

# 2024 ANNUAL WASTEWATER TREATMENT SYSTEM SUMMARY REPORT

## Plattsville Wastewater Treatment Plant

### 1. GENERAL INFORMATION

Oxford County (the County) prepares a report summarizing wastewater treatment operation and treated effluent discharge quality for every municipal wastewater treatment plant (WWTP) annually. The reports detail the latest effluent quality testing results and quantity statistics, and any non-compliance conditions that may have occurred for the previous year. They are available for review by the end of March on the County website at <http://www.oxfordcounty.ca/waterwastewater> or by contacting the Public Works Department.

All efforts have been made to ensure the information presented in this report is as accurate as possible.

If you have any questions or comments concerning the report, please contact the County at the address and phone number listed below or by email at [wastewater@oxfordcounty.ca](mailto:wastewater@oxfordcounty.ca).

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<b>Wastewater Treatment Plant:</b>	Plattsville WWTP
<b>Wastewater Treatment Plant Number:</b>	110003022
<b>Environmental Compliance Approval (ECA):</b>	3133-7QWH4N (June 23, 2009)
<b>Reporting Period:</b>	January 1, 2024 – December 31, 2024

#### **Wastewater Treatment Plant Owner & Contact Information:**

Oxford County Public Works Department - Wastewater Services  
P.O. Box 1614  
21 Reeve Street  
Woodstock, ON N4S 7Y3  
**Telephone:** 519-539-9800  
**Toll Free:** 866-537-7778  
**Email:** [wastewater@oxfordcounty.ca](mailto:wastewater@oxfordcounty.ca)

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## 1.1 System Description

The Plattsville WWTP is a Class I facility, as defined by Ontario Regulation (O. Reg.) 129/04. The Plattsville WWTP is a lagoon wastewater treatment system serving the community of Plattsville. The nominally separated wastewater collection system includes one (1) sewage pumping station (SPS), 12 kilometers of sanitary gravity sewers and 3.1 kilometers of sanitary forcemain sewers. Wastewater is treated at the Plattsville WWTP, which includes two aerated lagoon cells and two conventional wastewater stabilization ponds. Phosphorus removal is accomplished through the continuous dosing of aluminum sulphate into the splitter box prior to the wastewater entering the stabilization ponds and/or when required by batch dosing via a return pump pond mixing system, which can dose either cell and recirculate the contents. Treated effluent is pumped to an intermittent sand filter designed for ammonia removal prior to discharge into the Nith River.

The system is maintained by licensed wastewater system operators and licensed mechanics that operate, monitor, and maintain the treatment equipment, in accordance with the regulations, and collect samples as required by the ECA. Alarms automatically notify operators in the event of failure of critical operational requirements.

The Plattsville WWTP is located at Lot 16, Conc. 12, Township of Blandford-Blenheim, Ontario with the Facility description provided below:

<b>Facility</b>	Plattsville WWTP
<b>Design Capacity</b>	800 m <sup>3</sup> /d
<b>2024 Average Daily Flow</b>	436 m <sup>3</sup> /d
<b>2024 Maximum Daily Flow</b>	732 m <sup>3</sup> /d
<b>2024 Total Volume of Wastewater</b>	159,762 m <sup>3</sup> /year

## 1.2 Major Expenses

In 2024, the Plattsville WWTP had forecasted operating and maintenance expenditures of approximately \$682,000.

Planning for major wastewater system expenses is included within Oxford County's Wastewater Services Master Plan and managed according to our Asset Management and Capital Replacement Program. In addition to regular operational and maintenance expenditures, notable Capital Improvement Projects included:

- \$427,000 to develop Countywide SCADA Master Plan for all wastewater systems.



PLATTSVILLE WWTP GROUNDWATER SAMPLING								
Date	Apr 2/24	Apr 2/24	Apr 16/24	Apr 16/24	Nov 1/24	Nov 1/24	Nov 15/24	Nov 15/24
Depth of Sample	Shallow	Deep	Shallow	Deep	Shallow	Deep	Shallow	Deep
Parameter								
Nitrite (mg/L)	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nitrate (mg/L)	0.34	< 0.06	0.34	< 0.06	0.47	< 0.06	0.57	0.39
Nitrate + Nitrite (mg/L N)	0.34	< 0.06	0.34	< 0.06	0.47	< 0.06	0.57	0.39
Chloride (mg/L)	7	27	5	22	3	23	4	24

Oxford County's Hydrogeologist has reviewed all monitoring well data and will continue to monitor groundwater results on our behalf and has no concerns at this time.

## 2.2 WWTP Performance and Effluent Quality

### *Final Effluent Compliance Limits*

Compliance limits are defined as the maximum effluent concentrations permitted for a given parameter set by the Ministry of Environment, Conservation and Parks (MECP). Compliance limits are detailed within each WWTP ECA. The limits are determined to prevent impairment to the receiving water body quality. The Owner is legally obligated to operate and maintain the treatment system to ensure the compliance limits are achieved.

In 2024, the Plattsville WWTP provided effective treatment, with 160 samples out of 170 meeting compliance or 94% compliance to its regulatory limits for all effluent discharge to the Nith River.

In November, warm fall temperatures led to an algal bloom in the Waste Stabilization Ponds (WSP) which resulted in a non-compliance related to effluent TSS/TSS loading:

- The Effluent Total Suspended Solids Monthly Average Concentration was 86.0 mg/L, with an ECA Total Suspended Solids Monthly Average Concentration limit of 10.0 mg/L
- The Effluent Total Suspended Solids Average Monthly Loading Concentration was 94.3 kg/day, with an ECA Effluent Total Suspended Solids Average Monthly Loading Concentration limit of 14.7 kg/day

In response to the algae bloom, the equalization valve in between WSP1 and WSP2 was closed, the alum dose was adjusted to aid coagulation, the filter feed pump cycle times were adjusted, the effluent discharge flow rate and duration was decreased, repairs were made to damaged sand filter pipes and increased staff time and testing occurred to try and resolve the situation. Going forward operations plan to closely monitor both WSPs conditions prior to discharge.

In 2025, design work is to be initiated on a tertiary cloth media filter at the Plattsville WWTP and once constructed will reduce the chances of similar events in the future.

The non-compliance was reported to the MECP at the time.

On a bi-weekly basis (as a minimum) the operator measures the pH of the effluent stream during discharge. There was no single pH result for the effluent outside the discharge limit of 6.0 - 9.5 in 2024.

Chlorine was not used at the Plattsville WWTP in 2024.

During the 2024 effluent discharge, the receiving stream temperature was <12 degrees Celsius from April 1 through April 28, November 1 through November 5 and November 7 through November 28. The receiving stream temperature was >12 degrees Celsius from April 29 through May 26, and on November 6.

Influent wastewater characteristics and effluent discharge values are presented in the tables below:

<b>Influent Wastewater Characteristics (annual average)</b>		
<b>Parameter</b>	<b>Concentration (mg/L)</b>	<b>Loading (kg/d)</b>
BOD <sub>5</sub>	185	81
Total Suspended Solids	200	87
Total Phosphorus	5.2	2.3
Total Kjeldahl Nitrogen	52.9	23

<b>Effluent Parameter</b>	<b>Sample Frequency (when discharging)</b>	<b>ECA Effluent Limit (Monthly Average) (mg/L unless otherwise indicated)</b>	<b>Monthly Average Result Min-Max (mg/L unless otherwise indicated)</b>	<b>Percentage Removal</b>
CBOD <sub>5</sub>	weekly	10.0	2.0 – 5.2	97.0 – 98.8
TSS	weekly	10.0	4.2 – 86.0	57.0 – 97.9
TP	weekly	0.5	0.03 – 0.24	95.4 – 99.4
Total Ammonia Nitrogen (when receiving stream >12 degrees Celsius)	weekly	2.0	0.7	98.4
Total Ammonia Nitrogen (when receiving stream < or = to 12 degrees Celsius)	weekly	5.0	0.3 – 1.4	96.8 – 99.3
E. coli	weekly	200 colonies/100mL (monthly Geometric Mean Density)	3.1 – 108.8 colonies/100 mL (monthly Geometric Mean Density)	--
pH any single sample	weekly	6.0 – 9.5	6.9 – 8.1	--

Graphs of discharge parameters versus effluent discharge limits are included in this report in Appendix 'A.'

### 2.3 Final Effluent Design Objectives

Final Effluent Design Objectives (objectives) are non-enforceable effluent quality values which the Owner is obligated to use best efforts to strive towards achieving on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively, and voluntarily before environmental impairment occurs and before the compliance limits are exceeded.

There was two monthly average objective exceedances related to TSS and CBOD<sub>5</sub>. Several single sample effluent objective exceedances occurred in 2024. These results are summarized in the tables below.

Achieving the effluent objective for TSS, E. coli and CBOD<sub>5</sub> was difficult in the fall of 2024, due to algae blooms that formed in the waste stabilization ponds because of the warmer ambient temperatures. Operational strategies planned in 2025 to reduce the number of objective failures include recirculating both waste stabilization ponds prior to equalizing into waste stabilization pond 2, increased process testing throughout the discharge season and optimizing the coagulant dosage. Additionally, in 2025, plans are in place to remove the biosolid deposits within several of the treatment lagoons (de-sludging) and design work will be undertaken on a tertiary filtration unit.

The following table presents the range of effluent discharge values vs. ECA Objectives:

Effluent Parameter	Sample Frequency (when discharging)	Monthly Average Objective Concentration (mg/L unless otherwise indicated)	Monthly Average Result Min-Max (mg/L unless otherwise indicated)
CBOD <sub>5</sub>	weekly	5.0	2.0 – 5.2
TSS	weekly	5.0	4.2 – 86.0
TP	weekly	0.3	0.03 – 0.24
Total Ammonia Nitrogen (when receiving stream >12 degrees Celsius)	weekly	1.0	0.7
Total Ammonia Nitrogen (when receiving stream < or = to 12 degrees Celsius)	weekly	3.0	0.3 – 1.4
E. coli	weekly	150 colonies/100 mL (monthly Geometric Mean Density)	3.1 – 108.8 colonies/100 mL (monthly Geometric Mean Density)
Dissolved Oxygen	weekly	5.0	6.3 – 9.6

Plattsville effluent single sample concentrations that exceeded the objective in 2024 included the following:

Date	Parameter	Objective (mg/L unless otherwise indicated)	Result (mg/L unless otherwise indicated)
April 2, 2024	TSS	5.0	8.0
April 23, 2024	TAN	3.0	3.5
May 7, 2024	TSS	5.0	10.0
May 13, 2024	TSS	5.0	6.0
May 24, 2024	TAN	1.0	1.2
November 1, 2024	CBOD <sub>5</sub>	5.0	8.0
November 1, 2024	TSS	5.0	80.0
November 1, 2024	E. coli	150 colonies/100 mL	400 colonies/100 mL
November 7, 2024	TSS	5.0	101.0
November 13, 2024	TSS	5.0	103.0
November 13, 2024	E. coli	150 colonies/100 mL	340 colonies/100 mL
November 21, 2024	CBOD <sub>5</sub>	5.0	6.0
November 21, 2024	TSS	5.0	59.0
November 28, 2024	TSS	5.0	87.0

Plattsville effluent monthly average concentrations that exceeded the objective in 2024 included the following:

Month	Parameter	Objective (mg/L)	Monthly Average Result (mg/L)
November 2024	CBOD <sub>5</sub>	5.0	5.2
November 2024	TSS	5.0	86.0

### 3. OVERFLOWS, BYPASSING, UPSETS, SPILLS, AND ABNORMAL CONDITIONS

There were no overflows, bypassing, upsets, spills, or abnormal conditions at the Plattsville WWTP in 2024.

There were no complaints in 2024.

### 4. MAINTENANCE OF WORKS

The operating and maintenance staff at the Plattsville WWTP conducts regularly scheduled maintenance of the plant equipment. The Plattsville WWTP utilizes a database known as Cartegraph to issue work orders and maintain records for regular maintenance and repair at the Plattsville WWTP.

## **5. MONITORING EQUIPMENT MAINTENANCE AND CALIBRATION**

The calibration of flow meters is conducted yearly by JBF Controls Ltd. in accordance with the requirements of the ECA. The records are kept on-site at the Plattsville WWTP.

The operational monitoring equipment calibration records are kept on-site at the Plattsville WWTP.

## **6. INSPECTION, PILOTS, AND TRIALS**

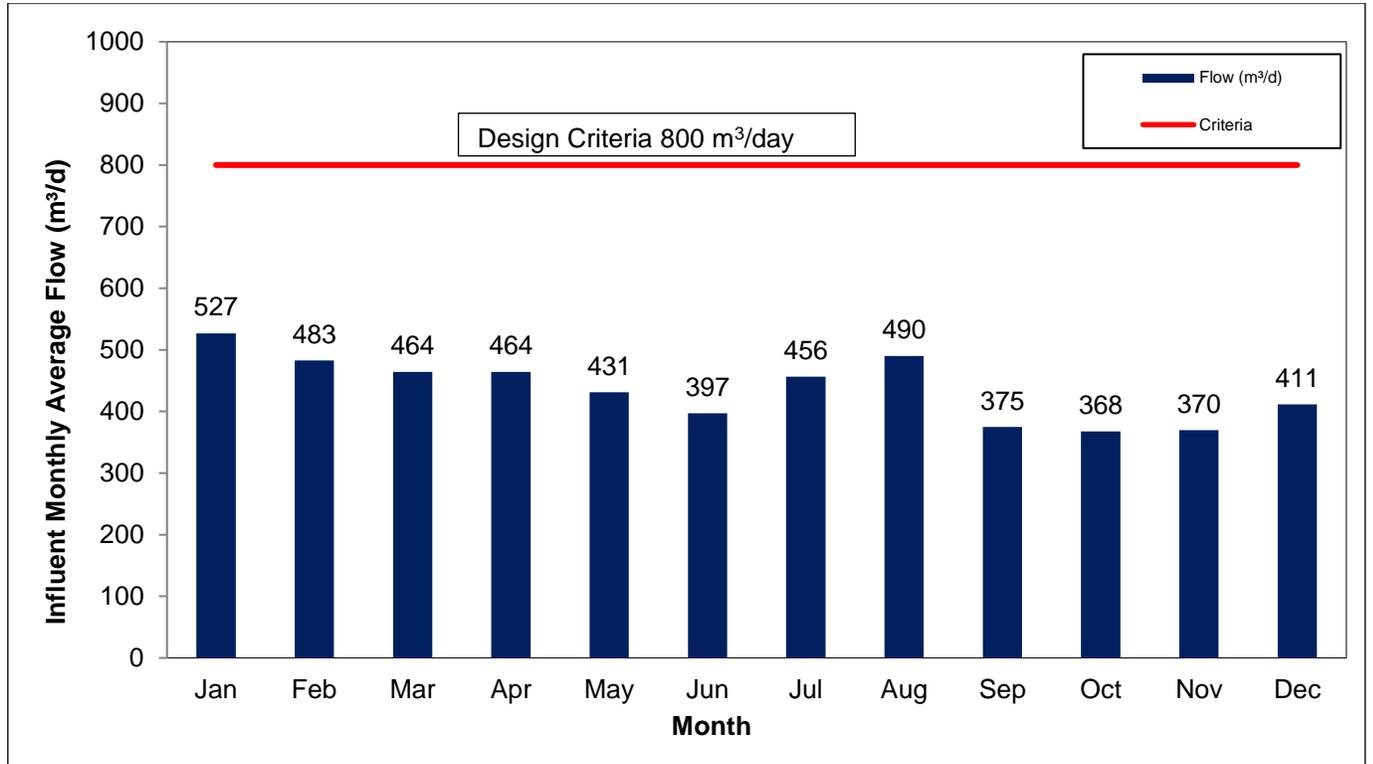
The MECP did not perform an inspection of the Plattsville WWTP in 2024. The MECP inspections typically occur on a 3-year schedule.

### ***Tertiary Filtration WWTP Upgrade***

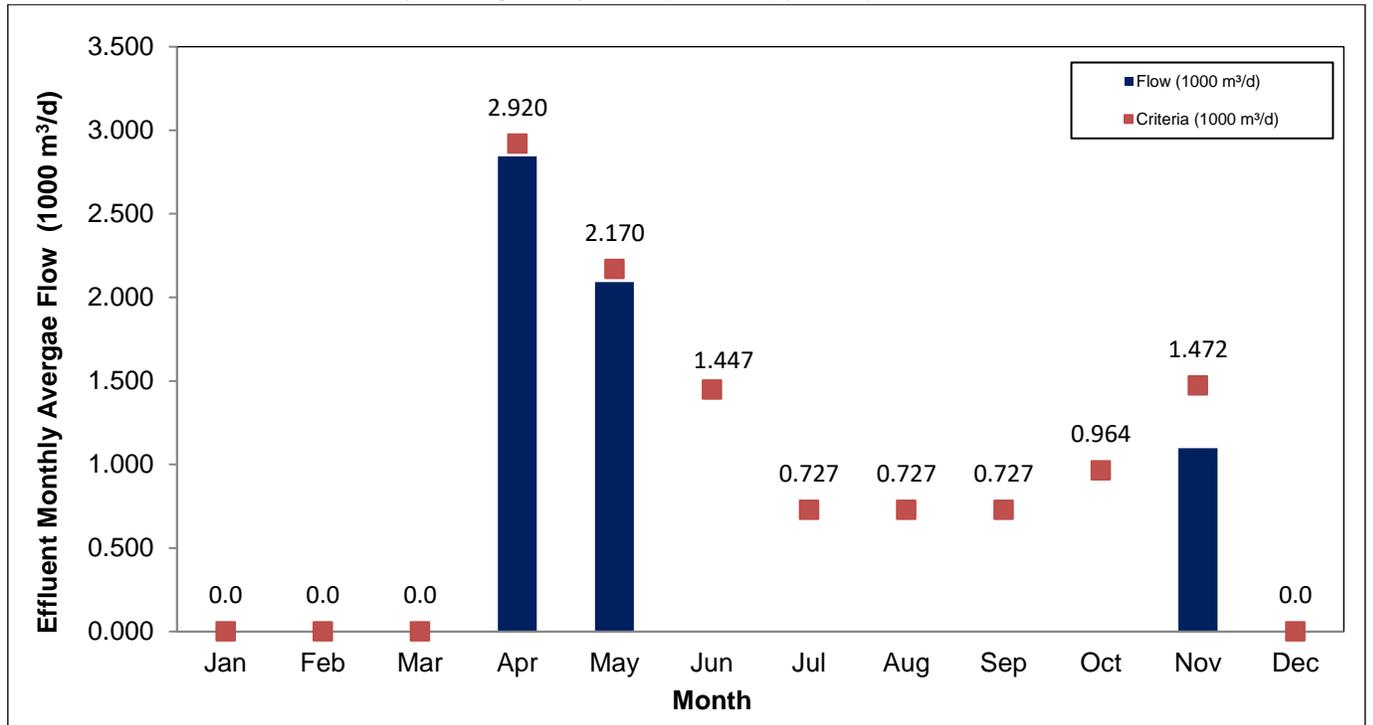
In 2025, design work will begin on a tertiary cloth media filter meant to address and eliminate current operational issues associated with algae blooms and elevated TSS concentrations within the WSPs during discharge periods. Construction is planned for 2026.

## APPENDIX A: GRAPHS OF 2024 DISCHARGE PARAMETERS VS. EFFLUENT DISCHARGE LIMITS

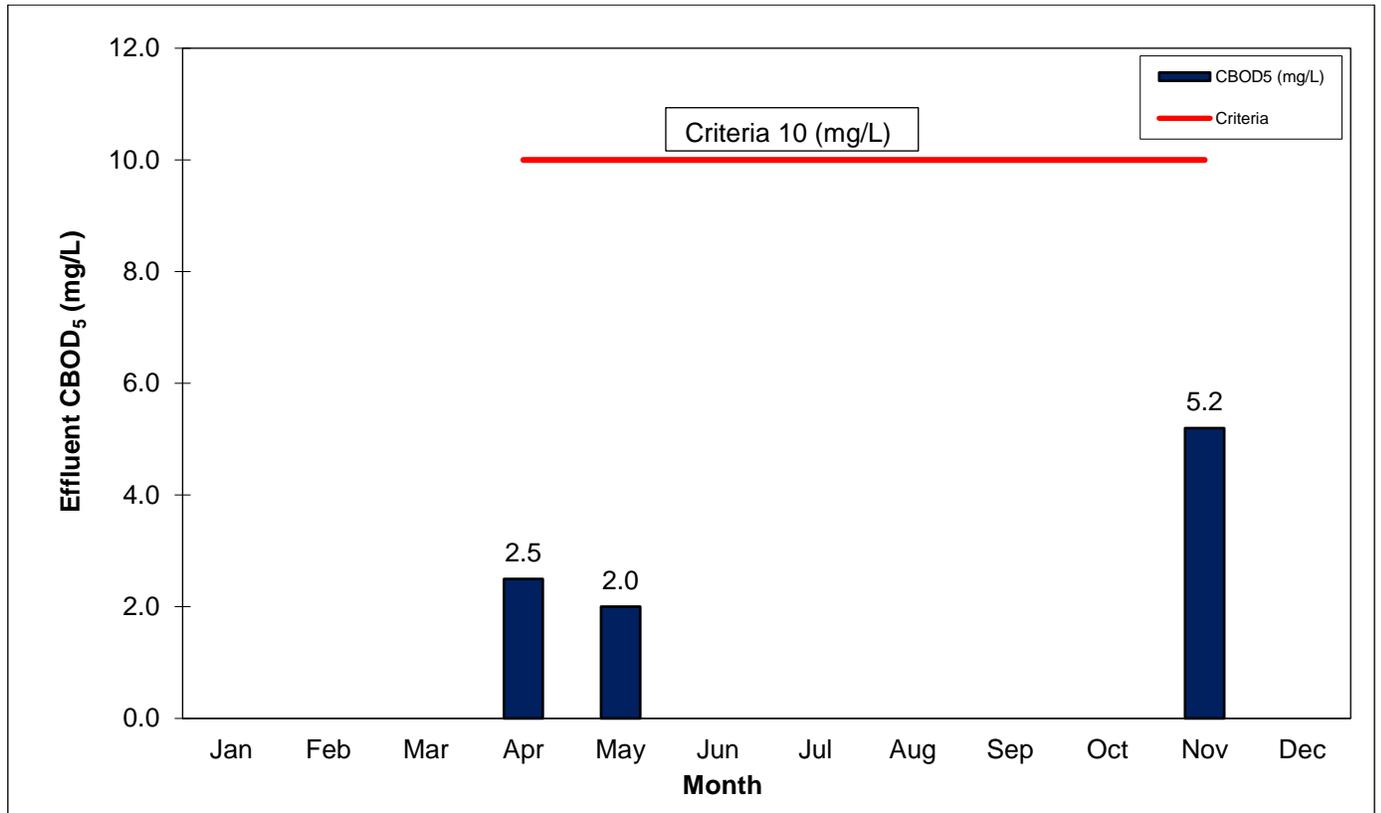
Plattsville WWTP Influent, Monthly Average Daily Flow in Cubic Meters per Day, 2024



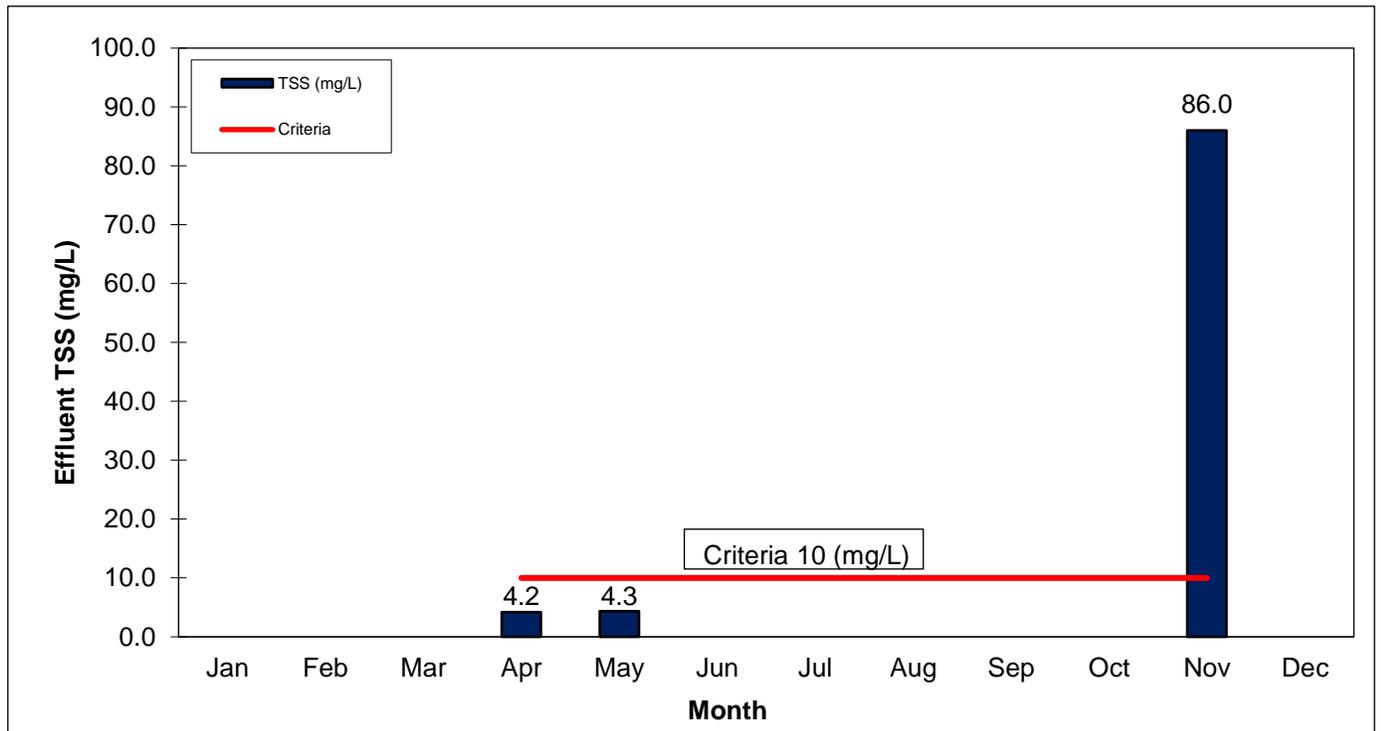
Plattsville WWTP Effluent, Monthly Average Daily Flow (1000 m<sup>3</sup>) per Day, 2024



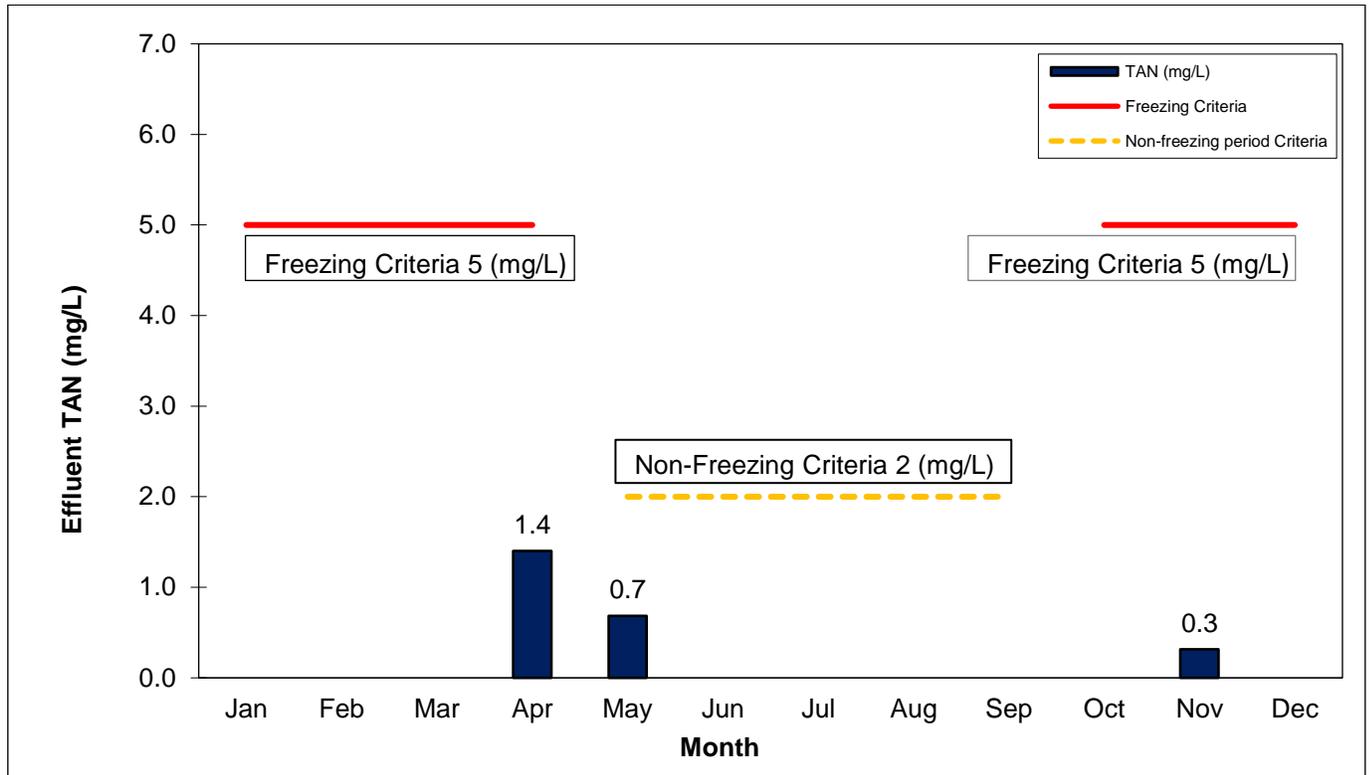
Plattsville WWTP Effluent, Monthly Average CBOD<sub>5</sub> (mg/L), 2024



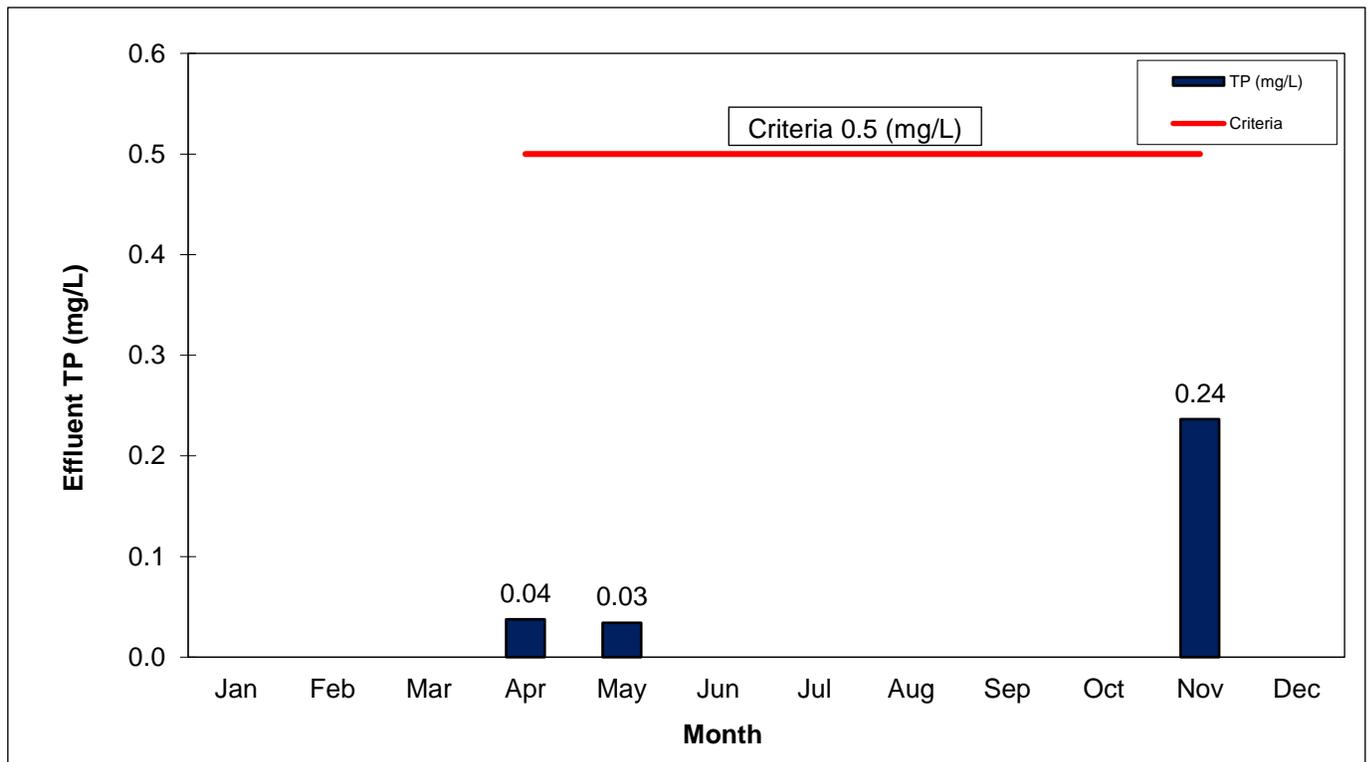
Plattsville WWTP Effluent, Monthly Average TSS (mg/L), 2024



Plattsville WWTP Effluent, Monthly Average TAN (mg/L), 2024



Plattsville WWTP Effluent, Monthly Average TP (mg/L), 2024



Plattsville WWTP Effluent, Monthly Geometric Mean Density E. coli (colonies/100 mL), 2024

