2023 ANNUAL SEWAGE REPORT

SHELBURNE WASTEWATER TREATMENT PLANT

For the period of
January 1st, 2023 to December 31st, 2023

Prepared for the Corporation of the Town of Shelburne by the Ontario Clean Water Agency

A People Place, A Change of Pace
SHELBURNE
ONTARIO, CANADA

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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1. System Description

The Shelburne Wastewater Treatment Plant (WWTP) is an extended aeration sewage treatment plant (STP) with tertiary treatment and is located at 300 Centennial Road in the Town of Shelburne, Ontario. The WWTP is owned by the Town of Shelburne and the Operating Authority is the Ontario Clean Water Agency. The WWTP is operated under amended ECA #6413-ABLQQS as a municipal sewage works for the collection, transmission, treatment and disposal of sewage, under a plant rated capacity of 3,420 m^3/d. The WWTP serves a community of approximately 8,994 people. The community first obtained a waste disposal system in 1968 with the construction of a 5.5 ha lagoon and associated gravity collection and pumping system. Consistent growth over the years lead to the construction, in 1981 of the current wastewater treatment system. The expansion consisted of a new trunk sewer, pumping facilities, secondary and tertiary treatment and modifications to the existing lagoons which now provide storm and effluent holding during excess storm flows and plant upsets and maintenance.

The facility consisted of a wet well, a manual screen, grit channels, an oxidation ditch, one secondary clarifier, four effluent sand filters and a chlorine contact chamber. The oxidation ditch used two brush rotors. The facility operated as an extended aeration plant in this configuration from 1981 until December 1999.

A major expansion (Phase 1) took place at the Shelburne WWTP in 1999, changing the configuration of the plant and the method of treating wastewater. The plant went under construction starting in April 1999 with the start-up of the new process in December of 1999. The Shelburne WWTP is still an extended aeration plant. As an extended aeration plant it is designed to remove suspended solids, $CBOD_5$ and phosphorus from the wastewater. Major improvements were two aeration tanks constructed with fine bubble diffusers. The sludge treatment system consists of a two stage aerobic sludge digestion system with a total storage volume of 580m^3, equipped with coarse bubble aeration system and supernatant decanting. The former oxidation ditch was converted to a sludge storage facility with approximately six months storage.

Sludge loading facilities provide for transfer of digested aerobic sludge to trucks. Digested sludge is land-applied as farm fertilizer.

The major process units consist of: equalization and influent works, aeration tanks, secondary clarifiers, disk filtration, UV disinfection, and aerobic biosolids digesters and sludge holding tank, chemical dosing (Aluminum Sulfate) and plant air (blowers). This facility receives residential, commercial, institutional and industrial wastewater and provides a level of treatment to meet the amended "Environmental Compliance Approval - # 6413-ABLQQS" for discharging into the Besley Drain a minor tributary of the Boyne River. The Boyne Creek empties into the Nottawasaga River, ultimately meeting Georgian Bay.

A “Process Flow Schematic” is included in **Appendix D** of this report.

An overview of Shelburne Wastewater Treatment Plant can be found in Table 1:

Table 1. Shelburne Wastewater Treatment Plant Overview

Facility Name	Shelburne Wastewater Treatment Plant
Facility Type	Extended Air STP with Tertiary Treatment
Plant Classification	WWT III
Works Number	110000659
Design Capacity	3,420 m^3/day
Designed Peak	8,921 m^3/day
Receiving Water	Besley Drain to Boyne Creek to Nottawasaga River
Environmental Compliance Approval	6413-ABLQQS , issued July 19, 2016

2. Monitoring Data and Comparison to Effluent Limits

As per Section 10(6)(a) of ECA 6413-ABLQQS, a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Effluent Limits of Condition 7, including an overview of the success and adequacy of the Works is required.

2.1 ECA Monitoring Program

The following tables outlines the hauled sewage, influent and effluent monitoring program at the Shelburne WWTP as required by the most current ECA for the reporting period. There are additional in-house samples taken and analyzed throughout the year in order to help with process performance monitoring, adjustment, and optimization. These parameters were analyzed by an accredited analytical laboratory (SGS Canada Inc., Lakefield, Ontario). The sampling frequencies meet the requirements set out in Section 9 of ECA 6413-ABLQQS.

Table 2. Hauled Sewage Water Quality Monitoring Program and Sampling Points - *as per ECA 6413-ABLQQS Section 9(3)*

Parameter	Sample Type	Minimum Frequency
BOD_5[2A]	Grab	Monthly
Total Suspended Solids[2A]	Grab	Monthly
Total Phophorus[2A]	Grab	Monthly
Total Kjeldahl Nitrogen[2A]	Grab	Monthly

[2A]Refer to Appendix A for monthly sample results.

Table 3. Raw Sewage (Influent) Water Quality Monitoring Program and Sampling Points - *as per ECA 6413-ABLQQS Section 9(3)*

Parameter	Sample Type	Minimum Frequency
BOD_5[3A]	Composite	Monthly
Total Suspended Solids[3A]	Composite	Monthly
Total Phosphorous[3A]	Composite	Monthly
Total Kjeldahl Nitrogen[3A]	Composite	Monthly

[3A]Refer to Appendix A for monthly sample results.

Table 4. Final Effluent Water Quality Monitoring Program and Sampling Points- *as per ECA 6413-ABLQQS Section 9(3)*

Parameter	Sample Type	Minimum Frequency
$CBOD_5$[4A]	Composite	Weekly
Total Suspended Solids[4A]	Composite	Weekly
Total Phosphorous[4A]	Composite	Weekly
Total Ammonia Nitrogen[4A]	Composite	Weekly
E. Coli[4A]	Grab	Weekly
pH	Grab/Probe	Weekly
Temperature	Grab/Probe	Weekly

[4A]Refer to Appendix A for monthly sample results.

2.2 Effluent Objectives and Effluent Limits

The following tables outline the final effluent objectives, limits and loadings at the Shelburne WWTP as per its ECA. The applicable effluent parameters are either "concentrations" expressed as milligrams per litre or "loadings" expressed as kilograms per day. As per Section 7, concertation Limits for $CBOD_5$, TSS, TP, and TAN are reportable based on a monthly average effluent concentration, *E.Coli* based on a monthly Geometric Mean Density, pH based on a Single Sample Result, and the Loading Limits are reportable based on a Monthly Average Waste Loading.

Table 5. Final Effluent Design Objectives - *as per Section 6 of ECA 6413-ABLQQS*

Effluent Parameter	Concentration Objective (mg/L)
$CBOD_5$	4.0
Total Suspended Solids	4.0
Total Phosphorous	0.12
Total Ammonia Nitrogen June 01 to Sept 30 Oct 01 to May 31	 0.5 2.0
E.coli	150 CFU /100 mL (monthly Geometric Mean Density)
pH	maintained between 6.5 to 8.5, inclusive, at all times

Table 6. Final Effluent Design Limits - *as per Section 7(1) of ECA 6413-ABLQQS*

Effluent Parameter	Average Concentration Limit (mg/L)	Average Waste Loading Limit (kg/day)
$CBOD_5$	5.0	17.1
Total Suspended Solids	5.0	17.1
Total Phosphorous	0.25	0.86
Total Ammonia Nitrogen Jun 01 to Sep 30 Oct 01 to May 31	 0.8 2.4	 2.7 8.2

Effluent Parameter	Average Concentration Limit (mg/L)	Average Waste Loading Limit (kg/day)
E.coli	200 CFU /100 mL (monthly Geometric Mean Density)	n/a
pH	maintained between 6.0 to 9.5, inclusive, at all times	

2.3 Effluent Monitoring Data: Comparison to Objectives and Limits

Analytical and monitoring data for the Shelburne Wastewater Treatment Facility is stored in OCWAs data management system (WISKI). Annual and monthly averages for flows, $CBOD_5$, Suspended Solids, Total Phosphorous, Nitrogen-series and *E.coli* can be found in Appendix A. A comparison of analytical data from effluent samples to the effluent objectives and effluent limits shown in the below tables.

Table 7. Effluent Sampling Results: $CBOD_5$ and $CBOD_5$ Loading Concentrations[7A]

	$CBOD_5$					
	Monthly Average Concentration (mg/L)	Within Objectives (4.00 mg/L)	Within Limits (5.00 mg/L)	Monthly Average Loading (kg/d)	Within Objectives (kg/d)	Within Limits (17.10 kg/d)
January	<2.40	Yes	Yes	<5.51	n/a	Yes
February	<2.00	Yes	Yes	<4.49	n/a	Yes
March	<2.25	Yes	Yes	<5.42	n/a	Yes
April	2.50	Yes	Yes	8.36	n/a	Yes
May	<3.92	Yes	Yes	<11.17	n/a	Yes
June	<2.00	Yes	Yes	<4.61	n/a	Yes
July	<2.00	Yes	Yes	<4.98	n/a	Yes
August	<2.00	Yes	Yes	<4.81	n/a	Yes
September	<3.50	Yes	Yes	<7.39	n/a	Yes
October	<2.00	Yes	Yes	<4.10	n/a	Yes
November	<2.50	Yes	Yes	<5.51	n/a	Yes
December	<2.50	Yes	Yes	<6.14	n/a	Yes

[7A]As per the ECA, CBOD5 Concentration Averaging Calculator is a Monthly Average Effluent Concentration

[7A]As per the ECA, CBOD5 Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading

Table 8: Effluent Sampling Results: TSS and TSS Loading Concentrations[8A]

	Total Suspended Solids					
	Monthly Average Concentration (mg/L)	Within Objectives (4.00 mg/L)	Within Limits (5.00 mg/L)	Monthly Average Loading (kg/d)	Within Objectives (kg/d)	Within Limits (17.10 kg/d)
January	3.80	Yes	Yes	8.72	n/a	Yes
February	6.00	***No***	***No*[8B]**	13.47	n/a	Yes
March	4.71	***No***	Yes	11.35	n/a	Yes

	Total Suspended Solids					
	Monthly Average Concentration (mg/L)	Within Objectives (4.00 mg/L)	Within Limits (5.00 mg/L)	Monthly Average Loading (kg/d)	Within Objectives (kg/d)	Within Limits (17.10 kg/d)
April	<4.40	***No***	Yes	<14.71	n/a	Yes
May	10.61	***No***	***No***[8B]	30.25	n/a	***No***[8B]
June	<3.44	Yes	Yes	<7.94	n/a	Yes
July	2.50	Yes	Yes	6.23	n/a	Yes
August	<2.00	Yes	Yes	<4.81	n/a	Yes
September	<2.00	Yes	Yes	<4.22	n/a	Yes
October	<2.80	Yes	Yes	<5.74	n/a	Yes
November	3.00	Yes	Yes	6.61	n/a	Yes
December	4.25	***No***	Yes	10.44	n/a	Yes

[8A]As per the ECA, TSS Concentration Averaging Calculator is a Monthly Average Effluent Concentration

[8A]As per the ECA, TSS Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading

[8B]Required notification of non-compliances were made for the limit exceedance in February and May 2023 and full details are provided in appendix F

Table 9: Effluent Sampling Results: TP and TP Loading Concentrations[9A]

	Total Phosphorus					
	Monthly Average Concentration (mg/L)	Within Objectives (0.12 mg/L)	Within Limits (0.25 mg/L)	Monthly Average Loading (kg/d)	Within Objectives (kg/d)	Within Limits (0.86 kg/d)
January	0.07	Yes	Yes	0.17	n/a	Yes
February	0.08	Yes	Yes	0.18	n/a	Yes
March	0.07	Yes	Yes	0.17	n/a	Yes
April	0.09	Yes	Yes	0.30	n/a	Yes
May	0.17	***No***	Yes	0.48	n/a	Yes
June	0.05	Yes	Yes	0.11	n/a	Yes
July	0.05	Yes	Yes	0.12	n/a	Yes
August	0.05	Yes	Yes	0.13	n/a	Yes
September	0.04	Yes	Yes	0.09	n/a	Yes
October	0.04	Yes	Yes	0.09	n/a	Yes
November	0.05	Yes	Yes	0.10	n/a	Yes
December	0.05	Yes	Yes	0.13	n/a	Yes

[9A]As per the ECA, TP Concentration Averaging Calculator is a Monthly Average Effluent Concentration

[9A]As per the ECA, TP Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading

Table 10: Effluent Sampling Results: TAN and TAN Loading Concentrations[10A]

	Total Ammonia Nitrogen (Ammonia Nitrogen + Ammonium Nitrogen)									
	Monthly Average Concentration (mg/L)	Within Objectives (Jun 01-Sept 30 0.50 mg/L)	Within Objectives (Oct 01-May 31 2.00 mg/L)	Within Limits (Jun 01-Sept 30 0.80 mg/L)	Within Limits (Oct 01-May 31 2.4 mg/L)	Monthly Average Loading (kg/d)	Within Objectives (Dec 01-Apr 30 kg/d)	Within Objectives (May 01-Nov 30 kg/d)	Within Limits (June 01-Sept 30 2.70 kg/d)	Within Limits (Oct 01-May 31 8.20 kg/d)
January	<0.10	n/a	Yes	n/a	Yes	<0.23	n/a	n/a	n/a	Yes
February	<0.25	n/a	Yes	n/a	Yes	<0.56	n/a	n/a	n/a	Yes
March	<0.10	n/a	Yes	n/a	Yes	<0.24	n/a	n/a	n/a	Yes
April	<1.03	n/a	Yes	n/a	Yes	<3.44	n/a	n/a	n/a	Yes
May	<0.32	n/a	Yes	n/a	Yes	<0.90	n/a	n/a	n/a	Yes
June	<0.10	Yes	n/a	Yes	n/a	<0.23	n/a	n/a	Yes	n/a
July	<0.10	Yes	n/a	Yes	n/a	<0.25	n/a	n/a	Yes	n/a
August	<0.10	Yes	n/a	Yes	n/a	<0.24	n/a	n/a	Yes	n/a
September	<0.10	Yes	n/a	Yes	n/a	<0.21	n/a	n/a	Yes	n/a
October	<0.20	n/a	Yes	n/a	Yes	<0.41	n/a	n/a	n/a	Yes
November	<0.10	n/a	Yes	n/a	Yes	<0.22	n/a	n/a	n/a	Yes
December	0.13	n/a	Yes	n/a	Yes	0.31	n/a	n/a	n/a	Yes

[10A]As per the ECA, TAN Concentration Averaging Calculator is a Monthly Average Effluent Concentration

[10A]As per the ECA, TAN Loading Limits Concentration Averaging Calculator is a Monthly Average Daily Effluent Loading

Table 11: Effluent Sampling Results: *E.coli* Concentrations

	E.coli		
	Monthly Geometric Mean Density (CFU/100mL)	Within Objectives (150 CFU/100mL)	Within Limits (200 CFU/100mL)
January	1.74	Yes	Yes
February	1.68	Yes	Yes
March	2.00	Yes	Yes
April	2.83	Yes	Yes
May	2.40	Yes	Yes
June	2.00	Yes	Yes
July	1.68	Yes	Yes
August	2.00	Yes	Yes
September	1.68	Yes	Yes
October	2.76	Yes	Yes

	E.coli		
	Monthly Geometric Mean Density (CFU/100mL)	Within Objectives (150 CFU/100mL)	Within Limits (200 CFU/100mL)
November	2.00	Yes	Yes
December	1.68	Yes	Yes

Table 12: Effluent Sampling Results: pH

	pH			
	pH Monthly Minimum	pH Monthly Maximum	Within Objectives (6.5-8.5)	Within Limits (6.0-9.5)
January	7.4	7.5	Yes	Yes
February	7.5	7.6	Yes	Yes
March	7.5	7.5	Yes	Yes
April	7.5	7.6	Yes	Yes
May	7.4	7.7	Yes	Yes
June	7.5	7.7	Yes	Yes
July	7.1	7.7	Yes	Yes
August	7.4	7.8	Yes	Yes
September	7.4	7.5	Yes	Yes
October	7.7	7.7	Yes	Yes
November	7.4	7.6	Yes	Yes
December	7.3	7.6	Yes	Yes

Table 13: Effluent Sampling Results: Temperature	**Temperature**	
	Monthly Minimum (°C)	Monthly Maximum (°C)
January	12.0	13.9
February	11.7	12.6
March	11.5	12.3
April	11.4	14.5
May	14.3	19.8
June	17.5	19.6
July	20.5	21.0
August	20.2	21.6
September	20.5	22.4
October	17.4	21.5
November	14.5	17.3
December	14.4	15.6

A review of the effluent monitoring data shows that the following parameters were within the objectives (as applicable) and limits set out in the most current ECA for the duration of the 2023 reporting period:

- CBOD5 monthly average effluent concentration
- CBOD5 monthly average daily effluent loading
- TP monthly average daily effluent loading
- TAN monthly average effluent concentration
- TAN monthly average daily effluent loading
- E.coli monthly geometric mean
- pH single sample results

A review of the effluent monitoring data shows that the following parameters were within the limits set out in the most current ECA for the duration of reporting period but were unable to meet the objectives in the following instances:

- TP monthly average effluent concentration – for May 2023

It should be noted that as per the ECA, the objectives are non-enforceable design objectives to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs. Exceedances of objectives is not reportable.

A review of the effluent monitoring data shows that the following parameters were within the limits set out in the most current ECA for some of the reporting period with the exception of:

- TSS monthly effluent concentration - for February and May 2023
- TSS monthly average daily effluent loading- for May 2023

The TSS monthly average concentrations exceeded the limit of 5.0 mg/L in February and May 2023. See *Section 4.0 Operational Issues and Corrective Actions* for more details.

The TSS monthly daily average loading concentrations exceeded the limit of 17.1 kg/d in May 2023. See *Section 4.0 Operational Issues and Corrective Actions* for more details.

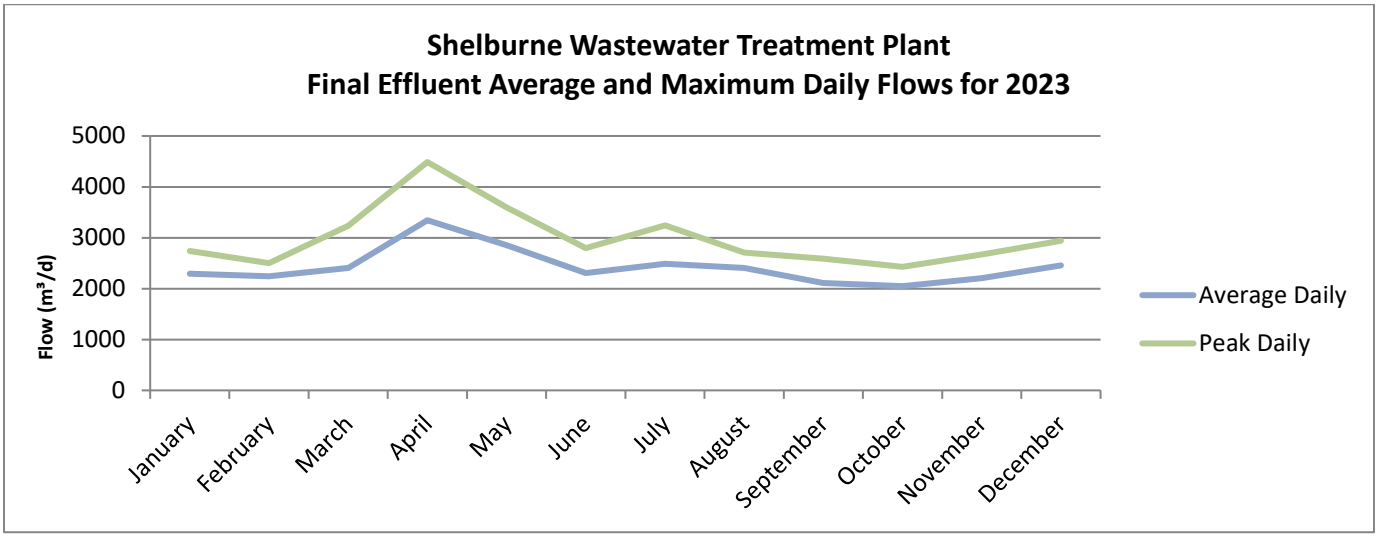
2.4 Effluent Flow: Summary and Interpretation of Reporting Year

The following table (Table 14) outlines the final effluent average daily flow data in 2023 and the graph shows the final effluent daily and peak final effluent flow by month for the reporting period.

Table 14: Final Effluent Average Daily Flow and Peak Flow Data by Month for 2023

Month	**Average Daily** (m^3/day)	**Peak Daily** (m^3/day)	**Total** (m^3/day)
January	2295.54	2740.70	71161.80
February	2245.24	2502.00	62866.70
March	2407.15	3237.70	74621.60
April	3343.63	4487.90	100308.80
May	2850.77	3594.10	88374.00
June	2303.80	2798.50	69114.00
July	2489.90	3243.50	77186.80
August	2403.94	2710.20	74522.00
September	2112.06	2588.50	63361.80
October	2048.49	2428.40	63503.30
November	2202.67	2667.50	66080.20
December	2455.69	2940.90	76126.50
2023 Average	2430.76	4487.90	887227.50

Graph 1: 2023 Average Daily and Peak Daily Final Effluent Flow by Month for 2023



2.5 Additional Monitoring Parameters

The following parameters in Table 15 are not reportable as they do not have limits or objectives but are monitored on a regular basis (see Section 2.1 for sampling frequency) as required by ECA 6413-ABLQQS and used to characterize the contents of incoming sewage flow. A summary of the influent laboratory results can be seen in table 15 for samples taken and analyzed during the reporting period. Sample results are based on monthly 24 hour composite samples and analyzed by an accredited external laboratory. A total of 12 influent samples were analyzed for the reporting period.

A review of the information for the reporting year compared to 2022 shows:

- Raw sewage quality in 2023 in the majority of parameters was lower when compared to raw sewage quality in 2022.
- BOD_5 - annual average was 455.58 mg/L in 2022 and was lower this year at 406.33 mg/L.
- TSS annual average was 645.00 mg/L in 2022 and was lower this year at 582.33 mg/L.
- TP annual average was 6.63 mg/L in 2022 and lower this year at 6.40 mg/L.
- TKN annual average was 45.11 mg/L in 2022 and was higher this year at 69.33 mg/L.

Table 15: Raw Sewage (Influent) Quality Analysis for 2023

Parameter	**Average** (mg/L)	**Minimum** (mg/L)	**Maximum** (mg/L)
BOD_5[15A]	406.33	264.00	724.00
Total Suspended Solids[15A]	582.33	307.00	1230.00
Total Phosphorous[15A]	6.40	4.13	11.40
Total Kjeldahl Nitrogen[15A]	69.33	31.50	335.00

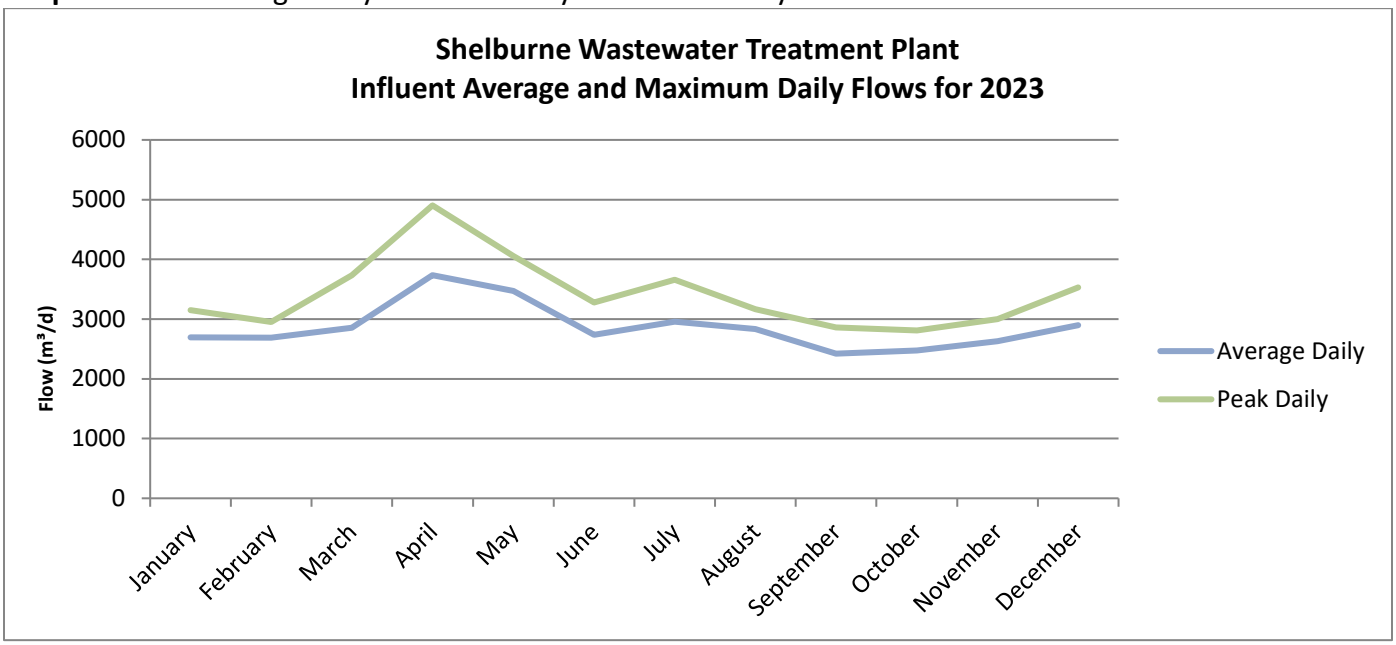
[15A]Refer to Appendix A for monthly sample results.

The following table (Table 16) outlines the influent average daily flow data in 2023 and the graph shows the final effluent daily and peak final effluent flow by month for the reporting period.

Table 16: Influent Average Daily Flow and Peak Flow Data by Month for 2023

Month	**Average Daily** (m^3/day)	**Peak Daily** (m^3/day)	**Total** (m^3/day)
January	2695.76	3148.40	83568.70
February	2688.41	2953.10	75275.60
March	2856.96	3732.90	88565.90
April	3735.14	4903.70	112054.20
May	3472.42	4057.10	107645.10
June	2736.53	3278.00	82096.00
July	2956.43	3656.20	91649.40
August	2835.47	3166.70	87899.50
September	2421.65	2859.40	72649.60
October	2472.70	2810.00	76653.70
November	2629.34	3000.50	78880.10
December	2897.47	3530.50	89821.50
2023 Average	2867.83	4903.70	1046759.30

Graph 2: 2023 Average Daily and Peak Daily Influent Flow by Month for 2023



The following parameters in Table 17 do not have limits or objectives but are monitored as needed when septage is received at the facility. Table 17 summarizes the monitoring data for the reporting period.

Table 17: Hauled Sewage Quality Analysis for 2023[17A]

Parameter	**Average** (mg/L)	**Minimum** (mg/L)	**Maximum** (mg/L)
BOD_5	>6726.26	<2340.00	>9408.00
Total Suspended Solids	15824.62	6970.00	27800.00
Total Phosphorous	121.00	33.00	248.00
Total Kjeldahl Nitrogen	700.15	156.00	1520.00

[17A]Refer to Appendix B for sample results.

2.6 Success and Adequacy of the Works

In 2023, the Shelburne WWTP produced effluent with the following removal rates:

Parameter	**Average Removal Rate for 2023**
Carbonaceous Biochemical Oxygen Demand	99.18%
Total Suspended Solids	99.06%
Total Phosphorus	98.69%

During the reporting period, Shelburne WWTP provided effective wastewater treatment, producing effluent with removal rates for $CBOD_5$ at 99.18%, 99.06% for Total Suspended Solids, and 98.69% for Total Phosphorus.

For the reporting period, the annual average effluent $CBOD_5$ concentration was <2.64 mg/L. The annual average effluent TSS concentration was 4.84 mg/L. The annual average effluent Total Phosphorus concentration was 0.07 mg/L.

The bacteriological quality of the effluent complied with the certificate of approval requirement of <200 Colony Forming Units (CFU) per 100 mL sample. The maximum geometric mean density for 2023 was 2.83 CFU per 100 mL, indicating adequate effluent disinfection for the year.

The total raw sewage volume of wastewater treated in 2023 was 1,046,759.30 m^3. The annual average daily flow of raw sewage was 2,867.83.12 m^3/day was 83.85 % of the design flow (3,420 m^3/day). The maximum peak flow of 4,903.70 m^3/day occurred in April due to higher precipitation and snow melt. This represents a peak flow of 1.4 times the rated capacity. The wastewater treatment plant operated within the rated capacity 87.12% of the time (318 out of 365 days of the year). The average daily flow has approached 80% of the rated capacity and the Town of Shelburne is aware of this. With future upgrades proposed for the Works this will increase design capacity to accommodate the growth.

3. Operating Issues and Corrective Actions

As per Section 10(6)(b) of ECA 6413-ABLQQS, *a description of any operating problems encountered and corrective actions taken* is required.

During the reporting period there were two (2) operating problems/situations encountered and corrective actions taken at the Shelburne Wastewater Plant during 2023 that affected the quality of the effluent leaving the plant.

- February 2023- the TSS monthly average concentration limit was exceeded due to seasonal temperature fluctuation, snow melt and heavy rain diluting MLSS in aeration tanks causing pin flock and the South Clarifier out of service due to electrical issues. The South Clarifier was returned to service February 23, 2023. Verbal and written notification of non-compliance were made to the MECP on March 22, 2023.
- May 2023- the TSS monthly average concentration and loading limits was exceeded due to the combination of tear in cloth in filter #2 and emptying of ponds due to lagoon leak. Ordering of more filter clothes and netting, draining, cleaning of filter #2 was completed for inspection of cloths. On June 9 the filter cloths and netting were received and work was scheduled and completed on June 14 and June 15. Verbal and written notification of non-compliance were made to the MECP on June 9, 2023 and June 20, 2023.

The ECA limit exceedance written/email notification which include full details of these occurrences are included in Appendix F. All major repairs/maintenance can be found in Section 4 of this report.

4. Maintenance Activities

As per Section 10(6)(c) of ECA 6413-ABLQQS, *a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanisms or thing forming part of the works* is required.

4.1 Work Management System

Planned maintenance, including scheduled and non-scheduled maintenance activities are scheduled using a computerized Work Management System (WMS) that allows user to:

- Enter detailed asset information
- Generate and process work orders
- Access maintenance and inspection procedures
- Plan, schedule, and document all asset related tasks and activities
- Access maintenance records and asset histories

Work Orders are automatically generated by the WMS program and are assigned to the applicable Operations staff accordingly.

4.2 Preventative Maintenance Activities

There were a number of preventative maintenance tasks completed throughout the reporting period. They are as follows:

- Monthly panel alarm and generator testing
- Monthly UV inspection and servicing
- Annual generator inspections and load testing
- Annual calibrations (flow meters, gas detectors, pH meters, D.O. meter etc.)
- Annual lifting device inspection
- Annual pump inspections and servicing
- Annual blower inspections

4.2 Major Maintenance, Repairs and Improvements

There were a number of major maintenance, repairs and/or improvements completed throughout the reporting period. They are as follows:

For 2023, major maintenance activities that occurred include:

- Lagoon Repairs resulting from spill event
- Mixing Pump Repairs
- Head Works Auger replacement
- Decant pump replacement
- Filter #2 cloth replacement
- Filter Feed Pump #1 repair
- Gas sensor replacement

- Septage tank clean out
- Yard hydrant repair
- Return activated sludge pump #1 wiring repairs
- Return activated sludge pump #3 wiring repairs
- Return activated sludge impellor replacements
- Return activated sludge pump #1 repair and install
- Return activated sludge pump #2 re-build and install
- Raw sewage pump repair
- Sludge pipe repair
- South clarifier hydro wiring replacement
- Blower air filter replacements
- Grit vortex system cleanout
- Midge fly control
- Annual Backflow Prevention inspection
- UV Lamp and Sleeve replacements
- Headworks Wet Well cleanout

5. Effluent Quality Assurance and Control

As per Section 10(6)(d) of ECA 6413-ABLQQS, *a summary of any effluent quality assurance or control measures undertaken in the reporting period* is required:

Quality assurance and control measures undertaken during the reporting period include adherence to provincial regulations, use of accredited laboratories, and operation of the system by licensed operators, scheduled sampling and analysis, in-house laboratory analysis, and calibration and preventative maintenance of equipment. The sections below provide further details of these measures.

5.1 Adherence to Provincial Regulations

The Ontario Clean Water Agency operates the WWTP in accordance with provincial regulations and the Environmental Compliance Approval.

5.2 Use of Accredited Laboratories

Analytical tests to monitor the effluent quality are conducted by a laboratory audited by the Canadian Association for Laboratory Accreditation Inc. (CALA) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods. During the reporting period, all chemical sample analyses were conducted by SGS (Lakefield) Canada Inc.

5.3 Operation by Licensed Operators

The WWTP was operated and maintained by licensed Operators. The mandatory licensing program for operators of sewage treatment facilities in Ontario is regulated under the Ontario Water Resources Act

(OWRA) Regulation 435/93 and Ontario Regulation 129/04. A Licensed individual has successfully passed the licensing exam and meets the education and experience requirements set out in the regulation.

5.4 Sampling and Analysis

The Ontario Clean Water Agency followed a sampling and analysis schedule that meets the requirements of the ECA.

5.5 In-house Analysis

In-house analysis were conducted by Licensed Operators for monitoring purposes using standard methods. The data generated from these tests is used to determine the treatment efficiency while effectively maintaining process control. All in-house monitoring equipment is calibrated based on the manufacturer's recommendations. Using their expertise, Operators of the facility make best efforts to stay within the ECA Effluent Objectives and Limits.

5.6 Calibrations

Third-party and in-house calibrations were completed on various equipment and monitoring and analysis items as required based on manufacturer's recommendations. Refer to Section 6 for more information regarding calibration of monitoring equipment.

6. Calibration and Maintenance Procedures

As per Section 10(6)(e) of ECA 6413-ABLQQS, a summary of the calibration and maintenance carried out on all effluent monitoring equipment is required.

All in-house monitoring equipment is calibrated/verified as per manufacturer's recommendations. Monitoring and metering equipment is also calibrated by a third party on an annual basis. Preventative maintenance is scheduled for all equipment at the sewage treatment plant and pumping stations at regular frequency (frequency depends on the equipment and type of maintenance). Maintenance activities are scheduled within the work management system Maximo, upon completion, Operators set the work order to complete. On a monthly basis, preventative work orders are reviewed for completion.

Indus Controls was contracted to calibrate flow measuring equipment on September 21, 2023. Copies of these calibration reports can be found in **Appendix C** of this report.

7. Efforts and Results Achieved in Meeting Effluent Objectives

As per Section 10(6)(f) of ECA 6413-ABLQQS, a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 6 is required.

Condition 6 is imposed "to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards 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 compliances limits of Condition 7 are exceeded."

OCWA as the Operating Authority (on behalf of the Owner) has made best efforts to stay within the Effluent Objectives in the ECA. These efforts are supported through:

- Continuous monitoring equipment
- Regular plant inspections/checks
- In-house sampling and testing
- Laboratory (3rd party) analysis of influent and effluent samples
- Data review
- Process optimization and adjustments (as required)
- Scheduled/preventative maintenance
- Repairs as necessary

A summary of the effluent quality in comparison to the effluent objectives can be found in Tables 7-13 of section 2.3 of this report. These results show that sewage treatment operations for 2023 provided effluent quality that were within most effluent objectives outlined in the ECA and minimized environmental impairment, with the exception of Total Suspended Solids (February-May and December 2023) and Total Phosphorous (May 2023). Seasonal temperatures, South Clarifier being out of service and filter #2 cloth and netting replacement could account for these effluent objective exceedances. Minor operational changes, South Clarifier repairs and replacement of cloth and netting on filter #2 were implemented to provide higher effluent quality in order to achieve the effluent objectives outlined in the ECA.

8. Sludge Production and Disposal

As per Section 10(6)(g) of ECA 6413-ABLQQS, 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 is required.

Digested sludge produced at the Shelburne WWTP is land-applied in accordance with the Nutrient Management Act 2002 and Ontario Regulation 267/03 by Saugeen Agri. Service under Certificate of Approval - Waste Management System #9566-6HYKC3.

Grab samples of digested (aerobic) sludge are collected and tested as per these requirements. In 2023, sludge sample analysis was carried out by SGS Lakefield Research Limited. Sludge analysis showed that the sludge met the quality criteria specified in the Ontario Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land (Guidelines). A summary of sludge sample results is provided in **Appendix B** of this report, along with septage data for the reporting period.

The Town of Shelburne has an arrangement/agreement for the hauling, acceptance and processing of liquid biosolids material from the Shelburne Wastewater Treatment Plant with Lystek International Corp. Volumes of biosolids hauled from the Shelburne Wastewater Treatment Plant to Lystek are noted in below table 18.

The following certified sites were utilized in 2023:

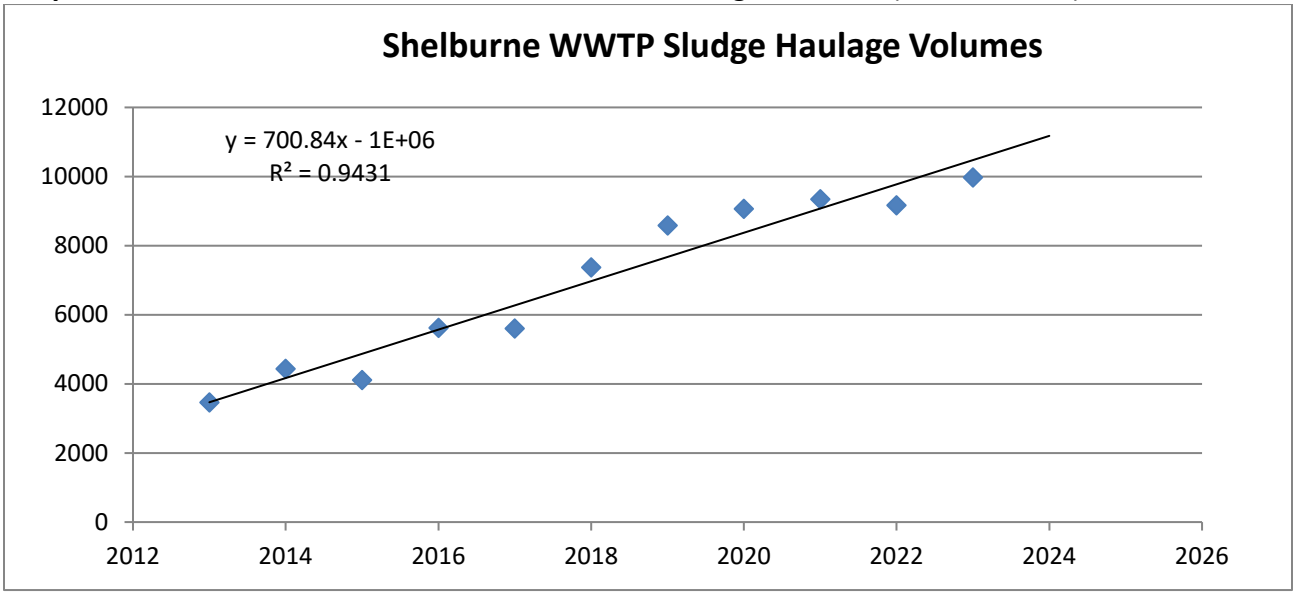
Table 18. Volume of Sludge Generated from Shelburne Wastewater Treatment Plant in 2023

Site	Site Location	Volume of Biosolids (m^3)	Hauler
NASM Submission ID: 25079	Leroy May	4077.00	Saugeen Agri.
NASM Submission ID: 25247	Gary Horst	5894.00	Saugeen Agri.
Lystek International Corp.	Dundalk, On	708.00	Saugeen Agri.

A total volume of 9,971 m^3 of sludge was applied to the above fields from the Shelburne WWTP in 2023.

Based on the design flow, average wastewater quantity and a linear regression with an R^2 value of 94.31%, the anticipated volume of sludge generated for 2023 will be approximately 11,000 m^3.

Graph 3. Shelburne Wastewater Treatment Plant Haulage Volumes (2013 to 2023)



9. Community Complaints

As per Section 10(6)(h) of ECA 6413-ABLQQS, a summary of any complaints received during the reporting period and any steps taken to address the complaints is required.

A standard operating procedure (SOP) is in place for addressing complaints received from the community. All complaints are addressed and documented in the facility logbook. Community complaint information is entered in OCWA's electronic database system "WMS Maximo". This system contains all the required information and history of all complaints.

There were two complaints registered in 2023 for the reporting period.

- On Saturday April 15, 2023 a resident from the Town of Shelburne residing on Morden Drive contacted The Town of Shelburne via email reporting an odour complaint for the WWTP. The complaint was addressed by Town of Shelburne staff with the explanation that it was due to the

warmer weather. Information was also provided to the resident on the function of the ponds and the planned upgrades to the sewage treatment plant in the future.

- On Saturday April 22, 2023 a resident from the Town of Shelburne contacted Spills Action Centre to report strong odours coming from the wastewater plant, making note that the odours were unbearable since the mild weather began and that the lagoons were full at the time. On Monday April 25, 2023 the complaint was communicated to OCWA and the Town of Shelburne from the local MECP inspector. OCWA and the Town were not previously aware of the complaint. A response was provided to the MECP inspector that due to the precipitation in the past few weeks prior and seasonal snow melt during high flow events that the material is sent to the ponds to not overwhelm the plant and returned when flows slow down. Information was also provided with regards to background reports relating to development and sewage plant upgrades. The MECP inspector contacted the complainant who expressed concerns that the odour negatively impacts their ability to use their property with no resolution in sight. The MECP encouraged the complainant to contact the Town and/or OCWA for such concerns. No further communication was made to OCWA or the Town by the complainant.

Also, during this timeframe Town Staff noticed social media remarks with regards to odour but the remarks were not formally directed to the Town or OCWA. During the April 24, 2023 council meeting the Director of Development and Operations (Town of Shelburne) addressed an inquiry from the Mayor with regards to the odour of the plant. It was communicated that due to the warm weather and snow melt, there were increased flows and pond levels which were being slowly worked back through the plant.

10. By-pass, Spill or Abnormal Discharge Events

As per Section 10(6)(i) of ECA 6413-ABLQQS, a summary of all By-pass, spill or abnormal discharge events (additionally events outside of Normal Operating Conditions) is required.

Overall, for the Shelburne WWTP there were no by-pass events, one (1) spill event, no abnormal discharge events or overflows. See the below sections 10.1 to 10.3 for further details. In addition, ECA 6413-ABLQQS requires that Quarterly bypass/overflow reports are to be submitted to the Water Supervisor. All 2023 quarterly reports were submitted to the Water Supervisor by the deadlines specified in the ECA.

10.1 By-pass Events

There were no by-pass events that occurred during the reporting period.

10.2 Spill and/or Abnormal Discharge Events

There was one (1) reportable spill event that occurred during the reporting period

- April 27, 2023- SAC incident Number I-3FKBT8, due to a leak from the emergency-use Wet Weather Flow Holding Ponds from a broken abandoned pipe. The location of the event was at the Shelburne WWTP and spilled into the Besley drain to Boyne Creek to the Nottawasaga River. Remediate actions were taken to prevent further spillage into environment. Samples were

collected and analyzed for parameters outlined in the ECA. Lagoons were drained, inspection was completed to find leak, and abandoned pipe was filled and re-sealed to prevent any future problems. Due to this event a Notice of Violation was given as full public access was not fully put in place and public had access to areas that contained spilled material. On May 24, 2023 confirmation was provided that remediation of the ditches had been completed.

10.3 Events Outside of Normal Operating Conditions

There were two (2) events that occurred outside of the normal operating conditions for the reporting year that affected the quality of the effluent leaving the plant.

- February 2023 - TSS monthly average concentration limit was exceeded due to seasonal temperature fluctuation, snow melt and heavy rain diluting MLSS in aeration tanks causing pin flock and the South Clarifier out of service due to electrical issues. The South Clarifier was returned to service February 23, 2023.
- May 2023 - TSS monthly average concentration and loading limits was exceeded due to the combination of tear in cloth in filter #2 and emptying of ponds due to lagoon leak. Ordering of more filter clothes and netting, draining, cleaning of filter #2 was completed for inspection of cloths. On June 9, filter cloths and netting was received and work was scheduled and completed on June 14 and June 15. The ECA limit exceedance written/email notification which include full details of these occurrences are included in Appendix F. All major repairs/maintenance can be found in Section 4 of this report.

11. Notice of Modifications

As per Section 10(6)(j) of ECA 6413-ABLQQS, 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 is required.

There were no new notices of modification submitted to the Water Supervisor during the reporting period.

OCWA continues to use one (1) product from the Notice of Modification signed on March 29, 2022 in order to improve operations:

- AQUABACxt- is a highly effective, US EPA-registered biological larvicide. It contains a species of bacteria called bacillus thuringiensis, an approved pesticide for controlling red worms and midge flies in wastewater treatment plants. On a weekly basis from spring to fall operations will dose the incoming raw sewage and aeration tank to eliminate midge flies at the plant during the summer months. The addition of AQUABACxt was started on May 29, 2023 and was greatly beneficial, there was a major reduction of midge flies in the clarifiers and filter/UV rooms when this product was used compared to previous years when no product was used. This product will continue to be used on a weekly basis from spring to fall.

12. Summary of Completed Modifications

As per Section 10(6)(k) of ECA 6413-ABLQQS, a report summarizing all modifications completed as a result of Schedule B, Section 3 is required.

Where: Schedule B, Section 3 is the "Limited Operational Flexibility Criteria for Modifications to Municipal Sewage Works" that allows for pre-approved normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment.

Refer to Section 4 of this report for a list of normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment.

13. Additional Information

As per Section 10(6)(l) of ECA 6413-ABLQQS, any other information the Water Supervisor requires from time to time is required.

There were no requests from the Water Supervisor for any other information during the reporting period.

14. Municipal Sewage Collection System- Annual Performance Report

This report was prepared in accordance with the requirements of the Environmental Compliance Approval for a Municipal Sewage Collection Systems, Schedule E, Section 4.6.1.

Municipal Sewage Collection System ECA #	109-W601, Issue 1
Sewage Works	Town of Shelburne Wastewater Collection and Treatment System
Collection System Owner	The Corporation of the Town of Shelburne
Reporting Period	January 1, 2023 to December 31, 2023

Is the Annual Report available to the public at no charge on a website on the Internet?

Yes

Note: As per Schedule E, Section 4.7.1 of CLI-ECA #109-W601, the annual performance report must be made available, on request and without charge, to members of the public who are served by the Authorized System; and 4.7.2 must be made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

Location where Annual Performance Report required under CLI-ECA #109-W601 Schedule E will be available for inspection. *(CLI-ECA #109-W601, Schedule E, Section 4.6.1 & 4.7.1):*

- Town of Shelburne Office, 203 Main Street Shelburne, Ontario, L9V 3K7
- http://www.shelburne.ca

Pursuant to Schedule E, sections 4.6.3 to 4.6.9, this Annual Performance Report shall:

a) If applicable, includes a summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.

b) If applicable, include a summary of any operating problems encountered and corrective actions taken.

c) Includes a summary of all calibration, maintenance, and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.

d) Include a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

e) Include a summary of all Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.

f) Include a summary of all Collection System Overflow(s) and Spill(s) of Sewage.
   i. Dates;
   ii. Volumes and durations;
   iii. If applicable, loadings for total suspended solids, BOD, total phosphorus, and total kjeldahl nitrogen and sampling results for E.Coli;
   iv. Disinfection, if any; and
   v. Any adverse impacts(s) and any corrective actions, if applicable

g) Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following items, as applicable:
   i. A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
   ii. Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
   iii. An assessment of the effectiveness of each action taken.
   iv. An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
   v. Public reporting approach including proactive efforts.

14.1 Description of the Works

The Town of Shelburne Wastewater Collection and Treatment System is Owned by the Town of Shelburne and operated by the Town of Shelburne (Collection) and Ontario Clean Water Agency (OCWA) (Treatment). The Shelburne Wastewater Collection and Treatment system consists of works for the collection and transmission of sewage, consisting of trunk sewers collection mains, sewage pumping stations and forcemains that discharge into west and east system collection mains, and to the Shelburne Sewage Treatment Plant. The sewage pumping stations in the Authorized system include:

- Fiddler's Glen Pumping Station (PS) – located at 901 Greenwood Cres, Shelburne. Consists of a concrete wet well, two submersible grinder pumps and connected to a forcemain discharging to the Shelburne STP. The PS is equipped with emergency storage, SCADA control system and a stand-by diesel generator in case of power failure.
- Hyland Village Pumping Station (PS) – located at 363 Stewart Street, Shelburne. Consists of a concrete wet well, two submersible grinder pumps and connected to a forcemain discharging to the collection system at the most northern manhole in the west end of Shelburne, and then eventually to the Shelburne STP. The PS is equipped with emergency storage, SCADA control system and a stand-by diesel generator in case of power failure.
- Fieldgate Pumping Station (PS) – located at 600 Red Elm Road, Shelburne. Consists of a concrete wet well, three submersible grinder pumps and connected to a forcemain discharging to the sanitary collection system at the most easterly manhole on Industrial Road on the east side of Shelburne, and then eventually to the Shelburne STP. The PS is equipped with emergency storage, SCADA control system and a stand-by diesel generator in case of power failure.

The Shelburne Wastewater Collection and Treatment System contains no combined sewage pumping stations, no combined sewage storage structures or combined storage tanks. The authorized collection system also contains no authorized combined sewer collection system overflow points and three authorized sanitary sewer overflow points (one at each of the pumping stations list above).

Prior to July 27, 2022, Fiddler's Glen Pumping Station was captured under ECA 0160-8P2QV6, Hyland's Village Pumping Station was captured under ECA 2719-B62QMQQ and Fieldgate Pumping Station was captured under ECA 0116-8P2QV6. On July 27, 2022, Municipal Sewage Collection System ECA Number 109-W601, Issue 1, was issued to the Shelburne Wastewater Collection and Treatment System incorporating all Pumping Stations, sewers, separate sewers and forcemains into one Consolidated Linear Infrastructure ECA. As such, all prior ECAs, issued by the Director for Sewage Works are considered revoked and replaced by ECA Number 109-W601.

14.2 Summary of Monitoring Data and Interpretation

No monitoring data is required to be collected within the municipal sewage collection system for the reporting year.

14.3 Summary of Operating Problems Encountered and Corrective Actions Taken

There were no operating problems encountered within the municipal sewage collection system for the reporting year.

14.4 Summary of Calibration, Maintenance, and Repairs

There were no major maintenance activities for the sewage pump stations during the reporting period.

Fiddler's Glenn SPS

- Monthly generator inspection and load testing
- Cleaned floats and exercise valve in wet well
- Repair on sanitary outfall from wet well
- Annual wet well inspection and clean out
- Annual 3rd party generator inspection and maintenance

Hyland Development SPS

- Cleaned floats
- Pump ground water from valve chamber
- Two flow meters in valve chamber replaced
- Monthly generator inspection and load testing
- Annual wet well inspection and clean out
- Annual 3rd party generator inspection and maintenance

Fieldgate SPS

- Cleaned floats
- Pump ground water from valve chamber
- Cleaning of gravel from wet well
- Pump #1 out of service, pump jammed due to plastic
- Monthly generator inspection and load testing
- Annual wet well inspection and clean out
- Annual 3rd party generator inspection and maintenance

14.5 Community Complaints Received in Relation to the Sewage Works

All complaints are addressed and documented in the facility logbook. Community complaint information is entered in OCWA's WMS database system "Maximo". This system contains all the required information and history of all complaints.

There were no complaints reported during the reporting period.

14.6 Alterations to the Authorized System

There were no alterations to the authorized system that occurred during the reporting period.

14.7 Summary of Collection System Overflow(s) and Spill(s) of Sewage

There were no collection system overflow(s) or spill(s) events that occurred during the reporting period

14.8 Efforts Made to Reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses

The sewage pump stations are equipped with alarm monitoring for high flow events. Preventative maintenance procedures are in place to ensure the sewage pump stations are operating as designed and include:

- 3rd Party generator inspection and load testing
- Annual Wet Well Inspection and Clean outs

2023 Annual Performance Report
Shelburne Wastewater Treatment Plant
Amended Environmental Compliance Approval No. 6413-ABLQQS

Appendix A

Performance Assessment Report

2023

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2023 to 12/31/2023 11:59:59 PM

5773 SHELBURNE WASTEWATER TREATMENT FACILITY 110000659

	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 Sewage m³/d	83,568.70	75,275.60	88,565.90	112,054.20	107,645.10	82,096.00	91,649.40	87,899.50	72,649.60	76,653.70	78,880.10	89,821.50	1,046,759.30			0.00
Raw Flow: Avg - Raw Sewage m³/d	2,695.76	2,688.41	2,856.96	3,735.14	3,472.42	2,736.53	2,956.43	2,835.47	2,421.65	2,472.70	2,629.34	2,897.47		2,867.83		3,420.00
Raw Flow: Max - Raw Sewage m³/d	3,148.40	2,953.10	3,732.90	4,903.70	4,057.10	3,278.00	3,656.20	3,166.70	2,859.40	2,810.00	3,000.50	3,530.50			4,903.70	0.00
Raw Flow: Count - Raw Sewage 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 - Final Effluent m³/d	71,161.80	62,866.70	74,621.60	100,308.80	88,374.00	69,114.00	77,186.80	74,522.00	63,361.80	63,503.30	66,080.20	76,126.50	887,227.50			0.00
Eff. Flow: Avg - Final Effluent m³/d	2,295.54	2,245.24	2,407.15	3,343.63	2,850.77	2,303.80	2,489.90	2,403.94	2,112.06	2,048.49	2,202.67	2,455.69		2,430.76		
Eff. Flow: Max - Final Effluent m³/d	2,740.70	2,502.00	3,237.70	4,487.90	3,594.10	2,798.50	3,243.50	2,710.20	2,588.50	2,428.40	2,667.50	2,940.90			4,487.90	0.00
Eff Flow: Count - Final 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
Carbonaceous Biochemical Oxygen Demand: CBOD																
Raw: Avg cBOD5 - Raw Sewage mg/L	171.00	433.00	201.00	293.00	280.00	363.00	289.00	588.00	248.00	592.00	480.00	336.00		356.17	592.00	0.00
Raw: # of samples of cBOD5 - Raw Sewage	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 cBOD5 - Final Effluent mg/L	< 2.40	< 2.00	< 2.25	2.50	< 3.92	< 2.00	< 2.00	< 2.00	< 3.50	< 2.00	< 2.50	< 2.50		< 2.64	< 3.92	5.00
Eff: # of samples of cBOD5 - Final Effluent	5.00	4.00	4.00	4.00	12.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	59.00			0.00
Loading: cBOD5 - Final Effluent kg/d	< 5.509	< 4.490	< 5.416	8.359	< 11.166	< 4.608	< 4.980	< 4.808	< 7.392	< 4.097	< 5.507	< 6.139		< 6.43	< 11.17	
Percent Removal: cBOD5 - Final Effluent %	98.60	99.54	98.88	99.15	98.60	99.45	99.31	99.66	98.59	99.66	99.48	99.26			99.66	0.00
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	264.00	454.00	265.00	268.00	284.00	331.00	430.00	668.00	316.00	724.00	455.00	417.00		406.33	724.00	0.00
Raw: # of samples of BOD5 - Raw Sewage	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 BOD5 - Final Effluent mg/L	< 2.00	5.00	< 2.00	< 2.00	< 2.00	< 2.00	< 2.00	3.00	< 2.00	< 2.00	< 2.00	< 2.00		< 2.29	< 5.00	
Loading: BOD5 - Final Effluent kg/d	< 4.591	11.226	< 4.814	< 6.687	< 5.702	< 4.608	< 4.980	7.212	< 4.224	< 4.097	< 4.405	< 4.911		< 5.56	< 11.23	
Percent Removal: BOD5 - Final Effluent %	99.24	98.90	99.25	99.25	99.30	99.40	99.53	99.55	99.37	99.72	99.56	99.52			99.72	0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	307.00	349.00	415.00	363.00	376.00	445.00	575.00	1,020.00	357.00	928.00	1,230.00	623.00		582.33	1,230.00	0.00
Raw: # of samples of TSS - Raw Sewage	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 TSS - Final Effluent mg/L	3.80	6.00	4.71	< 4.40	10.61	< 3.44	2.50	< 2.00	< 2.00	< 2.80	3.00	4.25		4.84	10.61	5.00
Eff: # of samples of TSS - Final Effluent	5.00	4.00	14.00	20.00	18.00	27.00	4.00	5.00	4.00	5.00	4.00	4.00	114.00			0.00
Loading: TSS - Final Effluent kg/d	8.723	13.471	11.348	< 14.712	30.250	< 7.935	6.225	< 4.808	< 4.224	< 5.736	6.608	10.437		11.77	30.25	
Percent Removal: TSS - Final Effluent %	98.76	98.28	98.86	98.79	97.18	99.23	99.57	99.80	99.44	99.70	99.76	99.32			99.80	0.00
Total Phosphorus: TP																

Raw: Avg TP - Raw Sewage mg/L	4.13	5.17	5.46	4.36	4.20	6.23	5.57	11.40	5.43	9.29	11.00	4.60		6.40	11.40	0.00
Raw: # of samples of TP - Raw Sewage	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 TP - Final Effluent mg/L	0.07	0.08	0.07	0.09	0.17	0.05	0.05	0.05	0.04	0.04	0.05	0.05		0.07	0.17	0.25
Eff: # of samples of TP - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Loading: TP - Final Effluent kg/d	0.169	0.184	0.167	0.304	0.481	0.107	0.115	0.129	0.092	0.085	0.104	0.134		0.17	0.48	
Percent Removal: TP - Final Effluent %	98.21	98.41	98.73	97.91	95.98	99.25	99.17	99.53	99.20	99.55	99.57	98.82			99.57	0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	43.00	39.70	38.00	31.50	36.90	46.20	52.00	60.50	49.20	335.00	59.90	40.10		69.33	335.00	0.00
Raw: # of samples of TKN - Raw Sewage	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 TAN - Final Effluent mg/L	< 0.10	< 0.25	< 0.10	< 1.03	< 0.32	< 0.10	< 0.10	< 0.10	< 0.10	< 0.20	< 0.10	0.13		< 0.41	< 1.03	2.40
Eff: # of samples of TAN - Final Effluent	5.00	4.00	4.00	20.00	6.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	69.00			0.00
Loading: TAN - Final Effluent kg/d	< 0.230	< 0.561	< 0.241	< 3.444	< 0.903	< 0.230	< 0.249	< 0.240	< 0.211	< 0.410	< 0.220	0.307		< 0.99	< 3.44	
Eff: Avg NO3-N - Final Effluent mg/L	25.82	22.53	23.30	9.59	19.62	21.70	20.80	< 20.37	28.43	23.58	24.05	23.58		21.95	28.43	0.00
Eff: # of samples of NO3-N - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Eff: Avg NO2-N - Final Effluent mg/L	0.32	0.94	0.24	4.50	0.79	< 0.06	0.08	0.07	0.19	0.12	0.06	0.24		0.63	4.50	0.00
Eff: # of samples of NO2-N - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Disinfection																
Eff: GMD E. Coli - Final Effluent cfu/100mL	1.74	1.68	2.00	2.83	2.40	2.00	1.68	2.00	1.68	2.76	2.00	1.68				200.00
Eff: # of samples of E. Coli - Final Effluent	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00

2023 Annual Performance Report
Shelburne Wastewater Treatment Plant
Amended Environmental Compliance Approval No. 6413-ABLQQS

Appendix B

Sludge Haulage Summary, Sludge Quality, and Septage Receiving

2023

Shelburne WWTP - Daily Haulage Summary			
Date	**Site**	**NASM #**	**Sludge Hauled (m^3)**
May			
13-May-23	Gary Horst	25247	600.00
15-May-23	Gary Horst	25247	1000.00
June			
27-Jun-23	Leroy May	25079	530.00
28-Jun-23	Leroy May	25079	864.00
29-Jun-23	Leroy May	25079	1083.00
30-Jun-23	Leroy May	25079	957.00
July			
1-Jul-23	Leroy May	25079	643.00
September			
26-Sep-23	Gary Horst	25247	950.00
27-Sep-23	Gary Horst	25247	1028.00
28-Sep-23	Gary Horst	25247	894.00
November			
14-Nov-23	Gary Horst	25247	889.00
15-Nov-23	Gary Horst	25247	533.00
		Total	**9971.00**

Ontario Clean Water Agency
Biosolids Quality Report - Liquid
Digestor Type: AEROBIC
Solids and Nutrients

Facility: SHELBURNE WASTEWATER TREATMENT FACILITY
Works: 5773
Period: 01/01/2023 to 12/01/2023

Facility Works Number: *1.10000659E8*
Facility Name: *SHELBURNE WASTEWATER TREATMENT FACILITY*
Facility Owner: *Corporation/Company: The Corporation of the Town of Shelburne*
Facility Classification: *Class 3 Wastewater Treatment*
Receiver: *Besley Drain to Boyne Creek*
Service Population: *8994.0*
Total Design Capacity: *3420.0 m3/day*
Period Being Reported: 01/01/2023 12/01/2023

Note: all parameters in this report will be derived from the Bslq Station

Month	Total Sludge Hauled (m3)	Avg. Total Solids (mg/L)	Avg. Volatile Solids (mg/L)	Avg. Total Phosphorus (mg/L)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	TKN (mg/L)	Ammonia + Nitrate (mg/L)	Potassium (mg/L)
Site	**SHELBURNE WASTEWATER TREATMENT FACILITY**									
Station	**Bslq Station only**									
Parameter Short Name	**HauledVol**	**TS**	**VS**	**TP**	**NH3p_NH4p_N**	**NO3-N**	**NO2-N**	**TKN**	**calculation in report - no T/S**	**K**
T/s	**IH Month.Total**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**	**Lab Published Month Mean**		**Lab Published Month Mean**
Jan		24,100.000		400.000	144.000	0.300	1.800	1,290.000	72.150	73.000
Feb		21,900.000		310.000	154.000	0.300	1.900	1,060.000	77.150	56.000
Mar		21,500.000		320.000	165.000	0.300	0.300	894.000	82.650	61.000
Apr		20,900.000		200.000	171.000	0.300	2.900	1,110.000	85.650	35.000
May	1,600.000	24,500.000		489.000	213.000	0.300	3.300	1,270.000	106.650	81.000
Jun	3,434.000	24,600.000		489.000	305.000	3.000	3.000	1,120.000	154.000	86.000
Jul	643.000	40,100.000		604.000	122.000	3.000	3.000	2,040.000	62.500	84.000
Aug		28,000.000		464.000	241.000	3.000	3.000	1,410.000	122.000	70.000
Sep	2,872.000	24,900.000		362.000	309.000	3.000	3.000	3,080.000	156.000	49.000
Oct		21,900.000		351.000	77.700	3.000	3.000	964.000	40.350	59.000
Nov	1,422.000	27,700.000		474.000	193.000	3.000	3.000	1,360.000	98.000	69.000
Dec		26,600.000		430.000	141.000	3.000	3.000	558.000	72.000	82.000
Average	1,994.200	25,558.333		407.750	186.308	1.875	2.600	1,346.333	94.092	67.083
Total	9,971.000	306,700.000	0.000	4,893.000	2,235.700	22.500	31.200	16,156.000	1,129.100	805.000

Ontario Clean Water Agency
Time Series Info Report

Report extracted 03/14/2024 11:30

From: **01/01/2023 to 31/12/2023**

Facility Org Number: **5773**
Facility Works Number: **110000659**
Facility Name: **SHELBURNE WASTEWATER TREATMENT FACILITY**
Facility Owner: **Corporation/Company: The Corporation of the Town of Shelburne**
Facility Classification: **Class 3 Wastewater Treatment**
Receiver: **Besley Drain to Boyne Creek**
Service Population: **8994.0**
Total Design Capacity: **3420.0 m3/day**

	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023	Total	Avg	Max	Min
Septage / Biochemical Oxygen Demand: BOD5 - mg/L																
Count Lab	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max Lab		8740	> 9408	5510	2340	8950		5500	8030	9100	5400				> 9408	
Mean Lab		8740	> 9408	5510	2340	6992.5		5500	6735	9100	5400			> 6726		
Min Lab		8740	> 9408	5510	2340	2660		5500	5440	9100	5400					> 2340
Septage / Carbonaceous Biochemical Oxygen Demand: CBOD5 - mg/L																
Count Lab	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max Lab		5290	3240	3800	1870	7420		4720	3700	6710	5120				7420	
Mean Lab		5290	3240	3800	1870	5710		4720	2420	6710	5120			4494.615		
Min Lab		5290	3240	3800	1870	2320		4720	1140	6710	5120					1140
Septage / Septage Received - m^3																
Count IH	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max IH		4.546	9.092	5.455	13.638	4.546		4.546	13.638	4.546	5.455				13.638	
Mean IH		4.546	9.092	5.455	13.638	4.546		4.546	12.502	4.546	5.455			6.959		
Min IH		4.546	9.092	5.455	13.638	4.546		4.546	11.365	4.546	5.455					4.546
Septage / Total Kjeldahl Nitrogen: TKN - mg/L																
Count Lab	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max Lab		323	156	460	367	1040		816	1120	1520	957				1520	
Mean Lab		323	156	460	367	652.25		816	947	1520	957			700.154		
Min Lab		323	156	460	367	234		816	774	1520	957					156
Septage / Total Phosphorus: TP - mg/L																
Count Lab	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max Lab		47.5	33	72	77.1	165		107	215	248	185				248	
Mean Lab		47.5	33	72	77.1	112.625		107	176.5	248	185			121.008		
Min Lab		47.5	33	72	77.1	75.5		107	138	248	185					33
Septage / Total Suspended Solids: TSS - mg/L																
Count Lab	0	1	1	1	1	4	0	1	2	1	1	0	13			
Max Lab		9380	7540	6970	8330	27800		12300	21100	21700	14900				27800	
Mean Lab		9380	7540	6970	8330	22150		12300	18000	21700	14900			15824.62		
Min Lab		9380	7540	6970	8330	11200		12300	14900	21700	14900					6970

2023 Annual Performance Report
Shelburne Wastewater Treatment Plant
Amended Environmental Compliance Approval No. 6413-ABLQQS

Appendix C

Calibration Reports

2023

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT
PRESSURE MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Magnehelic	Date:	September 21, 2023
Model:	2000 Series	Report No:	CO1481-2308-54
Order No:	NA	Job No:	CO1481-2308
Serial No:	NA		
Tag:	NA	Details	
Job Location:	To digester	Unit:	psi
Asset ID	0000062546	Range:	0-15
		Current Output:	NA
		4 mA Set Point	0
		20 mA Set Point	15

Inst. Reading	AS FOUND	AS LEFT
Pressure(psi)	6.2	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Input (%)	Calculated Pressure (psi)	Calculated Flow(l/sec)	Measure Pressure (psi)	Display flow(l/sec)	Deviation (psi)
0.00	0.00	0.00	0.03	0.00	0.03
100.00	15.00	1,000.00	14.96	999.98	-0.04

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 2
Device Description:	Digital Pressure Gauge	N/A	N/A
Manufacturer:	Martel Electronics	N/A	N/A
Model No:	BG-PI-PRO-500G	N/A	N/A

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification. Limited verification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT
PRESSURE MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Magnehelic	Date:	September 21, 2023
Model:	2000 Series	Report No:	CO1481-2308-55
Order No:	NA	Job No:	CO1481-2308
Serial No:	NA		
Tag:	NA	Details	
Job Location:	Aeration flow	Unit:	psi
Asset ID	0000062544	Range:	0-15
		Current Output:	NA
		4 mA Set Point	0
		20 mA Set Point	15

Inst. Reading	AS FOUND	AS LEFT
Pressure(psi)	8.5	8.6

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Input (%)	Calculated Pressure (psi)	Calculated Flow(l/sec)	Measure Pressure (psi)	Display flow(l/sec)	Deviation (psi)
0.00	0.00	0.00	0.10	0.00	0.10
100.00	15.00	1,000.00	14.91	1000.00	-0.09

0

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 2
Device Description:	Digital Pressure Gauge	N/A	N/A
Manufacturer:	Martel Electronics	N/A	N/A
Model No:	BG-PI-PRO-500G	N/A	N/A

Overall Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification. Limited verification

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 010D	Report No:	CO1481-2308-56
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	A9915693		
Tag:	FIT01		
Job Location:	WAS Flow		
Asset ID:	0000062478		

Sensor Details		Flow Details	
Line size:	3"	Unit:	l/sec
GKL:	5.1670	Flow Range:	0-27.8
Mounting:	Remote	Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	27.8

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	647823	647823
FLOW (l/sec)	0.01	0.006

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.040	3.98	0.04
A	1.98	5.14	1.985	5.16	0.01
B	3.96	6.28	3.978	6.29	0.02
C	7.92	8.56	7.932	8.58	0.01
D	19.79	15.39	19.775	15.35	-0.02

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 010D	Report No:	CO1481-2308-57
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	A9915978		
Tag:	FIT02	**Flow Details**	
Job Location:	Tank 1 RAS Flow	Unit:	l/sec
Asset ID:	0000062479	Flow Range:	0-66.7
		Current Output:	4-20 mA
Sensor Details		4 mA Set Point	0
Line size:	4"	20 mA Set Point	66.7
GKL:	5.243		
Mounting:	Remote		

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	36741	36748
FLOW (l/sec)	14.02	14.04

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.05	3.98	0.05
A	3.14	4.75	3.12	4.71	-0.02
B	6.28	5.51	6.30	5.53	0.02
C	12.55	7.01	12.52	6.99	-0.03
D	31.38	11.53	31.35	11.51	-0.03
E	62.76	19.05	62.73	19.02	-0.03

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 010D	Report No:	CO1481-2308-58
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	A9915977		
Tag:	FIT03		
Job Location:	Tank 2 RAS Flow	Flow Details	
Asset ID:	0000062480	Unit:	l/sec
		Flow Range:	0-66.7
Sensor Details		Current Output:	4-20 mA
Line size:	4"	4 mA Set Point	0
GKL:	5.318	20 mA Set Point	66.7
Mounting:	Remote		

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	423214	423214
FLOW (l/sec)	13.35	14.01

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.06	4.03	0.06
A	3.18	4.76	3.20	4.78	0.02
B	6.37	5.53	6.33	5.49	-0.04
C	12.73	7.05	12.70	7.01	-0.03
D	31.83	11.63	31.86	11.65	0.03
E	63.65	19.27	63.60	19.23	-0.05

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 010D	Report No:	CO1481-2308-59
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	A9915979		
Tag:	FIT04		
Job Location:	Truck Fill Flow		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	4"	Unit:	l/sec
GKL:	5.045	Flow Range:	0-75
Mounting:	Remote	Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	75

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	94914	94915
FLOW (l/sec)	0	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.03	3.99	0.03
A	3.02	4.64	2.99	4.61	-0.03
B	6.04	5.29	6.01	5.31	-0.03
C	12.08	6.58	12.10	6.61	0.02
D	30.19	10.44	30.21	10.46	0.02
E	60.39	16.88	60.35	16.85	-0.04

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **OCM III**
OPEN CHANNEL FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Milltronics	Date:	September 21, 2023
Model:	OCM III	Report No:	CO1481-2308-60
Tag:	FIT05	Job No:	CO1481-2308
Job Location:	Effluent Flow		
Asset ID:	000062506		

Flow Details	
Unit:	l/sec
Flow Range:	0-105
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	105

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	19707344 X 1000	19707352 X 1000
FLOW (l/sec)	12.79	6.82

Maintenance Checklist				Remarks
Visual Inspection:	☑	OK	☐ NOT OK	
Electrical Inspection:	☑	OK	☐ NOT OK	

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
F0	Access Code	2.71828	P7	Height of Max. Head	34.4820
P1	Dimension Unit (cm)	0	P32	Totalizer Multiplier	6*1000
P3	Exponential Device	0	P42	Head by OCM III	0
P4	Cal. Method -Ratiometric	1	P45	Low Flow Cut-off	0
P5	Flow Unit - l/sec	1	P46	Range at Zero Head	85.66725 cm
P6	Max Flow rate	105.0009	P47	Blanking Distance	30.48264 cm

Test Point Report

Reference Distance (cm)	Measured Distance (cm)	Calculated Flow (l/sec)	UUT Flow Display (l/sec)	Calculated (mA)	Measured (mA)	Deviaiton Full Scale (l/sec)
10.90	10.89	18.03	18.00	5.47	5.42	-0.03
11.09	11.07	18.51	18.46	5.27	5.23	-0.05

Calculations

Flow Calculations

$Q = q_{cal} (h/h_{cal})^{Exp}$ Where, Q= Discharge Flow, qcal = max flow, h = head, hcal = max head

Exp = 1.53 , Hence,

$Q = 105 (11.09/34.48)^{1.53}$

Q = 18.51

Instrument Test Information and Results

Input (%)	Calculated Flow(l/sec)	Calculated Input (mA)	Flow on UUT (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.11	4.05	0.11
25	26.25	8.00	26.29	8.01	0.04
50	52.50	12.00	52.46	11.95	-0.04
75	78.75	16.00	78.71	15.99	-0.04
100	105.00	20.00	104.96	19.97	-0.04

Information of Tools used for Verification of the Instruments

Device Description:	Manufacturer	Model
Electrical Multimeter	Fluke	179

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Program parameters verified. Single point verification done

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **ROSEMOUNT** ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Rosemount	Date:	September 21, 2023
Model:	8712	Report No:	CO1481-2308-61
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	860188157		
Tag:	FIT06		
Job Location:	Raw sewage flow		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	8"	Unit:	l/sec
Flow Cal Tube No.:	102550591100001 1	Flow Range:	0-150
Mounting:	Remote	Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	150

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	186280160	0
FLOW (L/SEC)	34.1	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Test-Point as Per Calibration KIT	Calculated Flow (FPS)	Calculated O/P (mA)	UUT Display (FPS)	UUT Measured Output (mA)	Deviation (FPS)
0.00	0.00	4.00	0.02	3.99	0.02
3.00	3.00	5.60	2.98	5.61	-0.02
10.00	10.00	9.33	9.97	9.32	-0.03
30.00	30.00	20.00	29.98	19.90	-0.02

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Rosemount	Fluke	N/A
Model No:	8714D	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑	Passed	☐	Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 100W	Report No:	CO1481-2308-62
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	C16501184		
Tag:	FIT014(UPPER)		
Job Location:	Upper filter		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	10"	Unit:	l/sec
GKL:	8.6872	Flow Range:	0-200
Mounting:	Remote	Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	200

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	3045603.707	3045614.175
FLOW (l/sec)	0.00	0.00

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.00	3.99	0.00
A	32.49	6.60	32.47	6.59	-0.02
B	64.99	9.20	64.98	9.21	-0.01
C	129.98	14.40	129.96	14.39	-0.02

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **KHRONE**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	Khrone	Date:	September 21, 2023
Model:	IFC 100W	Report No:	CO1481-2308-63
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	C16501544		
Tag:	FIT014(LOWER)	**Flow Details**	
Job Location:	Lower filter	Unit:	l/sec
Asset ID:	NA	Flow Range:	0-200
		Current Output:	4-20 mA
Sensor Details		4 mA Set Point	0
Line size:	10"	20 mA Set Point	200
GKL:	8.2852		
Mounting:	Remote		

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	4045820.168	4045835.734
FLOW (l/sec)	0.00	0.00

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Set-Point as Per Calibration KIT	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0	0.00	4.00	0.01	3.99	0.01
A	30.99	6.48	30.98	6.50	-0.01
B	61.98	8.96	62.01	9.01	0.03
C	123.96	13.92	123.94	13.93	-0.02

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Calibrator	Electrical Multimeter	N/A
Manufacturer:	Khrone	Fluke	N/A
Model No:	GS8B	179	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks: Measurement Works within Specification.

Service Technician : Chetan Parekh

Printed Date: September 21, 2023

Stamp/Signature

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **ABB**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	ABB	Date:	September 21, 2023
Model:	MagMaster	Report No:	CO1481-2308-64
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	3K620000015306		
Tag:	FIT07	**Flow Details**	
Job Location:	Storm Flow	Unit:	l/sec
Asset ID:	NA	Flow Range:	0-200
Sensor Details		Current Output:	4-20 mA
Line size:	10"	4 mA Set Point	0
Mounting:	Remote	20 mA Set Point	200

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	9109428	9109430
FLOW (l/sec)	0.00	0.00

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Flow Input (%)	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0.00	0.00	4.00	0.02	3.99	0.02
25.00	50.00	8.00	50.01	7.99	0.01
50.00	100.00	12.00	99.98	12.01	-0.02
75.00	150.00	16.00	150.03	16.02	0.03
100.00	200.00	20.00	199.99	19.98	-0.01

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Electrical Multimeter	N/A	N/A
Manufacturer:	Fluke	N/A	N/A
Model No:	179	N/A	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑	Passed	☐	Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Chetan Parekh	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

Version: 19-12

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **ABB**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	ABB	Date:	September 21, 2023
Model:	MagMaster	Report No:	CO1481-2308-65
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	3K620000015305		
Tag:	FIT08		
Job Location:	Storm return Flow		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	8"	Unit:	l/sec
Mounting:	Remote	Flow Range:	0-100
		Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	100

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	937994	937995
FLOW (l/sec)	0	0

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Flow Input (%)	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0.00	0.00	0.25	0.00	4.02	0.00
25.00	25.00	24.54	24.98	8.01	-0.02
50.00	50.00	49.85	50.02	11.99	0.02
75.00	75.00	74.99	75.03	16.02	0.03
100.00	100.00	100.00	99.97	19.98	-0.03

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Electrical Multimeter	N/A	N/A
Manufacturer:	Fluke	N/A	N/A
Model No:	179	N/A	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks: Measurement Works within Specification.

Service Technician : Chetan Parekh

Printed Date: September 21, 2023

Stamp/Signature

End of Report

Induscontrol Inc
3170 Ridgeway Drive, Unit #11
Mississauga, ON L5L 5R4

VERIFICATION REPORT - **ABB**
ELECTRO-MAGNETIC FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	300 Centennial Rd,
Plant Name:	Shelburne WWTP		Shelburne,ON L0N 1S4

Device Information		Service Information	
Make:	ABB	Date:	September 21, 2023
Model:	MagMaster	Report No:	CO1481-2308-66
Order Code:	NA	Job No:	CO1481-2308
Serial No.:	3K620000015302		
Tag:	FIT09		
Job Location:	Sludge transfer Flow		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	8"	Unit:	l/sec
Mounting:	Remote	Flow Range:	0-80
		Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	80

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	38436	38439
FLOW (l/sec)	0.00	0.00

Maintenance Checklist			Remarks
Visual Inspection:	☑ OK	☐ NOT OK	
Electrical Inspection:	☑ OK	☐ NOT OK	
Sensor Installation:	☑ OK	☐ NOT OK	
Transmitter Installation:	☑ OK	☐ NOT OK	

Instrument Test Information and Results

Flow Input (%)	Calculated Flow (l/sec)	Calculated O/P (mA)	UUT Display (l/sec)	UUT Measured Output (mA)	Deviation (l/sec)
0.00	0.00	4.00	0.02	3.98	-0.02
25.00	20.00	8.00	20.01	7.99	-0.01
50.00	40.00	12.00	39.98	11.99	0.02
75.00	60.00	16.00	60.03	16.02	-0.03
100.00	80.00	20.00	79.98	19.97	0.02

Information of Tools used for Verification of the Instruments

Details	Tool/Kit 1	Tool/Kit 2	Tool/Kit 3
Device Description:	Electrical Multimeter	N/A	N/A
Manufacturer:	Fluke	N/A	N/A
Model No:	179	N/A	N/A

* Refer Calibration Tools Certificates submittal for more Information

Verification Test Result:	☑ Passed	☐ Fail	☐ Not Verified

Overall Remarks:	Measurement Works within Specification.

Service Technician :	Sanket Trada	Stamp/Signature	
Printed Date:	September 21, 2023		

End of Report

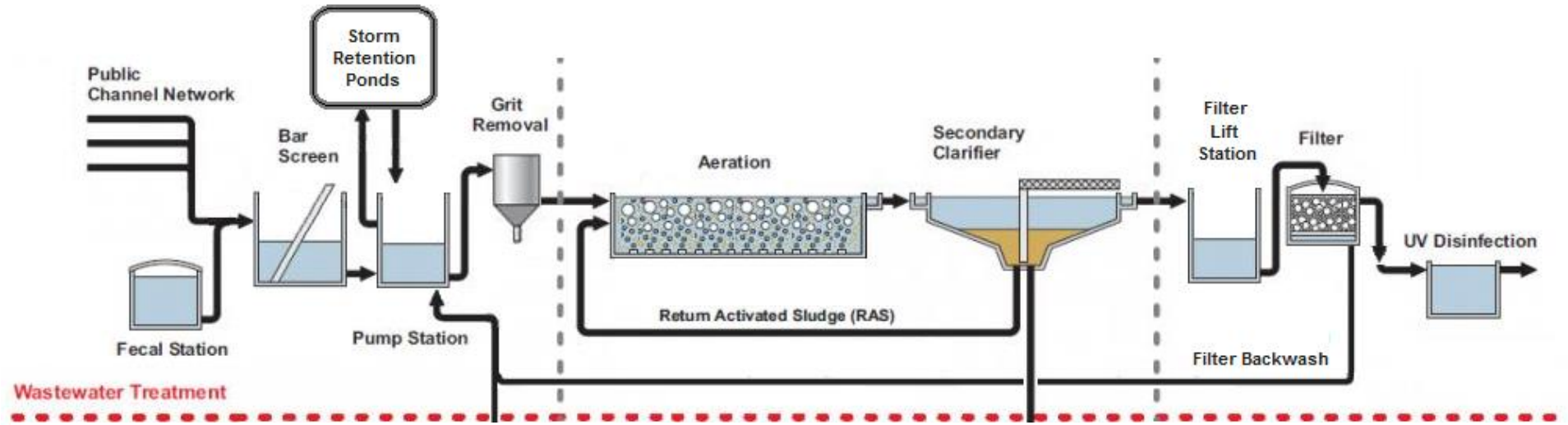
Version: 19-12

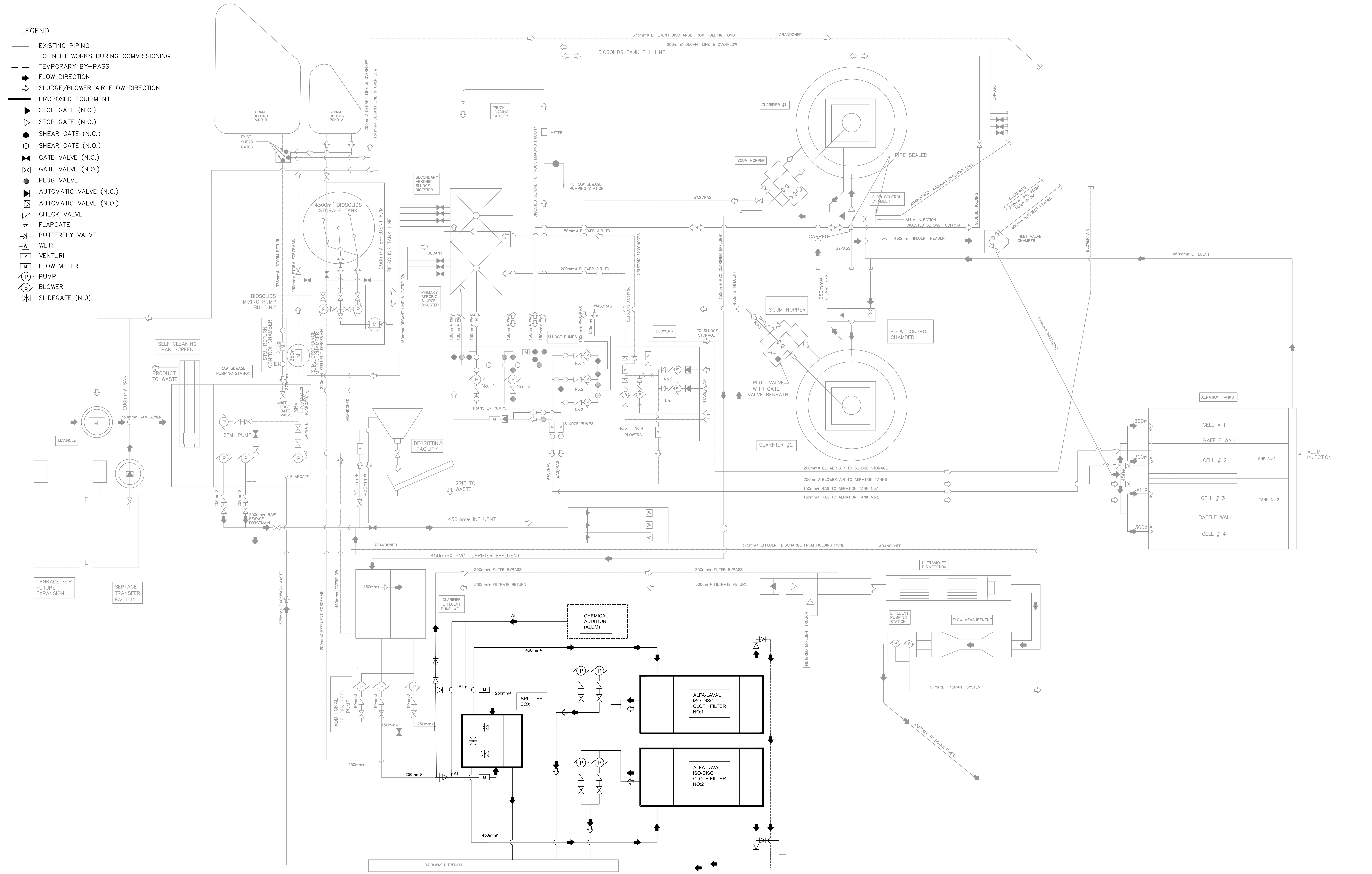
2023 Annual Performance Report
Shelburne Wastewater Treatment Plant
Amended Environmental Compliance Approval No. 6413-ABLQQS

Appendix D

Process Flow Schematic

Process Diagram





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2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.
3. THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT.
4. DO NOT SCALE THE DRAWINGS.

PROF. STAMP

No.	DATE	ISSUE / REVISION	No.	DATE	ISSUE / REVISION
1.	05/04/2016	33% SUBMISSION	6.	14/06/2016	ISSUED REQUEST FOR PROPOSAL
2.	20/04/2016	66% SUBMISSION	7.	08/08/2016	ISSUED FOR CONSTRUCTION
3.	25/04/2016	ISSUED FOR MOE REVIEW	8.	26/01/2018	AS-BUILT
4.	26/04/2016	ISSUED FOR NVCA REVIEW			
5.	30/05/2016	REVISED AS PER NVCA COMMENTS			

CLIENT: TOWN OF SHELBURNE

PROJECT: WATER POLLUTION CONTROL PLANT TERTIARY FILTER REPLACEMENT UPGRADES

TITLE: GENERAL PROCESS FLOW SCHEMATIC TEMPORARY BY-PASS & UPGRADES

S. BURNETT & ASSOCIATES LIMITED
ENGINEERING AND ENVIRONMENTAL SERVICES
210 BROADWAY, UNIT 203
ORANGEVILLE, ONTARIO L9W 5G4
TELEPHONE: 519-941-2949 FAX: 519-941-2036

DESIGNED BY	DRAWN BY	VERIFIED BY	DRAWING No.
D.D.	B.U	S.B.	G4
SCALE: NTS		PROJECT No.: M15003	

2023 Annual Performance Report
Shelburne Wastewater Treatment Plant
Amended Environmental Compliance Approval No. 6413-ABLQQS

Appendix E

Notice of Modification to the Sewage Works

2023

Ontario

Ministry of the Environment, Conservation and Parks

Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA ON-SITE PRIOR TO THE SCHEDULED IMPLEMENTATION DATE.

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility

(Insert the ECA's owner, number and issuance date and notice number, which should start with "01" and consecutive numbers thereafter)

ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)
6413-ABLQQS	07/19/16	01

ECA Owner	Municipality
Town of Shelburne	Town of Shelburne

Part 2: Description of the modifications as part of the Limited Operational Flexibility

(Attach a detailed description of the sewage works)

AQUABACxt is a highly effective, US EPA-registered biological larvicide. It contains a species of bacteria called bacillus thuringiensis, an approved pesticide for controlling red worms and midge flies in wastewater treatment plants.

On a weekly basis from spring to fall operator will dose the incoming raw sewage and aeration tank to eliminate midge flies at the plant during the summer months.

Description shall include:
1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print)	PEO License Number
Jose A. Casal, P.Eng. PMP	100133268
Signature (Digitally signed by Jose Casal Date: 2022.03.29 10:46:11 -04'00')	Date (mm/dd/yy) March 29, 2022
Name of Employer: Ontario Clean Water Agency (OCWA)	

Part 4 – Declaration by Owner

I hereby declare that:
1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the *Environmental Assessment Act.*

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print)	Owner representative's title (Print)
Jim Moss	**Director, Development and Operations**
Owner Representative's Signature	Date (mm/dd/yy) 03/22/2022

AQUABACxt & BugJuice

Eliminates Red Worms and Midge Flies In Wastewater

AQUABACxt

AQUABACxt is a highly effective, US EPA-registered biological larvicide. It contains a species of bacteria called *bacillus thuringiensis* (BT), an approved larvicide for controlling red worms and midge flies in wastewater treatment plants.

Red worms find wastewater plants to be a perfect home. They survive by eating your MLSS, then hatch into midge flies, and the cycle repeats. The active ingredient in AQUABACxt kills the red worms and breaks the cycle.

Common symptoms of red worm infestations include: disappearing MLSS (the red worms are eating it), stringy or clumpy return activated sludge, and nuisance flies that attract pests. AQUABACxt is safe to use and will only kill a very narrow set of target species; larvae of the mosquito, midge flies, and black flies. It will not cause effluent toxicity issues.

BugJuice

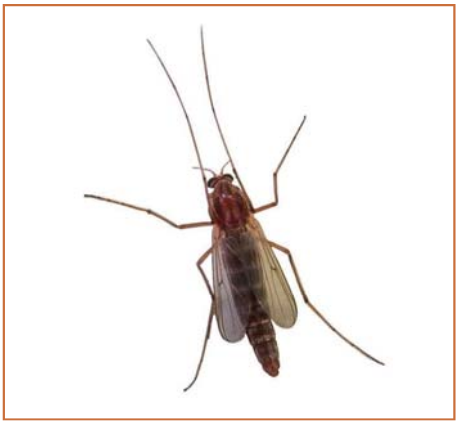
BugJuice degrades the cocoons red worms build around themselves, exposing more red worms to the AQUABACxt treatment. You can often find these cocoons on the walls of clarifier rings, or the sides of basins. This technique increases the effectiveness of AQUABACxt dramatically.

We recommend using BugJuice for the first 20 to 40 days of any treatment. After the initial treatment, an annual or biannual 20 day treatment is helpful for restoring the benefits.

Figure 1:

Isolated midge fly and an isolated red worm

Red Worm



Midge Fly

The Bugman AQUAFIX Inc.

P.O. Box 8682
Madison, WI
53708-8682

P: 888.757.9577
F: 866.636.1864

info@teamaquafix.com
www.teamaquafix.com

Dose Rates

AQUABACxt & BugJuice

AQUABACxt: Wastewater Plant Dosing

Flow Rate Gallons per day	Super Dose Twice per week for 1-2 weeks	Initial Dose Twice per week for 2 weeks	Maintenance Dose Once per week
10,000 GPD	0.5 pt or 8 oz	4 oz	2 oz
50,000 GPD	1 qt or 2 pt	1 pt	8 oz
100,000 GPD	0.5 gal	1 qt	1 pt
200,000 GPD	1 gal	2 qt	2 pt
300,000 GPD	1.5 gal	3 qt	3 pt
400,000 GPD	2 gal	4 qt	4 pt
500,000 GPD	2.5 gal	5 qt	5 pt
600,000 GPD	3 gal	6 qt	6 pt
700,000 GPD	3.5 gal	7 qt	7 pt
800,000 GPD	4 gal	8 qt	8 pt
900,000 GPD	4.5 gal	9 qt	9 pt
1,000,000 GPD	5 gal	10 qt	10 pt

AQUABACxt: Wastewater Lagoon Dosing

Lagoon Size	Initial Dose Once per week for 4 weeks	Maintenance Dose Once per week
1 Acres	2.5 gal	1 gal
4 Acres	10 gal	4 gal
8 Acres	20 gal	8 gal

BugJuice Dose Rate

Flow Rate Gallons per day	Dose: Add Daily at the head of treatment plant
100,000 GPD	1 pt
200,000 GPD	2 pt
300,000 GPD	3 pt
400,000 GPD	4 pt
500,000 GPD	5 pt
600,000 GPD	6 pt
700,000 GPD	7 pt
800,000 GPD	8 pt
900,000 GPD	9 pt
1,000,000 GPD	10 pt

AQUABACxt:

- Add directly to areas with red worms, often secondary clarifiers and tertiary processes
- Can be metered instead of weekly slug dose, if desired
- Continue to use throughout your climate's active midge fly season

BugJuice:

- Add daily at headworks of plant
- Use for at least the first 20-40 days of any AQUABACxt treatment

Available Sizes:

- 5 gal case
- 135 gal pallet
- 250 gal tote (AQUABACxt)
- 275 gal tote (BugJuice)

From: Weber, Martha (MECP)
To: Melissa Cortes
Cc: Don Irvine; Monika Kowalska; Jenna Porter
Subject: RE: Shelburne WWTP - Midge Fly Control
Date: March-21-22 7:57:13 AM

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning Melissa,

I double-checked with Approvals, and they agree this item would fall within the LOF provisions as proposed.

Thanks for reaching out!

Martha Weber
Water Inspector/Provincial Officer
Ministry of the Environment, Conservation and Parks
Guelph District Office
Cell (519) 830-5977

From: Melissa Cortes <MCortes@ocwa.com>
Sent: Wednesday, March 16, 2022 12:01 PM
To: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Cc: Donald Irvine <dirvine@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Jenna Porter <JPorter2@ocwa.com>
Subject: Shelburne WWTP - Midge Fly Control

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Martha,

I wanted to reach out to you to start a discussion on the use of a products called AQUABACxt and Bug Juice at the Shelbune WWTP to control midge flies. Our operator reached out and provided documentation/research on this product and how effective it is in controlling midge flies and wanted to try it at the Shelburne WWTP. Attached is some information on the product as well as dosing calculations that our operator has completed with a schedule of dosing.

If you could provide your feedback and directions we can take to start using these products I would greatly appreciate it. I believe it would fall under LOF and a notice of modification form will be

completed before using this product.

Thanks Melissa

Melissa Cortes
Process & Compliance Technician
Highlands Hub, Georgian Highlands Region
300 Centennial Road
Shelburne ON, L9V 2Z4
519-938-6909

From: Monika Kowalska <MKowalska@ocwa.com>
Sent: March-11-22 9:48 AM
To: Don Irvine <DIrvine@ocwa.com>
Cc: Jose Casal <JCasal@ocwa.com>; Jenna Porter <JPorter2@ocwa.com>; Melissa Cortes <MCortes@ocwa.com>
Subject: RE: Shelburne WWTP

Hi

I initially found out about this product through the email correspondence attached by Don. Another OCWA facility used this product last year and had great success.

Looking at the website, https://teamaquafix.com/products/midge-flies/aquabac-xt-midge-flies/
It is a product specifically designed for use at WWTP to eliminate red worms which develop into midge flies. These flies in turn attract spiders into the plant.
"It contains a species of bacteria called ***bacillus thuringiensis***, an approved larvicide for controlling red worms and midge flies in wastewater treatment plants and waterways. Highly effective against red worms but safe for fish, birds, mammals, and other lifeforms. AQUABACxt is safe to use and will only kill a very narrow set of target species; larvae of the mosquito, midge flies, and black flies. It will not cause effluent toxicity issues."

I am also a member of a wastewater operator group, and within this group, there have been many post about how other operators around the world manage the flies at their facilities, and the operators that have used this product highly recommend it.

Only other way to reduce/eliminate these flies at the source is through chlorination (which can negatively impact the microorganisms in the RAS). All other methods (bug zappers, etc,) are only treating the symptoms and are not effective.

Attached is the product sheet which can be found on the AQUAFIX website, and states the recommended doses.
Attached is the calculations I performed to determine how much product is required this year based off of the plant's flow per day.

There are 2 products that will be used.
Bug Juice draws out the red worms that are hiding in rags/grit and degrades their protective cocoons. The AQUABACxt is fed upon by these red worms which kills them, thereby eliminating the midge flies.

Bug Juice also carries the added benefit of improving digester settling and denser sludge (similar to XLR8 product used at the plant a couple of years ago). https://teamaquafix.com/products/aerobic-digester-sludge-storage-tank/bug-juice-sludge-reduction/

Attached is the SDS for both Bug Juice and AQUABACxt.
Attached is email correspondence with Landon from AQUAFIX, with some answers to questions I had earlier this year.

Let me know if there's any other info required.

Thanks,

Monika Kowalska, C.Tech.
Water & Wastewater Operator | Ontario Clean Water Agency
Highlands Hub | Georgian Highlands Region
300 Centennial Rd, Shelburne, Ontario L9V 2Z4
Cell 519-940-6057 | mkowalska@ocwa.com

Appendix F

ECA Limit Exceedance Email/Written Notifications

2023

From:	Melissa Cortes
To:	martha.weber@ontario.ca
Cc:	Don Irvine; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com); jmoss@shelburne.ca; Camille Leung; Caralynn McRae; Monika Kowalska; Suhail Auzam
Subject:	Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Limit Exceedance Total Suspended Solids - February 2023
Date:	March-22-23 3:22:00 PM
Attachments:	image001.jpg

Good afternoon Martha,

This is a notification that the Shelburne Wastewater Treatment Plant (WWTP) has met all but one of its ECA compliance limits (**Total Suspended Solids**) for the month of **February 2023**.

Facility: Shelburne WWTP
ECA # 6413-ABLQQS
ECA Issued: July 19, 2016

February 2023

Shelburne WWTP			**7th**	**14th**	**21st**	**28th**	**MONTHLY AVERAGE**	**Reportable**
PARAMETER	*LIMIT*	*OBJECTIVE*						
TSS	5.0mg/L	4.0mg/L	4.0	6.0	8.0	6.0	6.0	Monthly

Results Summary

- **TSS (Total Suspended Solids)** – the monthly average concentration of **6.0** mg/L was **above** the ECA Compliance Limit.

Reporting Actions

Verbally notified Martha Weber, Provincial Office/Water Inspector with the MECP Guelph District Office of the exceedance on Wednesday March 22, 2023 at 15:14 via phone call.

Process Observations

February 14th – Filter 1 daily backwash count began steadily increasing beginning on Feb 9,

February 9th -23rd - Temperature swings resulted in snow melt and heavy rain diluting MLSS in aeration tanks causing pin flocks.

February 22nd – 23rd – South Clarifier was out of service due to electrical issue

Corrective Actions taken

February 14th – Cleaned clarifier effluent channels

February 15th - Drained and cleaned filter 1

February 16th -20th – Troubleshoot filter 1 since filter not filtering

February 21st – Drained filter 1 and soaked filter 1 in potable water overnight

February 22nd – Drained potable water to headworks and filled with clarifer effluent, began filtering efficiently

February 22nd – Electrician onsite determined the wires between clarifier panel and MCC were burnt, returned 23rd to replace wires, back in service

February 18th-23rd – Decreased aeration blower to prevent shearing of flock, ammonia spiked in effluent increased aeration blower

February 24th – Scrubbed and cleaned filter effluent channels and UV channel

March 1st – Drained and cleaned filter 2

If there are any questions or comments concerning this matter, please let us know.

Thank you,

Melissa Cortes

Process & Compliance Technician
Highlands Hub, Georgian Highlands Region
300 Centennial Road
Shelburne ON, L9V 2Z4
519-938-6909

From:	Weber, Martha (MECP)
To:	Melissa Cortes
Cc:	Don Irvine; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com); jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List); Caralynn McRae; Monika Kowalska; Suhail Auzam; Alex Solomonov
Subject:	RE: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Waste Loading Limit Exceedance Total Suspended Solids - May 2023
Date:	June-20-23 3:48:59 PM
Attachments:	image001.jpg

Thanks Melissa – confirming receipt.

Martha Weber (she/her)| Water Inspector | Provincial Officer # 957 | Guelph District Office | Ontario Ministry of the Environment, Conservation and Parks | 1 Stone Rd. W., Floor 4SW | Guelph, ON | N1G 4Y2 | 519-830-5977

From: Melissa Cortes <MCortes@ocwa.com>
Sent: Tuesday, June 20, 2023 12:55 PM
To: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Cc: Donald Irvine <dirvine@ocwa.com>; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com) <stephen.burnett@sbaengineering.com>; jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List) <GHRH-SPCM@ocwa.com>; Caralyn Spencer <cmcrae@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Suhail Auzam <SAuzam@ocwa.com>; Alex Solomonov <ASolomonov@ocwa.com>
Subject: RE: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Waste Loading Limit Exceedance Total Suspended Solids - May 2023

Good afternoon Martha,

This is a notification that the Shelburne Wastewater Treatment Plant (WWTP) has exceeded the ECA compliance loading limit (**Total Suspended Solids**) for the month of **May 2023** as previously communicated.

Facility: Shelburne WWTP
ECA # 6413-ABLQQS
ECA Issued: July 19, 2016

Result Summary
ECA Average Waste Loading Limit (TSS): 17.1 kg/d
May Average Waste Loading Limit (TSS): 30.25 kg/d

This TSS average waste loading limit exceedance is directly related to the Monthly Average Total Suspended Solids Limit Exceedance with the same process observation and actions taken.

Process Observations

Results May 18-31, 2023 – Possible teared cloth in filter 2

Result May 23, 2023 - Due to trying to empty the ponds because of possible lagoon leak, the level in the ponds decreased to a low level where it was bringing back concentrated raw water into the plant. OIC Operator received a call from the on call operator on Monday May 22, 2023, was informed a lot of black material was entering the plant and the final effluent looked very cloudy. That combined with filter 1 not filtering properly and a likely tear in cloths in filter 2 would be the likely cause.

Corrective Actions taken

Apr 28, 2023 – Ordered more filter cloths, due to arrive June 15, 2023

May 17, 2023 – Drained and cleaned filter 2, inspected cloths visually from top and inspected effluent sleeves. Seems ok. Isolated disc 1 & 2. Placed filter back in service.

May 18, 2023 - Isolated filter 2. Removed plugs on disks 1 & 2. Placed back in service. Isolated filter 1. Drained and cleaned. Inspected effluent sleeves. Isolated disk 6. Placed back in service.

May 19, 2023 - Isolated filter 1, removed plug from disk 6. Placed back in service. Measured turbidity on individual disks from filter 2. Isolated disk 4.

May 25, 2023 - Filter 1 isolated due to filtering issues.

May 29, 2023 - Drained filter 1, placed back in service with restricted flow. Lowered water level in filter 2. Removed plug from disk 4. Placed back in service.

June 1, 2023 - Ordered plastic netting.

June 9, 2023 - Both filter cloths and netting arrived. Scheduled extra staff to assist in changing out the cloths on Wednesday June 14/Thursday June 15, 2023.

If there are any questions or comments concerning this matter, please let us know.

Thank you,

Melissa Cortes

Process & Compliance Technician
Highlands Hub, Georgian Highlands Region
300 Centennial Road
Shelburne ON, L9V 2Z4
519-938-6909

From: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Sent: June-13-23 3:43 PM
To: Melissa Cortes <MCortes@ocwa.com>
Cc: Don Irvine <DIrvine@ocwa.com>; Stephen Burnett - S. Burnett & Associates Limited

(stephen.burnett@sbaengineering.com) <stephen.burnett@sbaengineering.com>; jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List) <GHRH-SPCM@ocwa.com>; Caralynn McRae <CMcRae@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Suhail Auzam <SAuzam@ocwa.com>; Alex Solomonov <ASolomonov@ocwa.com>
Subject: RE: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Limit Exceedance Total Suspended Solids - May 2023

Thanks Melissa, for the additional information and the heads up about TSS loadings for May.

Martha Weber (she/her)| Water Inspector | Provincial Officer # 957 | Guelph District Office | Ontario Ministry of the Environment, Conservation and Parks | 1 Stone Rd. W., Floor 4SW | Guelph, ON | N1G 4Y2 | 519-830-5977

From: Melissa Cortes <MCortes@ocwa.com>
Sent: Tuesday, June 13, 2023 9:03 AM
To: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Cc: Donald Irvine <dirvine@ocwa.com>; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com) <stephen.burnett@sbaengineering.com>; jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List) <GHRH-SPCM@ocwa.com>; Caralyn Spencer <cmcrae@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Suhail Auzam <SAuzam@ocwa.com>; Alex Solomonov <ASolomonov@ocwa.com>
Subject: RE: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Limit Exceedance Total Suspended Solids - May 2023

Hi Martha,

Please see below June TSS sampling results we have received so far:

	Final Effluent / Total Suspended Solids: TSS - mg/L
	Lab Published
01/06/2023	7
02/06/2023	4
03/06/2023	4
04/06/2023	3
05/06/2023	3

OCWA has started to bring back material from Cell 2 (Holding Pond 2) and monitoring the incoming flow. We are comfortable with the level of Cell 1 (Holding Pond 1) and looking to bring Cell 2 down to the same level. Adjustment have been made at the plant to minimize flow going up to either cell until all repairs have been made. Higher than normal TSS levels in the aeration could also be contributing to the exceedance and OCWA has discussed haulage schedule with the vendor who anticipates hauling to resume in the coming days after the first cut of hay has been taken from the

fields. OCWA continues to decant off the biosolids tank and digesters to free up as much room as possible to bring the TSS levels in the plant down. With these steps in place along with the filter replacements this should mitigate the TSS exceedances going forward. OCWA will monitor closely and provide any information should we see any increase is the TSS throughout the month.

I am awaiting some final lab results to be uploaded into our database, by it appears that the TSS Loadings will also be exceeded for the month of May. Once all of the results are uploaded and final May loadings are calculated I will provide the final TSS loading for May 2023.

Thanks,

Melissa Cortes
Process & Compliance Technician
Highlands Hub, Georgian Highlands Region
300 Centennial Road
Shelburne ON, L9V 2Z4
519-938-6909

From: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Sent: June-09-23 1:47 PM
To: Melissa Cortes <MCortes@ocwa.com>
Cc: Don Irvine <DIrvine@ocwa.com>; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com) <stephen.burnett@sbaengineering.com>; jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List) <GHRH-SPCM@ocwa.com>; Caralynn McRae <CMcRae@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Suhail Auzam <SAuzam@ocwa.com>; Alex Solomonov <ASolomonov@ocwa.com>
Subject: RE: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Limit Exceedance Total Suspended Solids - May 2023

Hello Melissa,

I received your voicemail and thank you for your email regarding the TSS monthly average concentration exceedance for May at the Shelburne WPCP.

I am hoping you can provide more information on the following:

- Could you advise what the TSS results were from early June sampling?

My understanding is one Wet Weather Flow Holding Pond is almost empty (the one from which the spill appeared to be occurring from), and the other is in the process of being emptied. If this is correct, are other steps being taken in addition to the filter replacement to ensure a similar TSS exceedance issue does not occur when the contents in the lower portion of the pond are directed to the water pollution control plant for processing?

Thank you,

Martha Weber (she/her)| Water Inspector | Provincial Officer # 957 | Guelph District Office | Ontario Ministry of the Environment, Conservation and Parks | 1 Stone Rd. W., Floor 4SW | Guelph, ON | N1G 4Y2 | 519-830-5977

From: Melissa Cortes <MCortes@ocwa.com>
Sent: Friday, June 9, 2023 12:49 PM
To: Weber, Martha (MECP) <Martha.Weber@ontario.ca>
Cc: Donald Irvine <dirvine@ocwa.com>; Stephen Burnett - S. Burnett & Associates Limited (stephen.burnett@sbaengineering.com) <stephen.burnett@sbaengineering.com>; jmoss@shelburne.ca; -GHRH-SPCM@ocwa.com (Mailing List) <GHRH-SPCM@ocwa.com>; Caralyn Spencer <cmcrae@ocwa.com>; Monika Kowalska <MKowalska@ocwa.com>; Suhail Auzam <SAuzam@ocwa.com>; Alex Solomonov <ASolomonov@ocwa.com>
Subject: Shelburne Wastewater Treatment Plant (WWTP) ECA Compliance Limit Exceedance Total Suspended Solids - May 2023

Good afternoon Martha,

This is a notification that the Shelburne Wastewater Treatment Plant (WWTP) has met all but one of its ECA compliance limits (**Total Suspended Solids**) for the month of **May 2023**.

Facility: Shelburne WWTP
ECA # 6413-ABLQQS
ECA Issued: July 19, 2016

May 2023

PARAMETER	*LIMIT*	*OBJECTIVE*
TSS	5.0mg/L	4.0mg/L

Sample Date	Final Effluent / Total Suspended Solids: TSS - mg/L
01/05/2023	2.0
02/05/2023	2.0
09/05/2023	5.0
16/05/2023	3.0
18/05/2023	5.0
19/05/2023	6.0

20/05/2023	8.0
21/05/2023	8.0
22/05/2023	14.0
23/05/2023	69.0
24/05/2023	11.0
25/05/2023	7.0
26/05/2023	9.0
27/05/2023	11.0
28/05/2023	8.0
29/05/2023	8.0
30/05/2023	9.0
31/05/2023	6.0
Monthly Average	10.61

Results Summary

- **TSS (Total Suspended Solids)** – the monthly average concentration of **10.61** mg/L was **above** the ECA Compliance Limit.

Reporting Actions

Verbally notified Martha Weber, Provincial Office/Water Inspector with the MECP Guelph District Office of the exceedance on Friday June 9, 2023 at 12:38 via phone call (left voicemail).

Process Observations

Results May 18-31, 2023 – Possible teared cloth in filter 2

Result May 23, 2023 - Due to trying to empty the ponds because of possible lagoon leak, the level in the ponds decreased to a low level where it was bringing back concentrated raw water into the plant. OIC Operator received a call from the on call operator on Monday May 22, 2023, was informed a lot of black material was entering the plant and the final effluent looked very cloudy. That combined with filter 1 not filtering properly and a likely tear in cloths in filter 2 would be the likely cause.

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May 17, 2023 – Drained and cleaned filter 2, inspected cloths visually from top and inspected effluent sleeves. Seems ok. Isolated disc 1 & 2. Placed filter back in service.

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May 19, 2023 - Isolated filter 1, removed plug from disk 6. Placed back in service. Measured turbidity on individual disks from filter 2. Isolated disk 4.

May 25, 2023 - Filter 1 isolated due to filtering issues.

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June 1, 2023 - Ordered plastic netting.

June 9, 2023 - Both filter cloths and netting arrived. Scheduled extra staff to assist in changing out the cloths on Wednesday June 14/Thursday June 15, 2023.

If there are any questions or comments concerning this matter, please let us know.

Thank you,

Melissa Cortes

Process & Compliance Technician
Highlands Hub, Georgian Highlands Region
300 Centennial Road
Shelburne ON, L9V 2Z4
519-938-6909