



Ontario Clean Water Agency Agence Ontarienne Des Eaux

March 29, 2019

John Ritchie, Water Compliance Supervisor
John.S.Ritchie@ontario.ca
Ministry of the Environment and Climate Change
3rd floor, 101 17th Street East
Owen Sound, Ontario
N4K 0A5

RE: 2018 Annual Performance Report, Requirement for Wiarnton Sewage Lagoon System under the following Environmental Compliance Approval ECA 6045-ARDJS7

Dear Mr. Ritchie,

The Ontario Clean Water Agency entered into an agreement with the Town of South Bruce Peninsula to operate and maintain the Wiarnton Wastewater Treatment System.

Please see attached for the 2018 Annual Performance Report for the Wiarnton Sewage Lagoon System which covers the reporting period of January 1, 2018 to December 31, 2018. This report was completed in accordance with the requirements set out in ECA 6045-ARDJS7.

Should you require further clarification of information regarding this report, please feel free to contact me.

Sincerely,

Camille Leung
Safety, Process and Compliance Manager
Ontario Clean Water Agency
Georgian Highlands Region



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

WIARTON
WASTEWATER TREATMENT PLANT

ANNUAL PERFORMANCE REPORT

For the period of
JANUARY 1, 2018 TO DECEMBER 31, 2018

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 filter backwash pumping station.

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 forcemain 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	Warton 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
	BOD ₅ , 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 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;*
- 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, BOD₅, Suspended Solids, Total Phosphorous 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. 2018 Effluent Annual Average Concentrations and Removal Efficiencies

Parameter	Annual Average Concentration	Removal Efficiency
CBOD ₅	2.70	n/a
Total Suspended Solids	6.149	98.9%
Total Phosphorous	0.065	98.5%

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 Warton Wastewater Treatment System Monitoring Data to Effluent Limits, 2018

2018	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	2.4	Y	6.5	Y	4.7	Y	12.3	Y	0.06	Y	0.15	Y	0.06	Y	0.15	Y	2.0	n/a
February	4.6	Y	11.4	Y	8.8	Y	21.6	Y	0.06	Y	0.16	Y	0.06	Y	0.16	Y	2.0	n/a
March	5.9	Y	9.8	Y	15.1	N	25.1	Y	0.06	Y	0.16	Y	0.08	Y	0.20	Y	2.0	n/a
April	5.0	Y	12.7	Y	8.6	Y	21.9	Y	0.04	Y	0.11	Y	0.16	Y	0.41	Y	2.0	n/a
May	3.0	Y	6.8	Y	3.9	Y	8.8	Y	0.05	Y	0.12	Y	0.38	Y	0.87	Y	2.0	Y
June	2.0	Y	1.4	Y	3.0	Y	2.0	Y	0.06	Y	0.04	Y	0.27	Y	0.18	Y	2.0	Y
July	2.0	Y	1.6	Y	2.0	Y	1.6	Y	0.08	Y	0.07	Y	0.10	Y	0.08	Y	2.0	Y
August	2.0	Y	1.8	Y	2.0	Y	1.8	Y	0.09	Y	0.08	Y	0.16	Y	0.14	Y	2.0	Y
September	2.1	Y	0.9	Y	2.4	Y	1.1	Y	0.09	Y	0.04	Y	0.11	Y	0.05	Y	2.0	Y
October	2.0	Y	2.7	Y	2.0	Y	2.7	Y	0.07	Y	0.09	Y	0.10	Y	0.14	Y	2.0	n/a
November	2.0	Y	2.4	Y	4.2	Y	5.1	Y	0.06	Y	0.07	Y	0.47	Y	0.56	Y	3.3	n/a
December	3.1	Y	4.2	Y	6.0	Y	8.2	Y	0.04	Y	0.06	Y	0.13	Y	0.18	Y	2.0	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 one reportable instance where the sewage lagoon system exceeded the effluent limits set out in the ECA. In March 2018 the Total Suspended Solids monthly average (15.1 mg/L) exceeded the limit (15.0 mg/L) by 0.1 mg/L. This exceedance was reported on April 6th, 2018 to the Owen Sound District Office, Ministry of Environment, Conservation and Parks.

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 2018, the effluent was within the effluent limits and ranged from 6.07 to 8.45 with an annual average of 7.36. A monthly summary of pH can be found in Table 9

Table 9. Monthly Summary of pH for the Warton Wastewater Treatment System, 2018

	Average	Minimum	Maximum
January	6.88	6.69	7.02
February	6.88	6.63	7.08
March	6.70	6.07	7.27
April	7.13	6.67	7.48
May	7.63	7.26	7.84
June	7.69	7.51	7.75
July	7.91	7.50	8.45
August	7.68	7.57	7.84
September	7.26	6.69	7.56
October	7.62	7.03	7.92
November	7.45	6.92	7.74
December	7.69	6.69	8.15

2.4 Effluent Objectives

The effluent objectives as per ECA 6045-ARDJS7 for the Warton 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 91.6% of the time. Refer to Table 5 for detailed laboratory analysis results in comparison to the effluent objectives.

Table 51. Comparison of Wiarton Wastewater Treatment System Monitoring Data to Effluent Objectives, 2018

2018	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	2.4	Y	4.7	Y	0.06	Y	0.06	n/a
February	4.6	Y	8.8	Y	0.06	Y	0.06	n/a
March	5.9	Y	15.1	N	0.06	Y	0.08	n/a
April	5.0	Y	8.6	Y	0.04	Y	0.16	n/a
May	3.0	Y	3.9	Y	0.05	Y	0.38	n/a
June	2.0	Y	3.0	Y	0.06	Y	0.27	n/a
July	2.0	Y	2.0	Y	0.08	Y	0.10	n/a
August	2.0	Y	2.0	Y	0.09	Y	0.16	n/a
September	2.1	Y	2.4	Y	0.09	Y	0.11	n/a
October	2.0	Y	2.0	Y	0.07	Y	0.10	n/a
November	2.0	Y	4.2	Y	0.06	Y	0.47	Y
December	3.1	Y	6.0	Y	0.04	Y	0.13	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 2018 was 562,606 m³ with an annual average daily flow of 1,546 m³/day. Total effluent flows in 2018 have decreased in comparison to 2017.

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 2018 was 544,181 m³ with an annual average daily flow of 1,490 m³/day, which is 33.8% of the recommended rated capacity of 4,400 m³/day. Total influent flows in 2018 have decreased in comparison to 2017. The daily influent flow remained within the recommended rated capacity 97.8% (i.e. 357 out of 365 days) of the time during 2018.

Table 12: Influent Characteristics

	Minimum	Average	Maximum
BOD5 (mg/L)	82	150.9	448
TSS (mg/L)	37	125	190
TKN (mg/L)	11	22.7	36.8
Total Phosphorous	0.95	2.47	4.51

In 2018, approximately 2325.79 m³ of septage was received by the Warton Wastewater Treatment System. This is a decrease from 2017 (2,724.86 m³) but is higher than 2016 (2,312.92 m³) and 2015 (2,306.75 m³) 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]	366	3,220
Total Suspended Solids [mg/L]	114	4,880
Chemical Oxygen Demand [mg/L]	630	2,880
Ammonia+Ammonium (N) [mg/L]	10.2	287
Total Kjeldahl Nitrogen [as N mg/L]	79	528
Phosphorus (total) [mg/L]	2.4	23.7
Isopropyl Alcohol [mg/L]	< 5	< 5
Methyl alcohol [mg/L]	< 5	< 5
Acetone [µg/L]	< 30	< 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]	< 0.5	206
Xylene (total) [µg/L]	< 0.5	20
o-xylene [µg/L]	0.5	20
m/p-xylene [µg/L]	0.5	20

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 2018 was 544,181 m³ with an annual average daily flow of 1,490 m³/day, which is 33.9% of the rated capacity of 4,400 m³/day. The daily influent within the recommended rated capacity 97.8% (i.e. 357 out of 365 days) of the time during 2018. Total influent flows in 2018 have decreased in comparison to 2017.

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 2018

2018	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	7,780	2,437	1,490	Yes
February	9,363	2,342		
March	2,882	1,600		
April	5,206	2,768		
May	2,188	1,420		
June	1,094	863		
July	993	836		
August	1,910	840		
September	978	759		
October	1,128	867		
November	3,134	1,467		
December	3,494	1,683		

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. 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 65. Monitoring Parameters for Wiarton Wastewater Treatment System, 2018

Parameters	Average	Minimum	Maximum
Total Kjeldahl Nitrogen (N mg/L)	0.83	0.50	1.80

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 the vast majority of the time. 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 no overflow at the Wiarton Wastewater Treatment System or any associated pumping station and the sewage lagoon system operated within its rated capacity. For 2018 an operating challenge was the intermittent power bumps which caused the treated sewage to bypass UV disinfection, the 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 alum dosing pump #1 at filter building
- Repaired crack in force main at pump station #2
- Repaired pipe in filter #3 zone 1
- Installed new auto grease dispenser on mechanical screen
- Repaired broken flange on MBBR alum tank
- Repaired UV system and replaced all UV bulbs
- Clean and inspect filter influent channel
- Installed new air scrubber motor at MBBR
- Repaired blower bypass valve at blower building
- Repaired valve on air line in lagoon cell #1
- Replaced heater in Blower building and pump station #1
- Installed new heater at Filter building
- Installed MBBR blower phase protection
- Replaced GFI receptacles in filter building

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.

On May 7, 2018, Flowmetrix 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.

On May 15, 2018, 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 2018 and no sludge is expected to be removed in 2019.

8. Septage Receiving Works

In 2018, approximately 2,326 m³ 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 2018

Month	Total Volume of Septage Received (m ³)
January	196.1
February	172.5
March	223.0
April	190.8
May	194.4
June	172.3
July	184.9
August	342.1
September	209.2
October	128.7
November	138.8
December	173.2

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 2018, five (5) 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 no overflow and no abnormal discharge events in 2018 at the Wiarton Wastewater Treatment System.

During the reporting period, six (6) bypasses of final effluent (total volume of 192.7 m³) 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 16 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 2018 quarterly reports were submitted to the Water Supervisor by the deadlines specified in the ECA and have been included in Appendix D.

Table 17. Bypass Events

Date	Time		Duration HH:MM	Volume (m ³)	Treatment Process Bypassed	Reason for Bypass
	Start	End				
February 9, 2018	11:00	15:40	4:40	250	MBBR	Leak on forcemain, hauled sewage from pump station 2 to Wiarton Lagoons
February 20, 2018	22:00	02:30	4:30	133	MBBR	Heavy flows pumps unable to keep up, hauled sewage from pump station 1 to Wiarton Lagoons
March 27, 2018	11:15	11:45	0:30	25	UV System	Power outage caused UV system to fail
April 2, 2018	01:52	02:10	0:18	16.66	UV System	Power outage caused UV system to fail
September 20, 2018	23:47	00:47	1:00	17.06	UV System	Power outage caused UV system to fail
November 13, 2018	17:23	17:43	0:20	18.05	UV System	Power outage caused UV system to fail

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

From: 01/01/2018 to 31/12/2018

Report extracted 03/05/2019 11:58

Facility: [5620] WIARTON WASTEWATER TREATMENT LAGOON

Works: [11000819]

	01/2018	02/2018	03/2018	04/2018	05/2018	06/2018	07/2018	08/2018	09/2018	10/2018	11/2018	12/2018	<--Total-->	<--Avg-->	<--Max-->
Flows:															
Raw Flow: Total - Raw Sewage (m³)*	75554.00	65569.00	49610.00	83041.00	44006.00	25891.00	25929.00	26053.00	22765.00	26878.00	44006.00	52170.00	541472.00		
Raw Flow: Avg - Raw Sewage (m³/d)*	2437.23	2341.75	1600.32	2768.03	1419.55	863.03	836.42	840.42	758.83	867.03	1466.87	1682.90		1490.20	
Raw Flow: Max - Raw Sewage (m³/d)*	7780.00	9363.00	2882.00	5206.00	2188.00	1094.00	993.00	1910.00	978.00	1094.00	3134.00	3494.00			9363.00
Eff. Flow: Total - Effluent (m³)	82100.00	69580.00	53551.00	79309.00	71456.00	20262.00	24896.00	27685.00	13322.00	41916.00	36102.00	42427.00	562606.00		
Eff. Flow: Avg - Effluent (m³/d)	2648.39	2485.00	1727.45	2643.63	2305.03	675.40	803.10	893.06	444.07	1352.13	1203.40	1368.61		1545.77	
Eff. Flow: Max - Effluent (m³/d)	5543.00	4949.00	3633.00	5196.00	4620.00	2262.00	1214.00	3249.00	1634.00	3101.00	3334.00	3685.00			5543.00
Carbonaceous Biochemical Oxygen Demand: CBOD:															
Eff: Avg cBOD5 - Effluent (mg/L)	< 3.333	< 4.000	< 3.333	5.000	< 2.000	< 2.000	< 2.000	< 2.000	< 2.333	< 2.000	< 2.000	< 3.000		< 2.750	5.000
Eff: # of samples of cBOD5 - Effluent (mg/L)	3	4	3	3	2	2	2	3	3	2	3	2	32		
Loading: cBOD5 - Effluent (kg/d)	< 8.828	< 9.940	< 5.758	13.218	< 4.610	< 1.351	< 1.606	< 1.786	< 1.036	< 2.704	< 2.407	< 4.106		< 4.779	13.218
Biochemical Oxygen Demand: BOD5:															
Raw: Avg BOD5 - Raw Sewage (mg/L)	82.000	108.000	148.000	88.000	112.000	448.000	96.000	157.000	117.000	243.000	88.000	124.000		150.917	448.000
Raw: # of samples of BOD5 - Raw Sewage (mg/L)	1	2	1	1	1	1	1	1	1	1	1	1	13		
Total Suspended Solids: TSS:															
Raw: Avg TSS - Raw Sewage (mg/L)	80.000	92.000	176.000	37.000	150.000	120.000	125.000	144.000	138.000	190.000	112.000	136.000		125.000	190.000
Raw: # of samples of TSS - Raw Sewage (mg/L)	1	2	1	1	1	1	1	1	1	1	1	1	13		
Eff: Avg TSS - Effluent (mg/L)	5.333	9.250	20.333	8.200	3.500	< 2.500	< 2.000	< 2.000	< 2.667	2.000	10.000	6.000		< 6.149	20.333
Eff: # of samples of TSS - Effluent (mg/L)	3	4	3	5	2	2	2	3	3	2	3	2	34		
Loading: TSS - Effluent (kg/d)	14.125	22.986	35.125	21.678	8.068	< 1.689	< 1.606	< 1.786	< 1.184	2.704	12.034	8.212		< 10.933	35.125
Percent Removal: TSS - Raw Sewage (mg/L)	93.333	89.946	88.447	77.838	97.667	97.917	98.400	98.611	98.068	98.947	91.071	95.588			98.947
Total Phosphorus: TP:															
Raw: Avg TP - Raw Sewage (mg/L)	2.000	2.325	2.660	0.950	2.370	2.130	2.330	2.680	2.470	4.510	2.450	2.720		2.466	4.510
Raw: # of samples of TP - Raw Sewage (mg/L)	1	2	1	1	1	1	1	1	1	1	1	1	13		
Eff: Avg TP - Effluent (mg/L)	0.057	0.063	0.060	< 0.047	< 0.045	0.065	0.080	0.097	0.087	0.070	0.070	0.040		< 0.065	0.097
Eff: # of samples of TP - Effluent (mg/L)	3	4	3	3	2	2	2	3	3	2	3	2	32		
Loading: TP - Effluent (kg/d)	0.150	0.155	0.104	< 0.123	< 0.104	0.044	0.064	0.086	0.038	0.095	0.084	0.055		< 0.092	0.155
Percent Removal: TP - Raw Sewage (mg/L)	97.167	97.312	97.744	95.088	98.101	96.948	96.567	96.393	96.491	98.448	97.143	98.529			98.529
Nitrogen Series:															
Raw: Avg TKN - Raw Sewage (mg/L)	20.000	20.000	19.500	11.000	23.700	24.500	21.500	22.900	23.600	36.800	24.400	24.600		22.708	36.800
Raw: # of samples of TKN - Raw Sewage (mg/L)	1	2	1	1	1	1	1	1	1	1	1	1	13		
Eff: Avg TAN - Effluent (mg/L)	0.167	< 0.175	0.200	< 0.167	0.600	< 0.100	< 0.100	< 0.133	< 0.133	< 0.100	0.500	< 0.100		< 0.206	0.600
Eff: # of samples of TAN - Effluent (mg/L)	3	4	3	3	2	2	2	3	3	2	3	2	32		
Loading: TAN - Effluent (kg/d)	0.441	< 0.435	0.345	< 0.441	1.383	< 0.068	< 0.080	< 0.119	< 0.059	< 0.135	0.602	< 0.137		< 0.354	1.383
Eff: Avg NO3-N - Effluent (mg/L)	5.777	4.620	3.237	3.233	0.970	0.285	0.215	0.530	0.530	1.015	1.780	4.575		2.231	5.777
Eff: # of samples of NO3-N - Effluent (mg/L)	3	4	3	3	2	2	2	3	3	2	3	2	32		
Eff: Avg NO2-N - Effluent (mg/L)	< 0.043	< 0.035	0.037	0.037	0.100	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	0.093	< 0.035		< 0.044	0.100
Eff: # of samples of NO2-N - Effluent (mg/L)	3	4	3	3	2	2	2	3	3	2	3	2	32		
Disinfection:															
Eff: GMD E. Coli - Effluent (cfu/100mL)	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	3.302	2.000		2.108	3.302

*Raw Sewage Flows - MBBR Influent meter (therefore does not include Septage Receiving and any MBBR bypasses)



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix B

Calibration Reports

Western Office Eastern Office
2088 Jetstream Road 1602 Old Wooler Road
London, Ontario Wooler, Ontario
N5V 3P6 K0K 3M0

AS FOUND CERTIFICATION
FORWARD FLOW DIRECTION
PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	OCWA West Highlands - N&S Bruce	[MUT] MANUFACTURER	Krohne
CONTACT	Leo Paul Frigault Sr. Operations Manager 897 Bayview Street t: 519-534-1610 c: 519-379-2225 e: lfrigault@ocwa.com	MODEL	IFC 010D
		SERIAL NUMBER	A99 11651
		FUSE	On board plug
		PLANT ID	Wiaraton SPS No1 (Taylor St)
		METER ID	Station Flow
		FIT ID	N/A
		CLIENT TAG	OCWA# 165372
		OTHER	ORG# 5620
		GPS COORDINATES	N44 44.503 W81 08.018
VER. BY - FM	Joel Van Veller	VERIFICATION DATE	May 07, 2018
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC- QMS document at the time this test was		CAL. FREQUENCY	Annual
		CAL. DUE DATE	May, 2019

PROGRAMMING PARAMETERS			FORWARD TOTALIZER INFORMATION		
DIAMETER (DN)	mm	200	AS FOUND	4936180	M3
F.S. FLOW - MAG	LPS	215.7	AS LEFT	4936199	M3
F.S. RANGE - O/P	LPS	200.0	DIFFERENCE	19	M3
CAL. k-FACTOR	GKL	4.50500			
			TEST CRITERIA		
			AS FOUND CERTIFICATION TEST	Yes	
			FORWARD FLOW DIRECTION	Yes	
			ALLOWABLE [%] ERROR	5	
			COMPONENTS TESTED		
			CONVERTER DISPLAY	Yes	
			mA OUTPUT	Yes	
			TOTALIZER	Yes	
			ACCURACY BASED ON [% o.r.]	Yes	
			ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.		
Zero Offset Flow	LPS	0.5			

FLOW TUBE SIMULATION							
		0.0	0.5	1.0	2.0	5.0	m/s
		0.2	5.2	10.2	20.2	50.2	% F.S. Flow
		0.3	5.6	11.0	21.8	54.2	% F.S. Range
REF. FLOW RATE		0.50	11.28	22.07	43.64	108.34	LPS
MUT [Reading]		0.50	11.28	22.08	43.65	108.39	LPS
MUT [Difference]		0.00	0.00	0.01	0.01	0.05	LPS
MUT [% Error]		0.00	-0.04	0.05	0.03	0.04	%
mA OUTPUT		4.000	4.903	5.766	7.491	12.668	mA
MUT [Reading]		min. 4.000 mA	4.146	5.042	5.903	7.614	12.753
MUT [Difference]		max. 20.000 mA	0.146	0.139	0.137	0.123	0.085
MUT [% Error]			3.65	2.84	2.38	1.64	0.67
TOTALIZER - REF. FLOW RATE						108.345	LPS
TOTALIZER [MUT]						7	M3
TEST TIME						64.47	SECONDS
CALC. TOTALIZER						6.985	M3
ERROR						0.21	%

COMMENTS	QUALITY MANAGEMENT STANDARDS INFO.			RESULTS		
	[QMS] INFORMATION	IDENT.	ID #	TEST	AVG % o.r.	PASS FAIL
	[REFERENCE] FTS	KRO	1			
	PROCESS METER	DMM	1	DISPLAY	0.02	PASS
	ANALOG METER	AM	N/A	mA OUTPUT	2.24	PASS
	STOP WATCH	SW	YES	TOTALIZER	0.21	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Western Office Eastern Office
2088 Jetstream Road 1602 Old Wooler Road
London, Ontario Wooler, Ontario
N5V 3P6 K0K 3M0

AS FOUND CERTIFICATION
FORWARD FLOW DIRECTION
PASS

CLIENT DETAIL

CUSTOMER OCWA West Highlands - N&S Bruce
CONTACT Leo Paul Frigault
Sr. Operations Manager
897 Bayview Street
t: 519-534-1610
c: 519-379-2225
e: lfrigault@ocwa.com

EQUIPMENT DETAIL

[MUT] MANUFACTURER Krohne
MODEL IFC 010D
SERIAL NUMBER A98 17181
FUSE On board plug
PLANT ID Wiarton SPS No2 (441048 Elm St)
METER ID Station Flow
FIT ID N/A
CLIENT TAG OCWA# 165385
OTHER ORG# 5620
GPS COORDINATES N44 44.148 W81 08.008
VERIFICATION DATE May 07, 2018
CAL. FREQUENCY Annual
CAL. DUE DATE May, 2019

VER. BY - FM Joel Van Veller

Quality Management Standards Information -
Reference equipment and instrumentation used to
conduct this verification test is found in our AC-
QMS document at the time this test was

PROGRAMMING PARAMETERS

DIAMETER (DN) mm 250
F.S. FLOW - MAG LPS 339.9
F.S. RANGE - O/P LPS 250.0
CAL. k-FACTOR GKL 4.54400

FORWARD TOTALIZER INFORMATION

AS FOUND 9806918 M3
AS LEFT 9806951 M3
DIFFERENCE 33 M3

TEST CRITERIA

AS FOUND CERTIFICATION TEST Yes
FORWARD FLOW DIRECTION Yes
ALLOWABLE [%] ERROR 5

COMPONENTS TESTED

CONVERTER DISPLAY Yes
mA OUTPUT Yes
TOTALIZER Yes
ACCURACY BASED ON [% o.r.] Yes
ERROR DOCUMENTED IN THIS REPORT; BASED ON % o.r.

Zero Offset Flow LPS -1.28

FLOW TUBE SIMULATION

		0.0	0.5	1.0	2.0	5.0	m/s	
		-0.4	4.6	9.6	19.6	49.6	% F.S. Flow	
		-0.5	6.3	13.1	26.7	67.5	% F.S. Range	
REF. FLOW RATE		-1.28	15.72	32.71	66.71	168.69	LPS	
MUT [Reading]		-1.28	15.75	32.68	66.67	168.60	LPS	
MUT [Difference]		0.00	0.03	-0.03	-0.04	-0.09	LPS	
MUT [% Error]		0.00	0.21	-0.10	-0.05	-0.05	%	
mA OUTPUT		4.000	5.006	6.094	8.269	14.796	mA	
MUT [Reading]		min. 4.000 mA	4.163	5.152	6.229	8.398	14.889	
MUT [Difference]		max. 20.000 mA	0.163	0.146	0.135	0.129	0.093	
MUT [% Error]			4.08	2.92	2.22	1.56	0.63	
TOTALIZER - REF. FLOW RATE							168.686	LPS
TOTALIZER [MUT]							17	M3
TEST TIME							100.95	SECONDS
CALC. TOTALIZER							17.029	M3
ERROR							-0.17	%

COMMENTS

COMMENTS	QUALITY MANAGEMENT STANDARDS INFO.			RESULTS		
	[QMS] INFORMATION	IDENT.	ID #	TEST	AVG % o.r.	PASS FAIL
[REFERENCE] FTS	KRO		1			
PROCESS METER	DMM		1	DISPLAY	0.00	PASS
ANALOG METER	AM		N/A	mA OUTPUT	2.28	PASS
STOP WATCH	SW		YES	TOTALIZER	-0.17	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.

Western Office Eastern Office
 2088 Jetstream Road 1602 Old Wooler Road
 London, Ontario Wooler, Ontario
 N5V 3P6 K0K 3M0

RESULTS
PASSED
CLIENT DETAIL

CUSTOMER OCWA West Highlands - N&S Bruce
 CONTACT Leo Paul Frigault
 Sr. Operations Manager
 897 Bayview Street
 t: 519-534-1610
 c: 519-379-2225
 e: lfrigault@ocwa.com

DEVICE INFORMATION

[MUT] MANUFACTURER Endress & Hauser
 MODEL Promag 400
 CONVERTER SERIAL NUMBER KC1E9919000
 ORDER CODE 5L4C3H-2RW5/0
 PLANT ID Warton Head Works
 METER ID Influent Force Main
 FIT ID FIT-104
 CLIENT TAG OCWA# not assigned
 OTHER n/a
 GPS COORDINATES n/a
 VERIFICATION DATE May 07, 2018
 CAL. FREQUENCY Annual
 CAL. DUE DATE May, 2019

VER. BY - FM Joel Van Veller

Quality Management Standards Information -
 Reference equipment and instrumentation used to
 conduct this verification test is found in our AC-
 QMS document at the time this test was

CALIBRATION

DIAMETER (DN)	mm	300
CALIBRATION FACTOR		1.3133
ZERO POINT		-4

TOTALIZER

AS FOUND	1165916.75	M3
AS LEFT	1165916.75	M3
DIFFERENCE	0	M3

VERIFICATION INFORMATION

OPERATING TIME (d/h/m/s)	d	726
	h	19
	m	4
	s	11
DATE/TIME	date (dd.mm.yy)	07.05.18
	time (hh:mm)	14:55

COMPONENTS TESTED

SENSOR - Coil Current Shot Time	yes
SENSOR - Coil Hold Voltage	yes
SENSOR - Coil Current	yes
SENSOR - Electrode Reference Voltage	yes
SENSOR - Linearity Electrode Circuit	yes
SENSOR - Offset Electrode Circuitry	yes
I/O Module	yes

VERIFICATION ID 3

OVERALL VERIFICATION
PASSED
SENSOR

Coil Current Shot Time
 Coil Hold Voltage
 Coil Current

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

Reference Voltage
 Linearity of Electrode Measuring Circuit
 Offset of Electrode Measuring Circuit

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

Reference Voltage

PASSED

PASSED

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Prosonic 400 series meters with an active HEARTBEAT.

RESULTS
PASSED
CLIENT DETAIL

CUSTOMER OCWA West Highlands - N&S Bruce
 CONTACT Leo Paul Frigault
 Sr. Operations Manager
 897 Bayview Street
 t: 519-534-1610
 c: 519-379-2225
 e: lfrigault@ocwa.com

DEVICE INFORMATION

[MUT] MANUFACTURER Endress & Hauser
 MODEL Promag 400
 CONVERTER SERIAL NUMBER KC1E9819000
 ORDER CODE 5L4C2H-3K91/0
 PLANT ID Warton Head Works
 METER ID Septage Receiving
 FIT ID FIT-105
 CLIENT TAG OCWA# not assigned
 OTHER n/a
 GPS COORDINATES n/a
 VERIFICATION DATE May 07, 2018
 CAL. FREQUENCY Annual
 CAL. DUE DATE May, 2019

VER. BY - FM Joel Van Veller

Quality Management Standards Information -
 Reference equipment and instrumentation used to
 conduct this verification test is found in our AC-
 QMS document at the time this test was

CALIBRATION

DIAMETER (DN)	mm	200
CALIBRATION FACTOR		1.0880
ZERO POINT		0

TOTALIZER

AS FOUND	6705.01	M3
AS LEFT	6705.01	M3
DIFFERENCE	0	M3

VERIFICATION INFORMATION

OPERATING TIME (d/h/m/s)	d	726
	h	18
	m	7
	s	14
DATE/TIME	date (dd.mm.yy)	07.05.18
	time (hh:mm)	15:00

COMPONENTS TESTED

SENSOR - Coil Current Shot Time	yes
SENSOR - Coil Hold Voltage	yes
SENSOR - Coil Current	yes
SENSOR - Electrode Reference Voltage	yes
SENSOR - Linearity Electrode Circuit	yes
SENSOR - Offset Electrode Circuitry	yes
I/O Module	yes

VERIFICATION ID 3

OVERALL VERIFICATION
PASSED
SENSOR

Coil Current Shot Time
 Coil Hold Voltage
 Coil Current

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

Reference Voltage
 Linearity of Electrode Measuring Circuit
 Offset of Electrode Measuring Circuit

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

Reference Voltage

PASSED

PASSED

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Prosonic 400 series meters with an active HEARTBEAT.

Western Office Eastern Office
2088 Jetstream Road 1602 Old Wooler Road
London, Ontario Wooler, Ontario
N5V 3P6 K0K 3M0

RESULTS

PASSED

CLIENT DETAIL		DEVICE INFORMATION	
CUSTOMER	OCWA West Highlands - N&S Bruce	[MUT] MANUFACTURER	Endress & Hauser
CONTACT	Leo Paul Frigault Sr. Operations Manager 897 Bayview Street t: 519-534-1610 c: 519-379-2225 e: lfrigault@ocwa.com	MODEL	Promag 400
		CONVERTER SERIAL NUMBER	KC1EF119000
		ORDER CODE	5L4C1H-40D6/0
		PLANT ID	Wiarton Head Works
		METER ID	Receiving Station
		FIT ID	FIT-301
		CLIENT TAG	OCWA# not assigned
		OTHER	n/a
		GPS COORDINATES	n/a
VER. BY - FM	Joel Van Veller	VERIFICATION DATE	May 07, 2018
Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC- QMS document at the time this test was		CAL. FREQUENCY	Annual
		CAL. DUE DATE	May, 2019

CALIBRATION			TOTALIZER		
DIAMETER (DN)	mm	100	AS FOUND	2433.12	M3
CALIBRATION FACTOR		1.3799	AS LEFT	2433.12	M3
ZERO POINT		-4	DIFFERENCE	0	M3
VERIFICATION INFORMATION			COMPONENTS TESTED		
OPERATING TIME (d/h/m/s)	d	727	SENSOR - Coil Current Shot Time	yes	
	h	10	SENSOR - Coil Hold Voltage	yes	
	m	43	SENSOR - Coil Current	yes	
	s	14	SENSOR - Electrode Reference Voltage	yes	
DATE/TIME	date (dd.mm.yy)	07.05.18	SENSOR - Linearity Electrode Circuit	yes	
	time (hh:mm)	14:45	SENSOR - Offset Electrode Circuitry	yes	
			I/O Module	yes	
VERIFICATION ID		3			

OVERALL VERIFICATION	PASSED
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
SENSOR ELECTRONIC MODULE	PASSED
Reference Voltage	PASSED

COMMENTS

This report reflects the results based on the manufacturers HEARTBEAT diagnostic technology for flow meter verification for all Prosonic 400 series meters with an active HEARTBEAT.

AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER OCWA West Highlands - N&S Bruce
 CONTACT Leo Paul Frigault
 Sr. Operations Manager
 897 Bayview Street
 t: 519-534-1610
 c: 519-379-2225
 e: lfrigault@ocwa.com

[MUT] MANUFACTURER Milltronics
 MODEL MultiRanger
 CONVERTER SERIAL NUMBER 05w023466

PLANT ID Wiaraton WWTP
 METER ID Final Effluent
 FIT ID 1001
 CLIENT TAG OCWA# 209316
 OTHER ORG# 5620
 GPS COORDINATES N44 44.014 W81 07.965

VER. BY - FM Joel Van Veller

Quality Management Standards Information -
 Reference equipment and instrumentation used to
 conduct this verification test is found in our AC-
 QMS document at the time this test was

VERIFICATION DATE May 07, 2018
 CAL. FREQUENCY Annual
 CAL. DUE DATE May, 2019

PROGRAMMING PARAMETERS

THROAT WIDTH, (exp 1.5)	m	1.010
EMPTY DISTANCE, TX to notch	m	0.5038
TRANSDUCER (TX), to sump flc	m	n/a
SUMP LEVEL, zero flow	m	n/a
MAX. HEAD	m	0.200
BLANKING DISTANCE	m	0.300
DEAD ZONE	m	0.304
MAX. FLOW	M3/H	574.1
F.S. RANGE - O/P	M3/H	574.1

TOTALIZER		
AS FOUND	542063.58	M3
AS LEFT	542128.59	M3
DIFFERENCE	65.01	M3

TEST CRITERIA	
AS FOUND CERTIFICATION TEST	Yes
ALLOWABLE [%] ERROR	15

COMPONENTS TESTED	
CONVERTER DISPLAY	yes
mA OUTPUT	yes
TOTALIZER	yes
ACCURACY BASED ON [% o.r.]	no
ERROR DOCUMENTED IN THIS REPORT; BASED ON % F.S.	

Ultrasonic sensor installed to ensure full scale flow condition

AS FOUND TEST RESULTS

		0.0	12.9	36.1	65.6	100.0	% F.S. Range
		0.000	0.050	0.100	0.150	0.200	m
REF. FLOW RATE		0.0	74.0	207.1	376.7	574.1	M3/H
MUT [Reading]		0.0	77.2	218.4	401.2	608.3	M3/H
MUT [Difference]		0.0	3.2	11.3	24.5	34.2	M3/H
MUT [% Error]		0.0	0.6	2.0	4.3	6.0	%
mA OUTPUT		4.000	6.062	9.773	14.499	20.000	mA
MUT [Reading]	min. 4.000 mA	4.004	6.072	9.852	14.758	20.069	mA
MUT [Difference]	max. 20.000 mA	0.004	0.010	0.079	0.259	0.069	mA
MUT [% Error]		0.02	0.05	0.39	1.29	0.34	%
TOTALIZER - REF. FLOW RATE						574.070	M3/H
TOTALIZER [MUT]						13.28	M3
TEST TIME						78.45	SECONDS
CALC. TOTALIZER						12.510	M3
ERROR						5.80	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] LEVEL	Sim. BOARD	Yes
PROCESS METER	DMM	1
STOP WATCH	SW	Yes

RESULTS

TEST	AVG %FS	PASS FAIL
DISPLAY	3.19	PASS
mA OUTPUT	0.42	PASS
TOTALIZER	5.80	PASS

This report reflects the test results of the overall accuracy for the above flow converter using the specified manufacturers flow tube simulator to within the specified tolerance as identified within this report.



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie : ONTARIO CLEAN WATER AGENCY

Account Number / No. de compte : 40302465

Certification Number / Numéro du Certificat : 7685732

Part Number / No. de pièce : LXV440.53.10002	AISE SC W RFID (USA)
Serial Number / No. de série : 1653164	
External Reference / Référence externe : Ait-207/tit-206	

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par :
Bilton, Stephen

Certification Date / Date de certification :
16-MAY-18



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie : ONTARIO CLEAN WATER AGENCY

Account Number / No. de compte : 40302465

Certification Number / Numéro du Certificat : 7685732

Part Number / No. de pièce : DPD1R1	Digital pH Sensor,Ryton, Convertible
Serial Number / No. de série : 1603440861	
External Reference / Référence externe : Ait-205	

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par :
Bilton, Stephen

Certification Date / Date de certification :
16-MAY-18



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie : ONTARIO CLEAN WATER AGENCY

Account Number / No. de compte : 40302465

Certification Number / Numéro du Certificat : 7685732

Part Number / No. de pièce : 9020000	ASSY, PROBE, LDO MODEL 2, HACH
Serial Number / No. de série : 160630000021	
External Reference / Référence externe : Ait-203	

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par :
Bilton, Stephen

Certification Date / Date de certification :
16-MAY-18



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie : ONTARIO CLEAN WATER AGENCY

Account Number / No. de compte : 40302465

Certification Number / Numéro du Certificat : 7685732

Part Number / No. de pièce : 9020000	ASSY, PROBE, LDO MODEL 2, HACH
Serial Number / No. de série : 160630000028	
External Reference / Référence externe : Ait-202	

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par :
Bilton, Stephen

Certification Date / Date de certification :
16-MAY-18



Certificate of Instrument Performance
Certificat de Conformité

Company Name / Nom de la Compagnie : ONTARIO CLEAN WATER AGENCY

Account Number / No. de compte : 40302465

Certification Number / Numéro du Certificat : 7685732

Part Number / No. de pièce : 9020000	ASSY, PROBE, LDO MODEL 2, HACH
Serial Number / No. de série : 160630000026	
External Reference / Référence externe : Ait-204	

Hach Sales & Service Canada Ltd. certifies that your instrument has been serviced, calibrated, verified with standards and now meets new product specifications.

Hach Sales & Service Canada Ltd. atteste que votre instrument a été entretenu, calibré et vérifié selon les normes en vigueur. Ses spécifications actuelles sont équivalentes à celles d'un produit neuf.

Certified by / Certifié par :
Bilton, Stephen

Certification Date / Date de certification :
16-MAY-18



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix C

Community Complaints

Ontario Clean Water Agency Community Complaints

Facility ID: 5620
Facility Name: Wiarion Wastewater Treatment Lagoon
Address: c/o Southampton WPCP
City: Southampton
Province: Ontario
Postal Code: NOH 2LO
Name of Person who filed Complaint: Resident of 434 Gould St
Address: 434 Gould St, Wiarion
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: 09/12/2018
Time of Complaint: 01:00:55 PM

Nature of Complaint

- | | | |
|---------------------------------|---|--|
| <input type="checkbox"/> Noise | <input type="checkbox"/> Water Supply Taste/Colour | <input type="checkbox"/> Water Pressure/No Water |
| <input type="checkbox"/> Visual | <input checked="" type="checkbox"/> Service Problem | <input type="checkbox"/> Basement Flooding |
| <input type="checkbox"/> Odour | <input type="checkbox"/> Sludge Related | |
- Other: _____

Description:

Resident of #434 Gould st complaint. Requested cleaning of sewer lateral from cleanout to main.

Action taken in response:

Operator unable to access with camera on September 13th, therefore operator directed homeowner to contact a plumber.

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 03/22/2019 01:07:08 PM

Ontario Clean Water Agency Community Complaints

Facility ID: 5620
Facility Name: Warton Wastewater Treatment Lagoon
Address: c/o Southampton WPCP
City: Southampton
Province: Ontario
Postal Code: NOH 2LO
Name of Person who filed Complaint: Chestnut Park Realty
Address: Berford St, Warton
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: 03/07/2018
Time of Complaint: 01:30:18 PM

Nature of Complaint

- | | | |
|---------------------------------|---|--|
| <input type="checkbox"/> Noise | <input type="checkbox"/> Water Supply Taste/Colour | <input type="checkbox"/> Water Pressure/No Water |
| <input type="checkbox"/> Visual | <input checked="" type="checkbox"/> Service Problem | <input type="checkbox"/> Basement Flooding |
| <input type="checkbox"/> Odour | <input type="checkbox"/> Sludge Related | |
- Other: _____

Description:

Complaint from Chestnut Park Realty (Berford St) regarding smell of sewage in the bathroom.

Action taken in response:

Operator checked manholes and sewer lateral, all clear of blockage. Operator suggested the installation of a P-trap on the kitchenette tap as there was none present.

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 03/22/2019 01:03:36 PM

Ontario Clean Water Agency Community Complaints

Facility ID: 5620
Facility Name: Warton Wastewater Treatment Lagoon
Address: c/o Southampton WPCP
City: Southampton
Province: Ontario
Postal Code: NOH 2LO
Name of Person who filed Complaint: Resident of 163 Division St
Address: 163 Division St, Warton
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: 02/14/2018
Time of Complaint: 12:57:41 PM

Nature of Complaint

- | | | |
|---------------------------------|---|--|
| <input type="checkbox"/> Noise | <input type="checkbox"/> Water Supply Taste/Colour | <input type="checkbox"/> Water Pressure/No Water |
| <input type="checkbox"/> Visual | <input checked="" type="checkbox"/> Service Problem | <input type="checkbox"/> Basement Flooding |
| <input type="checkbox"/> Odour | <input type="checkbox"/> Sludge Related | |
- Other: _____

Description:

Complaint from resident of 163 Division St, Warton regarding raw sewage in the basement.

Action taken in response:

Operator inspected sewer system and found manhole outside the house was clogged. Operator flushed manhole and stopped the back-up into the basement.

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 03/22/2019 01:01:05 PM

Ontario Clean Water Agency Community Complaints

Facility ID: 5620
Facility Name: Wiarion Wastewater Treatment Lagoon
Address: c/o Southampton WPCP
City: Southampton
Province: Ontario
Postal Code: NOH 2LO
Name of Person who filed Complaint: Resident of 423 Brown
Address: 423 Brown St, Wiarion
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: 01/28/2018
Time of Complaint: 12:55:49 PM

Nature of Complaint

- | | | |
|---------------------------------|---|--|
| <input type="checkbox"/> Noise | <input type="checkbox"/> Water Supply Taste/Colour | <input type="checkbox"/> Water Pressure/No Water |
| <input type="checkbox"/> Visual | <input checked="" type="checkbox"/> Service Problem | <input type="checkbox"/> Basement Flooding |
| <input type="checkbox"/> Odour | <input type="checkbox"/> Sludge Related | |
- Other: _____

Description:

Complaint from resident at 423 Brown st regarding sewer backing up.

Action taken in response:

Operator sent the camera through and hand augured to restore flow.

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 03/22/2019 12:57:36 PM

Ontario Clean Water Agency Community Complaints

Facility ID: 5620
Facility Name: Warton Wastewater Treatment Lagoon
Address: c/o Southampton WPCP
City: Southampton
Province: Ontario
Postal Code: NOH 2LO
Name of Person who filed Complaint: Resident of 295 Frank St
Address: 295 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: 01/19/2018
Time of Complaint: 11:33:10 AM

Nature of Complaint

- | | | |
|---------------------------------|---|--|
| <input type="checkbox"/> Noise | <input type="checkbox"/> Water Supply Taste/Colour | <input type="checkbox"/> Water Pressure/No Water |
| <input type="checkbox"/> Visual | <input checked="" type="checkbox"/> Service Problem | <input type="checkbox"/> Basement Flooding |
| <input type="checkbox"/> Odour | <input type="checkbox"/> Sludge Related | |
- Other: _____

Description:

Complaint from 295 Frank St. regarding sewer backing up.

Action taken in response:

Operator met with the plumber onsite, plumber was able to restore flow.

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 03/22/2019 12:55:44 PM



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix D

Effluent By-Pass Reports

Megan Edney

From: Camille Leung
Sent: May-15-18 2:02 PM
To: Ritchie, John (MOECC)
Cc: Leo-Paul Frigault; Shayne Finlay (shayne.finlay@ontario.ca); Megan Edney
Subject: 2018 Q1 - Bypass/Overflow Event Summary - Warton WWTP (#110000819) - Town of South Bruce Peninsula
Attachments: 2018.02.09_WiartonWWTP_Bypass#8170-AVTNM6_Notfification.pdf; 2018.02.20_WiartonWWTP_BYPASS(MBBR)901942.pdf; 2018.03.27_WiartonWWTP_Bypass(NoUV)#3108-AX9MKY.pdf

Hi John,

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.

Port Elgin WPCP Summary Report: Q1 2018

- There were **3** bypass/overflow events to report for the Warton WWTP during the reporting period.

Please see attached for detailed reports.

Thank you.

Sincerely,

Camille



WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of
APRIL 1, 2018 TO JUNE 30, 2018

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 one bypass event occurred on April 2, 2018 at 0152h.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M ³)		
April 2, 2018	01:52	02:10	0:18	16.66	UV System	Power outage caused UV system to fail

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”

- No overflow events took place during this period



WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of

JULY 1, 2018 TO SEPTEMBER 30, 2018

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 one bypass event occurred on September 20, 2018 at 23:47h.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M ³)		
September 20, 2018	23:47	00:47	1:00	17.06	UV System	Power outage caused UV system to fail

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”

- No overflow events took place during this period



WIARTON WASTEWATER TREATMENT PLANT

QUARTERLY BYPASS REPORT

For the period of
OCTOBER 1, 2018 TO DECEMBER 31, 2018

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 one bypass event occurred on November 13, 2018 at 17:23h.

Date	Time		Duration	Volume	Treatment Process Bypassed	Reason for Bypass
	Start	End	HH:MM	(M ³)		
November 13, 2018	17:23	17:43	0:20	18.05	UV System	Power outage caused UV system to fail

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”

- No overflow events took place during this period



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix E

Septage Laboratory Results



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

07-February-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 26 January 2018

LR Report: CA13683-JAN18

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

Copy: #1

Phone: 519-797-2561
Fax:pdf

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-Holdi ng Tank
Sample Date & Time					24-Jan-18 13:00
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Biochemical Oxygen Demand (BOD5) [mg/L]	26-Jan-18	15:59	31-Jan-18	12:57	3220
Total Suspended Solids [mg/L]	30-Jan-18	08:09	30-Jan-18	15:34	4880
Chemical Oxygen Demand [mg/L]	29-Jan-18	11:51	30-Jan-18	10:35	3550
Ammonia+Ammonium (N) [mg/L]	26-Jan-18	18:24	30-Jan-18	11:35	184
Total Kjeldahl Nitrogen [as N mg/L]	29-Jan-18	09:12	31-Jan-18	10:13	528
Silver (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	< 0.08
Aluminum (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	13.2
Arsenic (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.03
Barium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.713
Calcium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	273
Cadmium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.004
Cobalt (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.007
Chromium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.041
Copper (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	2.32
Iron (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	13.1
Mercury (total) [mg/L]	29-Jan-18	15:24	29-Jan-18	16:46	0.00009
Manganese (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.563
Magnesium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	59.1
Potassium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	52.7
Sodium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	91.1
Nickel (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.050
Phosphorus (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	43.4
Lead (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.063
Selenium (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	< 0.01
Tin (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	0.02
Zinc (total) [mg/L]	29-Jan-18	15:25	29-Jan-18	16:30	8.21
Isopropyl Alcohol [mg/L]	02-Feb-18	14:59	05-Feb-18	16:01	< 5
Methyl alcohol [mg/L]	02-Feb-18	14:59	05-Feb-18	16:01	< 5
Acetone [µg/L]	26-Jan-18	16:16	30-Jan-18	10:19	< 300
Benzene [µg/L]	26-Jan-18	16:16	30-Jan-18	10:19	< 5
Ethylbenzene [µg/L]	26-Jan-18	16:16	30-Jan-18	10:19	< 5
Methyl ethyl ketone [µg/L]	26-Jan-18	16:16	30-Jan-18	10:20	< 200
Toluene [µg/L]	26-Jan-18	16:16	30-Jan-18	10:20	83.1
Xylene (total) [µg/L]	26-Jan-18	16:16	30-Jan-18	10:20	< 5



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

LR Report : CA13683-JAN18

Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - K0L 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

09-March-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 28 February 2018

LR Report: CA13952-FEB18

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

Copy: #1

Phone: 519-797-2561
Fax:pdf

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-Hold ing Tank
Sample Date & Time					26-Feb-18 17:00
Temperature Upon Receipt [°C]	---	---	---	---	10.0
Biochemical Oxygen Demand (BOD5) [mg/L]	28-Feb-18	17:51	06-Mar-18	16:02	1260
Total Suspended Solids [mg/L]	05-Mar-18	11:57	06-Mar-18	14:29	313
Chemical Oxygen Demand [mg/L]	02-Mar-18	06:48	02-Mar-18	14:01	2150
Ammonia+Ammonium (N) [mg/L]	28-Feb-18	16:30	01-Mar-18	11:54	10.2
Phosphorus (total) [mg/L]	01-Mar-18	06:22	05-Mar-18	14:14	9.2
Total Kjeldahl Nitrogen [as N mg/L]	01-Mar-18	06:22	06-Mar-18	13:55	83.5
Isopropyl Alcohol [mg/L]	08-Mar-18	09:09	08-Mar-18	15:03	< 5
Methyl alcohol [mg/L]	08-Mar-18	09:09	08-Mar-18	15:03	< 5
Acetone [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 600
Benzene [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10
Ethylbenzene [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10
Dichloromethane [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10
Methyl ethyl ketone [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 400
Toluene [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	17.7
Xylene (total) [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10
o-xylene [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10
m/p-xylene [µg/L]	28-Feb-18	15:01	01-Mar-18	14:41	< 10

Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
Lakefield - Ontario - KOL 2H0
Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

21-March-2018

OCWA-Southampton (Wiaraton WPCP)

Attn : Megan Edney

Date Rec. : 15 March 2018

LR Report: CA13453-MAR18

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

Copy: #1

Phone: 519-797-2561
Fax:pdf

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-Hold ing Tank
Sample Date & Time					13-Mar-18 14:00
Temperature Upon Receipt [°C]	---	---	---	---	5.0
Biochemical Oxygen Demand (BOD5) [mg/L]	15-Mar-18	17:24	20-Mar-18	14:59	478
Total Suspended Solids [mg/L]	16-Mar-18	10:58	19-Mar-18	14:00	307
Chemical Oxygen Demand [mg/L]	16-Mar-18	12:29	16-Mar-18	16:06	1220
Ammonia+Ammonium (N) [mg/L]	15-Mar-18	20:37	16-Mar-18	11:01	65.9
Total Kjeldahl Nitrogen [as N mg/L]	16-Mar-18	11:51	21-Mar-18	09:43	89.5
Phosphorus (total) [mg/L]	16-Mar-18	11:51	21-Mar-18	12:15	12.2
Isopropyl Alcohol [mg/L]	20-Mar-18	13:32	20-Mar-18	15:46	< 5
Methyl alcohol [mg/L]	20-Mar-18	13:32	20-Mar-18	15:46	< 5
Acetone [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 300
Benzene [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5
Ethylbenzene [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5
Dichloromethane [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5
Methyl ethyl ketone [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 200
Toluene [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	206
Xylene (total) [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5
o-xylene [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5
m/p-xylene [µg/L]	15-Mar-18	13:38	19-Mar-18	14:14	< 5

Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



SGS Canada Inc.

P.O. Box 4300 - 185 Concession St.
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Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

20-April-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 06 April 2018

LR Report: CA13122-APR18

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

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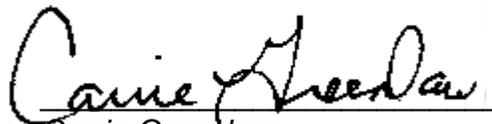
Phone: 519-797-2561
Fax:pdf

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-Apr-18 13:40
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Biochemical Oxygen Demand (BOD5) [mg/L]	06-Apr-18	16:13	12-Apr-18	11:34	366
Total Suspended Solids [mg/L]	09-Apr-18	08:16	12-Apr-18	16:28	212
Chemical Oxygen Demand [mg/L]	10-Apr-18	13:41	13-Apr-18	15:22	750
Ammonia+Ammonium (N) [mg/L]	10-Apr-18	18:00	11-Apr-18	14:05	287
Phosphorus (total) [mg/L]	09-Apr-18	12:54	13-Apr-18	11:28	23.7
Total Kjeldahl Nitrogen [as N mg/L]	09-Apr-18	12:54	12-Apr-18	14:06	269
Isopropyl Alcohol [mg/L]	19-Apr-18	09:18	19-Apr-18	15:23	< 5
Methyl alcohol [mg/L]	19-Apr-18	09:18	19-Apr-18	15:23	< 5
Acetone [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	88
Benzene [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5
Ethylbenzene [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5
Dichloromethane [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5
Methyl ethyl ketone [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 20
Toluene [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	5.4
Xylene (total) [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5
o-xylene [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5
m/p-xylene [µg/L]	10-Apr-18	16:11	11-Apr-18	16:04	< 0.5

Volatiles were received in 40 mL EPA vials preserved with Sodium Thi osulphate and Alcohols were received in 40mL EPA vials preserved with Ammonium Chloride. Client was notified.


Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



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Works #: 110000819

Project : PO#017018

07-May-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 02 May 2018

LR Report: CA13026-MAY18

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

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Phone: 519-797-2561
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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-Hol ding Tank
Sample Date & Time					30-Apr-18 15:00
Temperature Upon Receipt [°C]	---	---	---	---	4.0
Silver (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	< 0.08
Aluminum (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	31.5
Arsenic (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.08
Barium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.887
Calcium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	970
Cadmium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.017
Cobalt (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.016
Chromium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.123
Copper (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	7.75
Iron (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	54.2
Mercury (total) [mg/L]	03-May-18	07:51	04-May-18	14:26	< 0.00001
Manganese (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	3.18
Magnesium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	95.8
Potassium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	42.0
Sodium (total) [mg/L]	04-May-18	08:41	04-May-18	12:46	71.1
Nickel (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.186
Phosphorus (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	257
Lead (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.237
Selenium (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.03
Tin (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	0.03
Zinc (total) [mg/L]	04-May-18	08:41	04-May-18	11:12	14.0



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Works #: 110000819

Project : PO#017018

LR Report : CA13026-MAY18

Carrie Greenlaw
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Project Specialist
Environmental Services, Analytical

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 Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

19-June-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 31 May 2018
LR Report: CA10855-MAY18

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

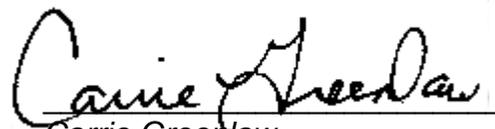
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Phone: 519-797-2561
 Fax:pdf

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					30-May-18 10:00
Temperature Upon Receipt [°C]					13.0
Biochemical Oxygen Demand (BOD5) [mg/L]	31-May-18	17:43	05-Jun-18	12:50	1430
Total Suspended Solids [mg/L]	04-Jun-18	08:19	05-Jun-18	14:43	415
Chemical Oxygen Demand [mg/L]	18-Jun-18	06:25	19-Jun-18	11:59	2080
Ammonia+Ammonium (N) [mg/L]	01-Jun-18	16:00	05-Jun-18	12:20	99.3
Phosphorus (total) [mg/L]	01-Jun-18	08:00	07-Jun-18	09:59	14.7
Total Kjeldahl Nitrogen [as N mg/L]	01-Jun-18	08:00	07-Jun-18	12:29	148
Isopropyl Alcohol [mg/L]	07-Jun-18	13:52	12-Jun-18	12:47	< 5
Methyl alcohol [mg/L]	07-Jun-18	13:52	12-Jun-18	12:47	< 5
Acetone [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 1200
Benzene [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
Ethylbenzene [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
Dichloromethane [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
Methyl ethyl ketone [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 800
Toluene [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
Xylene (total) [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
o-xylene [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20
m/p-xylene [ug/L]	06-Jun-18	16:23	11-Jun-18	16:03	< 20


 Carrie Greenlaw
 Project Specialist
 Environmental Services, Analytical



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Works #: 110000819

Project : PO#017018

17-July-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 30 June 2018

LR Report: CA13841-JUN18

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

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Phone: 519-797-2561
Fax:pdf

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-Hold ing Tank
Sample Date & Time					29-Jun-18 13:45
Temperature Upon Receipt [°C]	---	---	---	---	13.0
Biochemical Oxygen Demand (BOD5) [mg/L]	09-Jul-18	15:26	16-Jul-18	15:07	1830 UAL
Total Suspended Solids [mg/L]	04-Jul-18	13:27	10-Jul-18	08:54	376
Chemical Oxygen Demand [mg/L]	05-Jul-18	08:06	05-Jul-18	11:37	2120
Phosphorus (total) [mg/L]	04-Jul-18	06:41	06-Jul-18	09:14	2.4
Ammonia+Ammonium (N) [mg/L]	03-Jul-18	18:00	05-Jul-18	14:35	126
Total Kjeldahl Nitrogen [as N mg/L]	04-Jul-18	06:41	07-Jul-18	16:30	132
Isopropyl Alcohol [mg/L]	05-Jul-18	10:17	06-Jul-18	12:55	< 5
Methyl alcohol [mg/L]	05-Jul-18	10:17	06-Jul-18	12:55	< 5
Acetone [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	58
Benzene [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5
Ethylbenzene [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5
Dichloromethane [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5
Methyl ethyl ketone [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 20
Toluene [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	61.2
Xylene (total) [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5
o-xylene [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5
m/p-xylene [µg/L]	03-Jul-18	13:56	04-Jul-18	14:20	< 0.5

Note: The initial BOD result was outside of the acceptable range for the dilutions used. The analysis was repeated; however, the recommended holding time of 7 days was exceeded. UAL - Unreliable: Sample Age Exceeds Normal Limit



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Works #: 110000819

Project : PO#017018

LR Report : CA13841-JUN18

Carrie Greenlaw
Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



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Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

18-July-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 11 July 2018

LR Report: CA12336-JUL18

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

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Phone: 519-797-2561
Fax:pdf

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-H olding Tank
Sample Date & Time					10-Jul-18 13:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Silver (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.08
Aluminum (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.17
Arsenic (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.01
Barium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.0471
Calcium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	73.5
Cadmium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.001
Cobalt (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.002
Chromium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.002
Copper (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.044
Iron (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	1.07
Mercury (total) [mg/L]	18-Jul-18	15:06	18-Jul-18	15:21	0.00005
Manganese (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.0807
Magnesium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	26.7
Potassium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	60.3
Sodium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	316
Nickel (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.004
Phosphorus (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	16.4
Lead (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.007
Selenium (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.01
Tin (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	< 0.02
Zinc (total) [mg/L]	12-Jul-18	13:30	12-Jul-18	15:25	0.081



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Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

LR Report : CA12336-JUL18

Carrie Greenlaw
Carrie Greenlaw
Project Specialist
Environmental Services, Analytical



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 Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

19-July-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 11 July 2018
LR Report: CA12352-JUL18

P.O. Box 760
 Southampton, ON
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Phone: 519-797-2561
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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-Hol ding Tank
Sample Date & Time					10-Jul-18 13:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Biochemical Oxygen Demand (BOD5) [mg/L]	11-Jul-18	16:42	17-Jul-18	14:36	1690
Total Suspended Solids [mg/L]	11-Jul-18	17:43	13-Jul-18	11:39	380
Chemical Oxygen Demand [mg/L]	16-Jul-18	06:18	18-Jul-18	11:06	2200
Ammonia+Ammonium (N) [mg/L]	12-Jul-18	22:25	14-Jul-18	10:10	151
Total Kjeldahl Nitrogen [as N mg/L]	12-Jul-18	07:04	19-Jul-18	09:48	170
Phosphorus (total) [mg/L]	12-Jul-18	07:04	18-Jul-18	14:04	14.6
Isopropyl Alcohol [mg/L]	16-Jul-18	16-Jul-18	17-Jul-18	11:27	< 5
Methyl alcohol [mg/L]	16-Jul-18	16-Jul-18	17-Jul-18	11:27	< 5
Acetone [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	50
Benzene [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5
Ethylbenzene [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5
Dichloromethane [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5
Methyl ethyl ketone [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 20
Toluene [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	46.0
Xylene (total) [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5
o-xylene [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5
m/p-xylene [µg/L]	12-Jul-18	16:14	16-Jul-18	14:20	< 0.5



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Works #: 110000819

Project : PO#017018

LR Report : CA12352-JUL18

Carrie Greenlaw
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Project Specialist
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 Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819
Project : PO#017018

05-September-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 23 August 2018
LR Report: CA13561-AUG18

P.O. Box 760
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 N0H 2L0, Canada

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Phone: 519-797-2561
 Fax:pdf

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-Holdi ng Tank
Sample Date & Time					22-Aug-18 10:30
Temperature Upon Receipt [°C]	---	---	---	---	12.0
Biochemical Oxygen Demand (BOD5) [mg/L]	23-Aug-18	16:33	28-Aug-18	14:37	415
Total Suspended Solids [mg/L]	27-Aug-18	11:15	05-Sep-18	15:56	160
Chemical Oxygen Demand [mg/L]	24-Aug-18	13:55	27-Aug-18	19:50	630
Ammonia+Ammonium (N) [as N mg/L]	24-Aug-18	09:00	27-Aug-18	15:52	52.7
Total Kjeldahl Nitrogen [as N mg/L]	24-Aug-18	08:12	30-Aug-18	13:28	180
Phosphorus (total) [mg/L]	24-Aug-18	08:12	29-Aug-18	14:38	14.4
Isopropyl Alcohol [mg/L]	31-Aug-18	12:17	05-Sep-18	13:45	< 5
Methyl alcohol [mg/L]	31-Aug-18	12:17	05-Sep-18	13:45	< 5
Acetone [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 30
Benzene [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
Ethylbenzene [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
Dichloromethane [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
Methyl ethyl ketone [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 20
Toluene [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
Xylene (total) [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
o-xylene [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5
m/p-xylene [ug/L]	27-Aug-18	16:26	28-Aug-18	13:35	< 0.5


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 Project Specialist
 Environmental Services, Analytical



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Works #: 110000819

Project : PO#017018

09-October-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 27 September 2018

LR Report: CA12972-SEP18

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

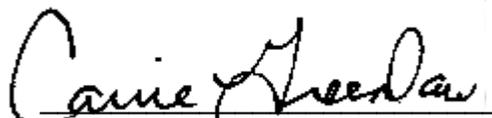
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Phone: 519-797-2561
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CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: Sept Sept-Septage-Hold ing Tank
Sample Date & Time					25-Sep-18 13:45
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Biochemical Oxygen Demand (BOD5) [mg/L]	27-Sep-18	18:25	02-Oct-18	14:29	1480
Total Suspended Solids [mg/L]	28-Sep-18	13:16	03-Oct-18	21:53	650
Chemical Oxygen Demand [mg/L]	28-Sep-18	08:19	02-Oct-18	15:26	2300
Ammonia+Ammonium (N) [as N mg/L]	28-Sep-18	17:00	01-Oct-18	14:21	92.3
Total Kjeldahl Nitrogen [as N mg/L]	28-Sep-18	15:23	05-Oct-18	10:43	144
Phosphorus (total) [mg/L]	28-Sep-18	15:23	05-Oct-18	16:47	20.6
Isopropyl Alcohol [mg/L]	02-Oct-18	09:08	04-Oct-18	13:55	< 5
Methyl alcohol [mg/L]	02-Oct-18	09:08	04-Oct-18	13:55	< 5
Acetone [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	47
Benzene [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5
Ethylbenzene [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5
Dichloromethane [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5
Methyl ethyl ketone [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	22
Toluene [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	31.6
Xylene (total) [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5
o-xylene [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5
m/p-xylene [ug/L]	27-Sep-18	16:12	01-Oct-18	12:55	< 0.5


 Carrie Greenlaw
 Project Specialist
 Environmental Services, Analytical



SGS Canada Inc.

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Phone: 705-652-2000 FAX: 705-652-6365

Works #: 110000819

Project : PO#017018

30-October-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 25 October 2018

LR Report: CA13907-OCT18

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

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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-Hol ding Tank
Sample Date & Time					24-Oct-18 13:00
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Silver (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.08
Aluminum (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.06
Arsenic (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.01
Barium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.0025
Calcium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	4.91
Cadmium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.001
Cobalt (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.001
Chromium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.002
Copper (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.051
Iron (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.048
Mercury (total) [mg/L]	26-Oct-18	16:21	30-Oct-18	09:39	0.00002
Manganese (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.0117
Magnesium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	1.87
Potassium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	42.4
Sodium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	208
Nickel (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.004
Lead (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.007
Selenium (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.01
Tin (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	< 0.02
Zinc (total) [mg/L]	26-Oct-18	15:30	30-Oct-18	09:39	0.037



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Works #: 110000819

Project : PO#017018

LR Report : CA13907-OCT18

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Works #: 110000819

Project : PO#017018

31-October-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 25 October 2018

LR Report: CA13926-OCT18

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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-Hold ing Tank
Sample Date & Time					24-Oct-18 13:00
Temperature Upon Receipt [°C]	---	---	---	---	6.0
Biochemical Oxygen Demand (BOD5) [mg/L]	25-Oct-18	17:18	30-Oct-18	14:46	1670
Total Suspended Solids [mg/L]	29-Oct-18	07:55	30-Oct-18	12:26	114
Chemical Oxygen Demand [mg/L]	26-Oct-18	07:40	31-Oct-18	09:11	2880
Ammonia+Ammonium (N) [as N mg/L]	25-Oct-18	20:00	29-Oct-18	09:46	50.3
Total Kjeldahl Nitrogen [as N mg/L]	26-Oct-18	11:20	31-Oct-18	14:08	106
Phosphorus (total) [mg/L]	26-Oct-18	11:20	31-Oct-18	14:03	6.8
Isopropyl Alcohol [mg/L]	26-Oct-18	11:34	31-Oct-18	12:45	< 5
Methyl alcohol [mg/L]	26-Oct-18	11:34	31-Oct-18	12:45	< 5
Acetone [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	339
Benzene [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
Ethylbenzene [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
Dichloromethane [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
Methyl ethyl ketone [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 20
Toluene [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
Xylene (total) [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
o-xylene [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5
m/p-xylene [ug/L]	30-Oct-18	16:50	31-Oct-18	10:47	< 0.5

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Works #: 110000819

Project : PO#017018

07-December-2018

OCWA-Southampton (Warton WPCP)

Attn : Megan Edney

Date Rec. : 29 November 2018

LR Report: CA13787-NOV18

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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-Holdi ng Tank
Sample Date & Time					28-Nov-18 10:00
Temperature Upon Receipt [°C]	---	---	---	---	8.0
Biochemical Oxygen Demand (BOD5) [mg/L]	29-Nov-18	16:49	04-Dec-18	14:32	424
Total Suspended Solids [mg/L]	30-Nov-18	12:38	03-Dec-18	16:30	400
Chemical Oxygen Demand [mg/L]	03-Dec-18	08:05	05-Dec-18	16:41	2500
Ammonia+Ammonium (N) [as N mg/L]	29-Nov-18	17:47	03-Dec-18	09:25	35.3
Total Kjeldahl Nitrogen [as N mg/L]	30-Nov-18	09:02	05-Dec-18	11:59	89.8
Phosphorus (total) [mg/L]	30-Nov-18	09:02	06-Dec-18	15:40	10.6
Isopropyl Alcohol [mg/L]	03-Dec-18	10:52	05-Dec-18	11:48	< 5
Methyl alcohol [mg/L]	03-Dec-18	10:52	05-Dec-18	11:48	< 5
Acetone [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	60
Benzene [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5
Ethylbenzene [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5
Dichloromethane [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5
Methyl ethyl ketone [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	54
Toluene [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	67.2
Xylene (total) [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5
o-xylene [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5
m/p-xylene [ug/L]	30-Nov-18	16:05	04-Dec-18	11:45	< 0.5

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Works #: 110000819

Project : PO#017018

31-December-2018

OCWA-Southampton (Wiarion WPCP)

Attn : Megan Edney

Date Rec. : 21 December 2018

LR Report: CA12795-DEC18

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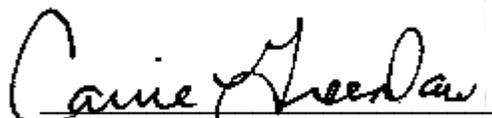
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Phone: 519-797-2561
Fax:pdf

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-Hold ing Tank
Sample Date & Time					20-Dec-18 09:15
Temperature Upon Receipt [°C]	---	---	---	---	9.0
Biochemical Oxygen Demand (BOD5) [mg/L]	21-Dec-18	15:00	27-Dec-18	14:37	1510
Total Suspended Solids [mg/L]	24-Dec-18	11:12	28-Dec-18	15:22	215
Chemical Oxygen Demand [mg/L]	27-Dec-18	07:58	31-Dec-18	12:58	2320
Ammonia+Ammonium (N) [as N mg/L]	21-Dec-18	16:00	24-Dec-18	12:09	21.1
Total Kjeldahl Nitrogen [as N mg/L]	27-Dec-18	14:25	31-Dec-18	10:34	79.0
Phosphorus (total) [mg/L]	27-Dec-18	14:25	31-Dec-18	11:05	11.6
Isopropyl Alcohol [mg/L]	28-Dec-18	09:47	31-Dec-18	10:57	< 5
Methyl alcohol [mg/L]	28-Dec-18	09:47	31-Dec-18	10:57	< 5
Acetone [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	50
Benzene [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5
Ethylbenzene [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5
Dichloromethane [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5
Methyl ethyl ketone [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	38
Toluene [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	37.9
Xylene (total) [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5
o-xylene [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5
m/p-xylene [ug/L]	22-Dec-18	16:48	24-Dec-18	10:48	< 0.5


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