2023

Annual Performance Report
Village of Point Edward
Water Pollution Control Plant

Works # 110000597

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The 2023 Annual performance report for the Point Edward Water Pollution Control Plant has been prepared by the Village of Point Edward Manager of Environmental Services. This report is submitted to the local MOECP Water Supervisor in accordance with Condition 10(6) Environmental Compliance Approval (ECA) Number 2156-AEDRL2 dated October 31, 2016, to ensure that a written report detailing performance with all Terms and Conditions of this approval is completed annually.

SECTION A

A summary and interpretation of all monitoring data, a comparison to the effluent limits outlined in Condition 7 including an overview of the success and adequacy of the Works.

In accordance with ECA Condition 10(6)(a), the following table is a detailed description of the measures taken to ensure compliance with Condition 7 of the Certificate of Approval, related to monitoring and recording, and a summary of sampling required by the certificate.

Discharge Period	Effluent Parameter	Analytical Data		Criteria (ECA) Effluent Limits	Exceedance
		Annual Monthly Average	Maximum Monthly Average	Monthly Average	
January 1 to December 31	CBOD5 mg/L	2.54	3.75	15.0 mg/L	No
	Total Suspended Solids mg/L	4.57	8.25	15.0 mg/L	No
	Total Phosphorus mg/L	0.19	0.28	1.0 mg/L	No
	Total Ammonia Nitrogen mg/L	0.13	0.18	1.5 mg/L (Apr 16 - Dec 15)	No
	Total Ammonia Nitrogen mg/L	0.11	0.13	3.0 mg/L (Dec 16 – Apr 15)	No
	E. Coli. (cfu/100ml)	26.55	78.36	Geometric Mean 200 cfu/100 ml	No

2023 Average Annual Loadings				
Parameter	**Maximum Monthly Average 2023 Loading kg/day**	**Annual Monthly Loading Average**	**Waste Loading Limit kg/day (Monthly Average)**	**Exceedance Yes/No**
CBOD5	5.32	3.69	52.5	No
Total Suspended Solids	11.34	6.64	52.5	No
Total Phosphorus	0.50	0.29	3.5	No
Total Ammonia Nitrogen	0.31 0.22	0.20 0.14	5.25 (Apr 16 - Dec 15) 10.5 (Dec 16 - April 15)	No No

SECTION B

A description of any operating problems encountered, and corrective actions taken.

There were a couple of short periods where an increased number of filamentous bacteria were present in the process which created a partial covering of the aeration basins with a thin layer of foam. This was corrected with increased wasting and additional monitoring of the process. There was no negative effect on the plant effluent as process changes were made in time to correct the issue before it caused a decline in effluent quality.
There were no other operational issues noted for 2023.

SECTION C

A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism, or thing forming a part of the works.

- Regular annual maintenance of pumps, valves, aeration blowers and equipment (oil changes etc.)
- Continued Scada upgrades with historian and improved system back up on remote servers
- Remote Scada access for operations staff and management
- Digester (primary) repairs
- Continued Implementation of MESH software for improved maintenance and inventory tracking
- Updates & additions to the System wide mapping of assets and GIS implementation program
- Clarifier chains were adjusted, and new drive sprockets installed. Tanks cleaned and inspected during repairs.

All other preventative and corrective maintenance completed in 2023 is documented in the MESH maintenance software and/or the plant logbook.

SECTION D

A summary of any effluent quality assurance or control measures undertaken

The final effluent quality determines how the treatment facility is operating and if standards are being met. The standards required for certain parameters are identified in the Environmental Compliance Approval (ECA), engineering specifications and the Ministry of the Environment's Effluent Discharge Policy.

The effluent quality for this facility is monitored on a regular basis for both legal and operational requirements. Sampling and testing in plant and by an external accredited lab are necessary for monitoring all parameters required by the ECA. The quality control parameters monitored for this facility include:

- Carbonaceous Biochemical Oxygen Demand
- Total Suspended Solids (Raw & Effluent)
- Total Phosphorus (Raw & Effluent)
- pH
- Nitrogen (Ammonia + Ammonium)
- E. Coli
- Dissolved Oxygen
- Temperature
- BOD5 (Raw)
- Total Kjeldahl Nitrogen (Raw)

The sampling techniques utilized at this facility include:

- 24-hour composite samplers for the collection of the raw & treated samples and grab samples are collected for the aeration samples.
- Grab samples are used for E. Coli, pH, Temperature & Dissolved Oxygen
- Dissolved Oxygen is also now collected and trended on SCADA.

Records are kept and will be provided to the Ministry of the Environment & Climate Change as required. These records include:

- Historical data
- Determination of operational efficiencies
- Chemical usage
- Proof of meeting all legal requirements.

All records of the process data are maintained at the Point Edward Water Pollution Control Plant.

SECTION E

A summary of the calibration and maintenance carried out on all effluent monitoring equipment.

The annual flow meter calibration testing was conducted on June 28, 2023, by SCG Flowmetrix Technical Services.
All records of calibration are kept in the Calibration Recorders binder in the Managers office at the plant.

SECTION F

A description of efforts made, and results achieved in meeting the effluent objectives of Condition 6

In accordance with the current ECA Condition 6, the following table is a detailed comparison for monitoring data to the effluent objectives.

1. Effluent Quality Compared to Effluent Objectives

Discharge Period	Effluent Parameter	Effluent Objective				Exceedance Yes/No
		Max Monthly Avg. mg/L unless noted	Max Monthly Loading kg/d unless noted	Monthly Avg. Concentration & Loading Objective Limits		
				Monthly Avg. Concentration mg/L unless noted	Monthly Avg. Loading kg/d unless noted	
January 1 to December 31	CBOD5	3.75	5.32	10.0	35	No
	Total Suspended Solids	8.25	11.34	10.0	35	No
	Total Phosphorus	0.28	0.50	0.8	2.8	No
	Total Ammonia Nitrogen	0.18	0.31	1.0 (Apr 16 - Dec 15)	3.5 (Apr 16 - Dec 15)	No
	Total Ammonia Nitrogen	0.13	0.22	2.0 (Dec 16 – Apr 15)	7.0 (Dec 16 – Apr 15)	No
	Dissolved Oxygen	*Min. Monthly Avg* *6.13*	N/A	>5.0 mg/L		No
	E. Coli	78.36	N/A	150 organisms/100 ml Monthly Geometric Mean Density		No
	pH	Annual Monthly Min-Max 6.70 – 8.64	Annual Monthly Avg. 7.48	Maintain pH between 6.5 - 9.0 all times		No

2. Rated Capacity

Discharge Period	Parameter	Analytical Data	Effluent Objectives (ECA)	Exceedance
		Daily Average	Daily Average	
2023	Rated Capacity	1,400 m^3/d	3,500 m^3/d	No

SECTION G

A tabulation of the volume of sludge generated in the reporting period, an anticipated volume to be generated in the next reporting period and a summary of the locations to where the sludge was disposed.

2023 Sludge generated (total) = 2,667 M^3

Sarnia WWTP received - 0.0 M^3
Central / Saul Farms received – 1,295 M^3
Wessuc Sarnia Site received – 1,372 M^3

* Estimated volumes for 2024 = 2,950 M^3

Sludge is hauled by Central Sanitation & Wessuc. No sludge was hauled to the Sarnia WWTP in 2023

SECTION H

A summary of any complaints received, and any steps taken to address the complaints.

In 2023, there were no complaints received for the Point Edward Water Pollution Control Plant. A Standard Operating Procedure is in place to address complaints in the event one is received.

SECTION I

A summary of all by-pass, spill, or abnormal discharge events

No bypasses, spills or abnormal discharges occurred in 2023.

SECTION J

A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1, with a status report on the implementation of each modification.

Attached as Appendix A (copy of Notice and status report)

SECTION K

A report summarizing all modifications completed as a result of Schedule B, Section 3

Attached as Appendix B

SECTION L

Any other information the District Manager requires from time to time

The un-ionized ammonia results show that the performance of the system is sufficient to keep the levels below the 20ug/L objective set by the Province of Ontario with a range of < 1 – 16 ugL.

Un-ionized Ammonia in Final Effluent Lab Results 2023	Un-ionized Ammonia mg/L	Field pH	Field Temperature Degrees Celsius	TAN mg/L
04-Jan-23	0.001	7.58	13.8	0.1
10-Jan-23	0.002	7.95	14	0.1
17-Jan-23	0.003	8.44	9.8	0.1
24-Jan-23	0.001	7.66	11.6	0.1
31-Jan-23	0.001	6.87	13.1	0.1
07-Feb-23	0.001	7.74	12.8	0.1
14-Feb-23	0.001	7.66	21.4	0.1
22-Feb-23	0.001	7.77	13.2	0.1
28-Feb-23	0.001	7.39	12.2	0.1
07-Mar-23	0.001	7.83	11.7	0.1
14-Mar-23	0.001	7.55	11.2	0.1
21-Mar-23	0.001	7.89	11.6	0.1
28-Mar-23	0.001	7.88	11.2	0.1
05-Apr-23	0.003	8.17	11	0.1
12-Apr-23	0.001	7.95	9.2	0.1
18-Apr-23	0.001	7.76	13.3	0.1
25-Apr-23	0.002	7.71	14.7	0.2
02-May-23	0.012	8.02	12.8	0.1
09-May-23	0.002	7.78	10.4	0.1
16-May-23	0.002	7.81	10.8	0.1
24-May-23	0.002	7.72	17.9	0.1
30-May-23	0.001	7.74	18.2	0.1
06-Jun-23	0.002	7.7	19.2	0.1
13-Jun-23	0.003	7.78	18.1	0.1
20-Jun-23	0.001	7.52	19.6	0.1
27-Jun-23	0.003	7.81	13.2	0.3
05-Jul-23	0.003	7.53	21.9	0.1
11-Jul-23	0.001	7.5	21.3	0.1
18-Jul-23	0.001	7.98	20.9	0.1
25-Jul-23	0.001	7.64	21.6	0.1
01-Aug-23	0.001	7.68	21	0.1
09-Aug-23	0.001	7.7	21.9	0.2
15-Aug-23	0.001	7.66	21.6	0.2
22-Aug-23	0.001	7.98	21.6	0.2
29-Aug-23	0.001	7.56	21.3	0.1
06-Sep-23	0.001	6.7	23.3	0.1
12-Sep-23	0.001	7.55	13.3	0.2
20-Sep-23	0.001	6.85	20.6	0.1
27-Sep-23	0.006	7.68	21	0.3
04-Oct-23	0.002	7.43	21.8	0.2
11-Oct-23	0.001	7.77	11.1	0.1
24-Oct-23	0.001	6.7	18.7	0.1
31-Oct-23	0.001	7.77	10.9	0.1
07-Nov-23	0.001	7.21	17.5	0.1
15-Nov-23	0.001	7.86	11.5	0.1
21-Nov-23	0.001	7.3	12.3	0.1
28-Nov-23	0.001	6.98	12.6	0.1
05-Dec-23	0.001	7.55	8.7	0.1
12-Dec-23	0.001	6.79	7.5	0.1
19-Dec-23	0.007	8.54	9.1	0.1
28-Dec-23	0.003	7.73	15.9	0.2

Appendix A

Status Report on Modifications

(Not Applicable for 2023)

Appendix B

As part of Schedule B section 3 this report is being submitted with the Sewage Works annual report.

Resealing of the Primary digester cover and walls has been on going from 2018 and will be continued into the 2024 calendar year for completion.