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# 2025 Annual Performance Report

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## Craikleith Wastewater Treatment Plant

**Prepared by: Wastewater Operations**

**Date: March 30, 2026**

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## Executive Summary

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This report has been prepared as required by Amended Environmental Compliance Approval 5338-ASUR85, Section 11 issued to the Craigleith Wastewater Treatment Plant.

Section 11 (4) requires the Owner to prepare performance reports on a calendar year basis and submit to the Water Supervisor by March 31 of the calendar year following the period being reported upon. The report shall contain, but shall not be limited to, the following information pertaining to the reporting period:

- a. Summary and interpretation of all Influent monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;
- 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;
- c. Summary of all operating issues encountered, and corrective actions taken;
- 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;
- e. Summary of any effluent quality assurance or control measures undertaken;
- f. Summary of the calibration and maintenance carried out on all Influent, and Final Effluent monitoring equipment;
- g. Summary of efforts made to achieve the design objectives;
- h. Tabulation of the volume 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;
- i. Summary of any complaints received, and any steps taken to address the complaints;
- j. Summary of all Bypasses, Overflows, spills within the meaning of Part X of EPA and abnormal discharge events, and other abnormal operating conditions;
- k. Copy of all Notice of Modifications to Sewage Works submitted to the Water Supervisor under paragraph 1.d. of Condition 10, with a summary report on status of implementation of all modification.

All the requirements listed in Section 11 (4) have been met and will be further explored throughout the report. The Town continues to successfully operate the Craigleith Wastewater Treatment System in accordance with regulatory requirements.

## Facility Information

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The Craigleith Wastewater Treatment Plant is an extended aeration treatment plant with a rated capacity of 8,133 m<sup>3</sup>/day. Extended aeration is a modification of the conventional activated sludge treatment process. This form of treatment was selected to allow for the fluctuating loads associated with the recreational / seasonal residential area serviced by the plant, and to limit the quantity of sludge generated by the plant. The treatment process

selected (extended aeration) produces a very low volume of sludge compared to a conventional activated sludge plant.

Due to the sensitivity of the receiving body of water (the Mary Ward shoals area of Georgian Bay), the treatment process is required to produce a high-quality effluent with an extremely low level of phosphorus. To reduce phosphorus to the required level, it is necessary to apply a chemical coagulant (aluminum sulphate) and to provide tertiary treatment of the plant effluent prior to discharge. The tertiary treatment in this plant is achieved using gravity sand filters.

The following subsections details the various monitoring streams required for compliance at the Craigeith Wastewater Treatment Plant.

## Monitoring and Compliance

Town Staff ensure that the sewage works and related equipment and appurtenances which are installed or used to achieve compliance are properly operated and maintained.

### A. Interpretation of Influent Monitoring and Analytical Data

A comprehensive interpretation of all monitoring and analytical data collected during the reporting period, in comparison to the effluent quality and quantity criteria, is outlined below:

Capacity Assessment – Table No. 1

Year	2025	2024	2023	2022	2021
Average Day Flow (m <sup>3</sup> /d)	3,474	3,317	3,619	3,248	3,376
Average Design Capacity (m <sup>3</sup> /d)	8,133	8,133	8,133	8,133	8,133
% of capacity (based on average daily flows)	43%	41%	45%	40%	42%
Peak Day Flow (m <sup>3</sup> /d)	13,193	8,752	8,892	9,767	14,461
Peak Design Capacity	19,640	19,640	19,640	19,640	19,640
Raw Sewage Total Flow (m <sup>3</sup> )	1,268,116	1,214,109	1,320,952	1,185,577	1,232,241

Capacity rating is based on Annual Flow Data

2025 Raw Sewage Loading Objectives (kg/d) – Table No. 2

Influent Parameter	Design	Annual Average Loading	% of Design	Was Design Exceeded?
BOD	1,261	516	41%	No
Total Suspended Solids	1,454	601	41%	No
Total Phosphorus	81	8.4	10%	No
Total Kjeldahl Nitrogen as N	291	73.9	25%	No

Chart No. 1: Craigleith Wastewater Treatment Plant 2025 Monthly Flow Data

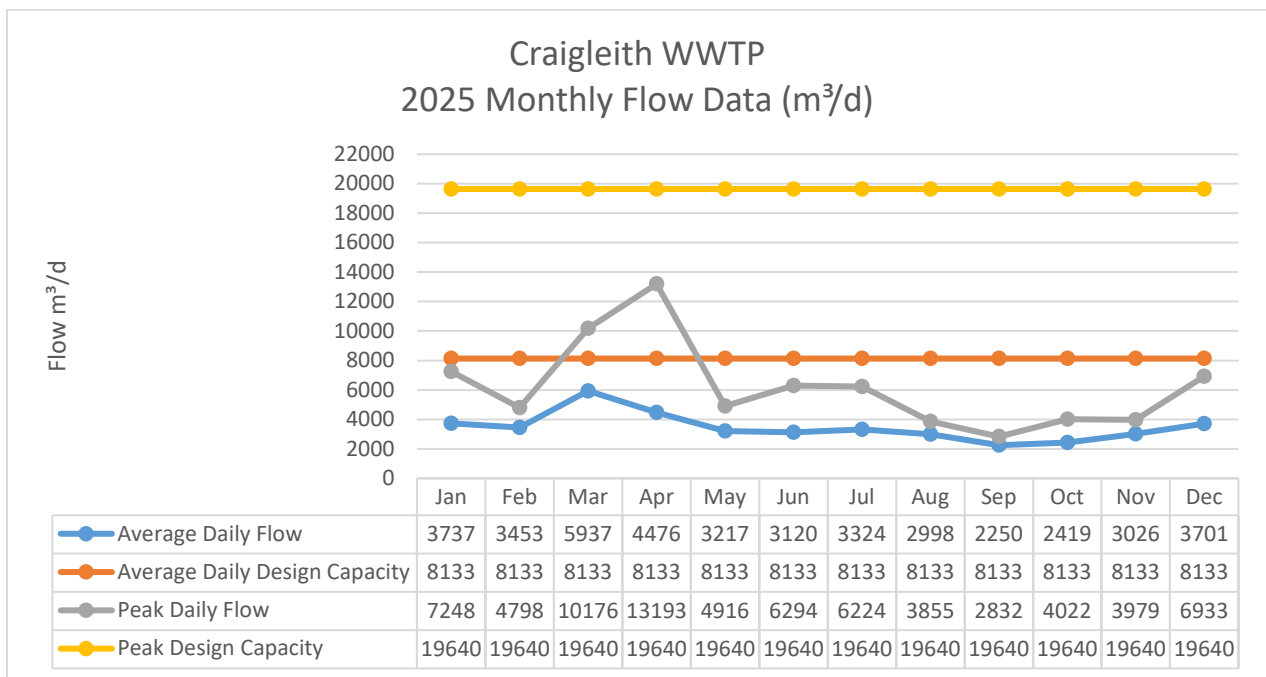
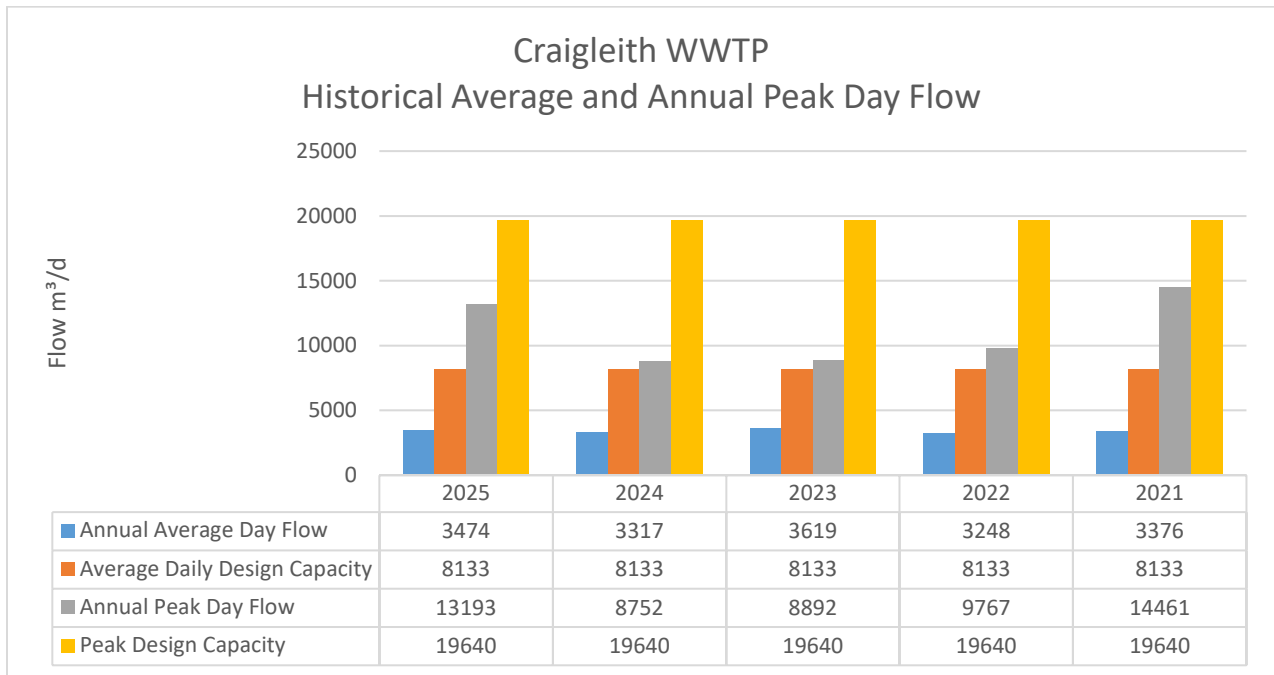


Chart No 2: Craigleith WWTP Historical Average and Peak Day Flow



The Annual Peak Day Flow is calculated using the average of the monthly Peak Day Flow events.

## B. Summary and Interpretation of Final Effluent Monitoring Data

### 2025 Plant Performance

Table No. 3

Effluent Parameter Average Daily Effluent Flow 2,837 m <sup>3</sup>	Design (kg/d)	Annual Average Loading (kg/d)	Was Design Exceeded?
CBOD5	122	19.5	No
Total Suspended Solids	122	11.8	No
Total Phosphorus	2.4	0.33	No
Un-ionized Ammonia	1.6	0.98	No

## 2025 Final Effluent Compliance Limits

Table No. 4

<b>Final Effluent Parameter</b>	<b>Date Sampled</b>	<b>Average Monthly Effluent Conc'n result mg/L</b>	<b>Maximum Monthly Conc'n mg/L</b>	<b>Average Monthly Effluent Conc'n Limit mg/L</b>	<b>Average Monthly Effluent Conc'n Limit Met? Y/N</b>	<b>Average Monthly Effluent Conc'n Objective mg/L</b>	<b>Average Monthly Effluent Conc'n Objective Met? Y/N</b>
CBOD5	January	5.0	6.0	15.0	Yes	10.0	Yes
	February	4.0	4.0	15.0	Yes	10.0	Yes
	March	15.5	18.0	15.0	No	10.0	No
	April	7.7	24.0	15.0	Yes	10.0	No
	May	5.0	6.0	15.0	Yes	10.0	Yes
	June	4.0	4.0	15.0	Yes	10.0	Yes
	July	4.0	4.0	15.0	Yes	10.0	Yes
	August	4.0	4.0	15.0	Yes	10.0	Yes
	September	4.0	4.0	15.0	Yes	10.0	Yes
	October	4.0	4.0	15.0	Yes	10.0	Yes
	November	8.7	18.0	15.0	Yes	10.0	Yes
	December	4.0	4.0	15.0	Yes	10.0	Yes

<b>Final Effluent Parameter</b>	<b>Date Sampled</b>	<b>Average Monthly Effluent Conc'n result mg/L</b>	<b>Maximum Monthly Conc'n mg/L</b>	<b>Average Monthly Effluent Conc'n Limit mg/L</b>	<b>Average Monthly Effluent Conc'n Limit Met? Y/N</b>	<b>Average Monthly Effluent Conc'n Objective mg/L</b>	<b>Average Monthly Effluent Conc'n Objective Met? Y/N</b>
Total Suspended Solids	January	2.0	2.0	15.0	Yes	5.0	Yes
	February	2.0	2.0	15.0	Yes	5.0	Yes
	March	3.0	4.0	15.0	Yes	5.0	Yes
	April	10.0	56.0	15.0	Yes	5.0	No
	May	2.5	3.0	15.0	Yes	5.0	Yes
	June	5.5	7.0	15.0	Yes	5.0	No
	July	3.0	4.0	15.0	Yes	5.0	Yes
	August	3.0	3.0	15.0	Yes	5.0	Yes
	September	6.5	9.0	15.0	Yes	5.0	No
	October	4.0	5.0	15.0	Yes	5.0	Yes
	November	3.0	4.0	15.0	Yes	5.0	Yes
	December	2.3	3.0	15.0	Yes	5.0	Yes

<b>Final Effluent Parameter</b>	<b>Date Sampled</b>	<b>Average Monthly Effluent Conc'n result mg/L</b>	<b>Maximum Monthly Conc'n mg/L</b>	<b>Average Monthly Effluent Conc'n Limit mg/L</b>	<b>Average Monthly Effluent Conc'n Limit Met? Y/N</b>	<b>Average Monthly Effluent Conc'n Objective mg/L</b>	<b>Average Monthly Effluent Conc'n Objective Met? Y/N</b>
Total Phosphorus	January	0.07	0.10	0.30	Yes	0.20	Yes
	February	0.04	0.04	0.30	Yes	0.20	Yes
	March	0.04	0.04	0.30	Yes	0.20	Yes
	April	0.29	1.85	0.30	Yes	0.20	No
	May	0.04	0.04	0.30	Yes	0.20	Yes
	June	0.13	0.20	0.30	Yes	0.20	Yes
	July	0.20	0.24	0.30	Yes	0.20	Yes
	August	0.29	0.31	0.30	Yes	0.20	No
	September	0.10	0.10	0.30	Yes	0.20	Yes
	October	0.07	0.10	0.30	Yes	0.20	Yes
	November	0.05	0.05	0.30	Yes	0.20	Yes
	December	0.04	0.05	0.30	Yes	0.20	Yes

<b>Final Effluent Parameter</b>	<b>Date Sampled</b>	<b>Average Monthly Effluent Conc'n result mg/L</b>	<b>Maximum Monthly Conc'n mg/L</b>	<b>Average Monthly Effluent Conc'n Limit mg/L</b>	<b>Average Monthly Effluent Conc'n Limit Met? Y/N</b>	<b>Average Monthly Effluent Conc'n Objective mg/L</b>	<b>Average Monthly Effluent Conc'n Objective Met? Y/N</b>
Un-ionized Ammonia	January	0.001	0.001	0.20	Yes	0.10	Yes
	February	0.009	0.016	0.20	Yes	0.10	Yes
	March	0.001	0.001	0.20	Yes	0.10	Yes
	April	0.002	0.001	0.20	Yes	0.10	Yes
	May	0.001	0.001	0.20	Yes	0.10	Yes
	June	0.001	0.001	0.20	Yes	0.10	Yes
	July	0.01	0.003	0.20	Yes	0.10	Yes
	August	0.001	0.001	0.20	Yes	0.10	Yes
	September	0.001	0.001	0.20	Yes	0.10	Yes
	October	0.001	0.001	0.20	Yes	0.10	Yes
	November	0.001	0.001	0.20	Yes	0.10	Yes
	December	0.001	0.002	0.20	Yes	0.10	Yes

<b>Final Effluent Parameter</b>	<b>Date Sampled</b>	<b>Monthly Geometric Mean Density</b>	<b>Monthly Geometric Mean Density Limit per 100 mL</b>	<b>Geometric Mean Density Limit Met? Y/N</b>	<b>Monthly Geometric Mean Density Objective per 100 mL</b>	<b>Monthly Mean Geometric Density Conc'n Objective Met? Y/N</b>
E. coli	January	1.0	200	Yes	150	Yes
	February	1.0	200	Yes	150	Yes
	March	1.0	200	Yes	150	Yes
	April	4.2	200	Yes	150	Yes
	May	1.0	200	Yes	150	Yes
	June	1.0	200	Yes	150	Yes
	July	1.0	200	Yes	150	Yes
	August	1.0	200	Yes	150	Yes
	September	1.0	200	Yes	150	Yes
	October	1.0	200	Yes	150	Yes
	November	1.0	200	Yes	150	Yes
	December	1.0	200	Yes	150	Yes

Chart No. 3 – Craigeith WWTP Monthly Average Effluent Waste Loadings – CBOD<sub>5</sub>

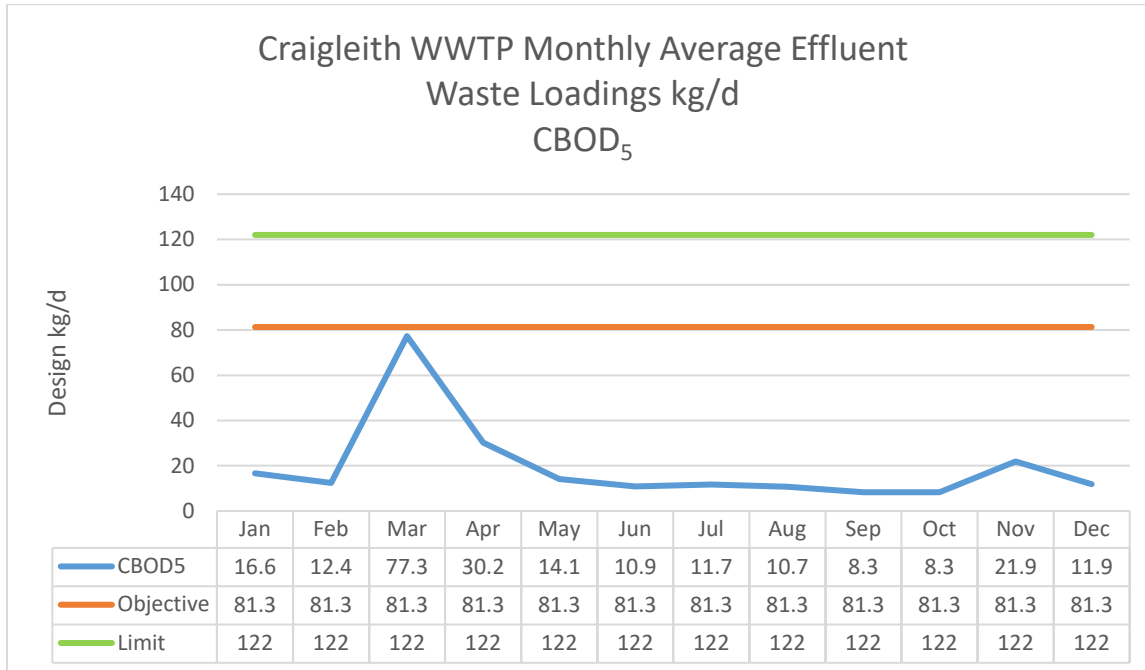


Chart No. 4 – Craigeith WWTP Monthly Average Effluent Waste Loadings – Suspended Solids

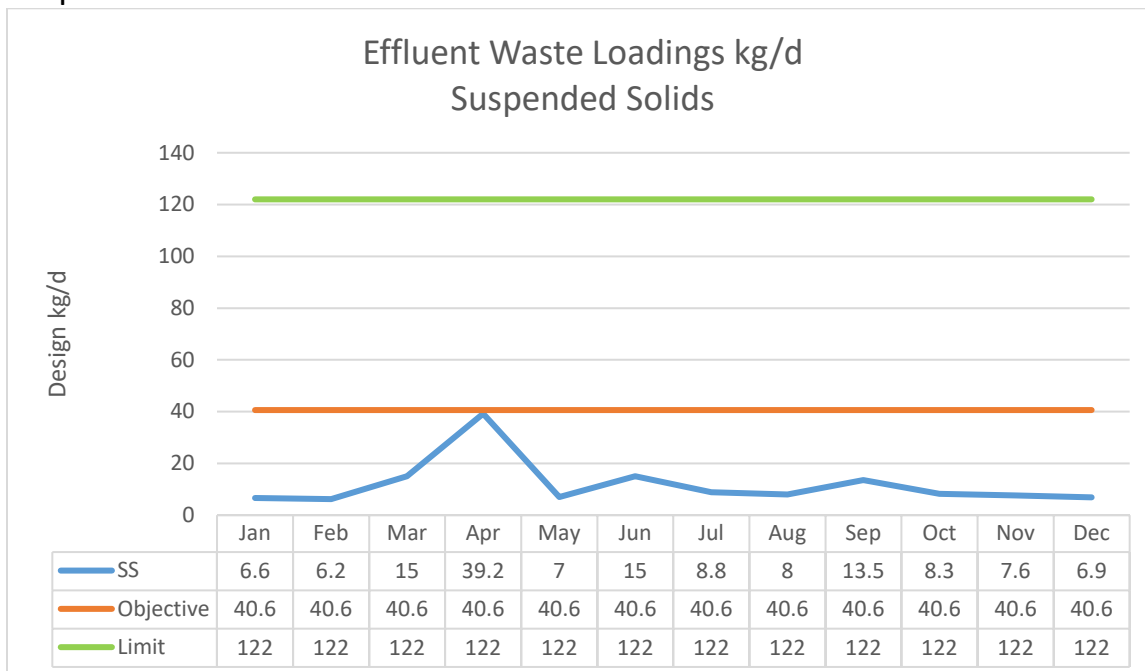


Chart No. 5 – Craigeith WWTP Monthly Average Effluent Waste Loadings – Total Phosphorus

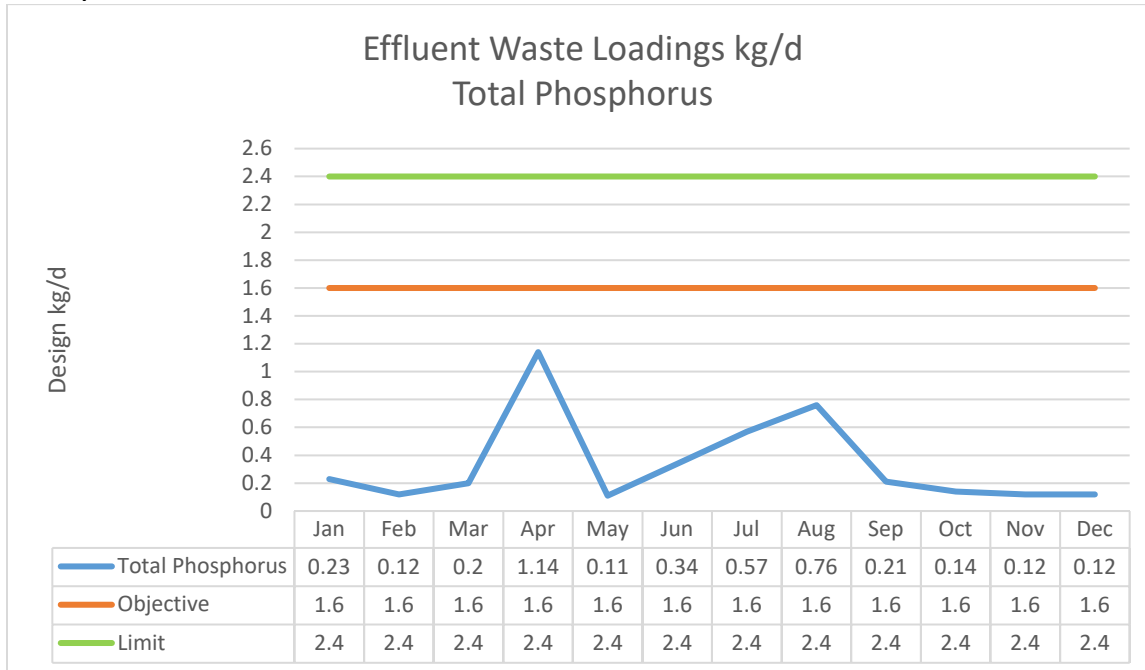


Chart No. 6 – Craigeith WWTP Monthly Average Effluent Waste Loadings – Unionized Ammonia

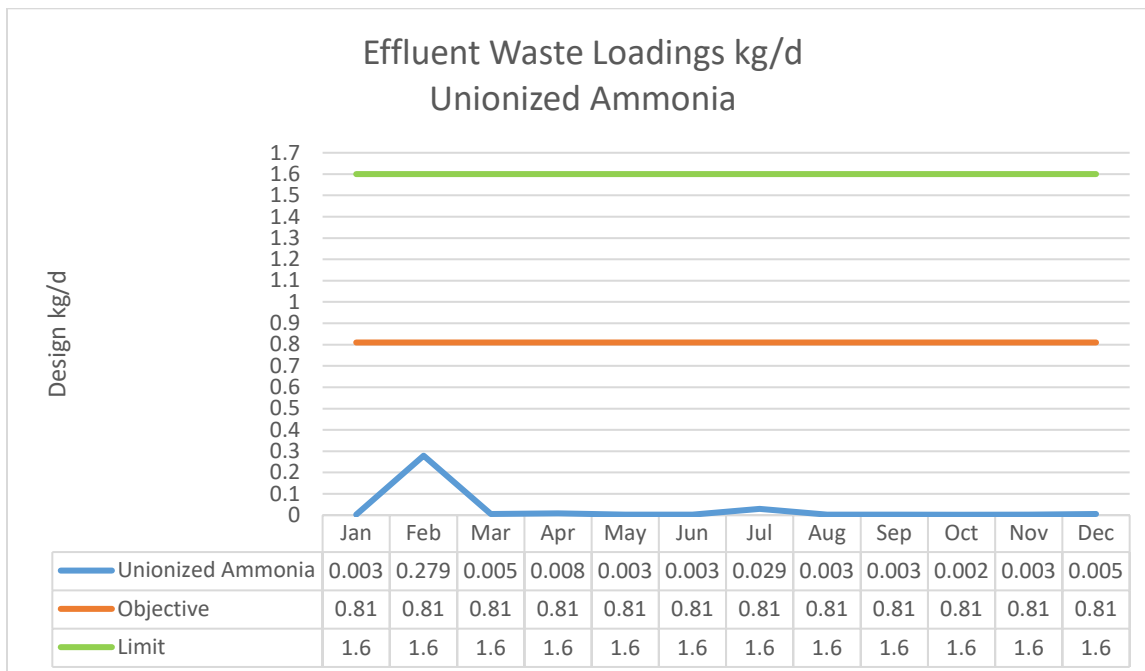
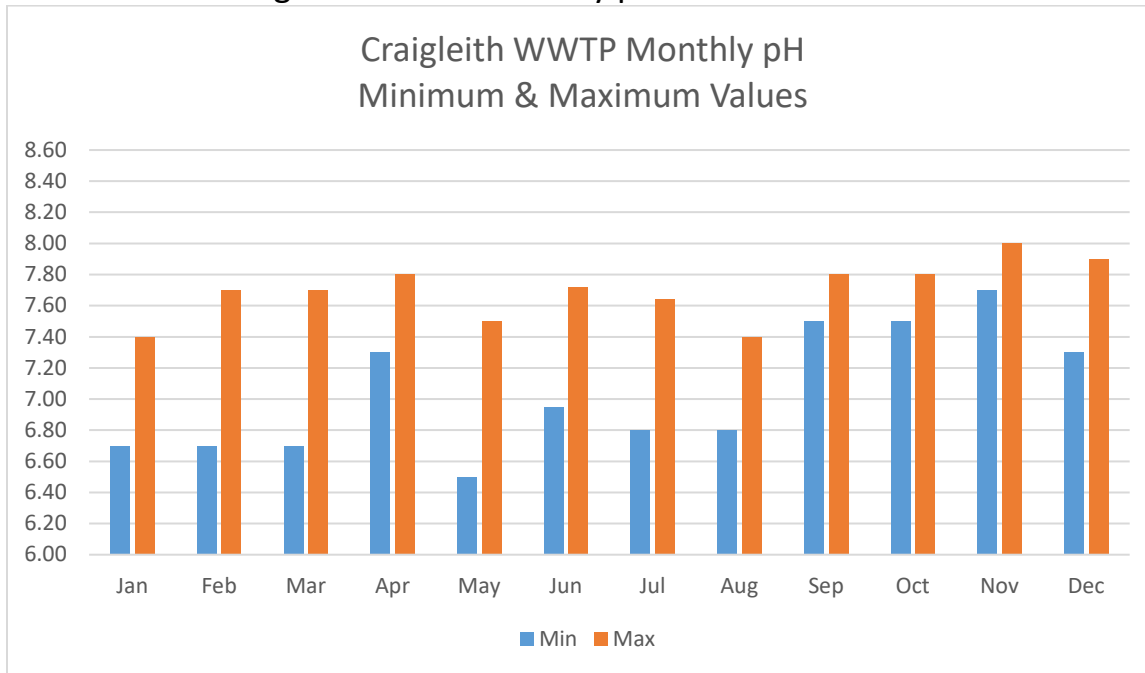


Chart No. 7 – Craigleith WWTP Monthly pH Values



### C. Summary of Operating Issues Encountered and Corrective Actions Taken

- Craigleith Clarifier #1 experienced a broken scraper arm. A Contractor was brought in and repaired in a timely manner.
- DO Analyzer failed on Aeration #2, replaced with new.
- High Lift pump jammed and a Contractor was brought in and repaired pump.

### D. Summary of Normal Repairs and Maintenance Activities Performed

- Annual inspection of all safety equipment
- Bi-annual inspection of all gas monitors
- Bi-annual vibration testing performed on all large pumps and air blowers
- All building ventilation was serviced
- All UV lamps serviced
- (4) four compressors were serviced
- Multiple small horsepower pumps had annual inspection and service performed
- Annual sample was collected for acute lethality analysis
- Generator serviced by third party contractor and tested monthly.

In accordance with Condition (8) of the ECA, the Owner shall ensure that, at all times, the Works and the related equipment and appurtenances used to achieve compliance with this Approval are properly operated and maintained.

The Craigleith WWTP employs a planned maintenance program that ensures the sewage works and related equipment installed or used to achieve compliance are properly operated and

maintained. Licensed Operators perform routine maintenance on all equipment including pumps, monitoring equipment, alarm systems, safety equipment, and other treatment components. Both routine and non-routine (emergency) maintenance activities are conducted in accordance with manufacturers' instructions.

## **E. Effluent Quality Control Measures**

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Effluent quality assurance is controlled through monthly effluent concentrations and waste loading calculations which are submitted to the Owen Sound Office Ministry of the Environment Conservation and Parks (MECP).

As indicated by the effluent concentration and waste loading chart, the Craigeith WWTP continues to experience a high degree of removal efficiency, thus this facility was operated within its Environmental Compliance Approval design objective.

Table No. 5

<b>Effluent Parameter</b>	<b>% Removal Efficiency (Annual Average)</b>
CBOD5	96 %
Suspended Solids	98 %
Total Phosphorus	96 %
Unionized Ammonia	98 %

## **F. Evaluation of Calibration and Maintenance Conducted on Monitoring Equipment**

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Calibration of the monitoring equipment was completed May 7, 2025. The calibration reports are available for review upon request. Calibration results met the accuracy requirement.

## **G. Summary of Efforts Made to Achieve Design Objectives**

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Through set maintenance schedules and weekly in-house compliance monitoring lab work, Operations Staff monitor the design objectives for the Craigeith WWTP.

## **H. Volume of Sludge generated in 2025 / Anticipated Volumes in 2026**

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Secondary sludge is treated aerobically in a two-stage digester. Gravity thickening is achieved in the holding tanks to approximately 3 to 4 % solids. There was 6,439.4 cubic meters of bio-solids removed in 2025.

2,248 cubic meters was removed for agricultural application under NASM # 62107

122 cubic meters was removed for agricultural application under NASM # 62277

3,291.4 cubic meters was removed for agricultural application under NASM # 62629

778 cubic meters was sent to the Biosolids Contractor's storage lagoons due to wet weather.

The anticipated volume for agricultural use in 2026 is 6,500 cubic meters.

## **I. Summary of Complaints Received in 2025**

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There were (2) two odour complaints received at the Craigleith Wastewater Treatment Plant in 2025. The complaints were from nearby residents with concerns about odour.

## **J. Summary of Bypasses, Overflow, or other situations outside Normal Operating Conditions**

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In accordance with Condition 5 of the ECA, this report must provide a summary of all by-passes, spills or abnormal discharge events.

A by-pass refers to the diversion of sewage around one or more unit processes within the treatment facility, whereby diverted sewage flows are returned to the treatment facility upstream of the final effluent sampling location and are discharged to the environment through the plant outfall. By-passes are prohibited except in certain situations and may be planned (i.e. for maintenance or research purposes) or unplanned (i.e. emergency situations or high flow conditions).

A plant overflow means a discharge to the environment from the sewage treatment facility at a location other than the plant outfall or into the plant outfall downstream of the final effluent sampling locations. Overflows are prohibited except in certain situations and special reporting, sampling, and recording requirements apply in the event of an overflow. Overflows may be generally the result of heavy rainfall or snow melt events, such that the system becomes hydraulically overloaded.

Spills are releases of pollutants into the natural environment from or out of a structure, vehicle or other container that is abnormal in quality or quantity in light of all the circumstances of the discharge. Spills are generally the result of mechanical, electrical, automation or process failures. Abnormal discharge events include any other abnormal events not otherwise classified as a bypass, overflow, or spill.

There were (2) two by-passes, (1) one spill and zero overflow events for the Craigleith WWTP during the reporting period.

Incident #1-NDSN4 in March 2025, the CWWTP exceeded the compliance limits for Total Phosphorus. This was reported as a spill to MECP.

Incident #1-N7NG9P on April 3, 2025, a significant rainfall event overloaded tertiary filters and backwash at the CWWTP. The estimated duration of 4.5 hours with an estimated volume of 20 cubic meters.

Incident #1-N9K3L6 on April 3, 2025, a significant rainfall event overloaded the tertiary filters which resulted in bypassing of the filters at the CWWTP. The estimated duration of 6.9 hours with an estimated volume of 2,945 cubic meters.

### **K. Summary of Notice of Modifications to Sewage Works Completed**

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There were no Notice of Modifications to Sewage Works Completed in 2025.