

THE TOWN OF ESSEX COLCHESTER WASTEWATER LAGOONS

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Ontario Clean Water Agency

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*2023 Third
Quarter
Operations
Report*

COLCHESTER WASTEWATER LAGOONS



Service Information

In service Date: 1988

Classification: Class 1 Wastewater Treatment, Class 2 Wastewater Collection

Environmental Certificate of Approval: 9096-7SFHHG

Capacity Information

Rated Capacity: 1,861 m³/day

Overview:

The Colchester Wastewater Lagoon System is owned by the Town of Essex and operated by the Ontario Clean Water Agency (OCWA).

The Colchester Collection System is also operated by OCWA consisting of five wastewater pump stations. The main pump station contains a diesel generator which is available to allow the treatment plant to remain in operation should a power failure occur and a portable generator can be utilized for the remaining pump stations.

Collection system piping repairs and maintenance are performed by the Town of Essex - Public Works Department.

Operational Description:

The Colchester Wastewater Lagoons consists of:

- Three sequentially operated cells
- Phosphorus removal system
- Continuous discharge pipe into Lake Erie

The five wastewater pump stations include:

- Colchester Lagoon Main Pump Station
- Crystal Beach Pump Station
- Argyle Beach Pump Station
- Cook's Beach Pump Station
- Colchester Country Club Pump Station

COMPLIANCE SUMMARY

Fourth Quarter

- The TSS objective was exceeded throughout the entire month of December due to the high solids content in cell #3. Sludge should be removed from the cell in Q1 2024. Project was delayed in 2023 since the centrifuge in Essex was out of service.

Third Quarter

- Bypass event from major storm event on August 24th to 26th reported to MECP. Total estimated volume was 7,207.5 m³.
- Notification of Non-compliance was submitted to MECP on September 7th. The TSS exceeded the monthly average of 30 mg/L – obtained 33.8 mg/L. Major storm event caused extreme flows which upset the Cells.

Second Quarter

- Nothing to report this quarter

First Quarter

- Annual WSER report was submitted to Environment Canada on February 6th.
- Annual report was submitted to MECP and the Town of Essex on March 16th.

OCCUPATIONAL HEALTH & SAFETY

Fourth Quarter

- No issues were identified

Third Quarter

- No issues were identified

Second Quarter

- No issues were identified

First Quarter

- Annual Health & Safety Inspection was completed on January 26th
 - No issues were identified

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INSPECTIONS

Fourth Quarter

- No inspections this quarter.

Third Quarter

- Annual flow meter calibrations completed by Indus Control – July 17th

Second Quarter

- Annual lifting device inspections completed by Alift – April 20th

First Quarter

- Annual backflow device inspections completed by KZ Plumbing – February 10th
 - All units passed
- Annual fire extinguisher inspections completed by Guardian Fire Protection – March 1st

ALARM CALL-IN SUMMARY

Fourth Quarter

- No call-ins this quarter

Third Quarter

Date	Alarm
16-Aug-23	Loss of phase – Colchester Country Club PS

Second Quarter

Date	Alarm
15-June-23	AC Power Failure
23-April-23	AC Power Failure

First Quarter

- No call-ins this quarter

MAINTENANCE & OPERATIONS

OCWA's Computerized Maintenance Management System (CMMS) contains a comprehensive history of the work, condition, cost, criticality, and life expectancy of the equipment at Colchester

Lagoons and Collection System. OCWA uses a program called Maximo to track, schedule, and document all work related to the infrastructure we operate and maintain on behalf of the Town of Essex.

Fourth Quarter

- Diesel tank level float was repaired by Comber Heating & Cooling.
- New battery and charger purchased for the portable generator.
- Chris Taylor made repairs to the roadway main entrance at Colchester Lagoon and Cyr's Beach PS entrance.

Third Quarter

- Major storm event on July 26th knocked down several trees and area wide power outage - high levels at several pump stations.
- Overload relay switches replaced on aerators.
- Plugged interconnect between Cell #1 & Cell #2 – Heaton's Sanitation called on-site to clean out the chamber.
- Major storm event on August 24th caused area wide power outage - high levels at several pump stations.

Second Quarter

- New garage door opener installed at Colchester Lagoon main building.
- Blockage was found in the chamber between Cell #1 & Cell #2. Hurricane Hydrovac called-site to clean out chamber.
- New refrigerated autosampler received for the effluent samples.
- Hurricane Hydrovac won the tender to remove sludge from Cell #3. Project should commence in August.

First Quarter

- New alum pump has been installed.
- Control Relay for pump replaced at Argyle PS that was damaged from the storm event December 23rd.
- Extended power outage occurred during the freezing rain event February 22nd & 23rd at the main plant and all pump stations.

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COMPLAINTS & CONCERNS

Fourth Quarter

- There were no complaints received this quarter.

Third Quarter

- There were no complaints received this quarter.

Second Quarter

- There were no complaints received this quarter.

First Quarter

- There were no complaints received this quarter.

PERFORMANCE ASSESSMENT REPORT

- Please see the attached Performance Assessment Report.

6067 COLCHESTER SOUTH WASTEWATER TREATMENT LAGOON 110002595

	1/ 2023	2/ 2023	3/ 2023	4/ 2023	5/ 2023	6/ 2023	7/ 2023	8/ 2023	9/ 2023	10/ 2023	11/ 2023	12/ 2023	<--Total-->	<--Avg-->	<--Max-->	<-Criteria-->
Flows																
Raw Flow: Total - Raw m³/d	21,023.00	26,543.00	35,656.00	27,649.00	24,834.00	21,179.00	29,919.00	47,985.00	25,959.00	21,951.00	18,571.00	22,820.00	324,089.00			0.00
Raw Flow: Avg - Raw m³/d	678.16	947.96	1,150.19	921.63	801.10	705.97	965.13	1,547.90	865.30	708.10	619.03	736.13		887.92		
Raw Flow: Max - Raw m³/d	1,294.00	2,875.00	2,491.00	1,835.00	1,186.00	1,117.00	1,772.00	11,275.00	1,149.00	1,063.00	726.00	995.00			11,275.00	0.00
Raw Flow: Count - Raw m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Effluent m³/d	21,023.00	26,543.00	35,656.00	27,649.00	24,834.00	21,179.00	29,919.00	47,985.00	25,959.00	21,951.00	18,571.00	22,820.00	324,089.00			0.00
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Eff Flow: Count - Effluent m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw mg/L	165.00	160.00	52.00	85.00	65.00	113.00	131.00	155.00	118.00	115.00	88.00	147.00		116.17	165.00	0.00
Raw: # of samples of BOD5 - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw mg/L	165.00	292.00	68.00	69.00	75.00	117.00	205.00	170.00	77.00	119.00	70.00	112.00		128.25	292.00	0.00
Raw: # of samples of TSS - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw mg/L	4.04	4.10	1.37	1.85	1.68	3.12	3.66	3.29	2.38	3.55	2.70	3.31		2.92	4.10	0.00
Raw: # of samples of TP - Raw mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Nitrogen Series																
Eff: Avg NO3-N - Effluent mg/L	8.58	5.11	3.66	5.43	8.18	13.50	10.70	9.98	6.66	9.87	14.10	10.20		8.83	14.10	0.00
Eff: # of samples of NO3-N - Effluent mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Eff: Avg NO2-N - Effluent mg/L	0.18	0.15	0.17	0.38	0.10	0.07	0.30	0.13	0.18	0.04	0.03	0.12		0.15	0.38	0.00
Eff: # of samples of NO2-N - Effluent mg/L	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Disinfection																
Eff: GMD E. Coli - Effluent cfu/100mL	120.00	240.00	540.00	400.00	160.00	38.00	480.00	60.00	640.00	340.00	58.00	114.00				
Eff: # of samples of E. Coli - Effluent cfu/100mL	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00