23.02	92.8%	231	5.9	32.34	97.4%	2.7	0.15	0.82	94.4%	7.30	0.56	3.07	92.3%	9.68	9.80	1.50	12.12	0.07	7.4	6.9	266	164	79		
June	107425	3581	4860	0.000	180	110	1.9	6.80	98.3%	288	7.3	26.14	97.5%	3.6	0.21	0.75	94.2%	22.40	0.33	1.18	98.5%	1.02	20.80	0.48	20.60	0.10	7.3	6.6	280	97	31		
July	91378	2948	3890	0.000	280	87	1.5	4.42	98.3%	249	5.3	15.62	97.9%	3.7	0.14	0.41	96.2%	19.20	0.20	0.59	99.0%	1.02	19.30	1.75	17.30	0.41	0.5	6.5	281	64	14		
August	82483	2661	3390	0.000	70	30	6.5	17.29	78.3%	205	7.5	19.96	96.3%	4.3	0.28	0.75	93.5%	26.70	3.53	9.39	86.8%	23.40	27.80	4.35	11.41	7.76	7.4	6.4	272	35	140		
September	85858	2862	4170	0.000	250	130	5.1	14.60	96.1%	276	6.8	19.46	97.5%	4.5	0.24	0.69	94.7%	30.10	5.02	14.37	83.3%	2.80	32.90	5.60	12.90	6.95	7.2	6.3	266	31	148		
October	96306	3107	4420	0.000	240	110	1.6	4.97	98.5%	261	6.3	19.57	97.6%	4.1	0.23	0.71	94.4%	31.70	0.20	0.62	99.4%	0.55	37.10	0.27	20.20	0.42	7.2	6.3	263	38	63		
November	156920	5231	8400	0.000	29	130	2.4	12.55	98.2%	191	6.8	35.57	96.4%	2.9	0.15	0.78	94.8%	10.70	0.06	0.31	99.4%	0.58	27.50	4.55	12.60	0.22	7.3	6.7	265	128	2025		
December	140125	4520	8670	0.000	120	32	2.0	9.04	93.8%	180	4.7	21.24	97.4%	3.1	0.15	0.68	95.2%	19.10	0.13	0.59	99.3%	1.92	20.60	0.40	14.25	0.08	7.2	6.6	277	145	8426		
Total	1639338			0.000					95.7%				96.4%				93.3%				86.2%												
Average		4491			155.17	96	3.78	17.37	94.1%	235	7.42	34.90	96.2%	3.85	0.24	1.04	93.5%	19.64	2.37	10.5	85.4%	21.2	23.37	3.19	12.91	1.38	6.78	6.65	267	116	9474		
Summer							3.47	11.85	96.0%		6.52	22.18	97.4%		0.21	0.69	94.5%	22.90	1.64	4.87	93.2%												
Winter							4.08	22.88	95.5%		8.32	47.62	95.5%		0.28	1.38	92.5%	16.38	3.11	16.06													



Plant Type: Extended Aeration w/modified activated sludge for denitrification
Design Capacity: 7100 m³/day
Population Served: 7,147 (Plant & Lagoon)
Compliance Parameters:

Summer - May 1 to October 31

	Conc.	Loading	
CBOD	7.0 mg/L	49.7 kg/day	Seasonal Average
TSS	7.0 mg/L	49.7 kg/day	Seasonal Average
Total Phosphorus	0.3 mg/L	2.13 kg/day	Monthly Average
Total Ammonia as N	2.0 mg/L	14.2 kg/day	Seasonal Average
E.Coli	200 col/100 mL		Monthly Geometric Mean

UV Disinfection turned on.

Winter - November 1 to April 30

	Conc.	Loading	
CBOD	15.0 mg/L	106.5 kg/day	Seasonal Average
TSS	15.0 mg/L	106.5 kg/day	Seasonal Average
Total Phosphorus	0.5 mg/L	3.55 kg/day	Monthly Average
Total Ammonia as N	4.0 mg/L	28.4 kg/day	Seasonal Average

UV Disinfection turned off.



2024 Chelmsford Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	10.6	24.0	24.4	51.5	3.6	37.6	40.0	39.1	24.1	236.0	15.1	22.1	44.0
Nitrate (as N)	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Nitrite (as N)	0.00	0.00	0.10	0.00	0.00	0.59	0.00	1.20	0.88	0.00	0.00	0.00	0.23
Potassium	50	36	53	55	40	66	95	52	48	41	46	48	53
TKN	377	477	498	252	181	690	1210	608	822	257	358	563	524
Total Phosphorus	69.8	85.2	105.0	28.5	13.6	76.2	68.3	181.0	27.0	0.093	48.9	214.0	76.5
Total Solids	10600	5660	9230	9050	17900	15700	22800	15700	23100	11700	10600	12600	13720
Arsenic	0.03	0.03	0.06	0.05	0.04	0.09	0.22	0.06	0.12	0.08	0.04	0.05	0.07
Cadmium	0.0037	0.0042	0.0072	0.0077	0.0037	0.0107	0.0299	0.0053	0.0134	0.0088	0.0062	0.0063	0.0089
Chromium	0.08	0.09	0.17	0.17	0.14	0.29	0.68	0.20	0.35	0.24	0.10	0.15	0.22
Cobalt	0.057	0.035	0.117	0.076	0.050	0.359	0.585	0.106	0.102	0.100	0.114	0.149	0.154
Copper	2.3	1.8	3.0	3.1	2.4	2.7	18.1	4.2	8.2	5.2	2.5	3.5	4.8
Lead	0.071	0.051	0.110	0.089	0.074	0.127	0.409	0.110	0.261	0.151	0.064	0.090	0.134
Mercury	0.003	0.000	0.004	0.003	0.002	0.004	0.017	0.003	0.049	0.016	0.002	0.004	0.009
Molybdenum	0.02	0.02	0.04	0.03	0.01	0.06	0.15	0.06	0.10	0.07	0.03	0.04	0.05
Nickel	0.36	0.30	0.66	1.11	1.00	1.05	2.10	0.41	0.84	0.56	0.35	0.71	0.79
Selenium	0.015	0.015	0.037	0.028	0.028	0.056	0.146	0.032	0.057	0.049	0.030	0.045	0.045
Zinc	1.88	2.33	3.58	3.37	2.25	6.15	13.70	3.21	6.51	4.27	2.33	3.45	4.42
Sample Date	Jan.4/24	Feb.7/24	Mar.6/24	Apr.3/24	May.1/24	Jun.5/24	Jul.3/24	Aug.7/24	Sep.4/24	Oct.23/24	Nov.6/24	Dec.4/24	

Work Order	523243	525823	528071	530299	533142	537234	540051	543971	547952	554550	556052	558668
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2024 Coniston Wastewater Treatment Plant Waste Sludge Analysis

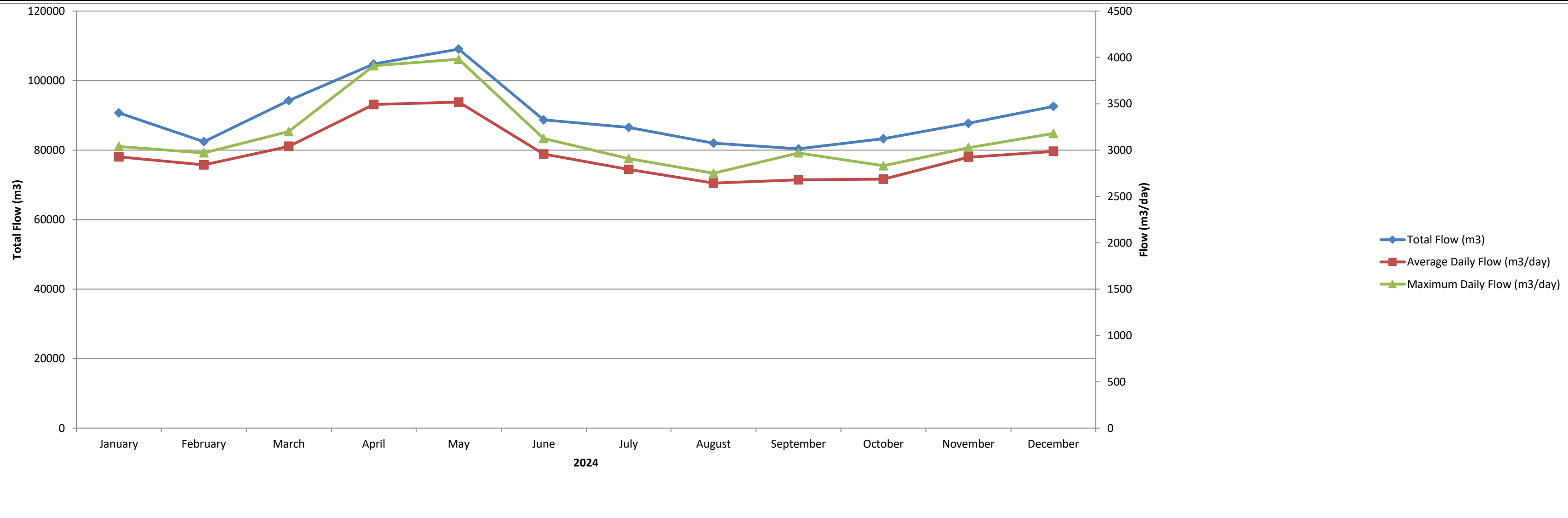
Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	104.0	117.0	0.0	11.1	43.6	222.0	12.6	0.0	1.9	4.2	26.8	59.8	50.3
Nitrate (as N)	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Nitrite (as N)	4.35	1.50	0.00	0.00	0.25	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.55
Potassium	54	76	32	26	35	54	45	56	37	42	63	55	47.9
TKN	788	1030	314	156	426	280	760	354	13.7	486	645	877	511
Total Phosphorus	173.0	234.0	68.6	24.0	69.7	106.0	117.0	132.0	112.0	120.0	170.0	190.0	126.4
Total Solids	14200	7790	5770	3260	2620	9630	9590	7230	5960	7590	23500	13000	9178
Arsenic	0.04	0.03	0.08	0.02	0.05	0.04	0.05	0.04	0.03	0.03	0.04	0.05	0.04
Cadmium	0.0118	0.0107	0.0108	0.0045	0.0155	0.0186	0.0173	0.0116	0.0073	0.0077	0.0105	0.0013	0.0106
Chromium	0.09	0.08	0.11	0.05	0.15	0.18	0.15	0.13	0.09	0.09	0.11	0.12	0.11
Cobalt	0.251	0.105	0.123	0.150	0.390	0.280	0.140	0.127	0.090	0.085	0.121	0.233	0.175
Copper	4.1	4.1	4.8	2.0	4.3	3.6	6.2	6.2	3.9	3.5	5.5	6.3	4.5
Lead	0.157	0.124	0.173	0.052	0.189	0.237	0.228	0.174	0.135	0.124	0.148	0.180	0.160
Mercury	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.001	0.002	0.000	0.001
Molybdenum	0.02	0.02	0.02	0.01	0.02	0.04	0.04	0.03	0.02	0.03	0.03	0.04	0.03
Nickel	2.2	1.5	3.2	1.6	3.8	1.9	3.0	2.5	1.4	1.2	1.9	2.7	2.24
Selenium	0.028	0.026	0.032	0.023	0.076	0.093	0.075	0.053	0.015	0.033	0.038	0.042	0.045
Zinc	3.86	5.15	2.59	1.39	4.14	6.76	6.92	4.92	3.26	3.66	4.91	5.12	4.39
Sample Date	Jan.4/24	Feb.6/24	Mar.5/24	Apr.2/24	May.7/24	Jun.4/24	July/3/24	Aug.8/24	Sep.3/24	Oct.8/24	Nov.5/24	Dec.4/24	

Work Order	523312	525624	527842	530008	533810	537188	539910	544205	547818	552950	555935	558573
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2024 Dowling Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity 10 ³ m ³	BOD ₅				CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-ionized Ammonia µg/L	TKN mg/L	Nitrate mg/L	Nitrite mg/L	pH		Alkalinity		Chlorine		Dechlorination		E.Coli # Col./100mL							
	Total m ³	Avg Day m ³ /d	Max Day m ³ /d		Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Raw Loading	Removed	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Raw Loading	Removed	Plant					Raw	Effluent	Raw	Effluent	Raw	Effluent	Total	Residual		Total	Loading					
	mg/L	mg/L	kg/d		Efficiency	mg/l	mg/l	kg/day	kg/day	kg/day	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	kg/day	kg/day					Efficiency	µg/L	mg/L	mg/L	mg/L	Raw	Effluent	mg/L		mg/L	Kg	mg/L	mg/L	Kg/day		
January	90701	2926	3040	0.000	21	3.7	10.83	82.4%	16	2.1	6.1	46.8	41	86.9%	43	3.9	11.41	90.9%	1.0	0.48	1.40	52.0%	3.1	0.32	0.94	9.07	8.13	89.7%	1.52	1.03	4.88	0.06	7.0	6.8	80	50.7	152.5	0.8	0.007	0.02	8			
February	82382	2841	2970	0.000	8	3.8	10.79	52.5%	6	2.4	6.8	17.0	10	60.0%	47	4.5	12.78	90.4%	1.0	0.49	1.39	51.0%	3.5	0.97	2.76	9.94	7.19	72.3%	5.74	1.55	4.11	0.05	7.1	6.8	81	52.1	144.6	0.7	0.005	0.01	3			
March	94231	3040	3200	0.000	23	4.7	14.29	79.6%	23	3.2	9.7	69.9	60	86.1%	42	3.9	11.85	90.7%	0.8	0.45	1.37	43.8%	2.5	0.54	1.64	7.60	5.96	78.4%	2.74	1.20	4.41	0.06	7.0	6.8	79	50.3	163.0	0.7	0.007	0.02	20			
April	104745	3492	3910	10.395	22	6.2	21.65	71.8%	21	3.6	12.6	73.3	61	82.9%	39	3.9	13.62	90.0%	0.9	0.40	1.40	55.6%	3.1	0.34	1.19	10.82	9.64	89.0%	1.65	0.95	4.36	0.30	7.0	6.8	79	52.3	153.5	0.6	0.006	0.02	18			
May	109045	3518	3980	10.329	11	6.6	23.22	40.0%	18	3.5	12.3	63.3	51	80.6%	29	3.8	13.37	86.9%	0.6	0.41	1.44	29.3%	1.9	1.12	3.94	6.68	2.74	41.1%	7.96	1.60	3.41	0.29	6.9	6.7	103	66.8	191.2	0.6	0.012	0.04	12			
June	88683	2956	3126	0.000	9	3.7	10.94	58.9%	11	1.5	4.4	32.5	28	86.4%	34	5.7	16.85	83.2%	1.1	0.45	1.33	59.1%	2.6	0.67	1.98	7.69	5.71	74.2%	5.13	1.13	4.69	0.11	6.7	6.6	100	72.7	227.7	0.9	0.012	0.04	2			
July	86501	2790	2907	0.000	19	4.6	12.84	75.8%	6	2.1	5.9	16.7	11	65.0%	46	5.0	13.95	89.1%	1.0	0.47	1.31	53.0%	3.0	0.14	0.39	8.37	7.98	95.3%	0.77	0.72	5.10	0.05	6.6	6.4	103	66.7	198.9	0.8	0.006	0.02	5			
August	81951	2644	2750	0.000	11	5.4	14.28	50.9%	15	2.4	6.3	39.7	33	84.0%	33	6.3	16.65	80.9%	0.7	0.47	1.24	32.9%	3.7	0.14	0.37	9.78	9.41	96.2%	0.88	1.07	5.85	0.05	6.6	6.4	98	62.4	194.8	0.7	0.007	0.02	13			
September	80367	2679	2970	0.000	22	3.0	8.04	86.4%	18	1.7	4.6	48.2	44	90.6%	36	7.3	19.56	79.7%	0.8	0.48	1.29	40.0%	3.0	0.12	0.32	8.04	7.72	96.0%	1.02	0.75	5.40	0.05	6.6	6.4	124	75.1	172.7	2.7	0.011	0.03	11			
October	83263	2686	2830	0.000	11	3.1	8.33	71.8%	6	1.4	3.8	16.1	12	76.7%	26	9.0	24.17	65.4%	1.1	0.52	1.40	52.7%	3.7	0.22	0.59	9.94	9.35	94.1%	1.56	0.60	5.73	0.05	6.6	6.4	125	69.9	170.3	0.6	0.008	0.02	15			
November	87693	2923	3026	0.000	23	4.9	14.32	78.7%	21	3.0	8.8	61.4	53	85.7%	38	6.7	19.58	82.4%	0.9	0.49	1.43	45.6%	3.5	0.26	0.76	10.23	9.47	92.6%	1.72	3.43	5.71	0.07	6.9	6.6	119	66.7	169.6	0.6	0.007	0.02	23			
December	92565	2986	3178	0.000	10	3.6	10.75	64.0%	9	2.7	8.1	26.9	19	70.0%	32	5.9	17.62	81.6%	0.9	0.45	1.34	50.0%	4.6	0.69	2.06	13.74	11.68	85.0%	2.47	1.23	4.83	0.05	6.8	6.6	115	71.5	212.4	0.7	0.008	0.02	19			
Total	1082127			20.724								511.9	423	82.5%				85.4%				48.4%				112	95											2151.2						
Average		2965			16	4.44	13.35	71.6%	14	2.47	7.45	42.66	35.2	79.8%	37	5.49	15.95	84.3%	0.90	0.46	1.36	48.4%	3.18	0.46	1.41	9.32	7.91	83.65%	2.76	1.27	4.87	0.10	6.82	6.59	101	63		0.9	0.008	0.02	12			



Plant Type: Extended Aeration
Design Capacity: 3200 m³/day
Population Served: 1,857

Compliance Parameters:

	Conc.	Loading	
BOD ₅	25 mg/L	80 kg/day	Annual Average
TSS	25 mg/L	80 kg/day	Annual Average
Total Phosphorus	1.0 mg/L	3.2 kg/day	Annual Average
E.Coli	200 col/100 mL		Monthly Geometric Mean



2024 Dowling Wastewater Treatment Plant Waste Sludge Analysis

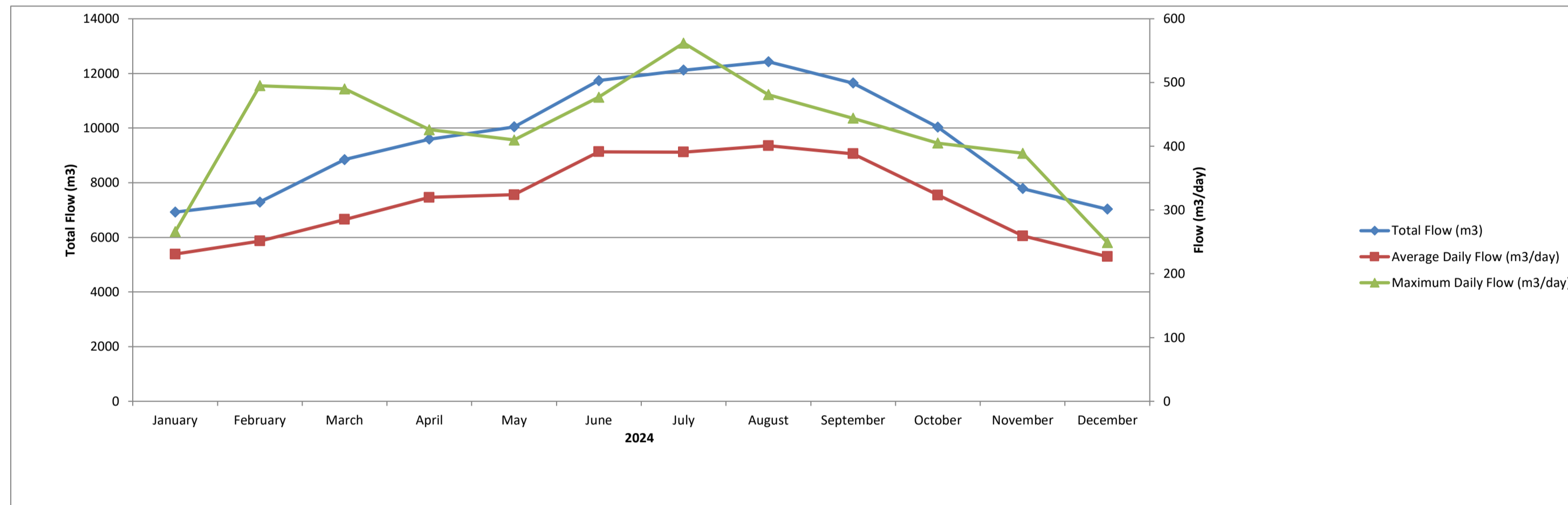
Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	0.00	0.70	0.91	7.09	2.30	8.80	1.04	1.28	1.39	1.04	1.09	0.95	2.22
Nitrate (as N)	0.92	1.27	1.88	0.89	1.17	1.48	101	0.34	1.42	1.85	2.20	1.00	9.62
Nitrite (as N)	0.18	0.00	0.00	0.00	0.10	0.20	0.14	0.00	0.00	0.28	0.00	0.00	0.08
Potassium	10	10	9	14	10	16	9	12	14	11	12	9	11.3
TKN	92.1	86.0	70.8	137.0	82.8	129.0	7.3	135.0	129.0	159.0	192.0	41.9	105.2
Total Phosphorus	13.70	10.70	15.80	22.40	7.36	12.00	18.10	13.30	13.10	7.08	9.86	16.70	13.3
Total Solids	1550	1040	1680	4130	1640	1800	1190	1750	1790	1630	1580	1480	1772
Arsenic	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cadmium	0.0007	0.0007	0.0009	0.0010	0.0007	0.0012	0.0009	0.0013	0.0015	0.0009	0.0010	0.0006	0.0010
Chromium	0.02	0.03	0.04	0.04	0.03	0.04	0.03	0.04	0.04	0.03	0.03	0.01	0.03
Cobalt	0.001	0.002	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.002	0.002	0.000	0.002
Copper	0.99	0.91	0.81	1.23	1.11	1.40	1.01	2.00	2.10	1.70	1.50	0.79	1.30
Lead	0.012	0.014	0.011	0.021	0.013	0.013	0.011	0.028	0.026	0.017	0.013	0.011	0.016
Mercury	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Molybdenum	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Nickel	0.02	0.02	0.04	0.03	0.03	0.04	0.03	0.04	0.05	0.03	0.03	0.02	0.03
Selenium	0.005	0.000	0.010	0.000	0.006	0.002	0.008	0.007	0.005	0.004	0.009	0.004	0.005
Zinc	0.28	0.35	0.36	0.43	0.36	0.50	0.35	0.68	0.62	0.42	0.43	0.28	0.42
Sample Date	Jan.3/24	Feb.7/24	Mar.6/24	Apr.4/24	May.1/24	Jun.5/23	Jul.3/24	Aug.7/24	Sep.4/24	Oct.24	Nov.6/24	Dec.2/24	

Work order	523144	525819	528069	530320	533116	537263	540054	543968	547955	551930	556040	558284
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2024 Falconbridge Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity 10 ³ m ³	BOD ₅						Total Suspended Solids						Total Phosphorus				Total Ammonia				Un-ionized Ammonia µg/L	TKN mg/L	Nitrate mg/L	Nitrite mg/L	pH		E.Coli # Col./100mL
	Total m ³	Avg Day m ³ /d	Max Day m ³ /d		Raw mg/L	Effluent mg/L	Loading kg/d	Raw Loading kg/day	Removed kg/day	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Raw Loading kg/day	Removed kg/day	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency					Raw	Effluent	
																													Raw	Effluent	
January	6923	231	266	0.000	250	1.0	0.23	58	58	99.6%	126	2.4	0.55	7	7	92.4%	6.8	0.02	0.00	99.7%	38.50	0.38	0.09	99.0%	0.91	0.70	0.31	0.15	7.1	6.9	246
February	7293	251	495	0.000	150	1.7	0.43	38	37	98.9%	167	2.6	0.65	6	6	89.5%	7.2	0.08	0.02	98.9%	35.30	0.45	0.11	98.7%	1.26	0.80	0.15	0.15	7.2	7.0	1000
March	8844	285	490	0.000	110	3.0	0.86	31	31	97.3%	145	2.8	0.80	4	4	82.0%	4.6	0.03	0.01	99.3%	25.90	0.38	0.11	98.5%	1.12	0.50	0.57	0.15	7.6	6.9	1000
April	9595	320	426	0.000	170	4.3	1.38	54	53	97.5%	170	2.0	0.64	9	8	92.9%	5.5	0.27	0.09	95.1%	28.80	0.07	0.02	99.8%	0.37	0.50	0.36	0.05	7.5	7.0	680
May	10044	324	410	0.000	83	1.5	0.49	27	26	98.2%	169	3.3	1.07	4	3	76.0%	5.5	0.04	0.01	99.3%	33.70	0.07	0.02	99.8%	0.27	0.20	0.15	0.15	7.4	7.0	215
June	11741	391	477	0.000	110	2.4	0.94	43	42	97.8%	144	4.0	1.57	6	4	74.2%	4.5	0.04	0.02	99.1%	31.20	0.05	0.02	99.8%	0.40	0.30	0.20	0.20	7.3	6.9	845
July	12120	391	562	0.000	120	1.1	0.43	47	46	99.1%	104	2.6	1.02	5	4	79.0%	5.1	0.01	0.00	99.8%	29.30	0.01	0.00	100.0%	0.05	0.60	0.15	0.15	7.3	7.0	450
August	12428	401	481	0.000	75	0.6	0.24	30	30	99.2%	129	2.7	1.08	4	3	71.9%	5.0	0.01	0.00	99.8%	29.70	0.01	0.00	100.0%	0.05	0.20	0.10	0.10	7.2	6.9	30
September	11647	388	444	0.000	91	0.5	0.19	35	35	99.5%	111	2.6	1.01	4	3	74.1%	6.2	0.01	0.00	99.8%	35.70	0.04	0.02	99.9%	0.49	0.40	0.05	0.05	7.1	6.9	170
October	10030	324	405	0.000	150	1.0	0.32	49	48	99.3%	93	2.5	0.81	4	4	82.0%	4.3	0.04	0.01	99.1%	32.40	0.03	0.01	99.9%	0.04	0.20	0.05	0.05	7.5	7.1	130
November	7785	260	389	0.000	160	1.8	0.47	42	41	98.9%	100	2.7	0.70	4	3	82.9%	5.1	0.02	0.01	99.6%	36.10	0.05	0.01	99.9%	0.17	0.30	0.10	0.10	7.4	7.0	1000
December	7033	227	249	0.000	180	1.0	0.23	41	41	99.4%	122	3.3	0.75	5	4	84.9%	7.5	0.03	0.01	99.6%	41.20	0.34	0.08	99.2%	0.98	0.70	0.10	0.10	7.48	6.8	2000
Total	115483	316	410	0.000	137	1.66	0.52	41.20	488	98.75%	132	2.79	0.89	5.30	4.41	83.25%	5.61	0.05	0.02	99.1%	33.15	0.16	0.04	99.6%	0.51	0.45	0.19	0.12	7.34	6.93	647



Plant Type: Trickling Filter
Design Capacity: 909 m³/day
Population Served: 754

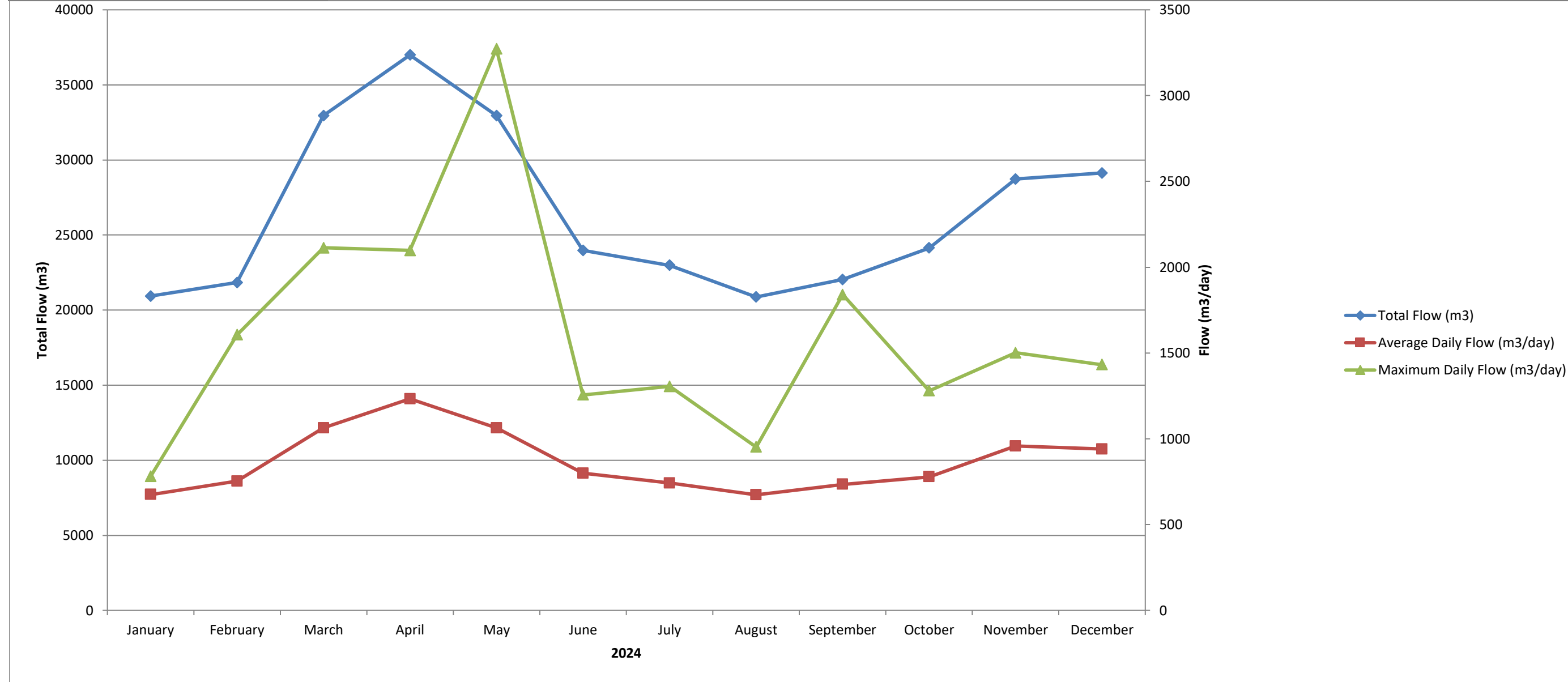
Compliance Parameters:

	Conc.	Loading	Annual Avg.
BOD ₅	15 mg/L	46 kg/day	Annual Avg.
TSS	15 mg/L	46 kg/day	Annual Avg.



2024 Levack Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity 10 ³ m ³	BOD RAW mg/L	CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-Ionized Ammonia		TKN		Nitrate		Nitrite		pH		Alkalinity		Chlorine		Dechlorination		E.Coli # Col./100mL
	Total	Avg Day	Max Day			Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Loading	Plant	Raw	Effluent	Raw	Effluent	Raw	Effluent	Raw	Residual	Total	Residual	Total	Loading					
	m ³	m ³ /d	m ³ /d			mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	Efficiency	mg/L	mg/L	kg/d	kg/d	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Kg	mg/L	mg/L	Kg/day			
January	20924	675	781	0.000	180	140	3.5	2.36	97.5%	174	6.8	4.59	96.1%	4.9	0.38	0.26	92.2%	23.60	0.01	0.01	100.0%	0.04	37.4	0.20	23.80	0.05	7.0	6.5	202	83.80	182.6	1.0	0.007	0.00	2			
February	21830	753	1606	0.000	150	150	1.8	1.35	98.8%	185	7.0	5.27	96.2%	5.4	0.54	0.41	90.0%	14.80	1.10	0.83	92.6%	5.24	24.9	0.70	23.00	0.10	6.9	6.6	203	93.14	136.6	0.8	0.005	0.00	1			
March	32954	1063	2113	0.000	100	63	5.1	5.42	91.9%	125	7.6	8.08	93.9%	3.5	0.41	0.44	88.3%	8.28	3.83	4.07	53.7%	80.17	11.4	5.00	13.30	0.10	6.7	6.7	166	105.25	87.6	0.8	0.013	0.01	3			
April	36988	1233	2097	0.000	100	67	4.0	4.93	94.0%	127	8.9	10.97	93.0%	3.5	0.39	0.48	88.9%	20.40	1.26	1.55	93.8%	7.21	18.1	1.90	16.30	0.05	6.9	6.7	146	104.86	100.8	0.6	0.005	0.01	2			
May	32957	1063	3272	0.000	47	38	4.0	4.25	89.5%	129	8.2	8.72	93.6%	4.8	0.61	0.65	87.3%	9.39	0.07	0.07	99.3%	0.30	10.0	0.80	12.40	0.05	6.8	6.5	139	68.33	150.7	0.6	0.004	0.00	8			
June	23968	799	1256	0.000	67	34	3.3	2.64	90.3%	167	6.4	5.11	96.2%	3.9	0.70	0.56	82.1%	23.10	0.11	0.09	99.5%	0.64	26.1	0.20	24.60	0.25	6.9	6.6	162	75.20	141.6	0.5	0.003	0.00	2			
July	22983	741	1305	0.000	74	65	1.0	0.74	98.5%	176	6.5	4.82	96.3%	4.9	0.73	0.54	85.1%	22.40	0.06	0.04	99.7%	0.85	22.0	0.20	19.80	0.05	6.9	6.6	167	74.83	154.8	0.5	0.004	0.00	2			
August	20870	673	952	0.000	130	49	2.3	1.55	95.3%	223	7.9	5.32	96.5%	5.5	0.78	0.53	85.8%	21.40	0.17	0.11	99.2%	2.19	25.3	0.65	14.67	0.08	6.9	6.5	178	78.83	181.4	0.6	0.004	0.00	8			
September	22038	735	1840	0.000	120	110	1.9	1.40	98.3%	173	10.9	8.01	93.7%	4.5	0.74	0.54	83.6%	20.40	0.11	0.08	99.5%	1.40	24.2	0.93	21.80	0.05	6.8	6.5	169	69.60	196.2	0.5	0.008	0.01	8			
October	24129	778	1280	0.000	92	67	1.1	0.86	98.4%	169	8.3	6.46	95.1%	4.4	0.58	0.45	86.8%	24.00	4.76	3.70	80.2%	59.18	25.2	4.10	11.20	0.40	6.8	6.6	176	106.50	156.2	0.5	0.008	0.01	2			
November	28731	958	1501	0.000	140	78	3.8	3.64	95.1%	159	8.1	7.76	94.9%	3.8	0.58	0.56	84.7%	16.50	0.09	0.09	99.5%	0.28	27.4	7.60	16.20	0.20	6.9	6.5	148	105.00	176.4	0.6	0.005	0.00	12			
December	29127	940	1432	0.000	96	57	1.1	1.03	98.1%	149	8.7	8.17	94.2%	4.1	1.09	1.02	73.4%	23.60	0.18	0.17	99.2%	0.90	27.5	0.20	22.00	0.05	6.8	6.5	138	68.83	148.8	0.4	0.003	0.00	16			
Total	317499			0.000					96.1%				94.9%				85.8%																					
Average		870			108.00	77	2.74	2.51	96.1%	163	7.94	6.94	94.9%	4.43	0.63	0.54	85.8%	18.99	0.98	0.90	94.4%	13.20	23.29	1.87	18.26	0.12	6.86	6.57	166	86		0.6	0.006	0	5			



Plant Type: Extended Aeration
Design Capacity: 2270 m³/day
Population Served: 2,320

Compliance Parameters:

	Conc.	Loading	
CBOD	25 mg/L	56.75 kg/day	Annual Average
TSS	25 mg/L	56.75 kg/day	Annual Average
Total Phosphorus	1.0 mg/L	3.1 kg/day	Monthly Average
pH	6.0 to 9.5 inclusive, at all times		
E.Coli	200 col/100 mL		Monthly Geometric Mean



2024 Levack Wastewater Treatment Plant Waste Sludge Analysis

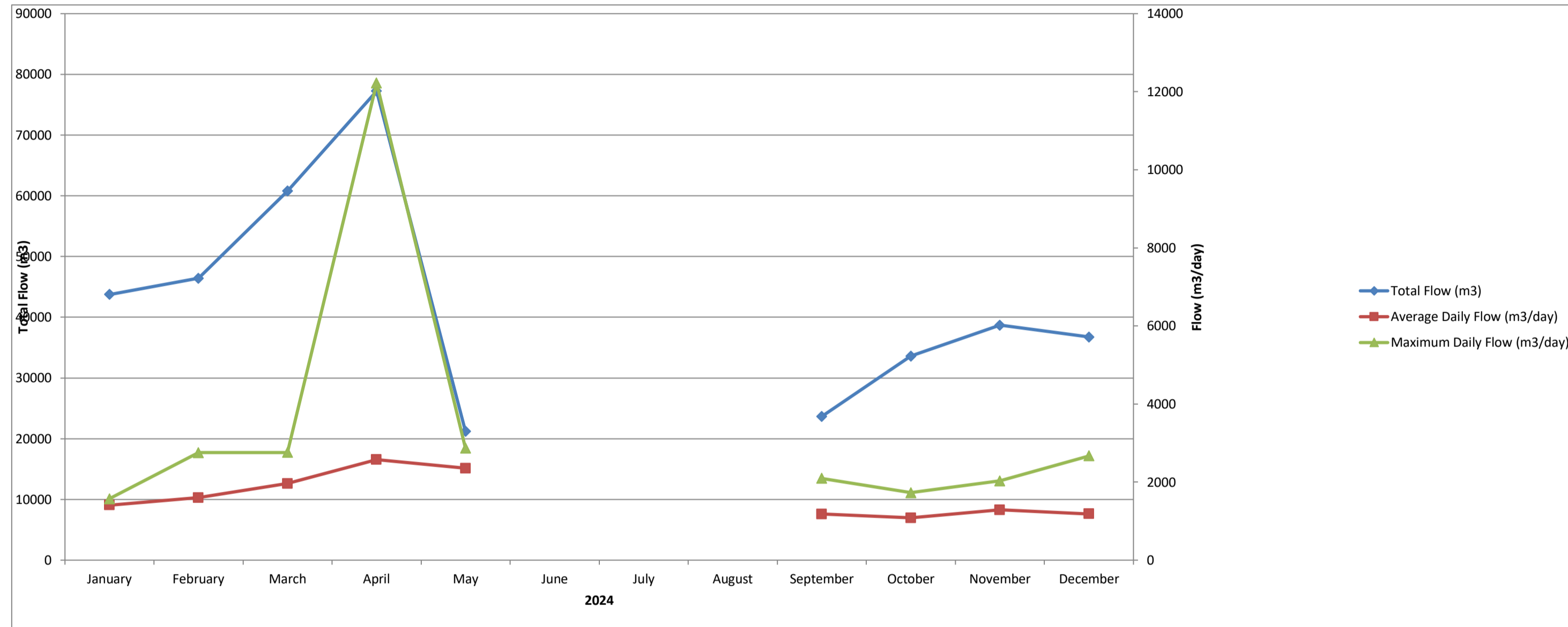
Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	0.20	27.70	4.06	160.00	1.58	24.70	1.15	0.54	4.66	4.83	19.50	0.55	20.79
Nitrate (as N)	12.50	0.00	5.30	0.00	6.94	0.00	3.90	20.0	1.26	1.69	0.00	15.00	5.55
Nitrite (as N)	0.00	0.00	0.00	0.00	0.00	0.57	0.20	0.10	0.00	3.32	0.00	0.20	0.37
Potassium	19	75	14	117	12	130	17	16	20	15	31	16	40
TKN	121.0	344.0	60.6	869.0	75.7	1590.0	14.6	52.8	220.0	103.0	408.0	17.8	323.0
Total Phosphorus	18.4	155.0	8.2	170.0	13.0	230.0	9.7	28.4	85.4	33.4	82.1	8.3	70.2
Total Solids	4560	11200	1160	12800	1180	23600	1930	1480	3150	2270	6270	1670	5939
Arsenic	0.00	0.02	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Cadmium	0.0012	0.0080	0.0013	0.0154	0.0008	0.0234	0.0012	0.0016	0.0040	0.0013	0.0054	0.0011	0.0054
Chromium	0.01	0.12	0.03	0.25	0.02	0.35	0.02	0.02	0.06	0.03	0.08	0.04	0.09
Cobalt	0.007	0.043	0.014	0.225	0.016	0.161	0.017	0.019	0.032	0.011	0.040	0.009	0.050
Copper	0.74	4.60	0.63	7.90	0.59	12.30	0.74	0.61	1.9	0.75	3.10	0.53	2.87
Lead	0.042	0.221	0.037	0.471	0.023	0.587	0.047	0.107	0.134	0.048	0.154	0.025	0.158
Mercury	0.000	0.001	0.000	0.008	0.000	0.009	0.000	0.000	0.000	0.000	0.003	0.000	0.002
Molybdenum	0.00	0.04	0.00	0.04	0.00	0.05	0.00	0.00	0.00	0.00	0.02	0.00	0.01
Nickel	0.22	1.16	0.23	2.70	0.21	3.00	0.27	0.23	0.61	0.23	0.70	0.18	0.81
Selenium	0.000	0.000	0.005	0.029	0.004	0.053	0.005	0.004	0.006	0.004	0.013	0.003	0.011
Zinc	0.57	4.37	0.52	6.91	0.38	9.30	0.71	1.09	1.90	0.72	2.69	0.49	2.47
Sample Date	Jan.3/24	Feb.7/24	Mar.6/24	Apr.3/24	May.1/24	Jun.5/24	July.3/24	Aug.7/24	Sep.3/24	Oct.1/24	Nov.6/24	Dec.2/24	

Work order	523150	525821	528070	530295	533130	537266	540044	543960	547948	551971	556047	558288
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2024 Lively Wastewater Treatment Plant Performance

Month	Flows				Excess Capacity	BOD ₅ Raw	CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-ionized Ammonia	TKN		Nitrate	Nitrite	pH		Alkalinity		Chlorine		Dechlorination		E.Coli Geomean	
	Total m ³	Avg Day m ³ /d	Max Day m ³ /d	Diverted m ³			Raw mg/L	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d		Plant Efficiency	Raw mg/L			Effluent mg/L	Raw mg/L	Effluent mg/L	Raw mg/L	Effluent mg/L	Total Kg	Residual mg/L	Total mg/L		Loading Kg/day
January	43759	1412	1575	5484	0.000	305	260	1.0	1.41	99.6%	196	4.8	6.78	97.8%	4.8	0.22	0.31	95.9%	30.30	3.74	5.28	88.9%	2.83	50.9	2.50	17.70	0.05	6.9	6.7	191	37	81.5	0.8	0.004	0.01	3	
February	46444	1602	2755	4499	0.000	160	130	5.5	8.81	95.8%	106	4.7	7.53	97.4%	4.0	0.26	0.42	96.2%	26.00	4.13	6.61	90.8%	12.43	37.5	4.20	13.90	0.05	7.1	6.4	186	37	67.6	0.8	0.002	0.00	3	
March	60779	1961	2760	8629	0.000	44	37	3.7	7.25	90.0%	129	5.0	9.80	97.2%	2.4	0.24	0.47	92.9%	7.32	6.45	12.65	37.4%	68.38	8.9	8.20	5.68	0.05	7.0	6.7	133	73	80.3	1.0	0.002	0.00	2	
April	77250	2575	12222	9196	0.019	50	44	3.7	9.53	91.6%	32	4.4	11.33	97.1%	1.7	0.29	0.75	96.4%	19.00	12.20	31.42	86.5%	141.67	18.5	9.10	2.76	0.05	6.9	6.8	132	97	70.7	0.8	0.002	0.01	6	
May	21194	2355	2867	28017	0.000	29	21	1.0	2.35	95.2%	38	3.2	7.54	93.1%	1.0	0.18	0.42	85.2%	12.00	6.78	15.97	53.6%	71.88	12.4	7.30	4.10	0.09	6.8	6.9	116	75	20.0	0.8	0.002	0.00	1	
June					0.000					#DIV/0!				#DIV/0!				#DIV/0!				#DIV/0!															
July					0.000					#DIV/0!				#DIV/0!				#DIV/0!				#DIV/0!															
August					0.000					#DIV/0!				#DIV/0!				#DIV/0!				#DIV/0!															
September	23668	1183	2095	6012	0.000					#DIV/0!	166	6.5	7.69	97.8%	3.0	0.72	0.85	86.4%				#DIV/0!						7.1	7.2	180	42	59.4	0.8	0.000	0.00	3	
October	33621	1085	1728	2688	0.000	61	61	13.0	14.10	78.7%	139	15.3	16.59	93.1%	4.1	0.56	0.61	91.4%	30.20	4.34	4.71	91.0%	0.59	34.2	6.00	12.20	2.74	7.5	6.4	211	101	150.9	0.7	0.000	0.00	3	
November	38701	1290	2033	6321	0.000	107	96	1.6	2.06	98.3%	144	8.0	10.32	96.5%	3.4	0.27	0.35	95.0%	25.60	0.07	0.09	99.8%	0.01	28.6	0.37	16.93	0.05	7.0	6.4	163	43	129.1	1.1	0.000	0.00	2	
December	36750	1185	2672	9675	0.000	150	180	3.3	3.91	98.2%	153	7.6	9.01	97.8%	5.0	0.46	0.55	95.9%	28.00	8.70	10.31	86.2%	32.20	35.5	8.80	13.20	0.58	6.7	7.1	162	89	82.8	1.1	0.000	0.00	1	
Total	382166				0.019					95.9%				96.8%				94.3%				85.1%															
Average		1579				113	104	4.10	6.18	#DIV/0!	123	6.61	9.62	#DIV/0!	3.27	0.36	0.52	#DIV/0!	22.30	5.80	10.9	#DIV/0!	41.25	28.31	5.81	10.81	0.46	7.00	6.74	164	66		0.88	0.001	0.00	3	



Plant Type: Extended Aeration
Design Capacity: 1600 m³/day
Population Served: 2,761

Compliance Parameters:

	Conc.	Loading	
BOD ₅	25 mg/L	40 kg/day	*
TSS	25 mg/L	40 kg/day	*
Total Phosphorus	1.0 mg/L	1.6 kg/day	Monthly Average
E.Coli	200 col/100 mL		Monthly Geometric Mean

* Annual average of any consecutive 12 month period.

June-Aug - Facility down for Maintenance - no flows



2024 Lively Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	17.60	10.90	120.00	16.10	34.80	NA	NA	NA	NA	3.27	0.16	10.40	26.65
Nitrate (as N)	0.00	0.00	0.61	0.00	0.00	NA	NA	NA	NA	2.61	11.30	0.00	1.82
Nitrite (as N)	0.0	0.0	0.8	0.0	0.0	NA	NA	NA	NA	1.0	0.0	0.0	0.2
Potassium	45	83	94	22	58	NA	NA	NA	NA	15	16	81	52
TKN	834	1520	1170	174	162	NA	NA	NA	NA	171	82	774	611
Total Phosphorus	214.00	364.00	223.00	53.10	6.90	NA	NA	NA	NA	7.83	0.41	462.00	166.40
Total Solids	26800	9220	29200	3190	17300	NA	NA	NA	NA	3070	2640	19500	13865
Arsenic	0.20	0.15	0.10	0.01	0.08	NA	NA	NA	NA	0.01	0.00	0.10	0.08
Cadmium	0.0611	0.0383	0.0230	0.0043	0.0191	NA	NA	NA	NA	0.0022	0.0018	0.0209	0.0213
Chromium	0.92	0.63	0.38	0.05	0.35	NA	NA	NA	NA	0.04	0.03	0.32	0.34
Cobalt	0.360	0.293	0.165	0.059	0.245	NA	NA	NA	NA	0.036	0.028	0.286	0.184
Copper	13.2	14.1	8.2	1.5	5.9	NA	NA	NA	NA	1.16	0.78	8.20	6.63
Lead	0.800	0.633	0.428	0.058	0.335	NA	NA	NA	NA	0.062	0.042	0.417	0.347
Mercury	0.017	0.013	0.009	0.001	0.005	NA	NA	NA	NA	0.002	0.000	0.008	0.007
Molybdenum	0.15	0.10	0.07	0.00	0.03	NA	NA	NA	NA	0.01	0.00	0.06	0.05
Nickel	3.40	3.30	2.00	0.52	2.30	NA	NA	NA	NA	0.24	0.23	2.10	1.76
Selenium	0.103	0.089	0.061	0.000	0.039	NA	NA	NA	NA	0.008	0.009	0.073	0.048
Zinc	9.60	12.30	6.80	1.33	6.77	NA	NA	NA	NA	0.77	0.76	7.21	5.69
Sample Date	Jan.9/24	Feb.7/24	Mar.4/24	Apr.2/24	May.7/24	NA	NA	NA	NA	Oct.1/24	Nov.5/24	Dec.3/24	

Work Order	January	February	March	April	May	June	July	August	September	October	November	December
	523532	525630	527862	530064	533723	NA	NA	NA	NA	551947	555799	558480

NA - plant shut down for maintenance - diverted to Walden
resumed Sep.11/24



2024 Sudbury Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	378	206	175	307	265	487	547	255	562	541	619	278	385
Nitrate (as N)	0.00	0.00	0.82	0.00	4.80	2.10	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Nitrite (as N)	3.60	1.90	2.00	0.00	31.20	25.20	1.30	0.60	0.00	19.40	0.00	0.00	7.10
Potassium	199	177	223	138	156	211	212	142	214	202	189	157	185
TKN	1010	2190	441	2440	595	1970	2090	665	1180	1290	2860	1260	1499
Total Phosphorus	244	631	310	498	223	294	220	348	612	727	1.60	38	346
Total Solids	38800	31900	46100	32100	31300	40800	33600	17600	42700	39200	35400	31900	35117
Arsenic	0.20	0.15	0.35	0.15	0.19	0.26	0.26	0.10	0.27	0.29	0.20	0.15	0.21
Cadmium	0.0261	0.0234	0.0418	0.0343	0.0283	0.0480	0.0301	0.0126	0.0434	0.0396	0.0306	0.0305	0.0324
Chromium	0.34	0.38	0.72	0.39	0.45	0.62	0.42	0.19	0.59	0.48	0.38	0.35	0.44
Cobalt	0.273	0.231	0.427	0.214	0.235	0.434	0.376	0.159	1.100	0.446	0.307	0.288	0.374
Copper	12.8	11.6	17.8	13.6	14.0	16.1	17.2	6.3	24.0	19.0	15.3	16.0	15.3
Lead	0.522	0.468	0.950	0.476	0.524	0.701	0.567	0.208	0.881	0.751	0.574	0.482	0.592
Mercury	0.004	0.005	0.008	0.005	0.031	0.012	0.011	0.003	0.013	0.011	0.010	0.007	0.010
Molybdenum	0.09	0.11	0.16	0.09	0.10	0.14	0.14	0.07	0.19	0.17	0.10	0.11	0.12
Nickel	6.3	3.7	8.6	5.0	5.1	6.5	6.8	2.4	36.0	8.3	5.5	5.2	8.3
Selenium	0.086	0.081	0.145	0.095	0.109	0.242	0.137	0.068	0.128	0.174	0.139	0.143	0.129
Zinc	9.60	11.80	15.50	11.90	10.10	14.90	15.90	5.85	18.70	20.00	14.50	15.00	13.65
Sample Date	Jan.2/24	Feb.5/24	Mar.4/24	Apr.2/24	May.1/24	Jun.3/24	Jul.2/24	Aug.6/24	Sep.3/24	Oct.1/24	Nov.4/24	Dec.2/24	

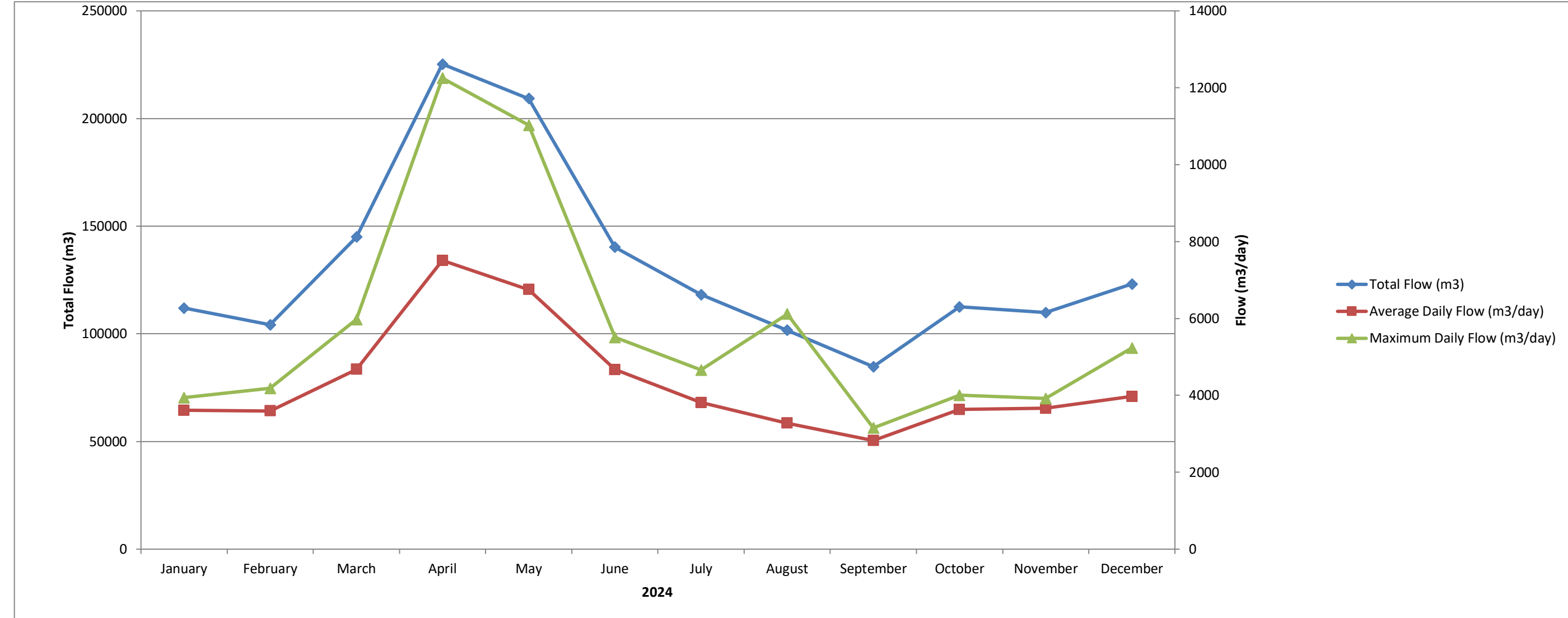
Work Order	522951	525453	527695	530068	533121	536783	539781	543710	547663	551961	555604	558268
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0.000 denotes values that are expressed as < MDL



2024 Valley East Wastewater Treatment Plant Performance

Month	Flows			Excess Capacity	BOD ₅ Raw	CBOD				Total Suspended Solids				Total Phosphorus				Total Ammonia				Un-ionized Ammonia	TKN		Nitrate	Nitrite	pH		Alkalinity		Chlorine		Dechlorination		E.Coli Geomean	
	Total m ³	Avg Day m ³ /d	Max Day m ³ /d			Raw mg/L	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d	Plant Efficiency	Raw mg/L	Effluent mg/L	Loading kg/d		Plant Efficiency	mg/L			mg/L	mg/L	mg/L	Raw mg/L	Effluent mg/L	Raw mg/L	Effluent mg/L	Total Kg		Residual mg/L
January	111939	3611	3938	0.000	230	210	2.5	9.03	98.8%	218	4.6	16.61	97.9%	4.7	0.61	2.20	87.0%	29.30	33.46	120.8	-14.2%	466.3	49.9	29.6	1.81	0.15	7.1	6.9	269	208	234.2	1.0	0.003	0.01	5	
February	104227	3594	4186	0.000	260	190	2.8	10.06	98.5%	235	6.3	22.64	97.3%	6.0	0.59	2.12	90.2%	37.20	36.50	131.2	1.9%	433.8	39.3	32.2	1.50	0.06	7.1	7.0	273	222	198.4	0.9	0.005	0.02	3	
March	144996	4677	5974	0.000	190	160	3.6	16.84	97.8%	170	6.7	31.34	96.1%	4.6	0.48	2.25	89.6%	26.20	25.98	121.5	0.8%	403.6	28.1	20.0	1.63	0.06	7.1	6.9	239	199	276.5	1.0	0.003	0.01	9	
April	225278	7509	12251	0.886	150	100	5.2	39.05	94.8%	141	10.5	78.85	92.6%	3.3	0.46	3.45	86.1%	27.80	18.15	136.3	34.7%	196.2	36.8	16.4	1.28	0.37	7.0	6.8	219	183	336.5	0.7	0.011	0.08	13	
May	209266	6751	11023	0.000	33	36	4.6	31.05	87.2%	141	6.9	46.58	95.1%	3.0	0.40	2.70	86.7%	7.65	16.31	110.1	-113.2%	221.8	8.1	14.4	1.83	0.46	7.2	7.0	207	173	381.8	0.9	0.005	0.03	13	
June	140222	4674	5505	0.000	47	73	4.1	19.16	94.4%	189	6.3	29.45	96.7%	4.2	0.51	2.38	87.9%	27.30	25.90	121.1	5.1%	389.4	28.4	26.1	1.77	0.34	7.1	7.0	219	187	528.9	0.9	0.001	0.00	50	
July	118206	3813	4657	0.000	140	100	2.5	9.53	97.5%	232	4.7	17.92	98.0%	5.5	0.48	1.83	91.3%	25.60	19.42	74.05	24.1%	287.5	33.0	18.5	6.20	1.14	7.0	6.9	251	151	416.5	1.1	0.007	0.03	10	
August	101630	3278	6115	0.000	53	44	5.1	16.72	88.4%	268	8.1	26.55	97.0%	6.2	0.61	2.00	90.2%	32.90	12.03	39.44	63.4%	109.9	33.3	11.6	13.68	0.62	7.1	6.6	256	84	202.6	1.1	0.006	0.02	63	
September	84745	2825	3153	0.000	200	170	1.8	5.08	98.9%	256	5.3	14.97	97.9%	6.8	0.64	1.81	90.6%	31.30	15.48	43.73	50.5%	114.5	37.8	15.0	10.20	0.54	7.0	6.6	262	104	193.9	1.1	0.004	0.01	33	
October	112512	3629	4006	0.000	250	190	1.9	6.90	99.0%	290	4.9	17.78	98.3%	6.9	0.65	2.36	90.6%	39.80	20.88	75.78	47.5%	145.9	42.9	18.3	7.80	0.78	7.1	6.7	273	129	172.1	1.3	0.002	0.01	13	
November	109918	3664	3918	0.000	180	200	3.0	10.99	98.5%	261	5.5	20.15	97.9%	7.0	0.74	2.71	89.4%	39.10	29.80	109.19	23.8%	329.8	36.1	27.9	3.92	1.04	7.1	6.9	265	183	165.0	1.1	0.001	0.00	54	
December	123063	3970	5234	0.000	220	210	3.0	11.91	98.6%	219	4.5	17.86	97.9%	5.7	0.58	2.30	89.8%	32.10	29.90	118.70	6.9%	268.5	41.6	29.6	2.73	0.57	7.1	7.0	249	199	178.3	0.9	0.008	0.03	9	
Total	1586002			0.886					97.3%				96.8%				89.1%				17.6%															
Average	4345				163	140	3.34	15.53	96.0%	218	6.19	28.39	96.9%	5.33	0.56	2.34	89.1%	29.69	23.65	100.2	0.1	280.60	34.61	21.63	4.53	0.51	7.08	6.86	249	168	273.73	1.0	0.005	0.02	23	



Plant Type: Extended Aeration
Design Capacity: 11,400 m³/day
Population Served: 17,365

Compliance Parameters:

CBOD	Conc. 25 mg/L	Loading 284 kg/day	Annual Average
TSS	25 mg/L	284 kg/day	Annual Average
Total Phosphorus	1.0 mg/L	11.4 kg/day	Monthly Average
pH	6.0 to 9.5 inclusive, at all times		
E.Coli	200 col/100 mL		Monthly Geometric Mean



2024 Valley East Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	204.0	86.8	112.0	219.0	118.0	287.0	15.9	172.0	193.0	198.0	172.0	164.0	162
Nitrate (as N)	0.00	0.00	0.00	0.00	2.00	0.25	0.00	0.25	0.00	0.00	0.00	0.00	0.21
Nitrite (as N)	1.80	0.50	0.35	0.00	11.60	0.53	0.70	4.76	7.40	4.87	0.00	0.10	2.72
Potassium	74	106	91	96	74	108	62	81	76	84	68	70	83
TKN	1400	1380	880	536	540	1160	1630	1330	1220	370	1170	1150	1064
Total Phosphorus	225	415	139	289	181	203	284	519	539	63.8	412	500	314
Total Solids	26500	28900	23800	28900	38200	29000	30900	27700	32700	29400	28600	26500	29258
Arsenic	0.05	0.07	0.08	0.08	0.09	0.08	0.09	0.07	0.07	0.07	0.06	0.06	0.07
Cadmium	0.0097	0.0128	0.0174	0.0157	0.0163	0.0165	0.015	0.0189	0.0146	0.0149	0.0124	0.0121	0.0147
Chromium	0.15	0.28	0.31	0.30	0.36	0.26	0.25	0.29	0.27	0.28	0.18	0.18	0.26
Cobalt	0.053	0.093	0.105	0.068	0.088	0.080	0.085	0.077	0.069	0.085	0.065	0.077	0.079
Copper	5.8	9.4	6.7	7.4	7.7	7.7	10.7	9.1	8.6	8.9	7.0	7.4	8.0
Lead	0.151	0.205	0.179	0.179	0.336	0.162	0.194	0.209	0.229	0.183	0.189	0.253	0.206
Mercury	0.000	0.006	0.003	0.003	0.008	0.005	0.004	0.005	0.005	0.003	0.004	0.004	0.004
Molybdenum	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.13	0.04	0.05
Nickel	0.34	0.63	0.70	0.50	0.78	0.53	0.48	0.44	0.45	0.44	0.34	0.38	0.50
Selenium	0.021	0.029	0.038	0.030	0.035	0.044	0.041	0.041	0.043	0.037	0.035	0.028	0.035
Zinc	6.63	12.30	8.30	10.80	9.80	8.80	11.80	12.50	11.30	11.00	9.90	9.6	10.2
Sample Date	Jan.2/24	Feb.7/24	Mar.4/24	Apr.3/24	May.1/24	Jun.5/24	July3/24	Aug.7/24	Sep.4/24	Oct.1/24	Nov.6/24	Dec.4/23	

Work Order	523031	525709	527810	530175	533070	537163	539902	543900	547903	551889	555895	558576
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2024 Walden Wastewater Treatment Plant Waste Sludge Analysis

Parameter (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December	Average
Ammonia (as N)	1.78	9.74	3.80	12.90	4.32	10.60	3.64	4.00	18.50	2.47	0.77	7.00	0.10
Nitrate (as N)	8.90	0.26	0.00	0.00	0.17	0.25	1.00	6.25	0.00	0.51	17.00	0.10	2.87
Nitrite (as N)	0.77	0.00	0.00	0.00	0.00	0.51	0.00	0.05	0.00	0.41	0.07	0.00	0.15
Potassium	21	27	52	30	25	109	28	24	46	31	18	51	39
TKN	117	201	384	304	854	922	378	96	664	424	62	556	414
Total Phosphorus	43.7	40.1	70.2	65.7	8.4	142.0	61.7	35.0	178.0	15.0	0.0	213.0	72.7
Total Solids	3460	3600	12800	5880	4890	17200	7460	3200	17300	6270	1640	12800	8042
Arsenic	0.03	0.03	0.09	0.03	0.03	0.13	0.04	0.02	0.05	0.03	0.00	0.06	0.05
Cadmium	0.0080	0.0058	0.0261	0.0105	0.0059	0.0485	0.0128	0.0053	0.0166	0.0097	0.0018	0.0186	0.0141
Chromium	0.09	0.07	0.36	0.15	0.11	0.60	0.14	0.06	0.17	0.10	0.02	0.18	0.17
Cobalt	0.144	0.152	0.412	0.182	0.168	0.887	0.240	0.130	0.391	0.283	0.072	0.570	0.303
Copper	1.9	1.4	5.1	2.3	2.1	10.2	3.9	1.4	4.4	2.6	0.48	5.5	3.4
Lead	0.090	0.092	0.325	0.125	0.099	0.509	0.163	0.059	0.191	0.103	0.020	0.159	0.161
Mercury	0.002	0.000	0.004	0.000	0.000	0.007	0.002	0.000	0.003	0.001	0.000	0.003	0.002
Molybdenum	0.06	0.06	0.20	0.06	0.05	0.19	0.10	0.05	0.07	0.06	0.01	0.09	0.08
Nickel	0.95	1.28	3.60	1.60	1.26	5.00	1.29	0.64	2.40	1.70	0.38	3.10	1.93
Selenium	0.018	0.000	0.078	0.027	0.020	0.119	0.039	0.016	0.025	0.024	0.009	0.063	0.037
Zinc	2.33	3.00	13.90	5.20	4.00	17.90	4.29	2.07	5.87	4.06	0.77	8.20	5.97
Sample Date	Jan.9/24	Feb.6/24	Mar.5/24	Apr.2/24	May.7/24	Jun.3/24	Jul.2/24	Aug.6/24	Sep.3/24	Oct.1/24	Nov.5/24	Dec.3/24	

Work Order	523531	525638	527873	530061	533731	536948	539787	543705	547647	551937	555803	558464
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