Ontario Clean Water Agency
Agence Ontarienne Des Eaux

WIARTON
WASTEWATER TREATMENT PLANT

ANNUAL PERFORMANCE REPORT

For the period of
JANUARY 1, 2019 TO DECEMBER 31, 2019

Prepared by the Ontario Clean Water Agency
For The Corporation of the Town of South Bruce Peninsula

1. System Description

The Wiarton Wastewater Treatment System began operating in its present configuration in 2016. The facility includes a three (3)-cell Moving Bed Bioreactor System (MBBR), a three (3)-cell (6ha.) waste stabilization lagoon system that is aerated and operated in series configuration, a Dynasand Filtration System and a UV disinfection System.

The collection system serves the former Town of Wiarton. All raw sewage, including waste from the Wiarton Water Filtration Plant sewage pump station is collected at Sewage Pump Station no. 1 (SPS no.1) located at the intersection of George and Taylor Street. SPS no.1 is equipped with two (2) 60 hp 1775 rpm sewage pumps located in a dry well each with a rated capacity of 103.0 L/s at a TDH of 29.0 m (one duty, one standby) and a combined rated capacity of 130 L/s at a TDH of 39.0 m. The dry well is equipped with a forcemain air relief and vacuum relief valve. The sewage is then pumped to Sewage Pump Station no.2 (SPS no.2) located at the intersection of Taylor and Elm Street. SPS no.2 is equipped with three (3) 90 hp sewage pumps located in a wet well each with a rated capacity of 116 L/s at a TDH of 30.5 m (one (1) duty, two (2) standby), and two pumps in parallel having a rated capacity of 164.81 L/sec at a TDH of 36.68m (two (2) duty, one (1) standby) From there, the raw sewage is pumped to a three (3)-cell MBBR System and then flows to a three (3)-cell waste stabilization lagoon system which provides effluent polishing. Coagulant is injected at the MBBR effluent to provide precipitation of phosphorous in the lagoons. The discharge from lagoon cell #3 is continuous.

The Septage Receiving Station has controlled access and a magnetic flow meter to record volumes of septage being received. The Septage Receiving Station discharges to the MBBR.

Hypochlorite solution dosing is performed (before filtration and UV disinfection) for seasonal chlorination of lagoon effluent for control of algae growth between May and September of each year.

Disinfection that utilizes the UV disinfection system is only required from May 15 to September 15 but is currently being operated year round.

The plant discharge utilizes the pipe located on Mary Street to Isaac Street (original) as well as the original abandoned force main on Taylor Street. Both pipes intersect at the discharge pipe located at George and Tyson Streets.

An overview of the Wiarton Wastewater Treatment System can be found in Table 1 and a summary of the monitoring program can be found in.

Table 1. Wiarton Wastewater Treatment System Overview

Facility Name	Wiarton Wastewater Treatment Plant
Facility Type	MBBR 3-cell, Aerated Lagoon3-cell, Sand Filtration, UV disinfection with pumping stations (3)
Plant Classification	II
Works Number	20002681
Recommended Rated Capacity	4,400 m^3/day
Number of Households	1,100
Receiving Water	Colpoy's Bay (Georgian Bay)
Environmental Compliance Approval Certificate of Approval	ECA 6045-ARDJS7
	3-0709-82-006 (Air)

Table 2. Monitoring Program for Wiarton WWTP

Source	Parameter	Frequency	Method
Influent	Flow (m^3)	Daily	Flow Meter
	BOD_5, TSS, TP, TKN	Monthly	External Analysis
Effluent	Flow (m^3)	Daily	Flow Meter
	$CBOD_5$, TSS, Total Ammonia Nitrogen (TAN), Total Phosphorus	Bi-Weekly	External Analysis
	E. Coli	Bi-Weekly	External Analysis
	pH, Temperature	Bi-Weekly	In-House & External Analysis
	Temperature	Bi-Weekly	In-House & External Analysis
Septage	Flow (m^3)	Daily	Flow Meter
	BOD5, Total Suspended Solids, Total Phosphorous, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen (TAN), Chemical Oxygen Demand Organics: Acetone, Benzene, Ethylbenzene, Isopropyl alcohol, Methyl alcohol, Methylene Chloride, Methyl ethyl, ketone, Toluene, Xylene	Monthly	External Analysis
	Metals: Aluminum, Arsenic, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Tin, Zinc	Quarterly	External Analysis
MBBR	DO, pH, Temperature, Ammonia	Daily	Online analyzers
	BOD, TSS, Alkalinity, Total Phosphorous*	Bi-Weekly	External Analysis

*Not required by ECA 6045-ARDJS7

2. Monitoring Data

ECA 6045-ARDJS7, Section 11.4

(a). a summary and interpretation of all Influent and Imported Sewage monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;

(b). a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

2.1 Sampling Frequency

Both raw sewage and effluent are sampled on a regular basis. The sampling types and frequencies are summarized in Table 3,4 and 5. The sampling frequencies either meet or exceed the requirements set out in ECA 6045-ARDJS7.

Table 3. Raw Sewage Monitoring – Sampling Frequencies as Required

Parameter	Sample Type	Frequency
BOD_5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorous	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Table 4. Effluent Sampling Monitoring – Sampling Frequencies as Required

Parameters	Sample Type	Frequency
$CBOD_5$	8-hr Composite	Bi-weekly
Total Suspended Solids	8-hr Composite	Bi-weekly
Total Phosphorous	8-hr Composite	Bi-weekly
Total Ammonia Nitrogen (TAN)	8-hr Composite	Bi-weekly
E. Coli	Grab	Bi-weekly
pH	Grab	Bi-weekly
Temperature	Grab	Bi-weekly

Table 5. Imported Sewage Monitoring – Sampling Frequencies as Required by Schedule D of ECA 6045-ARDJS7

Parameters	Sample Type	Frequency
BOD_5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorous	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly
Total Ammonia Nitrogen (TAN)	Grab	Monthly
Chemical Oxygen Demand	Grab	Monthly
Organics: Acetone, Benzene, Ethylbenzene, Isopropyl alcohol, Methyl alcohol, Methylene Chloride, Methyl ethyl, ketone, Toluene, Xylene	Grab	Monthly
Metals: Aluminum, Arsenic, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Tin, Zinc	Grab	Quarterly

2.2 Effluent Limits

The effluent limits that are to be met as per ECA 6045-ARDJS7 for the Wiarton Sewage Treatment Lagoon are found in Table .

Table 6. Effluent Limits as per ECA 6045-ARDJS7.

Effluent Parameter	Monthly Average Concentration (mg/L) *	Monthly Average Waste Loading (kg/day)
$CBOD_5$	15	66
Total Suspended Solids	15	66
Total Phosphorous as P	0.3	1.32
Total Ammonia Nitrogen (May 1 to October 31)	3	13.2
Total Ammonia Nitrogen (November 1 to April 30)	6	26.4
pH	Maintained between 6.0 to 9.5, inclusive, at all times	
E. Coli	Not to exceed 200 cfu/100 mL geometric mean density from May 15 to September 15	

**Under ECA 6045-ARDJS7 "Monthly Average Effluent Concentration" means the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, weighted by the quantity of the Final Effluent discharged per the days deemed to be represented by each sample*

2.3 Comparison of Data to Limits/Design Values

Analytical and monitoring data for the Wiarton Wastewater Treatment System is housed in OCWAs data management system (PDM). Annual and monthly averages for flows, CBOD, BOD_5, Suspended Solids, Total Phosporous as P, Nitrogen-series and E.coli can be found in Appendix A. Comparisons of analytical data from effluent samples to the effluent limits show the following removal efficiencies:

Table 7. 2019 Effluent Annual Average Concentrations and Removal Efficiencies

Parameter	Annual Average Concentration	Removal Efficiency
$CBOD_5$	3.0	n/a
Total Suspended Solids	5.7	99.3%
Total Phosphorous	0.04	99.5%

The following is a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Table .

Table 8. Comparison of Wiarton Wastewater Treatment System Monitoring Data to Effluent Limits, 2019

2019	$CBOD_5$				Total Suspended Solids				Total Phosphorous				Total Ammonia Nitrogen (TAN)				E. Coli	
	Monthly Average (mg/L)	**Within Limits** (15 mg/L)	**Monthly Average Loading** (kg/d)	**Within Limits** (66 kg/day)	**Monthly Average** (mg/L)	**Within Limits** (15 mg/L)	**Monthly Average Loading** (kg/d)	**Within Limits** (66 kg/day)	**Monthly Average** (mg/L)	**Within Limits** (0.3 mg/L)	**Monthly Average Loading** (kg/d)	**Within Limits** (1.32 kg/day)	**Monthly Average** (mg/L)	**Within Limits** (Nov 1 to Apr 1 - 6.0 mg/L & May 1 to Oct 31 – 3.0 mg/L)	**Monthly Average Loading** (kg/d)	**Within Limits** (Nov 1 to Apr 1 - 13.2 kg/day & May 1 to Oct 31 – 26.4 kg/day)	**Mean Geometric Density** (cfu/100 mL)	**Within Limits** (200 cfu/100 mL)
January	6.0	Y	10.5	Y	10.2	Y	17.7	Y	0.06	Y	0.10	Y	0.11	Y	0.20	Y		n/a
February	4.0	Y	7.2	Y	10.6	Y	19.0	Y	0.07	Y	0.13	Y	0.33	Y	0.57	Y		n/a
March	2.3	Y	6.3	Y	6.4	Y	17.2	Y	0.04	Y	0.07	Y	0.43	Y	0.75	Y		n/a
April	4.0	Y	11.8	Y	5.4	Y	16.2	Y	0.03	Y	0.10	Y	0.65	Y	1.94	Y		n/a
May	7.5	Y	13.5	Y	12.3	Y	22.3	Y	0.05	Y	0.10	Y	0.12	Y	0.22	Y		Y
June	2.0	Y	4.0	Y	6.4	Y	12.7	Y	0.03	Y	0.07	Y	0.56	Y	1.12	Y		Y
July	2.0	Y	2.7	Y	3.6	Y	5.0	Y	0.03	Y	0.04	Y	0.76	Y	1.04	Y		Y
August	2.0	Y	1.3	Y	3.4	Y	2.3	Y	0.03	Y	0.02	Y	0.32	Y	0.21	Y		Y
September	2.0	Y	1.3	Y	2.9	Y	1.8	Y	0.03	Y	0.02	Y	0.10	Y	0.06	Y		Y
October	2.0	Y	3.0	Y	2.0	Y	3.1	Y	0.03	Y	0.05	Y	0.10	Y	0.15	Y		n/a
November	2.0	Y	3.5	Y	4.0	Y	7.2	Y	0.03	Y	0.05	Y	0.52	Y	0.92	Y		n/a
December	2.0	Y	4.7	Y	3.4	Y	8.0	Y	0.03	Y	0.08	Y	0.40	Y	0.94	Y		n/a

**"Monthly Average Effluent Concentration" means the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, weighted by the quantity of the Final Effluent discharged per the days deemed to be represented by each sample*

During the reporting period there was no reportable instance where the sewage lagoon system exceeded the effluent limits set out in the ECA.

Another measure of effluent quality is pH, as per ECA 6045-ARDJS7 the effluent pH is to remain within the range of 6.0 and 9.5 at all times. In 2019, the effluent was within the effluent limits and ranged from 6.53 to 8.46with an annual average of7.59. A monthly summary of pH can be found in Table 9

Table 9. Monthly Summary of pH for the Wiarton Wastewater Treatment System, 2019

	Average	Minimum	Maximum
January	7.60	6.65	8.23
February	7.49	7.33	7.74
March	7.19	7.14	7.24
April	7.80	7.44	8.29
May	7.77	7.27	8.13
June	7.57	7.30	7.90
July	7.26	7.14	7.37
August	7.12	7.12	7.12
September	7.26	7.10	7.55
October	7.25	6.53	7.74
November	7.95	7.80	8.17
December	8.32	8.05	8.46

2.4 Effluent Objectives

The effluent objectives as per ECA 6045-ARDJS7 for the Wiarton Wastewater Treatment Lagoon are found in Table 10.

Table 10. Effluent Objectives as per ECA 6045-ARDJS7.

Effluent Parameter	Monthly Average Concentration (mg/L) *	Monthly Average Waste Loading (kg/day)
$CBOD_5$	10	n/a
Total Suspended Solids	10	n/a
Total Phosphorous as P	0.15	n/a
Total Ammonia Nitrogen (May 1 to October 31)	3	n/a
Total Ammonia Nitrogen (November 1 to April 30)	6	n/a

**Under ECA 6045-ARDJS7 "Monthly Average Effluent Concentration" means the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, weighted by the quantity of the Final Effluent discharged for the days deemed to be represented by each sample*

2.5 Comparison of Data to Effluent Objectives

ECA 6045-ARDJS7, Section 11.4. b) a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;)

g) a summary of efforts made to achieve the design objectives;

The Owner shall make an assessment of the issues and recommendations for pro-active actions if any is required under the following situations and include in the annual report to the Water Supervisor:

- *a. when any of the design objectives is not achieved more than 50% of the time in a year;*

During the reporting period, the plant effluent was within the effluent objectives 75% of the time. Refer to Table 11 for detailed laboratory analysis results in comparison to the effluent objectives.

Table 11. Comparison of Wiarton Wastewater Treatment System Monitoring Data to Effluent Objectives, 2019

2019	$CBOD_5$		Total Suspended Solids		Total Phosphorous		Total Ammonia Nitrogen (TAN)	
	Monthly Average (mg/L)	**Within Objective** (10 mg/L)	**Monthly Average** (mg/L)	**Within Objective** (10 mg/L)	**Monthly Average** (mg/L)	**Within Objective** (0.15 mg/L)	**Monthly Average** (mg/L)	**Within Objective** (Nov 1 to Apr 1 - 6.0 mg/L & May 1 to Oct 31 – 3.0 mg/L)
January	6.0	Y	10.2	**N**	0.06	Y	0.11	Y
February	4.0	Y	10.6	**N**	0.07	Y	0.33	Y
March	2.3	Y	6.4	Y	0.04	Y	0.43	Y
April	4.0	Y	5.4	Y	0.03	Y	0.65	Y
May	7.5	Y	12.3	**N**	0.05	Y	0.12	Y
June	2.0	Y	6.4	Y	0.03	Y	0.56	Y
July	2.0	Y	3.6	Y	0.03	Y	0.76	Y
August	2.0	Y	3.4	Y	0.03	Y	0.32	Y
September	2.0	Y	2.9	Y	0.03	Y	0.10	Y
October	2.0	Y	2.0	Y	0.03	Y	0.10	Y
November	2.0	Y	4.0	Y	0.03	Y	0.52	Y
December	2.0	Y	3.4	Y	0.03	Y	0.40	Y

**"Monthly Average Effluent Concentration" means the arithmetic mean of all Single Sample Results of the concentration of a contaminant in the Final Effluent sampled or measured during a calendar month, weighted by the quantity of the Final Effluent discharged per the days deemed to be represented by each sample*

2.6 Effluent Monitoring

The total effluent flow in 2019 was 601,748 m^3 with an annual average daily flow of 1,650m^3/day. Total effluent flows in 2019 have increased in comparison to 2018.

2.7 Influent Monitoring

ECA 6045-ARDJS7, Section 11.4. a) a summary and interpretation of all Influent and Imported Sewage monitoring data, including sewage characteristics, flow rates and a comparison to the values used in the design of the Works;

The total influent flow in 2019 was 687,706 m^3 with an annual average daily flow of 1,884 m^3/day, which is 42.8% of the recommended rated capacity of 4,400 m^3/day. Total influent flows in 2019 have increased in comparison to 2018. The daily influent flow remained within the recommended rated capacity 97.2% (i.e. 355 out of 365 days) of the time during 2019.

Table 12: Influent Characteristics

	Minimum	Average	Maximum
BOD5 (mg/L)	60	151.75	341
TSS (mg/L)	48	179	447
TKN (mg/L)	9.2	22.4	61.2
Total Phosphorous	1.020	2.544	6.200

In 2019, approximately 2,339 m^3 of septage was received by the Wiarton Wastewater Treatment System. This is very similar to 2018 (2,325.79 m^3) but is lower than 2017 (2,724.86m^3) volumes. ECA 6045-ARDJS7 requires monthly septage samples to be tested for BOD5, Total Suspended Solids, Total Phosphorous, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen (TAN), Chemical Oxygen Demand, Organics and Metals (Quarterly). Biochemical Oxygen Demand (BOD5), Total Phosphorus and Chemical Oxygen Demand are fairly stable; Total Suspended Solids, Total Kjeldahl Nitrogen (TKN) and Total Ammonia seem to vary significantly between samples. Refer to Appendix F for Septage Laboratory Results.

Table 13: Septage Receiving Characteristics

	Minimum	Maximum
Biochemical Oxygen Demand (BOD5) [mg/L]	403	5220
Total Suspended Solids [mg/L]	193	8,830
Chemical Oxygen Demand [mg/L]	1260	10,400
Ammonia+Ammonium (N) [mg/L]	13.1	197
Total Kjeldahl Nitrogen [as N mg/L]	83.5	298
Phosphorus (total) [mg/L]	9.49	40.10
Isopropyl Alcohol [µg/L]	<5000	<5000
Methyl alcohol [µg/L]	<5000	<5000
Acetone [µg/L]	101	<1200
Benzene [µg/L]	<0.5	<20
Ethylbenzene [µg/L]	<0.5	<20
Methylene Chloride [ug/L]	<0.5	<20
Methyl ethyl ketone [µg/L]	<20	<800
Toluene [µg/L]	20.9	998
Xylene (total) [µg/L]	<0.5	<20
o-xylene [µg/L]	<0.5	<20
m/p-xylene [µg/L]	<0.5	<20
Aluminum (mg/L)	0.32	8.19
Arsenic (mg/L)	0.001	0.02
Barium (mg/L)	0.042	0.834

Cadmium (mg/L)	0	0.007
Calcium (mg/L)	82.7	197
Chromium (mg/L)	0.001	0.035
Cobalt (mg/L)	0	0.009
Copper (mg/L)	0.037	5.25
Iron (mg/L)	1.77	14.20
Lead (mg/L)	0.001	0.054
Magnesium (mg/L)	22.6	45.3
Manganese (mg/L)	0.190	0.457
Mercury (mg/L)	0	0.001
Nickel (mg/L)	0.004	0.044
Potassium (mg/L)	36.2	71.4
Selenium (mg/L)	<0.001	0.02
Silver (µg/L)	<0.05	<80
Zinc (mg/L)	0.073	6.72

2.8 Additional Monitoring Parameters

The following parameters do not have effluent limits or objectives but are monitored on a regular basis (see Section 2.1 for sampling frequency) as required by ECA 6045-ARDJS7.

2.8.1 Flows

The Owner shall make an assessment of the issues and recommendations . for pro-active actions if any is required under the following situations and include in the annual report to the Water Supervisor:

- *b. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity.*

The total influent flow (including MBBR bypasses and Septage Receiving) in 2019 was 687,706 m^3 with an annual average daily flow of 1,884 m^3/day, which is 49.2% of the rated capacity of 4,400 m^3/day. The daily influent was within the recommended rated capacity 97.2% (i.e. 355 out of 365 days) of the time during 2019. Total influent flows in 2019 have increased in comparison to 2018.

A summary of the average and maximum daily flows (not including the Septage Receiving and MBBR Bypasses) on a monthly basis can be found in Table 14. It should be noted that a maximum or average day flow for the month does not indicate that the rated capacity was exceeded for every day of the entire month. Daily flows which exceeded the recommended rated capacity were typically due to high precipitation. For more detailed information regarding flows, refer to Appendix A.

Table 14. Average Daily Raw Sewage Flows by Month for 2019

2019	**Maximum Daily Raw Sewage Flow** (m^3/d)	**Average Daily Raw Sewage Flow** (m^3/d)	**Annual Average** (m^3/d)	**Within Limits of Rated Capacity** *(2,500 m^3/d)*
January	2,918	1,614	1,883	Yes
February	6,523	2,213		
March	11,830	3,079		
April	7,674	3,470		
May	3,569	2,093		
June	3,693	1,866		
July	1,427	1,106		
August	1,184	919		
September	2,092	1,084		
October	3,520	1,240		
November	2,068	2,571		
December	1,844	2,337		

2.8.2 TKN

A parameter which is monitored on a regular basis but does not have effluent limits or objectives is TKN. The annual average TKN has decreased since 2015 (i.e. 1.01 mg/L in 2019, 0.83 mg/L in 2018, 1.16 mg/L in 2017, 3.46 mg/L in 2016, and 4.75 mg/L in 2015).

Table 15. Monitoring Parameters for Wiarton Wastewater Treatment System, 2019

Parameters	Average	Minimum	Maximum
Total Kjeldahl Nitrogen (N mg/L)	1.01	0.50	1.90

2.9 Success & Adequacy of the System

Based upon a review of the analytical and monitoring data in comparison to the effluent limits and objectives it can be concluded that the Wiarton Wastewater Treatment System is performing adequately and successfully. The system shows a high removal efficiency and was within effluent limits. Regular monitoring and necessary process changes will continue to be made to best optimize the system and enable the system to be within the effluent objectives for a greater period of time.

3. Operating Challenges & Corrective Actions

ECA 6045-ARDJS7, Section 11.4. c) a summary of all operating issues encountered and corrective actions taken;(ECA 6045-ARDJS7)

There was one overflow at pump station 1 and one spill at the Wiarton Wastewater Treatment System. Intermittent power bumps which causes the treated sewage to bypass UV disinfection remain an operational challenge for 2019. All required bypass reporting was completed and Operations staff were able to maintain good overall performance of the sewage lagoon system.

4. Major Maintenance & Emergency Repairs

ECA 6045-ARDJS7, Section 11.4. d) a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

- Replaced multiple ballasts and uv lamps on UV System
- Repaired UV wiper system
- A new diesel generator and transfer switch were installed on the MBBR site.
- Installed reset button on pump 1 controller at pump station 1.
- Installed 2 new alum feed lines at MBBR
- Replaced pump end on filter building wet well pump.
- Installed 2 new motor starter relays in filter building wet well pumps.

5. Effluent Quality Assurance/Control Measures

ECA 6045-ARDJS7, Section 11.4. e) a summary of any effluent quality assurance or control measures undertaken;

All laboratory analyzed raw sewage and effluent samples (Section 3.1) are analyzed by SGS Canada Inc., which is an ISO 17025 accredited laboratory. Calibrations and preventative maintenance are performed on facility equipment and monitoring equipment, see Section 6 for more details. In addition to sample analysis, preventative maintenance is scheduled for key equipment in the sewage lagoon system and pumping stations on at least a monthly basis. Maintenance activities were scheduled within the work management system MAXIMO.

OCWA as the Operating Authority (on behalf of the Owner) has made best efforts to control the effluent quality in a manner that it remains within the Effluent Objectives in the ECA. The measures taken to support these efforts include:

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

6. Calibration & Maintenance

ECA 6045-ARDJS7, Section 11.4.f. requires a summary of the calibration and maintenance carried out on all Influent, Imported Sewage and Final Effluent monitoring equipment;

All in-house monitoring equipment was calibrated as per manufacturer's recommendations. Monitoring and metering equipment was also calibrated by a third party and is done so on an annual basis. In addition to sample analysis, preventative maintenance is scheduled for all equipment at the sewage lagoon system and pumping stations on at least a monthly basis. Maintenance activities were scheduled within the work management system MAXIMO, upon completion, Operators charge there time to the work order and close it off.

OnMay 11, 2019, Indus Controls performed an annual third party instrument verification of the influent, final effluent, Septage Receiving and sewage pumping station #1 and #2 flowmeters. All flow meters passed the annual verification all with percent errors of less than 5%. All records for calibrations/ verifications can be found in Appendix B.

OnMay 14, 2019, HACH performed an annual third party instrument verification of the DO probes, and pH analyzers. All instrumentation passed the annual verification. All records for calibrations/verifications can be found in Appendix B.

7. Sludge Generation and Handling

ECA 6045-ARDJS7, Section 11.4.h) a tabulation of the volume of sludge generated, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;

Since the facility is a sewage lagoon system, accumulated sludge is stored in the lagoon cells. No sludge was disposed of in 2019 and no sludge is expected to be removed in 2020.

8. Septage Receiving Works

In 2019, approximately 2,339m^3 of septage was received by the Wiarton Wastewater Treatment System. The septage was received from various sources including:

- Owen Sound Septic Services
- Grey Bruce Septic Services
- Bluewater Sanitation
- D&S Portables

The total monthly volume of septage received can be found in Table 166.

Table 16. Total Volume of Septage Received in 2019

Month	Total Volume of Septage Received (m^3)
January	177.6
February	169.1
March	166.8
April	183.6
May	203.7
June	200.2
July	286.0
August	253.0
September	159.3
October	160.4
November	145.8
December	233.2

9. Community Complaints

ECA 6045-ARDJS7, Section 11.4.i) a summary of any complaints received and any steps taken to address the complaints;

During 2019, eleven (11)community complaints for the Wiarton Wastewater Treatment System were received regarding sewer lateral services blockages. A detailed summary of the community complaints and the steps taken to address the complaints can be found in Appendix C.

10. By-passes, Spills, Overflows and Abnormal Discharge Events

ECA 6045-ARDJS7, Section 11.4.j) a summary of all Bypasses, Overflows, spills within the meaning of Part X of EPA and abnormal discharge events, and other abnormal operating conditions;

There was one (1) overflow and one (1) spill in 2019 at the Wiarton Wastewater Treatment System. All required information was recorded and the appropriate notifications were made to the Spills Action Centre, Ministry of Environment, Conservation and Parks (MECP), Ministry of Health and Long Term Care, the Town of South Bruce Peninsula and Environment Canada. Refer to Table 17 for a summary.

Table 17. Overflow / Spill Events

Environmental Incident #	Date	Time		Duration HH:MM	Volume (M^3)	Treatment Process	Reason for Overflow	Samples
		Start	End					
902841	March 14-15, 2019	21:12	05:40	8:28	290	Pump Station #1	Heavy Rain/ Snow Melt	CA13301-MAR19
4656-BAASL6	March 15, 2019	14:00	14:48	0:48	100	MBBR	Clogged Screens	CA13302-MAR19

During the reporting period, seven (7)bypasses of final effluent (total volume of 33,140.1 m^3) being discharged without receiving all of the required treatment were reported. All required information was recorded and the appropriate notifications were made to the Spills Action Centre, Ministry of Environment, Conservation and Parks (MECP), Ministry of Health and Long Term Care, the Town of South Bruce Peninsula and Environment Canada. Refer to Table 18 for a summary and Appendix D for detailed by-pass reports.

ECA 6045-ARDJS7 requires that Quarterly bypass/overflow reports are to be submitted to the Water Supervisor. All 2019 quarterly reports were submitted to the Water Supervisor by the deadlines specified in the ECA and have been included in Appendix D.

Table 18. Bypass Events

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(m^3)		
March 14-15, 2019	21:30	11:47	14:17	452.6	MBBR	Heavy rains and snow melt
March 15–21, 2019	14:48	10:56	140:08	31,000	MBBR	Clogged MBBR screens
April 16, 2019	22:35	23:20	0:45	74.2	UV	Power outage
April 18, 2019	18:45	21:40	2:55	154	MBBR	Heavy rains.
May 29, 2019	08:00	12:00	4:00	340	MBBR	Planned maintenance: installation of a transfer switch for new generator.
August 28-29, 2019	16:50	09:30	16:40	1,100	UV	UV system faulted
August 30, 2019	19:38	19:56	0:18	19.5	UV	UV System faulted due to Phase loss

11. Notice of Modifications

ECA 6045-ARDJS7, Section 11.4. k.) a copy of all Notice of Modifications to Sewage Works submitted to the Water Supervisor under paragraph 1.d. of Condition 10, with a summary report on status of implementation of all modification.

No Notices of Modifications have been submitted to the Water Supervisor during the reporting period.

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix A

Performance Assessment Report

Ontario Clean Water Agency
Performance Assessment Report Wastewater/Lagoon

Report extracted 03/27/2020 09:08

From: **01/01/2019 to 31/12/2019**

Facility: **[5620] WIARTON WASTEWATER TREATMENT LAGOON**

Works: **[110000819]**

	01/2019	02/2019	03/2019	04/2019	05/2019	06/2019	07/2019	08/2019	09/2019	10/2019	11/2019	12/2019	<--Total-->	<--Avg.-->	<--Max.-->	<--Criteria-->
Flows:																
Raw Flow: Total - Raw Sewage (m^3)	50029.00	61977.00	95437.00	104110.00	64890.00	55983.00	34291.00	28485.00	32514.00	38448.00	62048.00	57155.00	685367.00			
Raw Flow: Avg - Raw Sewage (m^3/d)	1613.84	2213.46	3078.61	3470.33	2093.23	1866.10	1106.16	918.87	1083.80	1240.26	2068.27	1843.71		1883.05		
Raw Flow: Max - Raw Sewage (m^3/d)	2918.00	6523.00	11830.00	7674.00	3569.00	3693.00	1427.00	1184.00	2092.00	3520.00	4027.00	4592.00			11830.00	
Eff. Flow: Total - Effluent (m^3)	54044.00	50091.00	83620.00	87310.00	56165.00	43467.00	37553.00	20442.00	20513.00	47168.00	53236.00	48139.00	601748.00			
Eff. Flow: Avg - Effluent (m^3/d)	1743.35	1788.96	2697.42	2910.33	1811.77	1448.90	1211.39	659.42	683.77	1521.55	1774.53	1552.87		1650.36		
Eff. Flow: Max - Effluent (m^3/d)	6087.00	6389.00	6765.00	7995.00	4334.00	3118.00	3213.00	1933.00	3025.00	3094.00	2770.00	3317.00			7995.00	
Carbonaceous Biochemical Oxygen Demand: CBOD:																
Eff: Avg cBOD5 - Effluent (mg/L)	5.667	4.000	< 2.000	4.500	< 6.000	< 2.000	< 2.000	< 2.000	< 2.000	< 2.000	< 2.000	< 2.000		< 3.014	6.000	20.0
Eff: # of samples of cBOD5 - Effluent (mg/L)	3	2	2	2	3	2	2	2	2	3	2	2	27			
Loading: cBOD5 - Effluent (kg/d)	9.879	7.156	< 5.395	13.097	< 10.871	< 2.898	< 2.423	< 1.319	< 1.368	< 3.043	< 3.549	< 3.106		< 5.342	13.097	
Biochemical Oxygen Demand: BOD5:																
Raw: Avg BOD5 - Raw Sewage (mg/L)	98.500	85.000	140.000	70.000	60.000	118.000	184.000	341.000		295.000	126.000			151.750	341.000	
Raw: # of samples of BOD5 - Raw Sewage (mg/L)	2	1	1	1	1	1	1	1	0	1	1		11			
Total Suspended Solids: TSS:																
Raw: Avg TSS - Raw Sewage (mg/L)	105.000	69.000	93.000	87.000	48.000	179.000	231.000	447.000		405.000	122.000			178.600	447.000	
Raw: # of samples of TSS - Raw Sewage (mg/L)	2	1	1	1	1	1	1	1	0	1	1		11			
Eff: Avg TSS - Effluent (mg/L)	10.250	10.600	6.250	5.000	11.000	6.000	3.500	3.000	2.500	< 3.667	3.000	3.500		< 5.689	11.000	24.0
Eff: # of samples of TSS - Effluent (mg/L)	4	5	4	2	5	2	2	2	2	3	2	2	35			
Loading: TSS - Effluent (kg/d)	17.869	18.963	16.859	14.552	19.930	8.693	4.240	1.978	1.709	< 5.579	5.324	5.435		< 10.094	19.930	
Percent Removal: TSS - Raw Sewage (mg/L)	90.238	84.638	93.280	94.253	77.083	96.648	98.485	99.329		99.095	97.541				99.329	
Total Phosphorus: TP:																
Raw: Avg TP - Raw Sewage (mg/L)	1.445	1.270	2.330	1.020	1.640	3.110	3.520	6.200		3.210	1.690			2.544	6.200	
Raw: # of samples of TP - Raw Sewage (mg/L)	2	1	1	1	1	1	1	1	0	1	1		11			
Eff: Avg TP - Effluent (mg/L)	0.057	0.070	< 0.050	< 0.035	0.053	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.035		< 0.040	0.070	0.5
Eff: # of samples of TP - Effluent (mg/L)	3	2	2	2	3	2	2	2	2	3	2	2	27			
Loading: TP - Effluent (kg/d)	0.099	0.125	< 0.135	< 0.102	0.097	< 0.043	< 0.036	< 0.020	< 0.021	< 0.046	< 0.053	< 0.054		< 0.069	0.135	
Percent Removal: TP - Raw Sewage (mg/L)	96.078	94.488	97.854	96.569	96.748	99.035	99.148	99.516		99.065	98.225				99.516	
Nitrogen Series:																
Raw: Avg TKN - Raw Sewage (mg/L)	13.600	11.400	20.500	9.200	15.700	21.800	33.100	61.200		20.400	17.200			22.410	61.200	
Raw: # of samples of TKN - Raw Sewage (mg/L)	2	1	1	1	1	1	1	1	0	1	1		11			
Eff: Avg TAN - Effluent (mg/L)	< 0.100	0.350	0.650	< 0.100	0.367	0.250	0.150	0.150	< 0.100	< 0.100	0.700	0.250		< 0.272	0.700	3.0 - 8.0
Eff: # of samples of TAN - Effluent (mg/L)	4	2	2	2	3	2	2	2	2	3	2	2	28			
Loading: TAN - Effluent (kg/d)	< 0.174	0.626	1.753	< 0.291	0.664	0.362	0.182	0.099	< 0.068	< 0.152	1.242	0.388		< 0.500	1.753	
Eff: Avg NO3-N - Effluent (mg/L)	4.543	5.005	4.695	2.920	< 0.743	0.630	0.200	0.420	0.635	1.470	4.430	5.615		< 2.609	5.615	
Eff: # of samples of NO3-N - Effluent (mg/L)	3	2	2	2	3	2	2	2	2	3	2	2	27			
Eff: Avg NO2-N - Effluent (mg/L)	0.043	0.065	0.085	0.030	< 0.073	0.110	< 0.030	< 0.030	< 0.030	< 0.040	0.215	0.090		< 0.070	0.215	
Eff: # of samples of NO2-N - Effluent (mg/L)	3	2	2	2	3	2	2	2	2	3	2	2	27			
Disinfection:																
Eff: GMD E. Coli - Effluent (cfu/100mL)	2.000	2.000	2.000	2.000	6.073	4.000	2.000	57.966	2.000	2.000	8.485	2.000		7.710	57.966	

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix B

Calibration Reports

CUSTOMER: OCWA WEST HIGHLANDS
LOCATION: WIARTON P/S 1, 526 TAYLOR ST, WIARTON.

VERIFICATION REPORT

EQUIPMENT ITEM: MAGNETIC FLOW METER
TAG NAME : TAYLOR STREET
LOCATION: WIARTON-P/S #1
MANUFACTURER: KROHNE
PART NUMBER: IFC-010D
SERIAL NO.: A99 11651

REPORT NO.: CO1069-1906-20
SERVICE DATE: June 11, 2019
SERVICE BY: SAGAR PATEL
JOB NO.: CO1069-1906

	STATUS	COMMENT
MOUNTING	A	
ELECTRICAL	A	
CERTIFICATION	A	
NAMEPLATE	A	

STATUS LEGEND
A: INSPECTED AND FOUND ACCEPTABLE
B: INSPECTED, FOUND DEFECTIVE AND CORRECTED
C: INSPECTED, FOUND DEFECTIVE AND NOT CORRECTED
D: NOT INSPECTED

OUTPUT	SIGNAL	PROCESS
TYPE:	mA	L/S
MIN.:	4.00	0
MAX:	20.00	200

INPUT/OUTPUT INFORMATION			BEFORE READINGS		AFTER READINGS	
CAL INPUT	OUTPUT SIGNAL	FLOW METER READING(L/S)	OUTPUT	% ERROR	OUTPUT	% ERROR
0	4.00	0.00	3.99	0.25%	3.99	0.25%
A	4.86	10.78	4.86	0.00%	4.86	0.00%
B	5.73	21.57	5.71	0.35%	5.71	0.35%
C	7.45	43.14	7.44	0.13%	7.44	0.13%
D	12.63	107.84	12.61	0.16%	12.61	0.16%

PARAMETES AND SETTINGS

GKL-4.5050, DIAMETER-200mm/8", FULL SCALE-200 L/SEC

TEST EQUIPMENT

TYPE:	CALIBRATOR	DIGITAL MULTIMETER
MANUFACTURER:	KROHNE	FLUKE
MODEL:	GS8B	179
SERIAL NO.:	U1727700065002	29660064

Comments:

Result:

SERVICE BY: SAGAR PATEL **DATE:** June 11, 2019

WITNESS BY: **DATE:**

CUSTOMER:OCWA WEST HIGHLANDS
LOCATION: WIARTON PUMPING STATION -2

VERIFICATION REPORT

EQUIPMENT ITEM: MAGNETIC FLOW METER
TAG NAME : TAYLOR STREET
LOCATION: WIARTON-P/S #2
MANUFACTURER: KROHNE
PART NUMBER: IFC-010D
SERIAL NO.: A98 17181

REPORT NO.: CO1069-1906-21
SERVICE DATE: June 11, 2019
SERVICE BY: SAGAR PATEL
JOB NO.: CO1069-1906

	STATUS	COMMENT
MOUNTING	A	
ELECTRICAL	A	
CERTIFICATION	A	
NAMEPLATE	A	

STATUS LEGEND
A: INSPECTED AND FOUND ACCEPTABLE
B: INSPECTED, FOUND DEFECTIVE AND CORRECTED
C: INSPECTED, FOUND DEFECTIVE AND NOT CORRECTED
D: NOT INSPECTED

OUTPUT	SIGNAL	PROCESS
TYPE:	mA	L/S
MIN.:	4.00	0
MAX:	20.00	250

INPUT/OUTPUT INFORMATION			BEFORE READINGS		AFTER READINGS	
CAL INPUT	OUTPUT SIGNAL	FLOW METER READING(L/S)	OUTPUT	% ERROR	OUTPUT	% ERROR
0	4.00	0.00	4.15	-3.75%	4.15	-3.75%
A	5.09	17.00	5.15	-1.18%	5.15	-1.18%
B	6.18	33.99	6.15	0.49%	6.15	0.49%
C	8.35	67.99	8.40	-0.60%	8.40	-0.60%
D	14.88	169.97	14.84	0.27%	14.84	0.27%

PARAMETES AND SETTINGS

GKL-4.5440, DIAMETER-250mm/10", FULL SCALE-250 L/SEC

TEST EQUIPMENT

TYPE:	CALIBRATOR	DIGITAL MULTIMETER
MANUFACTURER:	KROHNE	FLUKE
MODEL:	GS8B	179
SERIAL NO.:	U1727700065002	29660064

Comments:

Result:

SERVICE BY: SAGAR PATEL **DATE:** June 11, 2019

WITNESS BY:  **DATE:**

Verification report

Endress+Hauser
People for Process Automation

Verification report flowmeter

Plant operator	WWTP
Device information	
Location WWTP	**Device tag** FIT-104
Module name Promag L	**Nominal diameter** DN300 / 12"
Device name Promag 400	**Order code** 5L4C3H-2RW5/0
Serial number KC1E9919000	**Firmware version** 01.05.05
Calibration	
Calibration factor 1.3133	**Zero point** -4

Verification information	
Operating time 1126d10h35m08s	**Date/time** 11.06.19 11:50
Verification ID 4	
Verification results	
Overall result	☑ **Passed**
Detailed results	See next page

Overall result: Result of the complete device functionality test via Heartbeat Technology

Notes

Validity of the verification report is only given:
For devices with the Heartbeat Verification enabled software option
For verifications, carried out by the Endress+Hauser Service, or an authorized Endress+Hauser service provider

11.06.2019		
Date	Inspectors signature	Operator's signature

Endress+Hauser
People for Process Automation

Verification report flowmeter

Serial number: KC1E9919000
Verification detailed results Verification ID 4

Sensor	☑	**Passed**
Coil current shot time	☑	Passed
Coil hold voltage	☑	Passed
Coil current	☑	Passed
Sensor electronic module	☑	**Passed**
Reference voltage	☑	Passed
Linearity of electrode measuring circuit	☑	Passed
Offset of electrode measuring circuit	☑	Passed
I/O module	☑	**Passed**

Verification report

Endress+Hauser
People for Process Automation

Verification report flowmeter

Plant operator	Wiarton WWTP
Device information	
Location Wiarton WWTP	**Device tag** FIT-105
Module name Promag L	**Nominal diameter** DN200 / 8"
Device name Promag 400	**Order code** 5L4C2H-3K91/0
Serial number KC1E9819000	**Firmware version** 01.05.05
Calibration	
Calibration factor 1.0880	**Zero point** 0

Verification information	
Operating time 1126d02h54m47s	**Date/time** 11.06.19 11:44
Verification ID 4	
Verification results	
Overall result	☑ **Passed**
Detailed results	See next page

Overall result: Result of the complete device functionality test via Heartbeat Technology

Notes

Validity of the verification report is only given:
For devices with the Heartbeat Verification enabled software option
For verifications, carried out by the Endress+Hauser Service, or an authorized Endress+Hauser service provider

11.06.2019		
Date	Inspectors signature	Operator's signature

Endress+Hauser
People for Process Automation

Verification report flowmeter

Serial number: KC1E9819000
Verification detailed results Verification ID 4

Sensor	☑	**Passed**
Coil current shot time	☑	Passed
Coil hold voltage	☑	Passed
Coil current	☑	Passed
Sensor electronic module	☑	**Passed**
Reference voltage	☑	Passed
Linearity of electrode measuring circuit	☑	Passed
Offset of electrode measuring circuit	☑	Passed
I/O module	☑	**Passed**

Verification report

Endress+Hauser
People for Process Automation

Verification report flowmeter

Plant operator	Wiarton WWTP
Device information	
Location Wiarton WWTP	**Device tag** FIT-301
Module name Promag L	**Nominal diameter** DN100 / 4"
Device name Promag 400	**Order code** 5L4C1H-40D6/0
Serial number KC1EF119000	**Firmware version** 01.05.05
Calibration	
Calibration factor 1.3799	**Zero point** -4

Verification information	
Operating time 1126d20h02m14s	**Date/time** 11.06.19 12:02
Verification ID 4	
Verification results	
Overall result	☑ **Passed**
Detailed results	See next page

Overall result: Result of the complete device functionality test via Heartbeat Technology

Notes

Validity of the verification report is only given:
For devices with the Heartbeat Verification enabled software option
For verifications, carried out by the Endress+Hauser Service, or an authorized Endress+Hauser service provider

11.06.2019		
Date	Inspectors signature	Operator's signature

Endress+Hauser
People for Process Automation

Verification report flowmeter

Serial number: KC1EF119000
Verification detailed results Verification ID 4

Sensor	☑	**Passed**
Coil current shot time	☑	Passed
Coil hold voltage	☑	Passed
Coil current	☑	Passed
Sensor electronic module	☑	**Passed**
Reference voltage	☑	Passed
Linearity of electrode measuring circuit	☑	Passed
Offset of electrode measuring circuit	☑	Passed
I/O module	☑	**Passed**

CUSTOMER:OCWA WEST HIGHLANDS
LOCATION: WIARTON STP

VERIFICATION REPORT

INDUS CONTROL
Instrumentation + Control + System

EQUIPMENT ITEM: OPEN CHANNEL FLOW METER
REPORT NO.: CO1069-1906-25
OCWA NUMBER: FINAL EFFLUENT
SERVICE DATE: June 11, 2019
LOCATION: WIARTON-STP
MANUFACTURER: MILLTRONICS
SERVICE PERSON SAGAR PATEL
PART NUMBER: MULTIRANGER PLUS
SERIAL NO.: 05W023466
JOB NO.: CO1069-1906

	STATUS	COMMENT
MOUNTING	A	
ELECTRICAL	A	
CERTIFICATION	A	
NAMEPLATE	A	

STATUS LEGEND

A: INSPECTED AND FOUND ACCEPTABLE
B: INSPECTED, FOUND DEFECTIVE AND CORRECTED
C: INSPECTED, FOUND DEFECTIVE AND NOT CORRECTED
D: NOT INSPECTED

OUTPUT	SIGNAL	PROCESS
TYPE:	mA	M3/DAY
MIN.:	4.00	0.00
MAX:	20.00	592.00

TEST EQUIPMENT

Description	Serial No.	Calibration Date	Due Date
Fluke 179	**29660064**		

INPUT/OUTPUT INFORMATION			BEFORE READINGS		AFTER READINGS	
CAL INPUT	OUTPUT SIGNAL	FLOW METER READING(M3/Hr.)	OUTPUT	% ERROR	OUTPUT	% ERROR
0.00	4.00	0.00	4.00	0.00%	4.00	0.00%
148.00	8.00	147.50	7.97	0.38%	7.97	0.38%
296.00	12.00	295.30	11.96	0.33%	11.96	0.33%
444.00	16.00	443.80	15.96	0.25%	15.96	0.25%
592.00	20.00	591.60	19.94	0.30%	19.94	0.30%

PARAMETER AND SETTING

P1=2, P2=5, P3=50.1, P4=20, P5=30, P6=2, P42=1.5,P45=20, P46=591.9 max span, P48=5, P49=2, P50=2

COMMENTS

RESULTS MEASURMENT WORKS WITHIN THE SPECIFICATION, VERIFICATION PASSED

SERVICE BY SAGAR PATEL **DATE** June 11, 2019

WITNESS BY **DATE**

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix D

Community Complaints

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 466 McNaughton
Address:	466 McNaughton
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	10/18/2019
Time of Complaint:	11:16:45 AM

Nature of Complaint

☐ Noise ☐ Water Supply Taste/Colour ☐ Water Pressure/No Water
☐ Visual ☒ Service Problem ☐ Basement Flooding
☐ Odour ☐ Sludge Related
Other: _____

Description:

Complaint of blocked sanitary service.

Action taken in response:

Plumber jet the lateral to get it flowing and clear the lateral . Sewer lateral repaired.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/04/2020 11:19:05 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 437 Scott St
Address:	437 Scott St
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	09/07/2019
Time of Complaint:	11:14:31 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☒ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☐ Basement Flooding

Other: _____

Description:

Complaint of blocked sanitary service.

Action taken in response:

Operators sent camera and auger through the service to the new main .

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/04/2020 11:19:24 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Chamber office
Address:	Berford St.
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	07/26/2019
Time of Complaint:	10:13:22 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☒ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☐ Basement Flooding

Other: _____

Description:

Received complaint of backed up sewer lateral from Chamber office behind cenotaph.

Action taken in response:

Operator's investigated.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/04/2020 11:06:32 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 480 Frank St.
Address:	480 Frank St.
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	07/08/2019
Time of Complaint:	10:07:48 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☒ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☐ Basement Flooding

Other: _____

Description:

Complaint of blocked sewer

Action taken in response:

water jet clean out and augered

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/04/2020 10:13:10 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 480 Frank St
Address:	480 Frank St.
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	07/07/2019
Time of Complaint:	09:55:40 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☒ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☐ Basement Flooding

Other: _____

Description:

Complaint of blocked sewer.

Action taken in response:

Operator used hand snake to clear blockage through cleanout .

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/04/2020 09:57:34 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 480 Frank St.
Address:	480 Frank St.
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	07/01/2019
Time of Complaint:	03:48:43 PM

Nature of Complaint

☐ Noise ☐ Water Supply Taste/Colour ☐ Water Pressure/No Water
☐ Visual ☒ Service Problem ☐ Basement Flooding
☐ Odour ☐ Sludge Related
Other: blocked sewer

Description:

Complaint of blocked sewer.

Action taken in response:

Operator used hand snake through the cleanout to clear the blockage .

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/03/2020 03:51:49 PM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 527 Brown
Address:	527 Brown St.
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	06/17/2019
Time of Complaint:	02:43:57 PM

Nature of Complaint

☐ Noise ☐ Water Supply Taste/Colour ☐ Water Pressure/No Water
☐ Visual ☒ Service Problem ☐ Basement Flooding
☐ Odour ☐ Sludge Related
Other: Slow wastewater flow

Description:

Complaint of slow waste water flow

Action taken in response:

Operator investigated the man holes and found them to be flowing normally with no obstructions .

Was the source of the problem identified?: ○ Yes ● No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/03/2020 03:48:19 PM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 501 Gould St.
Address:	501 Gould St
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	04/19/2019
Time of Complaint:	11:34:50 AM

Nature of Complaint

☐ Noise ☐ Water Supply Taste/Colour ☐ Water Pressure/No Water
☐ Visual ☒ Service Problem ☐ Basement Flooding
☐ Odour ☐ Sludge Related
Other: pump chamber high level alarm

Description:

Complaint of high level alarm in pump chamber

Action taken in response:

Operator pumped chamber down manually, cleaned floats and chamber and put system back into auto.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/03/2020 11:42:50 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	Resident of 193 George St.
Address:	193 George St
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	04/05/2019
Time of Complaint:	11:20:01 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☐ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☒ Basement Flooding

Other: _____

Description:

Complaint of water in the basement

Action taken in response:

Operator investigated
problem appears to be a plumbing issue as collection system appears normal.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2T0
Name of Person who filed Complaint:	Resident of 624 Centennial Cres
Address:	624 Centennial Cres
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	03/15/2019
Time of Complaint:	11:16:22 AM

Nature of Complaint

☐ Noise	☐ Water Supply Taste/Colour	☐ Water Pressure/No Water
☐ Visual	☐ Service Problem	☒ Basement Flooding
☐ Odour	☐ Sludge Related	

Other: _____

Description:

Complaint of basement flooding.

Action taken in response:

Operator investigated.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

High level in sewer main causing issues. PS #1 in overflow, and vac truck called out to assist.

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/03/2020 11:18:53 AM

Ontario Clean Water Agency
Community Complaints

Facility ID:	5620
Facility Name:	Wiarton Wastewater Treatment Lagoon
Address:	
City:	Georgian Bluffs
Province:	Ontario
Postal Code:	NOH 2TO
Name of Person who filed Complaint:	resident of 417 Brown St.
Address:	417 Brown Street
Phone	

NOTE: If there were multiple complaints, provide the name of the person who filed the initial complaint and note the number and details in the "Description" field below

Date of Complaint:	03/13/2019
Time of Complaint:	11:05:23 AM

Nature of Complaint

- ☐ Noise
- ☐ Visual
- ☐ Odour
- ☐ Water Supply Taste/Colour
- ☒ Service Problem
- ☐ Sludge Related
- ☐ Water Pressure/No Water
- ☐ Basement Flooding

Other: _____

Description:

Complaint of lateral sewer blockage.

Action taken in response:

Operator investigated. Sent camera through line, unable to send snake through lateral.

Was the source of the problem identified?: ● Yes ○ No

Was the source an OCWA facility/activity?: ○ Yes ● No If "Yes", describe:

If any remedial action is required, complete action plan form

Updated By: Megan Edney 03/03/2020 11:16:00 AM

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix E

Effluent By-Pass Reports

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of

JANUARY 1, 2019 TO MARCH 31, 2019

As per the Amended Environmental Compliance Approval (number 6045-ARDJS7, issued on November 23, 2017), we are required to submit a summary report of the bypass events to the Water Supervisor on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15.

Bypass Events

A by-pass event is defined as “a diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling location, and discharging to the environment through the Sewage Treatment Plant outfall”

- During this period two bypass events occurred.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M^3)		
March 14-15, 2019	21:30	11:47	14:17	452.6	MBBR	Heavy rains and snow melt
March 15 – 21, 2019	14:48	10:56	140:08	31,000	MBBR	Clogged MBBR screens

Overflow Events

An overflow event is defined as “a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the Final Effluent sampling location”

- During this period two overflow events occurred.

Environmental Incident #	Date	Time		Duration	Volume	Treatment Process	Reason for Overflow	Samples
		Start	End	HH:MM	(M^3)			
902841	March 14-15, 2019	21:12	05:40	8:28	290	Pump Station #1	Heavy Rain/ Snow Melt	CA13301-MAR19
4656-BAASL6	March 15, 2019	14:00	14:48	0:48	100	MBBR	Clogged Screens	CA13302-MAR19

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of

APRIL 1, 2019 TO JUNE 30, 2019

As per the Amended Environmental Compliance Approval (number 6045-ARDJS7, issued on November 23, 2017), we are required to submit a summary report of the bypass events to the Water Supervisor on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15.

Bypass Events

A by-pass event is defined as “a diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling location, and discharging to the environment through the Sewage Treatment Plant outfall”

- During this period three bypass events occurred.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M^3)		
April 16, 2019	22:35	23:20	0:45	74.2	UV	Power outage
April 18, 2019	18:45	21:40	2:55	154	MBBR	Heavy rains.
May 29, 2019	08:00	12:00	4:00	340	MBBR	Planned maintenance: installation of a transfer switch for new generator.

Overflow Events

An overflow event is defined as “a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the Final Effluent sampling location”

- During this period no overflow events occurred.

Environmental Incident #	Date	Time		Duration	Volume	Treatment Process	Reason for Overflow	Samples
		Start	End	HH:MM	(M^3)			
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of

JULY 1, 2019 TO SEPTEMBER 30, 2019

As per the Amended Environmental Compliance Approval (number 6045-ARDJS7, issued on November 23, 2017), we are required to submit a summary report of the bypass events to the Water Supervisor on a quarterly basis, no later than each of the following dates for each calendar year: February 15, May 15, August 15, and November 15.

Bypass Events

A by-pass event is defined as “a diversion of sewage around one or more unit processes within the Sewage Treatment Plant with the diverted sewage flows being returned to the Sewage Treatment Plant treatment train upstream of the Final Effluent sampling location, and discharging to the environment through the Sewage Treatment Plant outfall”

- During this period two bypass events occurred.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M^3)		
August 28-29, 2019	16:50	09:30	16:40	1,100	UV	UV system faulted
August 30, 2019	19:38	19:56	0:18	19.5	UV	UV System faulted due to Phase loss

Overflow Events

An overflow event is defined as “a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the Final Effluent sampling location”

- During this period no overflow events occurred.

Environmental Incident #	Date	Time		Duration	Volume	Treatment Process	Reason for Overflow	Samples
		Start	End	HH:MM	(M^3)			
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix F

Septage Laboratory Results

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

17-January-2019

OCWA-Southampton (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 15 January 2019
LR Report: **CA13499-JAN19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					14-Jan-19 15:15
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Silver (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	< 0.08
Aluminum (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	8.19
Arsenic (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.02
Barium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.834
Calcium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	197
Cadmium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.007
Cobalt (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.009
Chromium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.035
Copper (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	5.25
Iron (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	13.7
Mercury (total) [mg/L]	16-Jan-19	13:00	17-Jan-19	11:39	0.00111
Manganese (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.457
Magnesium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	45.3
Potassium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	36.2
Sodium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	62.6
Nickel (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.044
Phosphorus (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	46.4
Lead (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.054
Selenium (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	0.02
Tin (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	< 0.02
Zinc (total) [mg/L]	16-Jan-19	14:54	17-Jan-19	11:39	6.72

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018
LR Report : **CA13499-JAN19**

Carrie Greenlaw
Project Specialist
Environmental Services, Analytical

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

25-January-2019

OCWA-Southampton (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 15 January 2019
LR Report: **CA13500-JAN19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					14-Jan-19 15:15
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	15-Jan-19	16:40	21-Jan-19	14:26	1040
Total Suspended Solids [mg/L]	15-Jan-19	14:38	17-Jan-19	14:26	1540
Chemical Oxygen Demand [mg/L]	16-Jan-19	08:32	21-Jan-19	14:26	3750
Ammonia+Ammonium (N) [as N mg/L]	15-Jan-19	21:00	17-Jan-19	15:46	110
Total Kjeldahl Nitrogen [as N mg/L]	16-Jan-19	08:05	21-Jan-19	10:27	298
Phosphorus (total) [mg/L]	16-Jan-19	08:05	21-Jan-19	13:28	40.1
Isopropyl Alcohol [mg/L]	22-Jan-19	08:58	22-Jan-19	14:59	< 5
Methyl alcohol [mg/L]	22-Jan-19	08:58	22-Jan-19	14:59	< 5
Acetone [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	101
Benzene [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5
Ethylbenzene [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5
Dichloromethane [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5
Methyl ethyl ketone [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 20
Toluene [ug/L]	16-Jan-19	16:57	24-Jan-19	16:13	998
Xylene (total) [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5
o-xylene [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5
m/p-xylene [ug/L]	16-Jan-19	16:57	17-Jan-19	12:42	< 0.5

Kimberley Didsbury
Project Specialist
Environmental Services, Analytical

OnLine LIMS

0001641921

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

14-March-2019

OCWA-Southampton (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 05 March 2019
LR Report: **CA12070-MAR19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					28-Feb-19 13:30
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	05-Mar-19	16:16	11-Mar-19	13:05	3070
Total Suspended Solids [mg/L]	05-Mar-19	07:57	06-Mar-19	14:33	3380
Chemical Oxygen Demand [mg/L]	08-Mar-19	08:45	11-Mar-19	13:05	5100
Ammonia+Ammonium (N) [as N mg/L]	05-Mar-19	18:20	06-Mar-19	13:17	45.2
Total Kjeldahl Nitrogen [as N mg/L]	06-Mar-19	12:21	11-Mar-19	15:46	253
Phosphorus (total) [mg/L]	06-Mar-19	12:21	12-Mar-19	13:38	32.2
Isopropyl Alcohol [mg/L]	13-Mar-19	09:54	13-Mar-19	16:40	< 5
Methyl alcohol [mg/L]	13-Mar-19	09:54	13-Mar-19	16:40	< 5
Acetone [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 1200
Benzene [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20
Ethylbenzene [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20
Dichloromethane [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20
Methyl ethyl ketone [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 800
Toluene [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	42.5
Xylene (total) [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20
o-xylene [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20
m/p-xylene [ug/L]	05-Mar-19	16:09	06-Mar-19	14:49	< 20

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0001683706

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

25-March-2019

OCWA-Southampton (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 12 March 2019
LR Report: **CA13166-MAR19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					11-Mar-19 13:00
Temperature Upon Receipt [°C]					7.0
Biochemical Oxygen Demand (BOD5) [mg/L]	18-Mar-19	15:43	25-Mar-19	10:24	2500
Total Suspended Solids [mg/L]	13-Mar-19	12:08	18-Mar-19	13:23	294
Chemical Oxygen Demand [mg/L]	13-Mar-19	08:39	18-Mar-19	14:31	2980
Ammonia+Ammonium (N) [as N mg/L]	12-Mar-19	18:30	14-Mar-19	14:08	13.1
Total Kjeldahl Nitrogen [as N mg/L]	13-Mar-19	10:39	18-Mar-19	14:01	99.9
Phosphorus (total) [mg/L]	13-Mar-19	10:39	18-Mar-19	13:08	11.6
Isopropyl Alcohol [mg/L]	13-Mar-19	09:54	13-Mar-19	12:56	< 5
Methyl alcohol [mg/L]	13-Mar-19	09:54	13-Mar-19	12:56	< 5
Acetone [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 1200
Benzene [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20
Ethylbenzene [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20
Dichloromethane [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20
Methyl ethyl ketone [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 800
Toluene [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	28.0
Xylene (total) [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20
o-xylene [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20
m/p-xylene [ug/L]	12-Mar-19	16:27	13-Mar-19	09:36	< 20

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0001694690

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

23-April-2019

OCWA-Southampton (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 11 April 2019
LR Report: **CA13320-APR19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					09-Apr-19 14:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Biochemical Oxygen Demand (BOD5) [mg/L]	11-Apr-19	16:50	16-Apr-19	11:43	1360
Total Suspended Solids [mg/L]	12-Apr-19	14:03	15-Apr-19	14:06	193
Chemical Oxygen Demand [mg/L]	12-Apr-19	09:16	16-Apr-19	11:43	2050
Ammonia+Ammonium (N) [as N mg/L]	11-Apr-19	20:00	12-Apr-19	08:36	25.2
Total Kjeldahl Nitrogen [as N mg/L]	17-Apr-19	08:15	18-Apr-19	09:56	83.5
Isopropyl Alcohol [mg/L]	15-Apr-19	09:44	16-Apr-19	14:45	< 5
Methyl alcohol [mg/L]	15-Apr-19	09:44	16-Apr-19	14:45	< 5
Acetone [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 1200
Benzene [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
Ethylbenzene [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
Dichloromethane [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
Methyl ethyl ketone [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 800
Toluene [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	20.9
Xylene (total) [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
o-xylene [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
m/p-xylene [ug/L]	12-Apr-19	16:56	15-Apr-19	04:03	< 20
Silver (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.08
Aluminum (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.37
Arsenic (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.01
Barium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.0419
Calcium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	82.7
Cadmium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.001
Cobalt (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.001
Chromium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.002
Copper (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.103
Iron (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	14.2
Mercury (total) [mg/L]	15-Apr-19	15:32	15-Apr-19	14:51	0.00002
Manganese (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.440
Magnesium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	22.6
Potassium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	39.2

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Works #: 110000819

Project : PO#017018
LR Report : **CA13320-APR19**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sodium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	196
Nickel (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.014
Phosphorus (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	9.49
Lead (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	0.012
Selenium (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.01
Tin (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	< 0.02
Zinc (total) [mg/L]	12-Apr-19	14:37	15-Apr-19	10:24	1.02

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OnLine LIMS

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Works #: 110000819
Project : PO#017018

05-June-2019

OCWA-Southampton (Wiarton WPCP)
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Phone: 519-797-2561
Fax:pdf

Date Rec. : 25 May 2019
LR Report: **CA13800-MAY19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					23-May-19 15:00
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Biochemical Oxygen Demand (BOD5) [mg/L]	27-May-19	15:40	03-Jun-19	13:39	2550
Total Suspended Solids [mg/L]	28-May-19	10:48	05-Jun-19	13:13	3840
Chemical Oxygen Demand [mg/L]	29-May-19	07:28	30-May-19	07:44	2700
Ammonia+Ammonium (N) [as N mg/L]	27-May-19	17:27	29-May-19	21:11	73.4
Total Kjeldahl Nitrogen [as N mg/L]	29-May-19	08:42	05-Jun-19	12:11	117
Phosphorus (total) [mg/L]	29-May-19	08:42	04-Jun-19	14:53	13.7
Isopropyl Alcohol [mg/L]	30-May-19	09:11	30-May-19	16:19	< 5
Methyl alcohol [mg/L]	30-May-19	09:11	30-May-19	16:19	< 5
Acetone [ug/L]	28-May-19	16:41	29-May-19	14:55	< 1200
Benzene [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20
Ethylbenzene [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20
Dichloromethane [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20
Methyl ethyl ketone [ug/L]	28-May-19	16:41	29-May-19	14:55	< 800
Toluene [ug/L]	28-May-19	16:41	29-May-19	14:55	84.8
Xylene (total) [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20
o-xylene [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20
m/p-xylene [ug/L]	28-May-19	16:41	29-May-19	14:55	< 20

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Works #: 110000819
Project : PO#017018

19-June-2019

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Date Rec. : 06 June 2019
LR Report: **CA12167-JUN19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					05-Jun-19 10:00
Temperature Upon Receipt [°C]	---	---	---	---	16.0
Biochemical Oxygen Demand (BOD5) [mg/L]	06-Jun-19	17:26	11-Jun-19	11:52	1210
Total Suspended Solids [mg/L]	09-Jun-19	12:57	10-Jun-19	21:30	384
Chemical Oxygen Demand [mg/L]	07-Jun-19	08:50	10-Jun-19	16:06	1260
Ammonia+Ammonium (N) [as N mg/L]	06-Jun-19	16:30	10-Jun-19	13:54	76.3
Total Kjeldahl Nitrogen [as N mg/L]	11-Jun-19	14:47	17-Jun-19	15:20	95.1
Phosphorus (total) [mg/L]	11-Jun-19	14:47	17-Jun-19	16:31	10.7
Isopropyl Alcohol [mg/L]	17-Jun-19	11:43	19-Jun-19	11:29	< 5
Methyl alcohol [mg/L]	17-Jun-19	11:43	19-Jun-19	11:29	< 5
Acetone [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 1200
Benzene [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20
Ethylbenzene [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20
Dichloromethane [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20
Methyl ethyl ketone [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 800
Toluene [ug/L]	11-Jun-19	16:11	12-Jun-19	17:06	47.2
Xylene (total) [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20
o-xylene [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20
m/p-xylene [ug/L]	10-Jun-19	16:04	12-Jun-19	17:06	< 20

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Works #: 110000819
Project : PO#017018

02-July-2019

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Date Rec. : 20 June 2019
LR Report: **CA12836-JUN19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					19-Jun-19 11:30
Temperature Upon Receipt [°C]	---	---	---	---	15.0
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Jun-19	15:35	26-Jun-19	15:21	403
Total Suspended Solids [mg/L]	23-Jun-19	11:55	25-Jun-19	15:28	432
Chemical Oxygen Demand [mg/L]	21-Jun-19	09:50	02-Jul-19	13:35	2450
Ammonia+Ammonium (N) [as N mg/L]	20-Jun-19	17:20	21-Jun-19	15:01	95.2
Total Kjeldahl Nitrogen [as N mg/L]	21-Jun-19	14:20	25-Jun-19	16:25	138
Phosphorus (total) [mg/L]	21-Jun-19	14:21	26-Jun-19	12:17	14.8
Isopropyl Alcohol [mg/L]	25-Jun-19	16:40	27-Jun-19	09:40	< 5
Methyl alcohol [mg/L]	25-Jun-19	16:40	27-Jun-19	09:40	< 5
Acetone [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 1200
Benzene [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20
Ethylbenzene [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20
Dichloromethane [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20
Methyl ethyl ketone [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 800
Toluene [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	73.1
Xylene (total) [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20
o-xylene [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20
m/p-xylene [ug/L]	21-Jun-19	16:47	24-Jun-19	14:35	< 20

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Works #: 110000819
Project : PO#017018

09-August-2019

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Fax:pdf

Date Rec. : 30 July 2019
LR Report: **CA13966-JUL19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					29-Jul-19 11:15
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Biochemical Oxygen Demand (BOD5) [mg/L]	30-Jul-19	15:46	06-Aug-19	10:09	2620
Total Suspended Solids [mg/L]	30-Jul-19	14:54	01-Aug-19	16:07	2910
Chemical Oxygen Demand [mg/L]	31-Jul-19	08:52	06-Aug-19	10:09	3750
Ammonia+Ammonium (N) [as N mg/L]	30-Jul-19	17:22	31-Jul-19	10:50	197
Total Kjeldahl Nitrogen [as N mg/L]	30-Jul-19	14:56	31-Jul-19	16:29	224
Phosphorus (total) [mg/L]	30-Jul-19	14:56	02-Aug-19	09:42	17.7
Isopropyl Alcohol [mg/L]	08-Aug-19	09:51	09-Aug-19	11:13	< 5
Methyl alcohol [mg/L]	08-Aug-19	09:51	09-Aug-19	11:13	< 5
Acetone [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 1200
Benzene [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20
Ethylbenzene [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20
Dichloromethane [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20
Methyl ethyl ketone [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 800
Toluene [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	34.9
Xylene (total) [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20
o-xylene [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20
m/p-xylene [ug/L]	31-Jul-19	16:54	01-Aug-19	11:13	< 20

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Works #: 110000819
Project : PO#017018

20-August-2019

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Date Rec. : 14 August 2019
LR Report: **CA12617-AUG19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					13-Aug-19 13:15
Temperature Upon Receipt [°C]	---	---	---	---	15.0
Silver (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.08
Aluminum (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.95
Arsenic (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.01
Barium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.0422
Calcium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	101
Cadmium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.001
Cobalt (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.003
Chromium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.004
Copper (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.113
Iron (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	2.68
Mercury (total) [mg/L]	15-Aug-19	15:22	19-Aug-19	12:59	< 0.00001
Manganese (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.239
Magnesium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	36.9
Potassium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	57.9
Sodium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	117
Nickel (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.004
Phosphorus (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	17.3
Lead (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.007
Selenium (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.01
Tin (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	< 0.02
Zinc (total) [mg/L]	16-Aug-19	15:08	19-Aug-19	13:46	0.139

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Works #: 110000819

Project : PO#017018
LR Report : **CA12617-AUG19**

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Works #: 110000819
Project : PO#017018

03-September-2019

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Date Rec. : 21 August 2019
LR Report: **CA12864-AUG19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					20-Aug-19 13:00
Temperature Upon Receipt [°C]	---	---	---	---	12.0
Biochemical Oxygen Demand (BOD5) [mg/L]	22-Aug-19	17:46	27-Aug-19	15:45	1250
Total Suspended Solids [mg/L]	26-Aug-19	12:01	28-Aug-19	11:06	497
Chemical Oxygen Demand [mg/L]	23-Aug-19	08:15	28-Aug-19	13:41	1520
Ammonia+Ammonium (N) [as N mg/L]	21-Aug-19	17:12	23-Aug-19	12:07	125
Total Kjeldahl Nitrogen [as N mg/L]	21-Aug-19	15:02	26-Aug-19	13:10	177
Phosphorus (total) [mg/L]	21-Aug-19	15:02	26-Aug-19	18:51	17.5
Acetone [ug/L]	22-Aug-19	16:35	23-Aug-19	15:55	< 1200
Benzene [ug/L]	22-Aug-19	16:35	23-Aug-19	15:55	< 20
Ethylbenzene [ug/L]	22-Aug-19	16:35	23-Aug-19	15:55	< 20
Isopropyl Alcohol [mg/L]	29-Aug-19	08:53	30-Aug-19	13:04	< 5
Methyl alcohol [mg/L]	29-Aug-19	08:53	30-Aug-19	13:04	< 5
Methylene Chloride [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 20
Dichloromethane [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 20
Methyl ethyl ketone [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 800
Toluene [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	58.9
Xylene (total) [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 20
o-xylene [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 20
m/p-xylene [ug/L]	22-Aug-19	16:35	23-Aug-19	15:56	< 20

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Project Specialist,
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Works #: 110000819
Project : PO#017018

25-September-2019

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Date Rec. : 17 September 2019
LR Report: **CA13573-SEP19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					16-Sep-19 12:35
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Biochemical Oxygen Demand (BOD5) [mg/L]	17-Sep-19	16:43	23-Sep-19	14:20	2030
Total Suspended Solids [mg/L]	17-Sep-19	10:45	20-Sep-19	15:30	464
Chemical Oxygen Demand [mg/L]	18-Sep-19	08:38	23-Sep-19	14:20	2600
Ammonia+Ammonium (N) [as N mg/L]	17-Sep-19	21:15	23-Sep-19	12:09	94.8
Total Kjeldahl Nitrogen [as N mg/L]	18-Sep-19	11:03	25-Sep-19	09:57	152
Phosphorus (total) [mg/L]	18-Sep-19	11:03	24-Sep-19	16:04	14.7
Isopropyl Alcohol [mg/L]	20-Sep-19	09:30	25-Sep-19	13:39	< 5
Methyl alcohol [mg/L]	20-Sep-19	09:30	25-Sep-19	13:39	< 5
Acetone [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 1200
Benzene [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20
Ethylbenzene [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20
Dichloromethane [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20
Methyl ethyl ketone [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 800
Toluene [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	52.4
Xylene (total) [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20
o-xylene [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20
m/p-xylene [ug/L]	17-Sep-19	16:54	18-Sep-19	11:07	< 20

Kimberley Didsbury
Project Specialist,
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Works #: 110000819
Project : PO#017018

28-October-2019

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Date Rec. : 17 October 2019
LR Report: **CA12506-OCT19**

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CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					16-Oct-19 15:15
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	17-Oct-19	17:56	22-Oct-19	11:06	1810
Total Suspended Solids [mg/L]	21-Oct-19	10:00	23-Oct-19	14:46	350
Chemical Oxygen Demand [mg/L]	18-Oct-19	08:29	23-Oct-19	10:02	2320
Ammonia+Ammonium (N) [as N mg/L]	17-Oct-19	20:00	23-Oct-19	16:13	112
Total Kjeldahl Nitrogen [as N mg/L]	21-Oct-19	06:49	24-Oct-19	15:43	170
Isopropyl Alcohol [mg/L]	21-Oct-19	11:00	22-Oct-19	15:11	< 5
Methyl alcohol [mg/L]	21-Oct-19	11:00	22-Oct-19	15:11	< 5
Acetone [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 1200
Benzene [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
Ethylbenzene [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
Dichloromethane [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
Methyl ethyl ketone [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 800
Toluene [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	94.6
Xylene (total) [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
o-xylene [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
m/p-xylene [ug/L]	18-Oct-19	16:58	22-Oct-19	11:28	< 20
Aluminum (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.317
Arsenic (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.0009
Barium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.0513
Cadmium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.000045
Calcium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	92.6
Chromium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.00084
Cobalt (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.000338
Copper (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.0369
Iron (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	1.77
Lead (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.00052
Magnesium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	31.9
Manganese (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.190
Nickel (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.0039
Phosphorus (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	16.6

SGS Canada Inc.
P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2HO
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018
LR Report : **CA12506-OCT19**

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Potassium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	71.4
Selenium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.00090
Silver (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	< 0.00005
Sodium (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	307
Tin (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.00076
Zinc (total) [mg/L]	21-Oct-19	18:33	23-Oct-19	11:38	0.073
Mercury (total) [ug/L]	18-Oct-19	14:50	21-Oct-19	14:46	0.01

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OnLine LIMS

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Works #: 110000819
Project : PO#017018

05-December-2019

OCWA-Grey Bruce (Wiarton WPCP)
Attn : Megan Edney

P.O. Box 760
Southampton, ON
N0H 2L0, Canada

Phone: 519-797-2561
Fax:pdf

Date Rec. : 27 November 2019
LR Report: **CA13660-NOV19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					26-Nov-19 11:40
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Nov-19	16:59	02-Dec-19	14:44	469
Total Suspended Solids [mg/L]	27-Nov-19	15:39	29-Nov-19	14:49	273
Chemical Oxygen Demand [mg/L]	28-Nov-19	10:14	04-Dec-19	15:51	1480
Ammonia+Ammonium (N) [as N mg/L]	28-Nov-19	17:48	28-Nov-19	12:38	43.1
Total Kjeldahl Nitrogen [as N mg/L]	28-Nov-19	06:29	29-Nov-19	14:49	126
Phosphorus (total) [mg/L]	28-Nov-19	06:29	04-Dec-19	08:56	11.8
Isopropyl Alcohol [mg/L]	29-Nov-19	15:13	29-Nov-19	15:57	< 5
Methyl alcohol [mg/L]	29-Nov-19	15:13	29-Nov-19	15:57	< 5
Acetone [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 1200
Benzene [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20
Ethylbenzene [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20
Dichloromethane [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20
Methyl ethyl ketone [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 800
Toluene [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	23.0
Xylene (total) [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20
o-xylene [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20
m/p-xylene [ug/L]	02-Dec-19	16:45	03-Dec-19	12:06	< 20

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Works #: 110000819
Project : PO#017018

18-December-2019

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Phone: 519-797-2561
Fax:pdf

Date Rec. : 06 December 2019
LR Report: **CA13176-DEC19**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Holding Tank
Sample Date & Time					05-Dec-19 12:55
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Biochemical Oxygen Demand (BOD5) [mg/L]	06-Dec-19	15:29	11-Dec-19	11:27	5220
Total Suspended Solids [mg/L]	09-Dec-19	10:00	10-Dec-19	07:38	8830
Chemical Oxygen Demand [mg/L]	09-Dec-19	08:19	11-Dec-19	11:27	10400
Ammonia+Ammonium (N) [as N mg/L]	06-Dec-19	17:10	09-Dec-19	16:16	49.7
Total Kjeldahl Nitrogen [as N mg/L]	09-Dec-19	06:28	11-Dec-19	13:30	204
Phosphorus (total) [mg/L]	09-Dec-19	06:28	12-Dec-19	12:21	21.8
Isopropyl Alcohol [mg/L]	17-Dec-19	12:04	18-Dec-19	09:29	< 5
Methyl alcohol [mg/L]	17-Dec-19	12:04	18-Dec-19	09:29	< 5
Acetone [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 1200
Benzene [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20
Ethylbenzene [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20
Dichloromethane [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20
Methyl ethyl ketone [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 800
Toluene [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	51.6
Xylene (total) [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20
o-xylene [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20
m/p-xylene [ug/L]	12-Dec-19	16:21	13-Dec-19	15:10	< 20

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