2022 ANNUAL SEWAGE REPORT

MAPLETON WASTEWATER POLLUTION CONTROL PLANT

For the period of
January 1st, 2022 to December 31st, 2022

Prepared for the Corporation of the Township of Mapleton by the Ontario Clean Water Agency

Mapleton

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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Appendix D: 2022 By-pass/Overflow/Spill Incident Report

1. System Description

The Mapleton wastewater facility receives residential and commercial wastewater and provides a level of treatment to meet the "Environmental Compliance Approval (ECA) #1391-B38PLA" for discharging into the Conestogo River.

Moorefield

Low-Pressure Sanitary Sewage Collection System (Off-site)

- Approximately 160 individual packaged grinder pump stations outside of the properties to be serviced including service laterals;
- Low-pressure collection sewers on Robb Street, Carson Street, Adam Brown Street, Maudsley Street, Ball Avenue, McGivern Street, Hillwood Drive, Booth Street West and Eight Concession Road;

Booth Street Sanitary Pumping Station (Off-site)

- A sewage pumping station located on Booth Street consists of a 2.4 m diameter by 4.5 m deep wet well equipped with two (2) submersible sewage pumps (one duty and one standby) each having a rated capacity of 14.14 L/s at 47 m TDH and an emergency overflow outlet;
- A 150 m diameter forcemain along Booth Street East, Eighth Concession Road and Mapleton WPCP Access Road discharging to the influent structure of the sewage treatment plant;
- A 50 kW outdoor diesel generator set.

Drayton

Sanitary Sewage Collection System (Off-site)

Sanitary sewer on Mill Street, High Street, Smith Drive, Spring Street, Main Street, Wood Street, Robin Drive, John Street, Union Street, Edward Street, Elm Street, Wellington Street, Easement West of Wellington Street, King Street, Queen Street and Wortley Street, Conestoga Drive, Hillview Drive, Pine Street, Maple Street, Green Street, Andrew Drive, Dales Drive, Parkside Street, Andrews Drive West, Faith Drive, River Run Road, Riverview Drive, Bedell Drive Pioneer Drive.

Sewage Pumping Station and Forcemain (Off-site)

- A sewage pumping station located on the north side of Mill Street consists of a wet well approximately 110 m west of the west limit of Wellington Street with a wet well with two (2) sewage pumps (one duty and one standby) each rated at 34.0 L/s at a TDH of 42.0 m;
- A forcemain to the waste stabilization ponds, emergency bypass connection on the discharge forcemain;
- A 60 kW standby diesel generator and emergency station overflow;

Stabilization Pond:

- A 21.2 ha waste stabilization pond system with (2) treatment cells operated in series and three (3) effluent treatment/storage cells operated in parallel or series with individual operating depths

(exclusive of sludge storage bottom zones and freeboard), areas and volumes as listed in Table 1:

Table 1. Stabilizing Pond Areas and Volumes

Parameters	Function	Operating Depth (m)	Surface Area (ha)	Operating Volume (m^3)
Cell 2	Treatment – Primary Cell	1.825	3.1	60,500
Cell 1	Treatment – Secondary Cell	1.825	3.2	62,100
Cell 3	Storage/treatment	2.425	5.5	131,700
Cell 4A	Storage/treatment	2.600	3.4	77,600
Cell 4B	Storage/treatment	2.600	6.0	140,700
		Total	21.2	472,600

- Influent works to Cell #2, interconnecting structures between lagoon cells;
- A primary gravity flow control structure (flow control structure A) with adjustable weir control, receiving influent from Cell #1 and with valved inlet/outlet pipes to Cells #3, 4A and 4B, and outlet pipe to Manhole 2;
- A secondary gravity flow control structure (flow control structure B) with valved inlet/outlet pipes to Cells 4A and 4B and the primary flow control chamber;
- A fine bubble aeration system for Cell #2 comprising two high speed blowers (duty/standby) having a capacity of 680 m^3/h at 45 kPa were decommissioned and removed in 2017, and two Positive Displacement Blowers (duty/standby), were installed. Each blower is 30 HP and is equipped with its own VFD's with the existing Positive Displacement Blower as back up. The feeder lines and diffuser tubes at the bottom of the cell are perpendicular to the direction of sewage flow;
- A compressed air distribution system in Cell #3 comprising a 25 hp compressor/blower, air header and distribution laterals for minimizing ice formation and to improve alum mixing;
- Effluent works and 600 mm diameter sewer to the stabilization pond effluent pumping station;

<u>Stabilization Pond Effluent Pumping Station:</u>

- A 3.4 m by 3.3 m by 6.0 m deep wet well, including a bypass/overflow chamber with a bottom sluice gate and an overflow weir, equipped with three (3) submersible pumps (two duty and one shelf spare) with variable speed 3 hp motors, each having a capacity of 23.1 L/second at 4.0 m TDH, with a 150 mm diameter pipe discharging stabilization pond effluent to a common trough at the top of the wet well;

- One (1) 200 mm diameter gravity flow pipe conveying stabilization pond effluent from the trough to the filtration building;
- A 600 mm diameter emergency bypass/overflow sewer from the pumping station to the final effluent manhole;

Supplementary Treatment Systems:

Phosphorus Removal

- A 4.3 m x 6.1 m alum building with a 15,000 L alum storage tank and two (2) 7.1 L/h capacity metering pumps to dose alum to flow control structure A located upstream of the storage lagoons;
- A new alum dosing system with a duplex pump control panel and two (2) metering pumps (duty and standby arrangement), each capable of handling 15L/hr;
- An insulated alum dosing pipe with fittings and other appurtenances;
- Installation of the alum dosing point within the filter feed pumping station wet well;
- Installation of a pipe mixer (static flow mixer) within the existing stainless steel filter feed pipe and necessary connections with fittings to the existing 200 mm diameter stainless steel filter feed pipe.

Supplementary Treatment Systems:

Phosphorus Removal

secondary pre-filtration alum dosing system to facilitate additional phosphorus removal, housed in an alum building, including:

- one (1) 9,000 L alum storage tank;
- an alum dosing system with a duplex pump control panel and two (2) metering pumps (duty and
  standby arrangement), each capable of handling 15 L/hr;
- an insulated alum dosing pipe with fittings and other appurtenances;
- installation of the alum dosing point within the filter feed pumping station wet well;
- installation of a pipe mixer (static flow mixer) in a precast chamber within the existing stainless steel filter feed pipe and necessary connections with fittings to the existing 200 mm diameter stainless steel filter feed pipe.

Post-Secondary Treatment System:

Sand Filters

- One (1) metering chamber complete with 200 mm diameter inlet pipe from the Stabilization Pond Effluent Pumping Station, a 200 mm diameter magnetic flowmeter and a 200 mm outlet pipe discharging to the filter influent channel described below;
- One (1) filter influent channel 690 mm wide by 2.5 m deep equipped with a stainless steel screen and guide, five (5) 200 mm diameter filter inlet pipes with gate valves and one (1) 200 mm diameter overflow pipe discharging to the filter effluent channel;

- Five (5) continuous backwash upflow sand filters, each having a 4.65 m^2 filtration area, 2.0 m depth coarse media, with design filtering capacity of 800 m^3/day, complete with headloss gauges, air-lift pumps for rejection/backwashing of filters to the reject wet well and effluent weirs;
- A 250 mm diameter filtered effluent pipe and a 500 mm wide by 1.6 m deep effluent channel for the disinfection system described below;
- Two (2) air compressors with 7.5 hp motors, each having an output capacity of 46 m^3/h at 690 kPa pressure discharging to a common air reservoir to provide air to the air lift pumps;
- A 2.16 m by 1.7 m, 4.7 m deep reject/backwash wastewater wet well equipped with two (2) submersible pumps with 3 hp integral motors (one duty and one standby), each having a capacity of 13.5 L/s at 10.7 m TDH, to pump filter reject/backwash wastewater to Cell #2 of the stabilization pond system via an approximately 37.0 m long 100 mm diameter forcemain;

Disinfection System:

UV Disinfection

Two (2) ultraviolet radiation units installed in series in the effluent channel of the filtration building, designed to handle a peak flow of 4,000 m^3/d and capable of producing a minimum dose of

36 mW.sec/cm^2 in the effluent with an ultraviolet transmittance of 65%, for the disinfection of effluent;

Final Effluent Flow Measurement and Sampling Point:

- One (1) 200 mm dia magnetic flowmeter and associated pipework in the effluent discharge system.

Final Effluent Disposal Facilities:

- A reinforced concrete cascade aerator including a 100 mm diameter drain/bypass pipe to provide adequate aeration to the filtered effluent prior to discharging to the Conestogo River,
- One (1) 300 mm diameter effluent discharge pipe from the cascade aerator to the final effluent manhole;
- One (1) 600 mm diameter final effluent pipe to the outfall structure at the Conestoga River

An overview of Mapleton Wastewater Pollution Control Plant can be found in Table 2:

Table 2. Mapleton Wastewater Pollution Control Plant Overview

Facility Name	Mapleton Wastewater Pollution Control Plant
Facility Type	Facultative Lagoons, Aerated Lagoon (Cell #2), Alum addition/phosphorous removal, sand filters, sewer system and UV Disinfection, and two pumping stations.
Plant Classification	WWT I
Works Number	120001782
Design Capacity	900 m^3/day
Receiving Water	Conestogo River
Environmental Compliance Approval	ECA# 1391-B38PLA, issued August 2, 2018

2. Influent and Effluent Monitoring and Comparison to Effluent Objectives and Effluent Limits

2.1 Influent (Raw Sewage)

As per Section 11(4)(a) of ECA 1391-B38PLA, *a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates* is required.

2.1.1 Sampling Frequency: Influent

Samples of raw sewage (influent) are collected and analyzed on a regular basis. The sampling types and frequencies are summarized in Table 3. The sampling frequencies meet the requirements set out in Schedule D of ECA 1391-B38PLA.

Table 3. Raw Sewage Monitoring – Sampling Frequencies

Parameter	Sample Type	Frequency
BOD_5[3A]	Grab	Bi-Weekly
Total Suspended Solids[3A]	Grab	Bi-Weekly
Total Phosphorous[3A]	Grab	Bi-Weekly
Total Kjeldahl Nitrogen[3A]	Grab	Bi-Weekly

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

2.1.2 Influent (Raw Sewage) Monitoring Data

The following parameters in Table 4 do not have limits or objectives but are monitored on a regular basis (see Section 2.1.1 for sampling frequency) as required by Schedule D of ECA 1391-B38PLA. Table 4 summarizes the influent monitoring data for the reporting period.

Table 4. Raw Sewage Monitoring Parameters as required by ECA 1391-B38PLA for Mapleton Wastewater Pollution Control Plant, 2022

Parameter	Average (mg/L)	Minimum (mg/L)	Maximum (mg/L)
BOD_5[4A]	321.11	186.67	416.00
Total Suspended Solids[4A]	317.96	164.50	494.50
Total Phosphorous[4A]	8.17	5.69	10.75
Total Kjeldahl Nitrogen[4A]	72.36	52.33	91.80

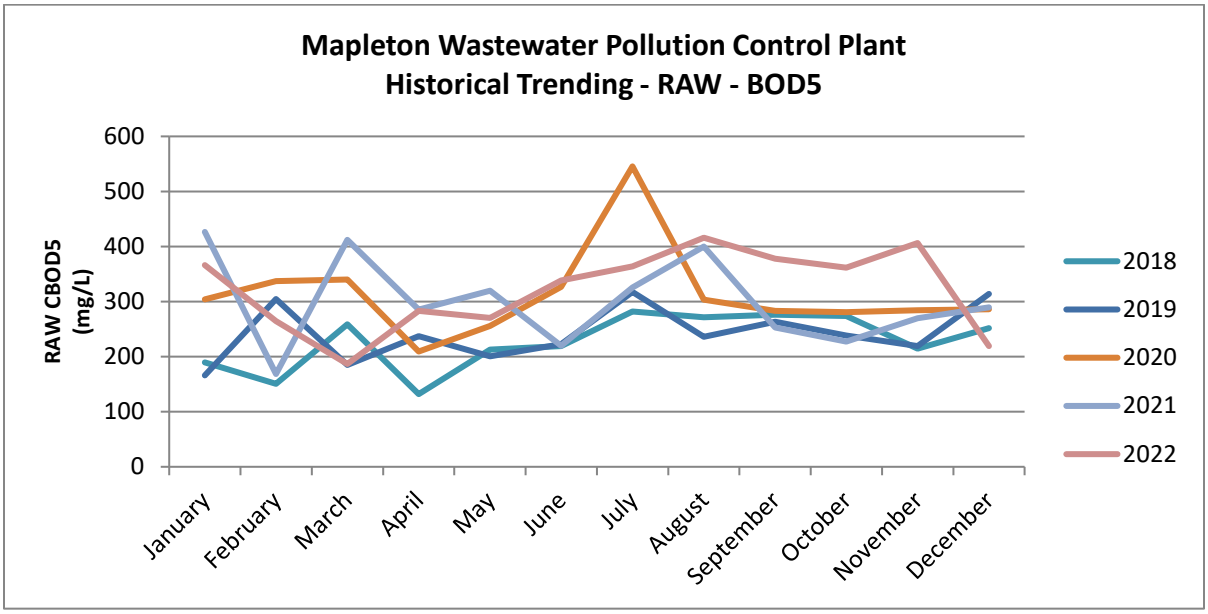
[4A]Refer to Appendix A for monthly sample results.

2.1.3 Historical Trends of Influent (Sewage) Characteristics and Influent Flowrates

Sewage Characteristics

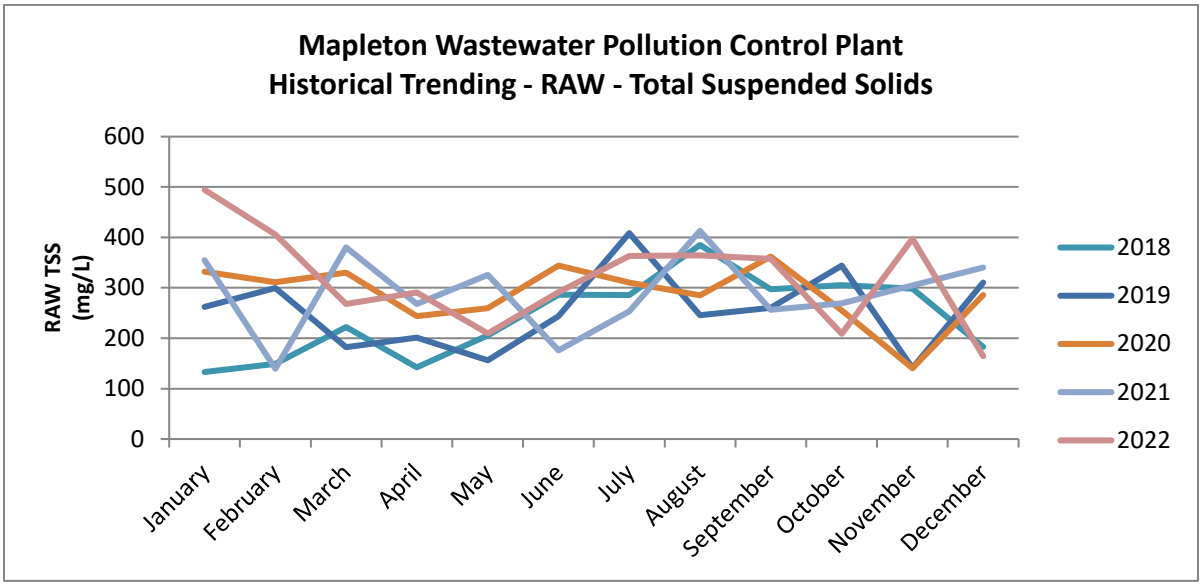
The below graph shows historical raw Biochemical Oxygen Demand (BOD_5) trending from 2018 to 2022. A review of the trends from the last 5 years for BOD_5 shows that the average BOD_5 concentration in the raw sewage had fluctuated year per year with no consistent observable trend. An overall increase in BOD_5 loading was observed in 2022 compared to previous years. BOD_5 annual average was 299.74 mg/L in 2021 and was slightly higher this year at 321.11 mg/L

Figure 1.



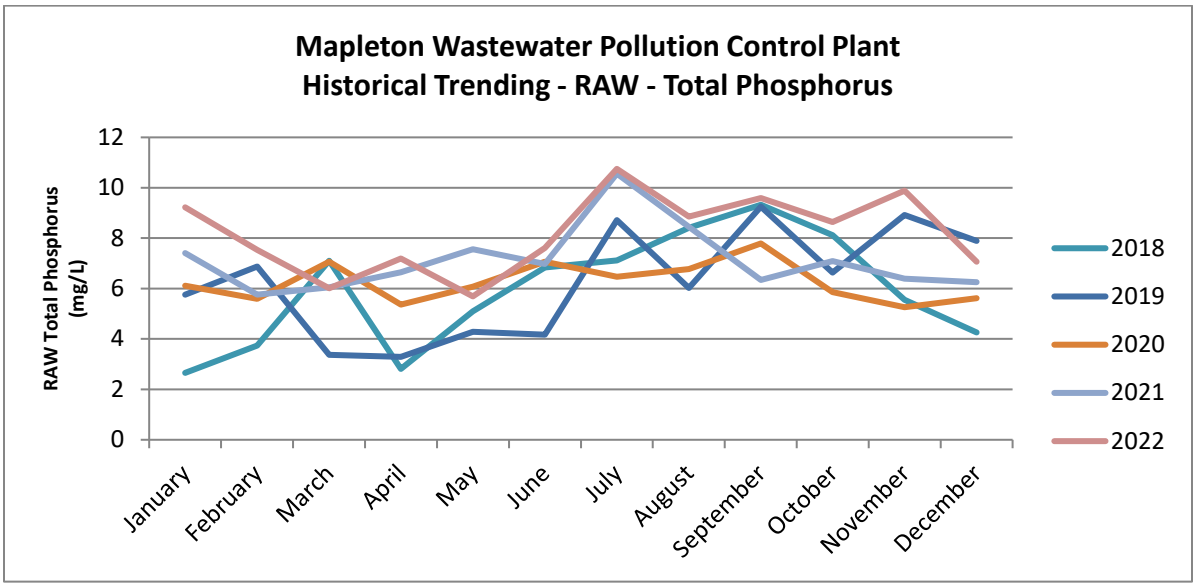
The below graph shows the historical raw Total Suspended Solids trending from 2018 to 2022. A review of the current 2022 trends versus the last 5 years has shown a slight increase in loadings of Total Suspended Solids for parts of the year. TSS annual average was 290.18 mg/L in 2021 and was slightly increased this year at 317.96 mg/L.

Figure 2.



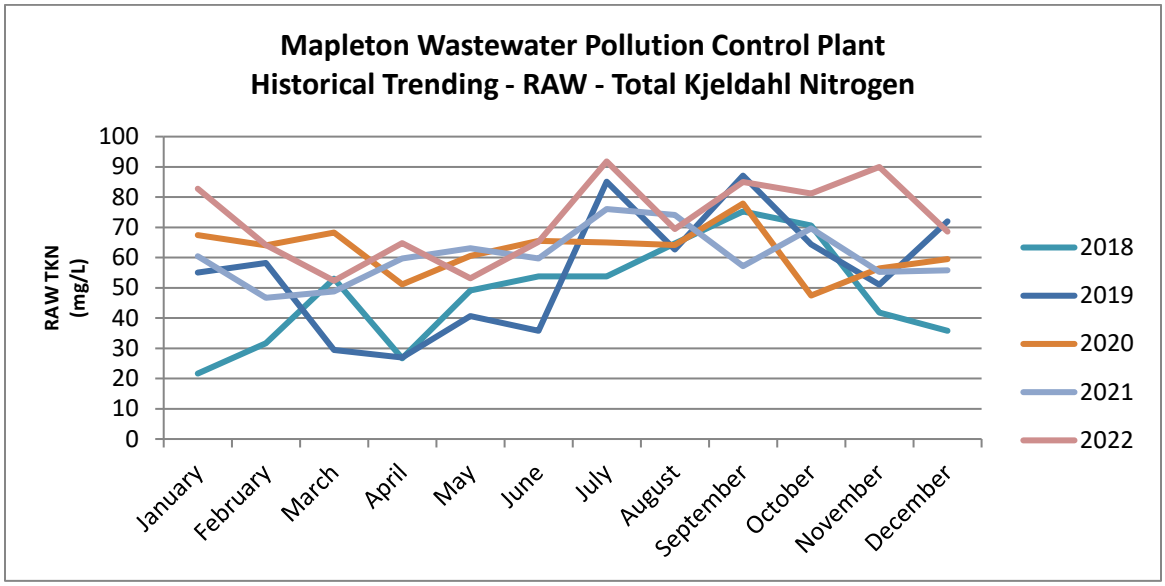
The below graph shows the historical raw Total Phosphorus trending from 2018 to 2022. A review of the current 2022 trends versus the last 5 years has shown a slight increase in loadings of phosphorus for the parts of the year. TP annual average was 7.12 mg/L in 2021 and was slightly increased this year at 8.17 mg/L.

Figure 3.



The below graph shows the historical raw Total Kjeldahl Nitrogen trending from 2018 to 2022. A review of the 2022 trends versus the last 5 years for TKN has shown a slight increase in loadings concentrations to previous years. TKN annual average was 60.53 mg/L in 2021 and was slightly increased this year at 72.36 mg/L

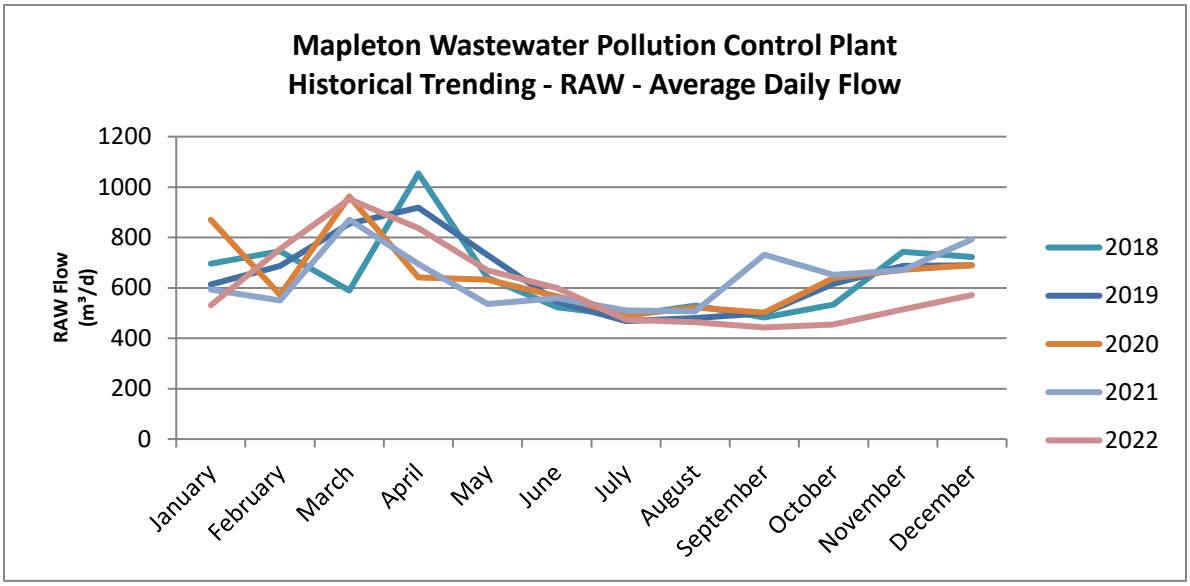
Figure 4.



Influent Flow:

The below graph shows historical raw flow trending from 2018 to 2022. The graph shows that the average flows have remained fairly consistent. There is a consistent peak in the months of March-April which would represent warmer temperatures resulting in snow melt and seasonal precipitation.

Figure 5.



The total raw sewage volume of wastewater treated in 2022 was 222,675.00 m^3, which was a slight decrease from 233,343.00m^3 total raw sewage volume for 2021. The annual average daily flow of raw sewage was 611.74 m^3/day was 67.97 % of the rated capacity (900 m^3/day). The maximum peak flow of 2,784.00 m^3/day occurred in February due to higher seasonal temperatures which resulted in rapid snow melt as well as heavy rainfall. This represents a peak flow of 3.09 times the rated capacity.

2.2 Final Effluent Monitoring and Flow Rates

As per Section 11(4)(b) of ECA 1391-B38PLA, *a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the designed objectives and compliance limits in this approval, including an overview of the success and adequacy of the Works* is required.

2.2.1 Sampling Frequency: Effluent

Samples of effluent are collected and analyzed on a regular basis. The sampling types and frequencies are summarized in Table 5. The sampling frequencies meet the requirements set out in Schedule D of ECA 1391-B38PLA.

Table 5. Effluent Sampling Monitoring – Sampling Frequencies

Parameters	Sample Type	Frequency
$CBOD_5$[5A]	24-hour Composite	Weekly
Total Suspended Solids[5A]	24-hour Composite	Weekly
Total Phosphorous[5A]	24-hour Composite	Weekly

Total Ammonia Nitrogen[5A]	24-hour Composite	Weekly
E. Coli[5A]	Grab	Weekly
pH	Grab/Probe	Weekly
Temperature	Grab/Probe	Weekly
Unionized Ammonia	Calculated	Weekly

[5A]Refer to Appendix A for monthly sample results.

2.2.2 Effluent Objectives and Limits

The effluent objectives as per Schedule B of ECA 1391-B38PLA for the Mapleton Wastewater Pollution Control Plant are summarized in table 6:

Table 6. Effluent Objectives as per Schedule B of ECA 1391-B38PLA

Effluent Parameter	Concentration Objective (mg/L)
$CBOD_5$	5.0
Total Suspended Solids	15.0
Total Ammonia Nitrogen	3.0
Total Phosphorous	0.25
E.Coli	100 CFU/100mL (Monthly Geometric Mean Density)
pH	6.5-8.5 inclusive

The effluent limits that are to be met as per Schedule C of ECA 1391-B38PLA for the Mapleton Wastewater Pollution Control Plant are summarized in Table 7. Any exceedance with the limits found in Table 7 constitutes a non-compliance.

Table 7. Effluent Limits as per Schedule C of ECA 1391-B38PLA

Effluent Parameter	Concentration Limit (mg/L)
$CBOD_5$ (April, October) (March, November, December)	 7.5 10.0
Total Suspended Solids	25.0
Total Ammonia Nitrogen	5.0
Total Phosphorous	0.42
E.Coli	200 CFU/100mL (Monthly Geometric Mean Density)
pH	6.0-9.5 Inclusive

2.2.3 Effluent Monitoring Data

The following parameters in Table 8 have limits and objectives, they are monitored on a regular basis (see Section 2.2.1 for sampling frequency) as required by Schedule D of ECA 1391-B38PLA. Table 8 summarizes the efffluent monitoring data for the reporting period.

Table 8. Effluent Monitoring Parameters as required by ECA 1391-B38PLA for Mapleton Wastewater Pollution Control Plant, 2022

Parameters	Average (mg/L)	Minimum (mg/L)	Maximum (mg/L)	Average Annual Loading (kg/d)
$CBOD_5$[8A]	2.80	2.00	5.67	6.81
Total Suspended Solids[8A]	9.87	6.00	15.00	24.51
Total Phosphorus[8A]	0.15	<0.03	0.39	0.37
Total Ammonia Nitrogen[8A]	0.77	<0.10	3.23	1.85
E.Coli[8A]	-	2.00	18.22	-
pH	8.02	7.78	8.30	-
Temperature	6.14	1.60	13.50	-
Unionized Ammonia	0.003	0.002	0.151	-

[8A]Refer to Appendix A for monthly sample results.

2.2.4 Comparison of Data to Effluent Objectives and Effluent Limits

Analytical and monitoring data for the Mapleton Wastewater Pollution Control Plan is stored in OCWAs data management system (WISKI7). Annual and monthly averages for flows, $CBOD_5$, Total Suspended Solids, Total Phosphorous, Nitrogen-series, E.coli and pH can be found in Appendix A. A comparison of analytical data from effluent samples to the effluent objectives and effluent limits shown in tables 9 to 14. The Discharge period for the Mapleton WPCP is March-April and October-December.

Concentrations and Loading

Table 9. 2022 Monthly Average Concentration and Loading of $CBOD_5$ in Comparison to ECA Objectives and Limits for Mapleton WPCP

	$CBOD_5$			
	Monthly Average Concentration (mg/L)	Within Objectives (5.00 mg/L)	Within Limits (Apr, Oct – 7.50 mg/L) (Mar, Nov, Dec - 10.00 mg/L)	Monthly Average Loading (kg/d)
January	-	-	-	-
February	-	-	-	-
March	5.67	Yes	Yes	13.06
April	<2.00	Yes	Yes	<4.29
May	-	-	-	-
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	<2.25	Yes	Yes	<5.46
November	<2.00	Yes	Yes	<5.70
December	<2.00	Yes	Yes	<5.54

Table 10. 2022 Monthly Average Concentration and Loading of Total Suspended Solids in Comparison to ECA Objectives and Limits for Mapleton WPCP

	Total Suspended Solids			
	Monthly Average Concentration (mg/L)	Within Objectives (15.00 mg/L)	Within Limits (25.00 mg/L)	Monthly Average Loading (kg/d)
January	-	-	-	-
February	-	-	-	-
March	15.00	Yes	Yes	34.56
April	6.00	Yes	Yes	12.86
May	-		-	-
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	8.50	Yes	Yes	20.61
November	9.40	Yes	Yes	26.81
December	10.00	Yes	Yes	27.72

Table 11. 2022 Monthly Average Concentration and Loading of Total Phosphorus in Comparison to ECA Objectives and Limits for Mapleton WPCP

	Total Phosphorus			
	Monthly Average Concentration (mg/L)	Within Objectives (0.25 mg/L)	Within Limits (0.42 mg/L)	Monthly Average Loading (kg/d)
January	-	-	-	-
February	-	-	-	-
March	0.39	No	Yes	0.89
April	<0.03	Yes	Yes	<0.06
May	-	-	-	-
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	0.14	Yes	Yes	0.33
November	0.08	Yes	Yes	0.23
December	0.12	Yes	Yes	0.33

Table 12. 2022 Monthly Average Concentration and Loading of Total Ammonia Nitrogen in Comparison to ECA Objectives and Limits for Mapleton WPCP

	Total Ammonia Nitrogen (Ammonia Nitrogen + Ammonium Nitrogen)			
	Monthly Average Concentration (mg/L)	Within Objectives (3.0 mg/L)	Within Limits (5.0 mg/L)	Monthly Average Loading (kg/d)
January	-	-	-	-
February	-	-	-	-
March	3.23	No	Yes	7.45
April	<0.10	Yes	Yes	<0.21
May	-	-	-	-
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	<0.10	Yes	Yes	<0.24
November	0.18	Yes	Yes	0.51
December	0.30	Yes	Yes	0.83

Table 13. 2022 Monthly Average Concentration and Loading of E.Coli in Comparison to ECA Objectives and Limits for Mapleton WPCP

	E.coli		
	Monthly Geometric Mean Density (CFU/100mL)	Within Objectives (100 CFU/100mL)	Within Limits (200 CFU/100mL)
January	-	-	-
February	-	-	-
March	2.00	Yes	Yes
April	18.22	Yes	Yes
May	-	-	-
June	-	-	-
July	-	-	-
August	-	-	-
September	-	-	-
October	2.00	Yes	Yes
November	2.00	Yes	Yes
December	2.00	Yes	Yes

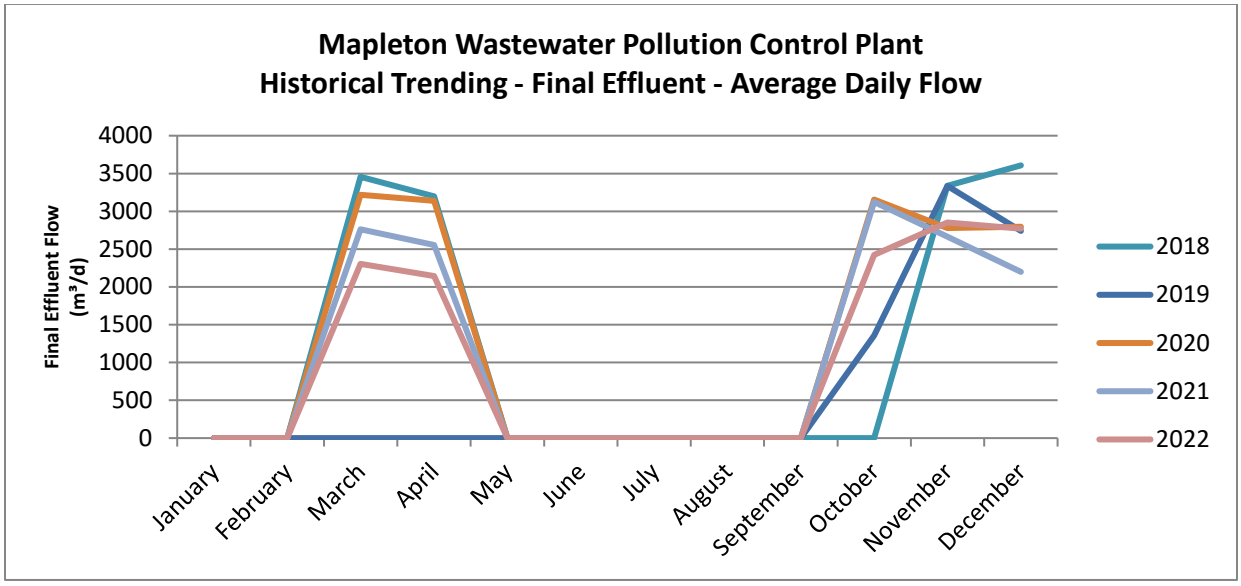
Table 14. 2022 Monthly Minimum and Maximum pH for Mapleton WPCP

	pH			
	Minimum	Maximum	Within Objectives (6.5 – 8.5)	Within Limits (6.0 – 9.5)
January	-	-	-	-
February	-	-	-	-
March	7.81	7.84	Yes	Yes
April	8.13	8.14	Yes	Yes
May	-	-	-	-
June	-	-	-	-
July	-	-	-	-
August	-	-	-	-
September	-	-	-	-
October	8.08	8.30	Yes	Yes
November	7.69	8.16	Yes	Yes
December	7.78	7.78	Yes	Yes

2.2.5 Final Effluent Flow and Maximum Discharge Rates

Effluent Flow: The below graph shows historical final effluent flow trending from 2018 to 2022. The graph shows that during the discharge periods the final effluent average flows have remained fairly consistent between the discharge periods.

Figure 6.



The total effluent volume of wastewater treated in 2022 was 239,105.55 m^3 with an annual average daily flow of effluent was 2,543.68 m^3/day, which was a decrease from the total effluent volume of wastewater treated in 2021 of 274,535.43m^3 and annual average daily flow of 2660.82m^3. See table 15 for comparison of maximum daily effluent flow to the maximum final effluent discharge rates as per Schedule C.

Table 15. Monthly Average Daily Effluent Flow

2022	Monthly Average Daily Effluent Flow (m^3)	Monthly Average Daily Effluent Flow Limit (m^3/day)
March	2,303.77	2,599[15A]
April	2,142.96	4,000
October	2,424.60	233[15A]
November	2,851.97	1,854[15A]
December	2,771.46	4,000

[15A]As per section Section 8(5) The Owner shall operate the Works such that discharge of Final Effluent from the Works is conducted on a seasonal discharge basis with the effluent being discharged only during the months at the rates as specified in Schedule C. However, discharges in excess of these daily discharges is allowed if the minimum 10:1 of the streamflow to daily discharge rate for the applicable period of that design streamflow occurs, based on actual measurements of flow rate in the Conestogo River.

[15A]As per Section 8(5)(b) The Owner shall, during the discharge of Final Effluent, make reference to the streamflow data of the Conestogo River from the Grand River Conservation Authority Website. The Owner shall take responsibility for interpreting the hydrometric data for that day and make the appropriate operational changes. The streamflow provided shall be the basis of proportional discharge for that day and the next six days for the purposes of determining the final effluent discharge rate;

2.5 Overview of Success and Adequacy of the Works;

The annual average effluent TSS concentration was 9.87 mg/L with a removal efficiency of >93.92%. The annual average effluent Total Phosphorus concentration was 0.15 mg/L with a removal efficiency of >93.56%.

The bacteriological quality of the effluent complied with the environmental compliance approval requirement of <200 colony forming units per 100 mL sample. The annual geometric mean density of organisms for 2022 was 5.24 per 100 mL, indicating extremely effective effluent disinfection.

3. Deviation from the Monitoring Schedule

As per Section 11(4)(c) of ECA 1391-B38PLA, *a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year* is required[3A.]

Table 16.

Date	Reason for Deviation
January 20, 2022	Raw sample taken 1 day later than scheduled – Delayed due to weather conditions
March 3, 2022	Effluent sample taken 2 days later than scheduled – Discharge was started March 1, 2022

April 22, 2022	Effluent sample taken 2 days later than scheduled – Discharge was started April 20, 2022
November 17, 2022	Effluent sample taken 1 day later than scheduled – Delayed due to staffing conflicts
December 8, 2022	Effluent sample taken 1 day later than scheduled – Due to delay in composite sampler start up

[3A]Refer to Appendix B the schedule for the next reporting year (2023).

4. Operating Problems and Corrective Actions

As per Section 11(4)(d) of ECA 1391-B38PLA, *a summary of all operating issues encountered and corrective actions taken* is required.

There were no operating problems encountered or corrective actions required at the Mapleton Wastewater Pollution Control Plant during 2022 that affected the quality of the effluent leaving the plant. All repairs/maintenance can be found in Section 5 of this report.

5. Major Maintenance Activities

As per Section 11(4)(e) of ECA 1391-B38PLA, *a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming parts of the Works* is required.

For 2022, major maintenance activities that occurred include:

- Sand filter air lift replacement
- Repair Pump 1 check valve
- Air relief valve failure and replacement
- Annual wet well cleanout
- Annual pump inspections
- 3rd Party flow meter calibrations

Plant maintenance, including non-scheduled maintenance is monitored using Maximo Workplace Management System. All routine and preventative maintenance was conducted as scheduled in 2022.

6. Effluent Quality Assurance and Control

As per Section 11(4)(f) of ECA 1391-B38PLA, *a summary of any effluent quality assurance or control measures undertaken* is required:

Quality assurance and control measures undertaken during the reporting period include adherence to provincial regulations, use of accredited laboratories, 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.

6.1 Adherence to Provincial Regulations

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

6.2 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.

6.3 Operation by Licensed Operators

The WPCP 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.

6.4 Sampling and Analysis

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

6.5 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.

7. Calibration and Maintenance Procedures

As per Section 11(4)(g) of ECA ECA 1391-B38PLA, *a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer* 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 14, 2022. Copies of these calibration reports can be found in **Appendix C** of this report.

8. Efforts and Results Achieved in Meeting Effluent Objectives

As per Section 11(4)(h) of ECA 1391-B38PLA, *a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situation:*

i. When any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

The Mapleton WPCP was able to achieve final effluent parameter design limits (refer to Table 7) 100% of the time during the reporting period. The $CBOD_5$, TSS, TP, TAN, E.Coli and pH were within the Effluent Limits 100% of the time during the reporting period. Based on the data, the final effluent was within the Effluent Objectives the majority of the time and there appears to be no increased trend in deterioration of final effluent quality. There were instances in March where the Total Phosphorus and Total Ammonia Nitrogen didn't not meet the effluent objectives as per section 2.2.4 tables 11 and 12 of this report.

During the reporting period, operations staff regularly completed visual inspections of final effluent samples and found the effluent to be essentially free of floating and settleable solids. No oil and no visible film, sheen, foam or discolouration were observed in the final effluent.

ii. When the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

During the reporting period the annual average daily influent flow did not exceed 80% of the rated capacity. The annual average daily flow of raw sewage in 2022 was 67.97 % (611.74 m^3/day) of the rated capacity (900 m^3/day). As this Average Daily Influent Flow is approaching 80% of the Rated Capacity, the Owner of the system has been made aware of the increased capacity required in the future. Currently, capacity upgrades are being investigated.

As per the ECA, 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 6 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 9 to 13. These results show that sewage treatment operations for 2022 minimized environmental impairment and provided effluent quality that was within the effluent objectives outlined in the ECA the majority of the time.

9. Sludge Generation

As per Section 11(4)(i) of ECA 1391-B38PLA, *an estimate of sludge volumes in the lagoon cells. Sludge volume is to be measured every five (5) years, but may be estimated in the interim years. A summary of disposal locations and volumes of sludge disposed of must also be provided if sludge was disposed of during the reporting period* is required

There was no sludge hauled/disposed of from the lagoon system in 2022. Currently, the volume of sludge in Cell #1 is being investigated for removal and haulage. The Township and the Town's engineer on

record CIMA+ Engineering are working towards scheduling and prioritizing capital projects required for the Town.

The estimate sludge volume in the lagoon cells

Table 17. Estimated Lagoon Cell Sludge Volumes for 2022

Cell	Estimated Sludge Volume (m^3)
Cell 1	800
Cell 2	500
Cell 3	220
Cell 4A	125
Cell 4B	100

10. Complaints

As per Section 11(4)(j) of ECA 1391-B38PLA, *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 was one (1) complaint registered in 2022 for the reporting period.

- May 24, 2022 – Home owner reported that the manhole at the end of his driveway was overflowing, on investigation air relief valve in manhole was replaced. Refer to section 11 of this report and appendix D for more information.

11. By-pass, Spill or Abnormal Discharge Events

As per Section 11(4)(k) of ECA 1391-B38PLA, *a summary of all By-pass, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events* is required.

One spill event occurred during the 2022 reporting period. On May 24, 2022 a rodent created a blockage in the air relief valve within a manhole located between the driveways of the farmer and the lagoon access which caused raw sewage to collect in the manhole and spill. Please refer to **Appendix D** for Environmental Incident Report and Notifications.

ECA 1391-B38PLA requires that Quarterly bypass/overflow reports are to be submitted to the Water Supervisor. All 2022 quarterly reports were submitted to the Water Supervisor by the deadlines specified in the ECA.

12. Notice of Modifications

As per Section 11(4)(l) of ECA 1391-B38PLA, *a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification* is required.

There were no modifications made during the reporting period to the Mapleton Wastewater Pollution Control Plant which would require a Notice of Modifications be submitted to the Water Supervisor.

13. Bypass/Overflow Proposed Elimination Projects

As per Section 11(4)(m) of ECA 1391-B38PLA, *a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer systems that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted* is required.

The Mapleton Wastewater Pollution Control Plant has not had bypass/overflow occurrences during this reporting period. Therefore this doesn't propose any future occurrences which don't require a project/expenditure to eliminate bypass/overflows.

14. Changes/updates to Scheduled Construction/Commissioning

As per Section 11(4)(n) of ECA 1391-B38PLA, *any changes or updates to the schedule for the completion of construction and commissioning operation of major process(es)/equipment groups in the Proposed Works* is required.

The Proposed Works reached substantial completion as of November 15, 2018.

2022 Annual Performance Report
Mapleton Water Pollution Control Plant
ECA# 1391-B38PLA August 2, 2018

Appendix A

Performance Assessment Report

2022

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2022 to 12/31/2022

6093 DRAYTON WASTEWATER TREATMENT LAGOON 120001782

	1 / 2022	2/ 2022	3/ 2022	4/ 2022	5/ 2022	6/ 2022	7/ 2022	8/ 2022	9/ 2022	10/ 2022	11/ 2022	12/ 2022	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage Drayton m³/d	14,243.00	18,887.00	26,819.00	22,670.00	18,318.00	15,840.00	12,284.00	13,929.00	13,284.00	14,109.00	15,446.00	20,331.00	206,160.00			0.00
Raw Flow: Total - Raw Sewage Flow from Moorefield m³/d	2,218.00	2,224.00	2,693.00	2,418.00	2,446.00	2,124.00	2,009.00	450.00	0.00	0.00	0.00	0.00	16,582.00			0.00
Raw Flow: Total - Raw Sewage Total m³/d	16,461.00	21,111.00	29,512.00	25,088.00	20,764.00	17,964.00	14,226.00	14,379.00	13,284.00	14,109.00	15,446.00	20,331.00	222,675.00			0.00
Raw Flow: Avg - Raw Sewage Drayton m³/d	459.45	674.54	865.13	755.67	590.90	528.00	409.47	449.32	442.80	455.13	514.87	655.84		566.37		750.00
Raw Flow: Avg - Raw Sewage Flow from Moorefield m³/d	71.55	79.43	86.87	80.60	78.90	70.80	64.81	18.00	0.00	0.00	0.00	0.00		69.97		
Raw Flow: Avg - Raw Sewage Total m³/d	531.00	753.96	952.00	836.27	669.81	598.80	474.20	463.84	442.80	455.13	514.87	655.84		611.74		
Raw Flow: Max - Raw Sewage Drayton m³/d	663.00	2,680.00	1,905.00	1,168.00	1,091.00	1,041.00	858.00	1,118.00	873.00	590.00	872.00	2,500.00			2,680.00	0.00
Raw Flow: Max - Raw Sewage Flow from Moorefield m³/d	104.00	125.00	152.00	117.00	168.00	101.00	86.00	87.00	0.00	0.00	0.00	0.00			168.00	0.00
Raw Flow: Max - Raw Sewage Total m³/d	767.00	2,784.00	2,057.00	1,224.00	1,172.00	1,137.00	934.00	1,119.00	873.00	590.00	872.00	2,500.00			2,784.00	0.00
Raw Flow: Count - Raw Sewage Drayton m³/d	31.00	28.00	31.00	30.00	31.00	30.00	30.00	31.00	30.00	31.00	30.00	31.00	364.00			0.00
Raw Flow: Count - Raw Sewage Flow from Moorefield m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	25.00	0.00	0.00	0.00	0.00	237.00			0.00
Raw Flow: Count - Raw Sewage Total m³/d	31.00	28.00	31.00	30.00	31.00	30.00	30.00	31.00	30.00	31.00	30.00	31.00	364.00			0.00
Eff. Flow: Total - Final Effluent m³/d	0.00	0.00	36,860.36	21,429.57	0.00	0.00	0.00	0.00	0.00	70,313.27	85,559.20	24,943.15	239,105.55			0.00
Eff. Flow: Avg - Final Effluent m³/d	0.00	0.00	2,303.77	2,142.96	0.00	0.00	0.00	0.00	0.00	2,424.60	2,851.97	2,771.46		2,543.68		4,000.00
Eff. Flow: Max - Final Effluent m³/d	0.00	0.00	2,825.55	2,520.10	0.00	0.00	0.00	0.00	0.00	2,949.70	3,233.29	3,085.57			3,233.29	0.00
Eff Flow: Count - Final Effluent m³/d	0.00	0.00	16.00	10.00	0.00	0.00	0.00	0.00	0.00	29.00	30.00	9.00	94.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent mg/L	0.00	0.00	5.67	< 2.00	0.00	0.00	0.00	0.00	0.00	< 2.25	< 2.00	< 2.00		2.80	5.67	10.00
Eff: # of samples of cBOD5 - Final Effluent	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	4.00	5.00	1.00	15.00			0.00
Loading: cBOD5 - Final Effluent kg/d	0.000	0.000	13.055	< 4.286	0.000	0.000	0.000	0.000	0.000	< 5.455	< 5.704	< 5.543		6.81	13.05	
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage Drayton mg/L	366.00	264.50	186.67	283.00	270.33	338.50	364.00	416.00	377.67	361.33	406.33	219.00		321.11	416.00	0.00
Raw: # of samples of BOD5 - Raw Sewage Drayton	2.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	2.00	29.00			0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage Drayton mg/L	494.50	405.50	268.00	291.00	209.33	291.50	363.00	364.50	357.67	208.67	397.33	164.50		317.96	494.50	0.00
Raw: # of samples of TSS - Raw Sewage Drayton	2.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	2.00	29.00			0.00
Eff: Avg TSS - Final Effluent mg/L	0.00	0.00	15.00	6.00	0.00	0.00	0.00	0.00	0.00	8.50	9.40	10.00		9.87	15.00	
Eff: # of samples of TSS - Final Effluent	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	4.00	5.00	1.00	15.00			0.00
Loading: TSS - Final Effluent kg/d	0.000	0.000	34.557	12.858	0.000	0.000	0.000	0.000	0.000	20.609	26.809	27.715		24.51	34.56	
Percent Removal: TSS - Final Effluent %	0.00	0.00	94.40	97.94	0.00	0.00	0.00	0.00	0.00	95.93	97.63	93.92			97.94	0.00
Total Phosphorus: TP																

Raw: Avg TP - Raw Sewage Drayton mg/L	9.22	7.53	6.01	7.19	5.69	7.61	10.75	8.86	9.59	8.64	9.89	7.07		8.17	10.75	0.00
Raw: # of samples of TP - Raw Sewage Drayton	2.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	2.00	29.00			0.00
Eff: Avg TP - Final Effluent mg/L	0.00	0.00	0.39	< 0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.08	0.12		0.15	0.39	0.50
Eff: # of samples of TP - Final Effluent	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	4.00	5.00	1.00	15.00			0.00
Loading: TP - Final Effluent kg/d	0.000	0.000	0.891	< 0.064	0.000	0.000	0.000	0.000	0.000	0.333	0.234	0.333		0.37	0.89	
Percent Removal: TP - Final Effluent %	0.00	0.00	93.56	99.58	0.00	0.00	0.00	0.00	0.00	98.41	99.17	98.30			99.58	0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage Drayton mg/L	82.75	64.15	52.33	64.80	53.17	65.25	91.80	69.40	85.00	81.13	90.00	68.55		72.36	91.80	0.00
Raw: # of samples of TKN - Raw Sewage Drayton	2.00	2.00	3.00	2.00	3.00	2.00	2.00	2.00	3.00	3.00	3.00	2.00	29.00			0.00
Eff: Avg TAN - Final Effluent mg/L	0.00	0.00	3.23	< 0.10	0.00	0.00	0.00	0.00	0.00	< 0.10	0.18	0.30		0.77	3.23	5.00
Eff: # of samples of TAN - Final Effluent	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	4.00	5.00	1.00	15.00			0.00
Loading: TAN - Final Effluent kg/d	0.000	0.000	7.449	< 0.214	0.000	0.000	0.000	0.000	0.000	< 0.242	0.513	0.831		1.85	7.45	
Disinfection																
Eff: GMD E. Coli - Final Effluent cfu/100mL	0.00	0.00	2.00	18.22	0.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00				
Eff: # of samples of E. Coli - Final Effluent	0.00	0.00	3.00	2.00	0.00	0.00	0.00	0.00	0.00	4.00	5.00	1.00	15.00			0.00

2022 Annual Performance Report
Mapleton Water Pollution Control Plant
ECA# 1391-B38PLA August 2, 2018

Appendix B

2023 Sampling Schedule

2023 Sampling Calendar
DRAYTON LAGOON (Org #6093)
WWT I, WWC I

JANUARY						
M	T	W	TH	F	St	Su
						1
2	**3-BW**	4	5	6	7	8
9	10	11	12	13	14	15
16	**17-BW**	18	19	20	21	22
23	24	25	26	27	28	29
30	**31-BW**					

FEBRUARY						
M	T	W	TH	F	St	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13-LCS	**14-BW/LCS**	**15-LCS**	**16-LCS**	**17-LCS**	18	19
20	21	22	23	24	25	26
27	**28-BW**					

MARCH						
M	T	W	TH	F	St	Su
		1	2	3	4	5
6	**7-W/R**	8	9	10	11	12
13	**14-BW/W/R**	15	16	17	18	19
20	**21-W/R**	22	23	24	25	26
27	**28-BW/W/R**	29	30	31		

APRIL						
M	T	W	TH	F	St	Su
					1	2
3	**4-W/R**	5	6	7	8	9
10	**11-BW/W/R**	12	13	14	15	16
17	**18-W/R**	19	20	21	22	23
24	**25-BW/W/R**	26	27	28	29	30

MAY						
M	T	W	TH	F	St	Su
1	2	3	4	5	6	7
8	**9-BW**	10	11	12	13	14
15	16	17	18	19	20	21
22	**23-BW**	24	25	26	27	28
29	30	31				

JUNE						
M	T	W	TH	F	St	Su
			1	2	3	4
5	**6-BW**	7	8	9	10	11
12	13	14	15	16	17	18
19	**20-BW**	21	22	23	24	25
26	27	28	29	30		

Stat Holiday/Weekend

Sample Day

BW=Bi-Weekly Raw; **W**=Weekly Effluent; **R**=Weekly River; **LCS**=Lagoon Cell Sampling (Required at least 7 days prior to discharge)

Discharge Periods: March-April & October-December

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

S:\WestHighlands\12 MAPLETON (Township of)\01 OPERATIONAL\1-1 Sampling Schedules\04 Drayton Lagoon WWTP\Sampling Calendar_DraytonLagoon_Waste_2023_2022.12.14.xlsx

Revision # 7
Revised 2022-12-14

2023 Sampling Calendar
DRAYTON LAGOON (Org #6093)
WWT I, WWC I

JULY						
M	T	W	TH	F	St	Su
					1	2
3	**4-BW**	5	6	7	8	9
10	**11**	12	13	14	15	16
17	**18-BW**	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST						
M	T	W	TH	F	St	Su
	1-BW	2	3	4	5	6
7	8	9	10	11	12	13
14	**15-BW**	16	17	18	19	20
21	22	23	24	25	26	27
28	**29-BW**	30	31			

SEPTEMBER						
M	T	W	TH	F	St	Su
				1	2	3
4	5	6	7	8	9	10
11	**12-BW**	13	14	15	16	17
18-LCS	**19-LCS**	**20-LCS**	**21-LCS**	**22-LCS**	23	24
25	**26-BW**	27	28	29	30	

OCTOBER						
M	T	W	TH	F	St	Su
						1
2	**3-W/R**	4	5	6	7	8
9	**10-BW/W/R**	11	12	13	14	15
16	**17-W/R**	18	19	20	21	22
23	**24-BW/W/R**	25	26	27	28	29
30	**31-W/R**					

NOVEMBER						
M	T	W	TH	F	St	Su
		1	2	3	4	5
6	**7-BW/W/R**	8	9	10	11	12
13	**14-W/R**	15	16	17	18	19
20	**21-BW/W/R**	22	23	24	25	26
27	**28-W/R**	29	30			

DECEMBER						
M	T	W	TH	F	St	Su
				1	2	3
4	**5-BW/W/R**	6	7	8	9	10
11	**12-W/R**	13	14	15	16	17
18	**19-BW/W/R**	20	21	22	23	24
25	26	**27-W/R**	28	29	30	31

Stat Holiday/Weekend	**BW**=Bi-Weekly Raw; **W**=Weekly Effluent; **R**=Weekly River; **LCS**=Lagoon Cell Sampling (Required at least 7 days prior to discharge)
Sample Day	Discharge Periods: March-April & October-December

If you are NOT able to sample on the scheduled day, call your PCT as soon as possible

S:\WestHighlands\12 MAPLETON (Township of)\01 OPERATIONAL\1-1 Sampling Schedules\04 Drayton Lagoon WWTP\Sampling Calendar_DraytonLagoon_Waste_2023_2022.12.14.xlsx

Revision # 7
Revised 2022-12-14

2022 Annual Performance Report
Mapleton Water Pollution Control Plant
ECA# 1391-B38PLA August 2, 2018

Appendix C

Calibration Reports

2022

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:	7101 Side Road 15,
Plant Name:	Drayton Lagoon		Drayton, ON, N0G 1P0

Device Information		Service Information	
Make:	Rosemount	Date:	September 14, 2022
Model:	8712D	Report No:	CO1360-2208-45
Order Code:	NA	Job No:	CO1360-2208
Serial No.:	8602203395		
Tag:	NA		
Job Location:	Lagoon Flow		
Asset ID:	NA		

Sensor Details		Flow Details	
Line size:	8"	Unit:	l/sec
Flow Cal Tube No.:	0979205909737005	Flow Range:	0-25500 (m3/day)
Mounting:	Remote	Current Output:	4-20 mA
		4 mA Set Point	0
		20 mA Set Point	25500

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	2524478	2524479
FLOW (m3/day)	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

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	0.00	4.00	0.00
3.00	3.00	5.60	2.99	5.59	0.01
10.00	10.00	9.33	9.98	9.31	0.02
30.00	30.00	20.00	30.01	20.01	-0.01

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 :	Tushar Patel	Stamp/Signature	
Printed Date:	September 14, 2022		

End of Report

Version: 19-12

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

VERIFICATION REPORT- **MULTIRANGER 200**
OPEN CHANNEL FLOW MEASUREMENT

Customer Name:	OCWA-Georgian Highlands Region	Site/Plant Address:	7101 Side Road 15,
Plant Name:	Drayton Lagoon		Drayton, ON, N0G 1P0

Device Information	
Make:	Milltronics
Model:	Multiranger 200
Order Code:	N/A
Serial No.:	PBD/BN210450
Tag:	NA
Job Location:	Lagoon

Service Information	
Date:	September 14, 2022
Report No:	CO1360-2208-46
Job No:	CO1360-2208

Inst. Reading	AS FOUND	AS LEFT
TOTALIZER (m3)	303747.13	303756.88

Flow Details	
Unit:	m3/hr
Flow Range:	0-1382
Current Output:	4-20 mA
4 mA Set Point	0
20 mA Set Point	1382

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

Programming Parameter of Instrument

Parameter	Discription	Value	Parameter	Discription	Value
P001	Operation	6.00000	P601	Flow Exponent	1.55
P002	Material	1.000	P602	PMD Dimension	0
P004	Transducer	XPS-10	P603	Maximum Head	0.168 m
P005	Units	1	P604	Maximum Flow	1382
P006	Empty	0.952 m	P605	Zero Head	0.00
P007	Span	0.225 m	P608	Flow rate Units	3.00
P620	Low Flow cuttoff	0.075m	P210	4mA Setpoint	0.00
P600	Primary Mea. Device	7	P211	20mA Setpoint	1382.00

Instrument Test Information and Results

Input (%)	Calculated Flow(m3/hr)	Calculated Input (mA)	Flow on Scada (m3/hr)	UUT Measured Output (mA)	Deviation (m3/hr)
0	0.00	4.00	0.01	4.00	0.01
25	345.50	8.00	344.10	7.94	-1.40
50	691.00	12.00	690.84	11.97	-0.16
75	1036.50	16.00	1036.85	16.01	0.35
100	1382.00	20.00	1382.88	20.01	0.88

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. Measurement works as per specification.

Service Technician :	Tushar Patel	Stamp/Signature	
Printed Date:	September 14, 2022		

End of Report

Version: 19-12

DTM Version: 3.31.00

Flowmeter Verification Certificate Transmitter

Georgian Highlands Region	Drayton-Lagoon
Customer	Plant
	FIT-1
Order code	Tag Name
PROMAG 53 W DN200	1.0526 - 1.0526
Device type	K-Factor
L81D5519000	4
Serial number	Zero point
V2.03.00	V1.06.00
Software Version Transmitter	Software Version I/O-Module
14.09.2022	11:29
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550911	8812230
Production number	Production number
1.07.08	1.00.01
Software Version	Software Version
04/2022	04/2022
Last Calibration Date	Last Calibration Date

14.09.2022		
Date	Operator's Sign	Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	
Order code	
Device type	**PROMAG 53 W DN200**
Serial number	**L81D5519000**
Software Version Transmitter	**V2.03.00**
Verification date	**14.09.2022**

Plant	
Tag Name	**FIT-1**
K-Factor	**1.0526 - 1.0526**
Zero point	**4**
Software Version I/O-Module	**V1.06.00**
Verification time	**11:29**

Verification Flow end value (100 %): 452.389 m3/h
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	22.619 m3/h (5%)	1.50 %	0.73 %
✓		45.239 m3/h (10.0%)	1.00 %	0.04 %
✓		226.195 m3/h (50.0%)	0.60 %	0.10 %
✓		452.389 m3/h (100%)	0.55 %	0.04 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.001 mA
✓		4.800 mA (5%)	0.05 mA	0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.014 mA
✓		12.000 mA (50.0%)	0.05 mA	0.004 mA
✓		20.000 mA (100%)	0.05 mA	0.005 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	13.300 ms	0.000..27.625 ms	16.419 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.000 mV	0.000 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer		Plant	
Order code		Tag Name	**FIT-1**
Device type	**PROMAG 53 W DN200**	K-Factor	**1.0526 - 1.0526**
Serial number	**L81D5519000**	Zero point	**4**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.06.00**
Verification date	**14.09.2022**	Verification time	**11:29**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA activ	0.0 m3/h	200.00 m3/h		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	OFF	---	---	---		

Actual System Ident. 125.0

2022 Annual Performance Report
Mapleton Water Pollution Control Plant
ECA# 1391-B38PLA August 2, 2018

Appendix D

Environmental Incident Report

2022

Ontario Clean Water Agency
Environmental Incident Report

Facility ID:	6093	EIncidentReport
Facility Name:	Drayton Wastewater Treatment System & Lagoon	
Address:	7101 Sideroad 15	
City:	Mapleton	
Province:	Ontario	
Postal Code:	N0H	
Date of Occurrence:	05/24/2022	
Time of Occurrence:	08:03:50 AM	

Nature of the Incident

● Level 1 Contingency ○ Level 2 Contingency ○ Level 3 Contingency *Click here To Show the Definitions*

Incident affected: ☐ Air ☐ Water ☒ Land ☐ Nothing

What was discharged or emitted?

☐ Chlorine	☐ Oil/Diesel/Gas
☐ Sodium Hypochlorite	☒ Untreated or partly treated sewage
☐ Calcium Chloride	☐ Odours
☐ Aluminum Compounds (Specify in Other)	☐ Water
☐ Arsenic	☐ Iron Coagulants
☐ Fluoride	

Other: _____

If this was a discharge, spill or emission...

If a liquid, approximately what quantity was released?: 189 Litres

If a gas, approximately what quantity was released?: _____

If a solid, approximately what quantity was released?: _____ Kg

What was the source of release?:

Rodent (mole or mouse) was lodge in the air relief valve which wasn't allowing the float to close

Where did the release go?:

Onto gravel driveway and grass beside driveway

If it entered a watercourse: ○ Yes ● No

If it went off site: ● Yes ○ No

Duration of the release?: Approx. 2.5 hours

Is the release now stopped?: ● Yes ○ No

Was there any damage? (i.e. property and/or environmental): ○ Yes ● No ○ N/A

If "Yes", describe below and fill out "Insurance Claim" report

Action(s) Taken

What actions were taken to control the incident?

Foster's arrived at 10:20 am and started sucking out sewage from manhole. At 11:40am operator collected 3 PET bottles of material to have analzyed as per ECA for BOD5, TSS, TP and TKN. Once manhole was cleaned out it was discovered that the valve was leaking through the top of the relief valve. Foster's was able to close the valve on the bottom and stop the leaking at approx 11:55am. Wellington Construction arrived onsite at 2:00pm at which time they pulled the valve apart and found a rodent stuck between the plunger and the seal of the valve. This was not allowing the valve to seal properly and allowing a small amount of sewage to leak out of the air relief valve. Once the rodent was removed and valve was reinstalled the valve was operating normally. Wellington Construction completed work at approximately 3:30 pm. May 26, 2022 at 12:32pm Township remediated the contaminated area by removing the gravel and replacing with new.

What actions have been taken to remediate the incident?

This was an unfortunate event that occurred and was not an event that any one onsite had dealt with before. OCWA has semi-anual maintenance work orders that require the operator to lift the chambers as well as any other chambers within the system to check equipment inside and have the chambers cleaned out if required. These work orders will continue to be in place and completed.

Was this a reportable spill or discharge?: ● Yes ○ No

If "Yes", at what time was it first reported to the MOE?

Notification made to Rick Neubrand, MECP on May 24, 2022 at 11:08 am

Was it reported to the MOE district office?: ● Yes ○ No

If "Yes", which office/location and who was the contact?: Guelph District Office - Rick Neubrand

Was it reported to MOE SAC?: ● Yes ○ No

If "Yes", at what time was it reported to MOE SAC?:

Notification made to Dhara Pattel, SAC on May 24, 2022 at 10:45 am - Incident # 1-1TH0SR

Was it reported to Municipality?: ● Yes ○ No

If "Yes", at what time was it reported to Municipality?:

Municipality notified OCWA of the spill May 24, 2022 at 8:03am

External Assistance/Involvement

Was corporate or area office assistance requested?: ○ Yes ● No

If "Yes", was it received?: ○ Yes ○ No

Was external emergency assistance requested?: ○ Yes ● No

If "Yes", from who?: ☐ Fire Department ☐ Equipment Suppliers ☐ Canutec
☐ Ambulance or Hospital ☐ MOE ☐ Coast Guard
☐ Police ☐ Municipality

Other: _____

Was there any media involvment?: ○ Yes ● No

If "Yes", who?: _____

Was the public affected?: ○ Yes ● No

If "Yes", how?: _____

Updated By: Melissa Cortes 05/27/2022 10:59:06 AM

Comments:

-Operations was notified of incident by Township May 24, 2022 at 8:03am
-Operations arrived onsite at 10:00am to investigate and immediately notified Senior Operations Manager Don Irvine
-Operations contacted Foster May 24, 2022 at 10:20am to request their assistance
-Operations contacted Wellington Construction May 24, 2022 at 10:30am to request their assistance
-Operations notified PCT Melissa Cortes May 24, 2022 at 10:38am
-Melissa Cortes notified SAC (Dhara Pattel, Environmental Officer) May 24, 2022 at 10:45am (Incident # 1-1TH0SR)
-Melissa Cortes notified MECP (Rick Neubrand, Senior Environmental Officer) May 24, 2022 at 11:08am
-Rick Neubrand contacted Melissa Cortes May 24, 2022 at 11:35am to discuss incident
-Don Irvine contacted Rick Neubrand May 24, 2022 at 11:50am to discuss incident
-Operations collected samples of raw sewage at 11:40am
-Foster's closed valve at bottom of manhole and stopped leaking at approximately 11:55am
-Wellington Construction arrived at 2:00pm to investigate and remediate incident
-Wellington Construction completed required work at approximately 3:30pm.
-Operations notified Melissa Cortes of completion of work May 24, 2022 at 4:11pm
-Melissa Cortes notified SAC (Neil Hamilton, Environmental Officer) May 24, 2022 at 4:17pm to update approximate volume, cause of incident and actions taken.
-Township scrapped driveway and replaced gravel of affected area to remove content spilled from manhole on May 26, 2022
-Melissa Cortes notified SAC (Blake Turner, Environmental Officer) May 27, 2022 at 8:58am that effected area was cleaned up and completed