ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

March 28, 2024

Ministry of the Environment, Conservation and Parks
3rd floor, 101 17th Street East
Owen Sound, Ontario
N4K 0A5

RE: 2023 Southampton Sewage Treatment Plant Annual Sewage Performance Report (CofA #3-1216-88-947) and Municipal Sewage Collection System Performance Report (CLI-ECA 093-W601) – Town of Saugeen Shores

Please see attached for the 2023 Annual Sewage and Collection System Performance Reports prepared by the Ontario Clean Water Agency on behalf of the Town of Saugeen Shores for the:

- Southampton Sewage Treatment Plant
- Town of Saugeen Shores Municipal Sewage Collection System

This report was completed in accordance with the requirements set out in CofA #3-1216-88-947 *Condition 17*, issued July 25, 1994 and Municipal Sewage Collection System CLI-ECA #093-W601 *Schedule E (4.6)*, issued January 10, 2023. Your receipt of this report by or before March 31, satisfies the regulatory requirements:

- CofA #3-1216-88-947 that "The owner shall prepare and submit a performance report to the Regional Director on an annual basis, and the submission shall be made no later than 90 days following the end of each calendar year." and;
- CLI-ECA #093-W601 that "The Owner shall prepare an annual performance report for the Authorized System that is submitted to the Director on or before March 31st of each year and covers the period from January 1st to December 31st of the preceding calendar year.

In addition, CLI-ECA #093-W601 requires that report shall be made available, on request and without charge, to members of the public who are served by the Authorized System; and made available, by June 1 of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet. We kindly ask that notification is provided once the report is posted on the Town's Municipal website.

Lastly, the Ministry has indicated that the Municipal Collection System ECA Annual Reports can either be prepared as a separate report or as a subsection of the Annual Sewage Report for the Wastewater Treatment Facility, attached you will find one report that satisfies the reporting requirements of both Environmental Compliance Approvals.

Should you require further clarification on the information found within the Annual Sewage Performance Report, please feel free to contact me.

Sincerely,

Dan MacLeod
Senior Operations Manager
OCWA, Georgian Highlands Region

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

SOUTHAMPTON
SEWAGE TREATMENT PLANT

ANNUAL PERFORMANCE REPORT

For the period of
JANUARY 1, 2023 TO DECEMBER 31, 2023

Prepared by the Ontario Clean Water Agency
For The Town of Saugeen Shores

1. System Description

The Southampton Sewage Treatment Plant began operating in its current configuration in 1996. The plant is a modified extended aeration activated sludge facility, which includes:

- Four (4) secondary clarifiers;
- Two (2) aeration tanks (oxidation ditches);
- Phosphorus removal (by continuous alum addition) and;
- Disinfection of final effluent by ultra-violet light.

The sludge is aerobically digested in the primary and secondary digester and stored in four aerated holding tanks. Digested sludge is land applied as farm fertilizer in accordance with the Non-Agricultural Source Materials (NASM) Guidelines. The plant has storage capability for approximately six months in the event that conditions are not favorable for land application.

An overview of Southampton Sewage Treatment Plant can be found in Table 1:

Table 1. Southampton Sewage Treatment Plant Overview

Facility Name	Southampton Sewage Treatment Plant
Facility Type	Modified Extended Aeration
Plant Classification	II WWT
Works Number	110001453
Design Capacity	3,046 m^3/day
Number of Households	~1869 Residential + ~134 Commercial
Receiving Water	Saugeen River
Certificate of Approval	3-1216-88-947 (Sewage Treatment Plant)
	8-1070-95-006 (Air)

2. Monitoring and Compliance Reports

As per Section 17(a) of C of A 3-1216-88-947, *a summary of all monitoring and compliance reports submitted in the reporting period, including an overview of the success and adequacy of the sewage treatment program* is required.

During the reporting period, the following reports were submitted:

- Discharge Data Reports (Ministry of Environment, Conservation and Parks, MECP)
- Monitoring Reports (Government of Canada)
- Monthly Process and Compliance Reports (Town of Saugeen Shores)

2.1 Discharge Data Report (MECP)

The Ontario Clean Water Agency (OCWA) has an agreement with the MECP to submit quarterly discharge data for all OCWA operated municipal sewage treatment facilities 45 days at the end of each quarter. Monitoring data is submitted via the Ministry of Environment Wastewater System (MEWS). The MECP has these reports stored in a shared location where MECP Inspectors can obtain and review them. There are no limits/objectives for discharge for the quarterly Discharge Data Report.

2.2 Monitoring Report (WSER)

A monitoring report required under the Wastewater Systems Effluent Regulation (WSER) is submitted on a quarterly basis to the Government of Canada via the Effluent Regulatory Reporting Information System (ERRIS). The quarterly monitoring report requires that the following information be reported for the Southampton Sewage Treatment Plant:

- Number of days effluent was deposited
- Total volume of effluent deposited
- Average CBOD (limit of 25 mg/L)
- Average concentration of suspended solids (limit of 25 mg/L)

The monitoring reports can be found within the ERRIS. All results for average CBOD and concentration of suspended solids were below the limits set out in WSER. Testing is performed annually every August for Acute Lethality of the effluent to Rainbow Trout. The 2023 results showed 0% mortality.

2.3 Process & Compliance Report.

As per the Services Agreement (Saugeen Shores/OCWA Agreement) that OCWA has with the Town of Saugeen Shores, a Process and Compliance Report is to be submitted for each month of the year. The Monthly Process and Compliance Reports include the following information for the Southampton Sewage Treatment Plant:

- Rated peak flow
- Rated average daily flow
- Average daily raw sewage flow
- Maximum daily raw sewage flow
- Scheduled maintenance
- Unscheduled maintenance
- Call-ins
- Public inquiries and related issues

2.4 Adequacy of the Sewage Treatment Program

The current sewage treatment program provides effluent that meets all of the effluent requirements for the reports described in section 2.1 to 2.3. In addition to this, the effluent for 2023 was within all effluent limits set out in CofA 3-1216-88-947. It was also within all effluent objectives, with the exception of Total Phosphorus in August where the monthly average produced a result above the objective but below the limit. Based on this evidence, the current sewage treatment program is deemed adequate. OCWA will continue to stay within effluent limits and will continue to aim to meet effluent objectives during each reporting period.

3. Monitoring and Analytical Data

As per Section 17(b) of C of A 3-1216-88-947, *a comprehensive interpretation of all monitoring data and analytical data collected for the Southampton Sewage Treatment Plant during the reporting period compared to the effluent quality and quantity criteria described in Sections 11 and 12* of C of A 3-1216-88-947 is required.

3.1 Sampling Frequency

Both raw sewage (influent) and effluent are sampled on a regular basis. The sampling types and frequencies are summarized in Table 2 and Table 3. The sampling frequencies either meet or exceed the requirements set out in Section 15 of C of A 3-1216-88-947.

Table 2. Raw Sewage Monitoring – Sampling Frequencies

Parameter	Sample Type	Minimum Frequency
BOD_5[2a]	24 hour Composite	Monthly
Total Suspended Solids[2a]	24 hour Composite	Monthly
Total Phosphorus[2a]	24 hour Composite	Monthly
Total Kjeldahl Nitrogen[2a]	24 hour Composite	Monthly
Alkalinity	24 hour Composite	Monthly

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

Table 3. Effluent Sampling Monitoring – Sampling Frequencies

Parameters	Sample Type	Minimum Frequency
BOD_5[3a]	24 hour Composite	Monthly
Total Suspended Solids[3a]	24 hour Composite	Monthly
Total Phosphorus[3a]	24 hour Composite	Monthly
Total Kjeldahl Nitrogen	24 hour Composite	Monthly
Ammonia Nitrogen[3a]	24 hour Composite	Monthly
Nitrite and Nitrate[3a]	24 hour Composite	Monthly
Alkalinity	24 hour Composite	Monthly
pH	24 hour Composite	Monthly
E. Coli[3a]	Grab	Monthly

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

3.2 Effluent Objectives and Effluent Limits

The effluent objectives as per Section 11 of C of A 3-1216-88-947 for the Southampton Sewage Treatment Plant are:

Table 4. Effluent Objectives as per Section 11 of C of A 3-1216-88-947

Effluent Parameter	Average Annual Concentration (mg/L)	Average Annual Loading (kg/day)
BOD_5	20	60.8
Suspended Solids	20	60.8
Total Phosphorus as P	0.5[4a]	1.5
E.Coli	150 cfu/100 mL geometric mean density for a calendar month	

[4a]The objective for Total Phosphorus as P shall be based on 'average monthly concentrations'.

The effluent limits that are to be met as per Section 12 of C of A 3-1216-88-947 for the Southampton Sewage Treatment Plant are found in Table 5. Any exceedance with the limits found in Table 5 constitutes a non-compliance with C of A 3-1216-88-947.

Table 5. Effluent Limits as per Section 12 of C of A 3-1216-88-947

Effluent Parameter	Average Concentration (mg/L)	Average Annual Loading (kg/day)
BOD_5	25 (Annual)	76.1
Suspended Solids	25 (Annual)	76.1
Total Phosphorus as P	1 (Monthly)	3
E.Coli	Not to exceed 200 cfu/100 mL geometric mean density for any calendar month	

3.3 Comparison of Data to Effluent Objectives and Effluent Limits

Analytical and monitoring data for the Southampton Sewage Treatment Plant is stored in OCWA's data management system (PDM). Annual and monthly averages for flows, CBOD, BOD_5, Suspended Solids, Total Phosphorus as P, Nitrogen-series and *E.coli* can be found in Appendix A. A comparison of analytical data from effluent samples to the effluent objectives and effluent limits show the following removal efficiencies:

Table 6. 2023 Effluent Annual Average Concentrations and Removal Efficiencies

Parameter	Annual Average Concentration	Average Percent Removal Efficiency
BOD_5 (mg/L)	3.42	96.3%
Suspended Solids (mg/L)	9.75	92.8%
Total Phosphorus as P (mg/L)	0.31	89.5%

Table 7. Comparison of Effluent Limits and Objectives to Sampled Effluent for Southampton Sewage Treatment Plant (2023)

	BOD_5						**Suspended Solids**						**Total Phosphorus**						**E. Coli**		
	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Objectives (60.8 kg/d)	Within Limits (76.1 kg/d)	Average Annual Concentration (mg/L)	Within Objectives (20 mg/L)	Within Limits (25 mg/L)	Average Annual Loading (kg/d)	Within Objectives (60.8 kg/d)	Within Limits (76.1 kg/d)	Average Monthly Concentration (mg/L)	Within Objectives (0.5 mg/L)	Within Limits (1 mg/L)	Average Annual Loading (kg/d)	Within Objectives (1.5 kg/d)	Within Limits (3 kg/d)	Monthly Geometric Mean Density (mg/L)	Within Objectives (150 cfu/ 100 mL)	Within Limits (200 cfu/ 100 mL)
January	3.42	Y	Y	6.90	Y	Y	9.75	Y	Y	19.7	Y	Y	0.28	Y	Y	0.630	Y	Y	1.59	Y	Y
February													0.17	Y	Y				4.00	Y	Y
March													0.27	Y	Y				2.83	Y	Y
April													0.32	Y	Y				<2.00	Y	Y
May													0.42	Y	Y				<2.00	Y	Y
June													0.27	Y	Y				<2.00	Y	Y
July													0.40	Y	Y				<2.00	Y	Y
August													0.52	N	Y				8.62	Y	Y
September													0.24	Y	Y				<2.00	Y	Y
October													0.46	Y	Y				<2.00	Y	Y
November													0.17	Y	Y				<2.00	Y	Y
December													0.17	Y	Y				<2.00	Y	Y

3.4 Additional Monitoring Parameters

The following parameters do not have limits or objectives but are monitored on a regular basis (see Section 3.1 for sampling frequency) as required by C of A 3-1216-88-947. Table 8, Table 9 and Table 10 summarize the monitoring data for the reporting period. The raw sewage and effluent values are similar to the results from the previous year.

Table 8. Raw Sewage Monitoring Parameters as required by C of A 3-1216-88-947 for Southampton Sewage Treatment Plant, 2023

Parameter	Average	Minimum	Maximum
BOD_5[8a] (mg/L)	88.29	42.00	133.00
Total Suspended Solids[8a] (mg/L)	150.04	80.00	353.00
Total Phosphorus[8a] (mg/L)	2.96	1.98	5.59
Total Kjeldahl Nitrogen[8a] (mg/L)	22.51	14.20	38.10
Alkalinity (mg/L as CaCO3)	274.92	243.00	319.00

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

Table 9. Effluent Monitoring Parameters as required by C of A 3-1216-88-947 for Southampton Sewage Treatment Plant, 2023

Parameters	Average	Minimum	Maximum
Total Kjeldahl Nitrogen (mg/L)	0.78	0.50	2.60
Total Ammonia Nitrogen[9a] (mg/L)	0.10	0.10	0.20
Nitrite and Nitrate[9a] (mg/L)	19.67	13.90	25.10
Alkalinity (mg/L as $CaCO_3$)	105.42	45.00	157.00
pH	7.90	7.45	8.18

[9a]Refer to Appendix A for monthly sample results. For sewage the optimal pH range for effluent is between 6.0 and 9.5.

Table 10. Influent Flow Monitoring as required by C of A 3-1216-88-947 for Southampton Sewage Treatment Plant, 2023

Parameters	Result (m^3)	CofA Limits	Percentage of Limits
Annual Average Flow	2,148	3,042	70.6%
Peak Flow Rate	4,161	6,084	68.4%

4. Effluent Quality Assurance and Control

As per 17(c) of C of A 3-1216-88-947, *a summary of effluent quality assurance or control measures taken during the reporting period* is required.

All laboratory analyzed raw sewage and effluent samples (Section 3.1) are analyzed by SGS Canada Inc., which is an ISO 17025 accredited laboratory. In-house tests are conducted for monitoring purposes by licensed operators using standardized methods. The results from in-house tests are used to determine treatment efficiency and to effectively maintain process control. Calibrations and preventative maintenance are performed on facility equipment and monitoring equipment, see Section 10 for more details. In addition to sample analysis, preventative maintenance is scheduled for equipment at the

sewage treatment plant and pumping stations at regular frequency (dependent on the equipment and type of maintenance). Maintenance activities are scheduled in the work management system (WMS).

5. Major Maintenance Activities

As per 17(d) of C of A 3-1216-88-947, *a summary of all maintenance carried out on any major structure, equipment, apparatus, or mechanisms that form part of the facility during the reporting period* is required. For 2023, major maintenance activities that occurred include:

- Aeration ditch clean out
- Clarifier wear shoes purchased
- 100hp blower bearings replaced
- Channel aeration blower replaced

6. Operating Challenges

As per 17(e) of C of A 3-1216-88-947, *the operating problems encountered and corrective actions taken during the reporting period* are to be identified.

There were no operating challenges, bypasses or spills at the Southampton Sewage Treatment Plant during the reporting period.

7. Proposed Alterations, Extensions or Replacements

As per 17(f) of C of A 3-1216-88-947, *a summary of any proposed alteration, extension or replacement in the process of operations of the sewage treatment plant to be completed over the next reporting period which may require approval under the Ontario Water Resources Act* (OWRA) is required. The following alterations, extensions/replacements are proposed for 2024, some of which may not require approval under OWRA:

- Headworks upgrade/expansion
- Pump Station #1 upgrades
- Pump Station #3 Forcemain and PS rehab

8. Sludge Generation

As per 17(g) of C of A 3-1216-88-947, *a tabulation of the volume of sludge generated in the reporting period and an outline of anticipated volumes to be generated over the next reporting period* is required.

According to the Daily Record of Sludge Haulage, a total volume of 3,022 m^3 of sludge was generated from the Southampton Sewage Treatment Plant and applied to agricultural land by Bartels Environmental Services during the reporting period. Table 11 summarizes the sludge haulage volumes for 2023. The hauling and spreading of sludge from the Southampton sewage treatment plant was conducted by Bartel's Environmental Services. A chemical analysis of the sludge/biosolids quality can be found in Appendix B.

Table 11. Volume of Sludge Generated from Southampton Sewage Treatment Plant in 2023

NASM Site	Volume of Biosolids (m^3)	Hauler	Haulage Dates
23706	1,364	Bartel's Environmental	May 15, 16, 17
24198	910	Bartel's Environmental	September 18, 19, 20
25069	748	Bartel's Environmental	November 20, 21

Based on a linear regression with an R^2 value of 88%, the anticipated volume to be generated over the next reporting period is approximately 3,180 m^3.

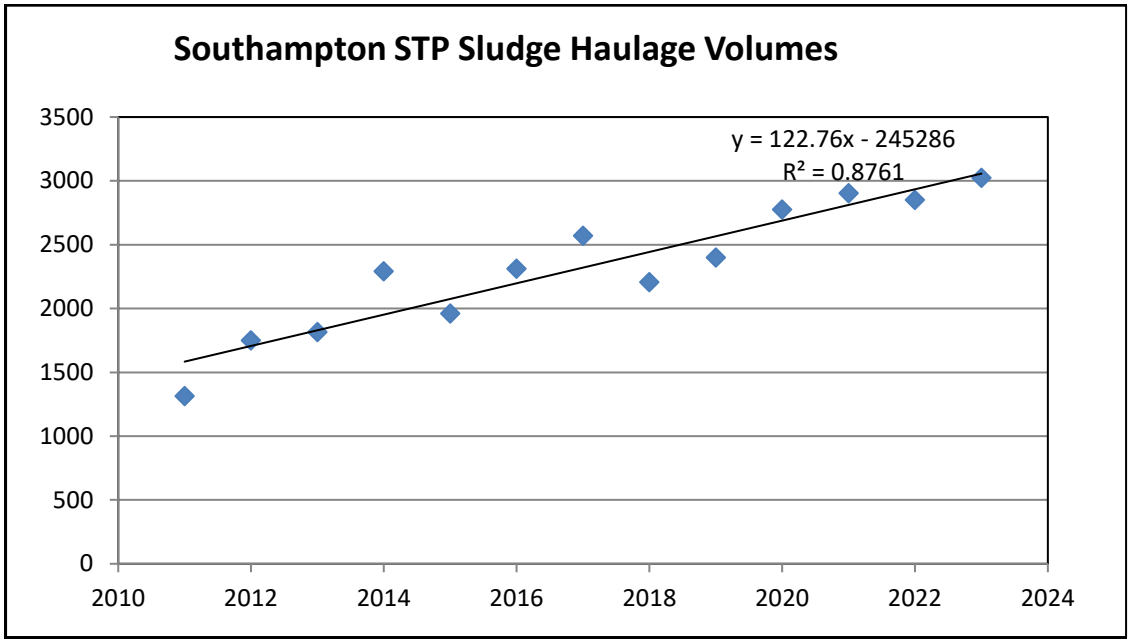

Figure 1. Southampton Sewage Treatment Plant Haulage Volumes (2012 to 2023)

9. Sludge Handling

As per 17(h) of C of A 3-1216-88-947, an *outline of the sludge handing methods and disposal areas to be utilized over the next reporting period* are to be specified.

In 2023 sludge was handled and hauled by Bartels Environmental Inc. and applied to Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) approved Non-Agricultural Source Material Plans (NASM Plans) based on Ontario Regulation 338/09 made under the Nutrient Management Act, 2002. NASM Plans under the Nutrient Management Act are issued to the owner (farmer) who is responsible for managing this plan with assistance from the NASM Plan Developer. See Appendix C for Sludge Haulage Records for Southampton Sewage Treatment Plant.

Grab samples of digested (aerobic) sludge were collected as the sludge was being transferred from the digester to the hauling truck (see Appendix B for laboratory results). With the exception of total solids and volatile suspended solids, all other samples were analyzed by SGS Canada Inc. Sludge analyses showed that the sludge met the quality criteria specified in the Ontario Guidelines for the Utilization of Biosolids and Other Wastes on Agricultural Land (Guidelines). A summary of sludge haulage and sample and quality report results are attached in Appendix B & C.

10. Calibration and Maintenance Procedures

As required by 17(i) of C of A 3-1216-88-947, *an evaluation of the calibration and maintenance procedures conducted on all monitoring equipment* is required.

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

On May 15 & 16, 2023 SCG Flowmetrix performed an annual third party instrument verification of the final effluent and influent flow meters. On April 14 and October 17, 2023, SPD Sales Limited calibrated the gas detection equipment. On April 12, 2023 SPD Sales Limited calibrated spectrophotometer and probes used in the Southampton Sewage Treatment Plant. The meter/probes were cleaned, parts replaced, the devices were calibrated and verified that the devices were performing to factory specifications, where applicable. All records for the above mentioned calibrations/ verifications can be found in Appendix D.

11. Modifications for Performance and Reliability

As per 17(j) of C of A 3-1216-88-947 an *evaluation for the need for modifications to the Southampton Sewage Treatment Plant to improve performance and reliability and to minimize upsets and bypasses* is required.

Southampton Sewage Treatment Plant was within all effluent objectives (with the exception of Total Phosphorus in August) and limits for the entire reporting period. However, considering the systems age and the projected growth of the municipality, modifications for increased capacity are required in the near future.

12. Municipal Sewage Collection System – Annual Performance Report

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

Municipal Sewage Collection System ECA #	093-W601, Issue 1
Sewage Works	Saugeen Shores Municipal Sewage Collection System
Collection System Owner	The Corporation of the Town of Saugeen Shores
Reporting Period	January 1, 2023 to December 31, 2023

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

Yes

Note: As per Schedule E, Section 4.7.1 of CLI-ECA #093-W601, the annual performance report must be made available, on request and without charge, to members of the public who are served by the Authorized System; and 4.7.2 must be made available, by June 1st of the same reporting year, to members of the public without charge by publishing the report on the Internet, if the Owner maintains a website on the Internet.

Location where Annual Performance Report required under CLI-ECA #093-W601 Schedule E will be available for inspection. *(CLI-ECA #093-W601, Schedule E, Section 4.7.1 & 4.7.2):*

- Town of Saugeen Shores Municipal Office, 600 Tomlinson Dr., Port Elgin, ON N0H 2C0
- https://www.saugeenshores.ca/en/town-hall/water-reports.aspx#2022-WaterWastewater-Reports

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

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

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

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

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

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

f) Include a summary of all Collection System Overflow(s) and Spill(s) of Sewage.

g) Includes a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses.

12.1 Description of the Works

The Town of Saugeen Shores Municipal Sewage Collection System consists of two separate subsystems; the Port Elgin Wastewater Collection Subsystem and the Southampton Wastewater Collection Subsystem. For the purposes of this annual report, only the Southampton Wastewater Collection Subsystem will be included. For further information on the Port Elgin Wastewater Collection System, please refer to the Port Elgin WPCP 2023 Annual Performance Report.

The Southampton Wastewater Collection Subsystem consists of sewage works for the collection and transmission of sewage, consisting of trunk sewers, separate sewers, sewage pumping stations, and forcemains, with discharge into the Southampton Water Pollution Control Plant.

The sewage pumping station in Authorized System include:

- Southampton Sewage Pumping Station #1 – located at 86 Saugeen St. Consists of drywell, control building, two pumps, a stand-by diesel generator and discharges to the Southampton Sewage Treatment Plant.
- Southampton Sewage Pumping Station #2 – located at 3 Beach Rd. Consists of wetwell, control building, two pumps, a stand-by diesel generator and discharges to a gravity sewer on Huron St and then flows to PS #1.

- Southampton Sewage Pumping Station #3 – located at 315 Clarendon St. Consists of wetwell, two pumps, a stand-by diesel generator and discharges to the Southampton Sewage Treatment Plant into the same forcemain as PS #1.
- Southampton Sewage Pumping Station #4 – located at 489 Eckford Ave. Consists of wetwell, two pumps, a stand-by diesel generator (shared with Turner St. Control Station) and discharges to a gravity sewage collection system near Blanchfield and Oak St. which is delivered to PS #5.
- Southampton Sewage Pumping Station #5 – located at 130 Shore Rd. Consists of wetwell, two pumps, a stand-by diesel generator (shared with Turner St. Control Station) and discharges to the Southampton Sewage Treatment Plant.

12.2 Summary of Monitoring Data and Interpretation

No monitoring data was required within the municipal sewage collection system for the reporting period.

12.3 Summary of Operating Problems Encountered and Corrective Actions Taken

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

12.4 Summary of Calibration, Maintenance and Repairs

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

On May 15 & 16, 2023 SCG Flowmetrix performed an annual third party instrument verification of the final effluent and influent flow meters. On April 14 and October 17, 2023, SPD Sales Limited calibrated the gas detection equipment. On April 12, 2023 SPD Sales Limited calibrated spectrophotometer and probes used in the Southampton Sewage Treatment Plant. The meter/probes were cleaned, parts replaced, the devices were calibrated and verified that the devices were performing to factory specifications, where applicable. All records for the above mentioned calibrations/ verifications can be found in Appendix D.

All records for the above mentioned calibrations/ verifications can be found in Appendix D.

Major maintenance activities for the sewage pump stations can be found in section 12.6 of this report.

12.5 Community Complaints Received in Relation to the Sewage Works

During the reporting period, OCWA staff received six (6) community complaints. Typically, the Town will address complaints by verifying if there are odours in the surrounding area physically by attending the location of the complaint and creating an odour log. The sewers are flushed routinely and the

operators of the plant ensure that an odour neutralizer in periodically added to the sewage collection system. See Appendix E for details on community complaints.

12.6 Alterations to the Authorized System

For 2023, major maintenance activities that occurred within the Authorized System include:

- Spools and valves replaced at PS#1 (required external pumps to bypass wetwell and direct sewage to WWTP)
- New Pump purchase for PS#3
- Old pump for PS#3 rebuilt

There were no alterations performed within the Authorized System that pose a Significant Drinking Water Threat.

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

There were no collection system overflow or spill events that occurred during the reporting period.

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

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

- Wet well cleanouts
- Daily inspections of pump stations
- Annual cleanouts
- Pump inspections
- Alarm testing
- Generator inspection and maintenance

ONTARIO CLEAN WATER AGENCY
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Appendix A

Performance Assessment Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

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

5613 SOUTHAMPTON WASTEWATER TREATMENT FACILITY 110001453

	1 / 2023	2/ 2023	3/ 2023	4/ 2023	5/ 2023	6/ 2023	7/ 2023	8/ 2023	9/ 2023	10/ 2023	11/ 2023	12/ 2023	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage m³/d	67,772.04	60,008.73	62,873.51	78,305.05	67,216.39	54,586.61	65,496.62	62,292.07	58,057.57	73,920.81	64,856.04	68,777.15	784,162.59			0.00
Raw Flow: Avg - Raw Sewage m³/d	2,186.19	2,143.17	2,028.18	2,610.17	2,168.27	1,819.55	2,112.79	2,009.42	1,935.25	2,384.54	2,161.87	2,218.62		2,148.39		6,083.00
Raw Flow: Max - Raw Sewage m³/d	2,943.21	3,004.07	2,584.96	4,161.31	2,569.61	2,182.43	2,315.27	2,216.42	2,206.22	3,374.97	2,700.56	3,126.99			4,161.31	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Final Effluent m³/d	63,069.00	54,969.00	58,931.00	73,174.00	62,607.00	53,353.00	63,061.00	60,100.00	55,428.00	69,634.00	59,128.00	63,282.00	736,736.00			0.00
Eff. Flow: Avg - Final Effluent m³/d	2,034.48	1,963.18	1,901.00	2,439.13	2,019.58	1,778.43	2,034.23	1,938.71	1,847.60	2,246.26	1,970.93	2,041.35		2,018.45		
Eff. Flow: Max - Final Effluent m³/d	2,894.00	2,886.00	2,502.00	4,642.00	2,795.00	2,206.00	2,235.00	2,216.00	2,256.00	3,373.00	2,584.00	3,120.00			4,642.00	0.00
Eff Flow: Count - Final Effluent m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Final Effluent mg/L	3.33	3.00	2.50	< 9.50	2.50	< 2.50	< 2.50	< 2.33	< 2.00	2.00	< 2.00	< 2.00		3.04	9.50	
Eff: # of samples of cBOD5 - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Loading: cBOD5 - Final Effluent kg/d	6.782	5.890	4.753	< 23.172	5.049	< 4.446	< 5.086	< 4.524	< 3.695	4.493	< 3.942	< 4.083		6.14	23.17	
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	109.67	97.00	100.50	120.00	83.00	89.00	87.50	84.67	76.00	81.00	56.00	67.00		87.61	120.00	0.00
Raw: # of samples of BOD5 - Raw Sewage	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Eff: Avg BOD5 - Final Effluent mg/L	4.67	3.00	3.50	9.00	3.50	2.00	< 2.50	< 2.33	< 2.00	3.00	< 2.00	< 3.00		3.42	9.00	25.00
Loading: BOD5 - Final Effluent kg/d	9.494	5.890	6.654	21.952	7.069	3.557	< 5.086	< 4.524	< 3.695	6.739	< 3.942	< 6.124		6.90	21.95	76.100
Percent Removal: BOD5 - Raw Sewage %	95.74	96.91	96.52	92.50	95.78	97.75	97.14	97.24	97.37	96.30	96.43	95.52		96.27	97.75	0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	217.67	165.00	200.00	251.50	115.50	119.00	140.00	155.67	111.00	105.00	85.00	83.50		145.74	251.50	0.00
Raw: # of samples of TSS - Raw Sewage	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Eff: Avg TSS - Final Effluent mg/L	15.00	12.00	15.00	12.50	9.50	5.00	6.00	9.00	4.50	18.00	6.00	7.50		9.75	18.00	25.00
Eff: # of samples of TSS - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Loading: TSS - Final Effluent kg/d	30.517	23.558	28.515	30.489	19.186	8.892	12.205	17.448	8.314	40.433	11.826	15.310		19.68	40.43	76.100
Percent Removal: TSS - Raw Sewage %	93.11	92.73	92.50	95.03	91.77	95.80	95.71	94.22	95.95	82.86	92.94	91.02		92.80	95.95	0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	2.27	2.38	2.63	2.53	2.82	3.28	3.68	4.71	3.07	2.94	2.30	2.07		2.89	4.71	0.00
Raw: # of samples of TP - Raw Sewage	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Eff: Avg TP - Final Effluent mg/L	0.28	0.17	0.27	0.32	0.42	0.27	0.40	0.52	0.24	0.46	0.17	0.17		0.31	0.52	1.00
Eff: # of samples of TP - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00

Loading: TP - Final Effluent kg/d	0.563	0.334	0.504	0.781	0.838	0.480	0.804	1.002	0.443	1.033	0.335	0.337		0.63	1.03	3.000
Percent Removal: TP - Raw Sewage %	87.83	92.86	89.92	87.33	85.26	91.77	89.25	89.04	92.18	84.35	92.59	92.03		89.53	92.86	0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	17.97	19.50	18.95	17.45	22.25	24.40	26.65	33.63	23.10	23.60	18.45	19.90		22.15	33.63	0.00
Raw: # of samples of TKN - Raw Sewage	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Eff: Avg TAN - Final Effluent mg/L	< 0.10	< 0.10	< 0.10	< 0.10	0.15	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.15	
Eff: # of samples of TAN - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Loading: TAN - Final Effluent kg/d	< 0.203	< 0.196	< 0.190	< 0.244	0.303	< 0.178	< 0.203	< 0.194	< 0.185	< 0.225	< 0.197	< 0.204		< 0.21	< 0.30	
Eff: Avg NO3-N - Final Effluent mg/L	17.77	13.90	18.45	17.40	20.90	24.90	22.85	22.23	23.35	14.10	16.90	16.10		19.07	24.90	0.00
Eff: # of samples of NO3-N - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Eff: Avg NO2-N - Final Effluent mg/L	< 0.03	< 0.03	< 0.03	0.34	0.71	< 0.05	< 0.06	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03		< 0.12	< 0.71	0.00
Eff: # of samples of NO2-N - Final Effluent	3.00	1.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	1.00	2.00	2.00	24.00			0.00
Disinfection																
Eff: GMD E. Coli - Final Effluent cfu/100mL	1.59	4.00	2.83	2.00	2.00	2.00	2.00	8.62	2.00	2.00	2.00	2.00				200.00

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix B

Sludge Quality Sample Analysis

Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE (Hauled Sludge)

Waterworks/Project #	110001453	C of C LIMS No:	May- ~~1274~~ 12755
Facility Name	Southampton STP	Laboratory Section	Sample condition upon receipt
Org. #	5613	Date Rec'd: MAY 1 6 2023	Time Rec'd: ____ Initials ____
Quote #			
Attached Parameter List	[ ] No [ ] Yes	Temperature Upon Receipt 13.3	°C

Identification of Regulation under which the sample(s) fall: No Requirement to Report Sample Results Under Any Regulation for Wastewater Treatment

Requested Turnaround Time: App. Req'd 24-48 h [ ] | [X] 5-7d | [ ] 7-10d | [ ] Other Specify:____

	Report to: Process & Compliance Technician (PCT)	Data Transfer Contact: PCT	Invoice To: Ontario Clean Water Agency	Laboratory: SGS Lakefield / London Research Ltd
Address:	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	185 Concession St., Lakefield ON, K0L 2H0 657 Consortium Ct, London ON, N6E 2S8
Telephone:	519-374-5782	519-374-5782	(519) 797-2561	705-652-2000 / 519-672-4500
Fax:	(519) 797-3080	(519) 797-3080	(519) 797-3080	705-652-6365 / 519-672-0361
Email:	kyoung@ocwa.com	kyoung@ocwa.com	apwesthighlands@ocwa.com	carrie.greenlaw@sgs.com / angela.stott@sgs.com

Station Acronym	Station Number (Short Name)		Sample Location Name	Date & Time Collected	# of Bottles	TS	TS ASH	TS LOI	TKN	E.Coli	NH3 +NH4	Nitrite	Nitrate	Nitrite + Nitrate	TP	pH	Metals**						Comments	Upload to MOE	Upload to OCWA
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	May 15/23 08:35	1	X	X	X	X		X	X	X	X	X	X								Yes [X] No [ ]	Yes [X] No [ ]
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	May 15/23 08:35	1												X							Yes [X] No [ ]	Yes [X] No [ ]
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	May 15/23 08:35	1					X														Yes [X] No [ ]	Yes [X] No [ ]
																								Yes [ ] No [ ]	Yes [ ] No [ ]
																								Yes [ ] No [ ]	Yes [ ] No [ ]
																								Yes [ ] No [ ]	Yes [ ] No [ ]
																								Yes [ ] No [ ]	Yes [ ] No [ ]
																								Yes [ ] No [ ]	Yes [ ] No [ ]

1 FC 500 ml pet ice

Sampler Name: Justyn Becker | Sampler Signature: Justyn Becker

* Station Acronym: Cell - Cell Contents, Dis - Disinfection, Down - Downstream, Eff - Final Effluent, PrBy - Primary Bypass, Raw - Raw Sewage, ScBy - Secondary Bypass, Up - Upstream, Well - Monitoring Well, Aer - Aeration, Brs - Biosolids-raw sludge, Bth - Biosolids thickening, Bpd - Biosolids primary digestion, Bsd - Biosolids sec. digestion, Bps - Biosolids pri super, Bss - Biosolids sec super, Bslq - Biosolids sludge quality, Bsoq - Biosolids soil quality, DAF - Dissolved Air Floatation, Grit - Primary Treatment/Grit, PrEf - Primary Effluent, RAS - Return Activated Sludge, SBR - Secondary Treatment/SBRs, ScEf - Secondary Effluent, TWAS - Thickened Waste Activated Sludge, WAS - Waste Activated Sludge, IndW - Industrial Wastewater, PStn - Pump Stn, Sept - Septage, Lcht - Leachate, PrTr - Primary Treatment, ReAr - Re-aeration, Tert - Tertiary Treatment, Aflo - Actiflo, TeBy - Tertiary Bypass, Hold - Holding Tank, CSO - Combined Sewer Overflow, SSO - Sanitary Sewer Overflow

RTN 608470042524
10:30
FC

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

Works #: 110001453
Project : PO#017018

29-May-2023

OCWA-Bruce (Southampton WPCP)
Attn : Karla Young

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

Phone: 519-797-2561
Fax:pdf

Date Rec. : 16 May 2023
LR Report: **CA12755-MAY23**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

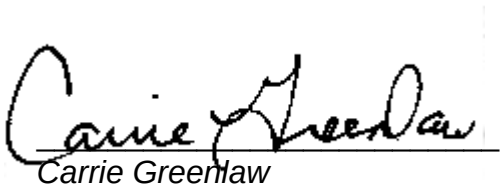
Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: BSLQ BSLQ-Sludge Quality Hauled Sludge
Sample Date & Time					15-May-23 08:35
Temperature Upon Receipt [°C]	---	---	---	---	13.0
Total Solids [mg/L]	19-May-23	14:00	23-May-23	15:45	36000
Total Solids (ASH) [mg/L]	19-May-23	14:00	23-May-23	15:45	14600
Total Solids (LOI) [mg/L]	19-May-23	14:00	23-May-23	15:45	21500
pH [pH Units]	17-May-23	07:34	18-May-23	08:58	5.39
Total Kjeldahl Nitrogen [as N mg/L]	17-May-23	16:30	19-May-23	14:11	860
Ammonia+Ammonium (N) [as N mg/L]	16-May-23	18:00	17-May-23	13:29	< 1
Nitrite (as N) [mg/L]	18-May-23	12:54	29-May-23	09:48	1.7
Nitrate (as N) [mg/L]	18-May-23	12:54	29-May-23	09:48	480
Nitrate + Nitrite (as N) [mg/L]	18-May-23	12:54	29-May-23	09:48	480
Arsenic [mg/L]	19-May-23	15:36	24-May-23	12:45	0.2
Cadmium [mg/L]	19-May-23	15:36	24-May-23	12:45	0.038
Cobalt [mg/L]	19-May-23	15:36	24-May-23	12:45	0.14
Chromium [mg/L]	19-May-23	15:36	24-May-23	12:45	0.65
Copper [mg/L]	19-May-23	15:36	24-May-23	12:45	16
Mercury [mg/L]	19-May-23	15:36	24-May-23	12:45	0.009
Potassium [mg/L]	19-May-23	15:36	24-May-23	12:45	115
Molybdenum [mg/L]	19-May-23	15:36	24-May-23	12:45	0.20
Nickel [mg/L]	19-May-23	15:36	24-May-23	12:45	0.59
Phosphorus (Total) [mg/L]	19-May-23	15:36	24-May-23	12:45	1140
Lead [mg/L]	19-May-23	15:36	24-May-23	12:45	0.5
Selenium [mg/L]	19-May-23	15:36	24-May-23	12:45	0.2
Zinc [mg/L]	19-May-23	15:36	24-May-23	12:45	16
E. Coli [cfu/1g dried wgt]	16-May-23	15:50	18-May-23	11:59	<278
E. Coli [cfu/100mL]	16-May-23	15:50	18-May-23	11:59	< 1000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

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

Works #: 110001453

Project : PO#017018
LR Report : **CA12755-MAY23**



Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003346438

Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE (Hauled Sludge)

Waterworks/Project # 110001453	C of C LIMS No: Sep 12650 Y
Facility Name Southampton STP	Laboratory Section Date Rec'd: SEP 19 2023 Time Rec'd: ____ Initials ____
Org. # 5613	Sample condition upon receipt ____
Quote # Attached Parameter List [ ] No [ ] Yes	Temperature Upon Receipt 14.6 x3 °C

Identification of Regulation under which the sample(s) fall: No Requirement to Report Sample Results Under Any Regulation for Wastewater Treatment

Requested Turnaround Time: App. Req'd 24-48 h [ ] X 5-7d [ ] 7-10d [ ] Other Specify:____

	Report to: Process & Compliance Technician (PCT)	Data Transfer Contact: PCT	Invoice To: Ontario Clean Water Agency	Laboratory: SGS Lakefield / London Research Ltd
Address:	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	185 Concession St., Lakefield ON, K0L 2H0 657 Consortium Ct, London ON, N6E 2S8
Telephone:	519-374-5782	519-374-5782	(519) 797-2561	705-652-2000 / 519-672-4500
Fax:	(519) 797-3080	(519) 797-3080	(519) 797-3080	705-652-6365 / 519-672-0361
Email:	kyoung@ocwa.com	kyoung@ocwa.com	apwesthighlands@ocwa.com	carrie.greenlaw@sgs.com / angela.stott@sgs.com

Sample						Parameters															Comments	Upload to MOE	Upload to OCWA
Station Acronym	Station Number (Short Name)		Sample Location Name	Date & Time Collected	# of Bottles	TS	TS ASH	TS LOI	TKN	E.Coli	NH3 +NH4	Nitrite	Nitrate	Nitrite + Nitrate	TP	pH	Metals**							
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	Sept. 18/23 0750	1	X	X	X	X		X	X	X	X	X	X							Yes X No	Yes X No
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" "	1												X						Yes X No	Yes X No
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" "	1					0													Yes X No	Yes X No
										VEC													Yes No	Yes No
																							Yes No	Yes No
																							Yes No	Yes No
																							Yes No	Yes No
																							Yes No	Yes No

Sampler Name:	Justin Porter	Sampler Signature:	

* Station Acronym: Cell - Cell Contents, Dis - Disinfection, Down - Downstream, Eff - Final Effluent, PrBy - Primary Bypass, Raw - Raw Sewage, ScBy - Secondary Bypass, Up - Upstream, Well - Monitoring Well, Aer - Aeration, Brs - Biosolids-raw sludge, Bth - Biosolids thickening, Bpd - Biosolids primary digestion, Bsd - Biosolids sec. digestion, Bps - Biosolids pri super, Bss - Biosolids sec super, Bslq - Biosolids sludge quality, Bsoq - Biosolids soil quality, DAF - Dissolved Air Floatation, Grit - Primary Treatment/Grit, PrEf - Primary Effluent, RAS - Return Activated Sludge, SBR - Secondary Treatment/SBRs, ScEf - Secondary Effluent, TWAS - Thickened Waste Activated Sludge, WAS - Waste Activated Sludge, IndW - Industrial Wastewater, PStn - Pump Stn, Sept - Septage, Lcht - Leachate, PrTr - Primary Treatment, ReAr - Re-aeration, Tert - Tertiary Treatment, Aflo - Actiflo, TeBy - Tertiary Bypass, Hold - Holding Tank, CSO - Combined Sewer Overflow, SSO - Sanitary Sewer Overflow

10:00

6085872319 11 (R

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

Works #: 110001453
Project : PO#017018

04-October-2023

OCWA-Bruce (Southampton WPCP)
Attn : Karla Young

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

Phone: 519-797-2561
Fax:pdf

Date Rec. : 19 September 2023
LR Report: **CA12650-SEP23**

Copy: #1

CERTIFICATE OF ANALYSIS

Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: BSLQ BSLQ-Sludge Quality Hauled Sludge
Sample Date & Time					18-Sep-23 07:50
Temperature Upon Receipt [°C]	---	---	---	---	14.0
Total Solids [mg/L]	22-Sep-23	17:32	26-Sep-23	09:14	27900
Total Solids (ASH) [mg/L]	22-Sep-23	17:32	26-Sep-23	09:14	12600
Total Solids (LOI) [mg/L]	22-Sep-23	17:32	26-Sep-23	09:14	15400
pH [pH Units]	20-Sep-23	10:04	21-Sep-23	09:46	6.00
Total Kjeldahl Nitrogen [as N mg/L]	20-Sep-23	09:46	22-Sep-23	12:44	746
Ammonia+Ammonium (N) [as N mg/L]	20-Sep-23	14:58	21-Sep-23	10:11	1.6
Nitrite (as N) [mg/L]	22-Sep-23	19:51	25-Sep-23	14:53	< 3
Nitrate (as N) [mg/L]	22-Sep-23	19:51	25-Sep-23	14:53	210
Nitrate + Nitrite (as N) [mg/L]	22-Sep-23	19:51	25-Sep-23	14:53	210
Arsenic [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.2
Cadmium [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.030
Cobalt [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.10
Chromium [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.55
Copper [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	14
Mercury [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.011
Potassium [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	78
Molybdenum [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.12
Nickel [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.44
Phosphorus (Total) [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	837
Lead [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.4
Selenium [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	0.1
Zinc [mg/L]	29-Sep-23	14:59	03-Oct-23	15:01	15
E. Coli [cfu/1g dried wgt]	19-Sep-23	16:16	21-Sep-23	09:55	3584
E. Coli [cfu/100mL]	19-Sep-23	16:16	21-Sep-23	09:55	10000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

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

Works #: 110001453

Project : PO#017018
LR Report : **CA12650-SEP23**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

Ontario Clean Water Agency - Request for Laboratory Services and CHAIN OF CUSTODY - SEWAGE (Hauled Sludge)

Waterworks/Project # **110001453**	C of C LIMS No: NOV-12644
Facility Name **Southampton STP**	Laboratory Section — Sample condition upon receipt:
Org. # **5613**	Date Rec'd: NOV 2 1 2023 — Time Rec'd: — Initials:
Quote #	Temperature Upon Receipt 7x3 °C
Attached Parameter List ☐ No ☐ Yes	

Identification of Regulation under which the sample(s) fall: No Requirement to Report Sample Results Under Any Regulation for Wastewater Treatment

Requested Turnaround Time: App. Req'd — 24-48 h ☐ — X 5-7d — 7-10d ☐ — Other ☐ Specify:

	Report to: Process & Compliance Technician (PCT)	Data Transfer Contact: PCT	Invoice To: Ontario Clean Water Agency	Laboratory: SGS Lakefield / London Research Ltd
Address:	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	18 Caroline Street Southampton, ON N0H 2L0	185 Concession St., Lakefield ON, K0L 2H0 657 Consortium Ct, London ON, N6E 2S8
Telephone:	519-374-5782	519-374-5782	(519) 797-2561	705-652-2000 / 519-672-4500
Fax:	(519) 797-3080	(519) 797-3080	(519) 797-3080	705-652-6365 / 519-672-0361
Email:	kyoung@ocwa.com	kyoung@ocwa.com	apwesthighlands@ocwa.com	carrie.greenlaw@sgs.com / angela.stott@sgs.com

Sample						Parameters																Comments	Upload to MOE	Upload to OCWA
Station Acronym	Station Number (Short Name)		Sample Location Name	Date & Time Collected	# of Bottles	TS	TS ASH	TS LOI	TKN	E.Coli	NH3 +NH4	Nitrite	Nitrate	Nitrite + Nitrate	TP	pH	Metals**							
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	Nov.21/23 0805	1	X	X	X	X		X	X	X	X	X	X								Yes X No ☐ / Yes X No ☐
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" "	1												X							Yes X No ☐ / Yes X No ☐
BSLQ	BSLQ	-	Sludge Quality Hauled Sludge	" "	1					(X)	IEC													Yes X No ☐ / Yes X No ☐
											PET													Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐
																								Yes ☐ No ☐ / Yes ☐ No ☐

Sampler Name:	Justin Parker	Sampler Signature:	Justin Parker

* Station Acronym: Cell - Cell Contents, Dis - Disinfection, Down - Downstream, Eff - Final Effluent, PrBy - Primary Bypass, Raw - Raw Sewage, ScBy - Secondary Bypass, Up - Upstream, Well - Monitoring Well, Aer - Aeration, Brs - Biosolids-raw sludge, Bth - Biosolids thickening, Bpd - Biosolids primary digestion, Bsd - Biosolids sec. digestion, Bps - Biosolids pri super, Bss - Biosolids sec super, Bslq - Biosolids sludge quality, Bsoq - Biosolids soil quality, DAF - Dissolved Air Floatation, Grit - Primary Treatment/Grit, PrEf - Primary Effluent, RAS - Return Activated Sludge, SBR - Secondary Treatment/SBRs, ScEf - Secondary Effluent, TWAS - Thickened Waste Activated Sludge, WAS - Waste Activated Sludge, IndW - Industrial Wastewater, PStn - Pump Stn, Sept - Septage, Lcht - Leachate, PrTr - Primary Treatment, ReAr - Re-aeration, Tert - Tertiary Treatment, Aflo - Actiflo, TeBy - Tertiary Bypass, Hold - Holding Tank, CSO - Combined Sewer Overflow, SSO - Sanitary Sewer Overflow

10:38
608642252910 HC RTN

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

Works #: 110001453
Project : PO#017018

30-November-2023

OCWA-Bruce (Southampton WPCP)
Attn : Karla Young

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

Phone: 519-797-2561
Fax:pdf

Date Rec. : 21 November 2023
LR Report: **CA12644-NOV23**

Copy: #1

CERTIFICATE OF ANALYSIS
Final Report

Analysis	1: Analysis Start Date	2: Analysis Start Time	3: Analysis Completed Date	4: Analysis Completed Time	5: BSLQ BSLQ-Sludge Quality Hauled Sludge
Sample Date & Time					20-Nov-23 08:05
Temperature Upon Receipt [°C]	---	---	---	---	7.0
Total Solids [mg/L]	21-Nov-23	18:43	23-Nov-23	11:14	25400
Total Solids (ASH) [mg/L]	21-Nov-23	18:43	23-Nov-23	11:14	8170
Total Solids (LOI) [mg/L]	21-Nov-23	18:43	23-Nov-23	11:14	17200
pH [pH Units]	22-Nov-23	16:02	23-Nov-23	12:48	6.15
Total Kjeldahl Nitrogen [as N mg/L]	22-Nov-23	13:57	24-Nov-23	14:12	797
Ammonia+Ammonium (N) [as N mg/L]	22-Nov-23	13:56	23-Nov-23	12:42	< 1
Nitrite (as N) [mg/L]	23-Nov-23	08:48	27-Nov-23	13:30	< 3
Nitrate (as N) [mg/L]	23-Nov-23	08:48	27-Nov-23	13:30	190
Nitrate + Nitrite (as N) [mg/L]	23-Nov-23	08:48	27-Nov-23	13:30	190
Arsenic [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.1
Cadmium [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.026
Cobalt [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.07
Chromium [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.41
Copper [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	12
Mercury [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.009
Potassium [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	60
Molybdenum [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.12
Nickel [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.35
Phosphorus (Total) [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	811
Lead [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.4
Selenium [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	0.1
Zinc [mg/L]	29-Nov-23	05:01	30-Nov-23	12:57	15
E. Coli [cfu/1g dried wgt]	21-Nov-23	15:46	23-Nov-23	15:10	6299
E. Coli [cfu/100mL]	21-Nov-23	15:46	23-Nov-23	15:10	16000

Note: Metals and mercury were analyzed on the as-received sample.
The E.coli value reported in CFU/1g dried weight was calculated using Total Solids and CFU/100ml.

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

Works #: 110001453

Project : PO#017018
LR Report : **CA12644-NOV23**

Carrie Greenlaw
Project Specialist,
Environment, Health & Safety

OnLine LIMS

0003549921

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix C

Check sheets of Sludge Haulage

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	May 15-23

Carrier/ Hauler	Site #
Bartels Env.	23706

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	12:00	12:30	44	415	T-17	DH
2	12:50	1:15	44	127	T20	BB
3	1:30	1:40	44	415	T-17	DH
4	2:00	2:30	44	127	T20	BB
5	2:50	3:10	44	415	T-17	DH
6	3:20	3:50	44	127	T20	BB
7	4:00	4:20	44	415	T-17	DH
8	4:30	5:00	44	127	T20	BB
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total 352 m^3

REMARKS

Date May 15/23

OCWA Rep. Signature Justyn Becker

Carrier/ Hauler Signature S Hunter

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	May 16/23

Carrier/ Hauler	Site #
Bartels Env	23706

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	6:30 am	7:00 am	44	415	T-17	DH
2	7:00	7:30	44	127	T20	BB
3	7:35	7:55	44	415	T-17	DH
4	8:15	8:45	44	127	T20	BB
5	9:00	9:35	44	415	T-17	DH
6	11:00	11:30	44	127	T-20	BB
7	11:45	12:10	44	415	T-17	DH
8	12:00	12:30	44	127	T20	BB
9	12:40	1:10	44	415	T-17	DH
10	1:10	1:35	44	127	T20	BB
11	1:50	2:15	44	415	T-17	DH
12	2:15	2:40	44	127	T20	BB
13	2:55	3:15	44	415	T-17	DH
14	3:30	4:00	44	127	T20	BB
15	4:05	4:30	44	415	T-17	DH
16						
17						
18						
19						
20						

Daily Total 660 m^3

REMARKS

Date May 16/23

OCWA Rep. Signature Gustyn Becker

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	May 17/23

Carrier/ Hauler	Site #
Bowtels Env	23706

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	6:30	7:00	44	127	T-20	BB
2	7:05	7:30	44	415	T-17	DH
3	7:50	8:15	44	127	T-20	BB
4	8:20	8:45	44	415	T-17	DH
5	8:50	9:15	44	127	T-20	BB
6	9:50	10:10	44	414	T-17	DH
7	10:15	10:40	44	127	T 20	BB
8	10:50	11:20	44	415	T-17	DH
9						
10						
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16						
17						
18						
19						
20						

Daily Total 352

REMARKS

Date May 17/23

OCWA Rep. Signature Gustyn Becker

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page \ of

Plant/ Facility Name	Area	Date
Southampton	Burgoyne	Sept 18/23

Carrier/ Hauler	Site #
Bartels Environmental	24198

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	8:00	8:20	44	4282	T14	JH
2	8:30	8:50	44	127	T20	BB
3	12:50	1:15	44	415	T26	DG
4	1:25	1:50	44	4282	T14	JH
5	1:30	2:00	44	127	T20	BB
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20						
		Daily Total				

REMARKS

Date Sept 18/23

OCWA Rep. Signature Justin Pratt

Carrier/ Hauler Signature

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ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

Plant/ Facility Name	Area	Date
Southampton	Burgoyne	Sept 19-23

Carrier/ Hauler	Site #
Bartels Environmental	24198

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	7:00	7:20	44	415	T-26	DH
2	7:20	7:40	44	127	T20	BB
3	7:40	8:00	44	4282	T14	JH
4	8:20	8:40	44	415	T-26	DH
5	8:45	9:10	44	127	T20	BB
6	9:35	9:55	44	4282	T14	JH
7	10:10	10:30	44	415	T-26	DH
8	10:30	10:50	44	127	T20	BB
9	11:00	11:20	44	4282	T14	JH
10	11:30	11:50	44	415	T-26	DH
11	12:00	12:20	44	127	T20	BB
12	12:25	12:45	44	4282	T14	JH
13	1:10	1:30	44	415	T-26	DH
14	2:00	2:30	44	127	T20	BB
15	2:50	3:10	44	4282	T14	JH
16						
17						
18						
19						
20						

Daily Total

REMARKS

Date Sept 20-23

OCWA Rep. Signature Just Pat.

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

Plant/ Facility Name	Area	Date
Southampton	Burgoyne	Sept 20-23

Carrier/ Hauler	Site #
Bartels Environmental	24198

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	7:00	7:20	30	415	T-26	DH
2						
3						
4						
5						
6						
7						
8						
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Daily Total

REMARKS

Date Sept 20-23

OCWA Rep. Signature Justin Pratt

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Plant/ Facility Name	Area	Date
Southampton	Saugeen Shores	NOV 21-23

Carrier/ Hauler	Site #
Bartels Environmental	25069

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	6:45	7:10	44	127	T-20	BB
2	7:15	7:35	44	415	T-26	DH
3	8:00	8:20	44	127	T 20	BB
4	8:30	8:50	44	415	T-26	DH
5	9:25	9:45	44	127	T20	BB
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Daily Total 220

REMARKS

Date NOV 21/23

OCWA Rep. Signature Just Pat

Carrier/ Hauler Signature

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:TARIO CLEAN WATER AGENCY
:ENCE ONTARIENNE DES EAUX

Daily Record of Sludge Haulage

Page of

:nt/ Facility Name	Area	Date
Southampton	~~For~~ Saugeen Shores	Nov 20/23

Carrier/ Hauler	Site #
Bartels Environmental	25069

NOTE: ONLY ONE SHEET PER SITE

Load No.	Time		Load Volume (m^3)	Carrier Information		Driver Initials
	In	Out		Vehicle License #	Trailer #	
1	8:15	8:30	44	127	T20	BB
2	8:40	9:00	44	415	T-26	DH
3	9:15	9:30	44	127	T20	BB
4	10:00	10:15	44	415	T-26	DH
5	10:50	11:10	44	127	T20	BB
6	11:25	11:45	44	415	T-26	DH
7	12:00	12:20	44	127	T20	BB
8	12:35	12:55	44	415	T-26	DH
9	1:20	1:40	44	127	T20	BB
10	1:50	2:10	44	415	T-26	DH
11	2:30	2:50	44	127	T20	BB
12	3:00	3:20	44	415	T-26	DH
13						
14						
15						
16						
17						
18						
19						
20						

Daily Total 528 m^3

REMARKS

Date Nov 20/23

OCWA Rep. Signature Just Poet

Carrier/ Hauler Signature

White Copy = OCWA Yellow Copy = Carrier Pink Copy = Facility

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix D
Calibration Reports

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	14-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**220902-0002**	**Asset#:**	NA
Due Date:	14-Oct-23	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200115001C				
Instrument Visual Inspection:		**Range:**	0-25 O2%, 0- 50 PPM H2S	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Oxygen Gas & H2S Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	O2	%	0	20.80	0-25	NA	19.50	18.00
2	H2S	PPM	0	40	0-50	NA	5.00	15.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**20.8**	20.80	0.00%	20.80	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**40**	38.00	5.00%	40	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025
	CalGas H2S 40 PPM	304-402184551-1, Aug-2023

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**No**	**Date:**	14-Apr-23	**Date:**	14-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	14-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**220902-0002**	**Asset#:**	NA
Due Date:	14-Oct-23	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200117001B				
Instrument Visual Inspection:		**Range:**	0-100% LEL	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Methane Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:	
Sensor Type and unit:	LEL, %
Zero Gas Value:	0
Span Gas Value:	50
Gas Range Value:	0-100
Caution Level:	NA
Warning Level:	10
Alarm Level:	20

Gas	**Gas Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
Zero	**0**	0	0.00%	0	0.00%
Span	**50**	52	4.00%	50	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Methane 2.5% Vol (50%)	304-402205618-1, Aug-2025
	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	14-Apr-23	**Date:**	14-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	14-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**220902-0002**	**Asset#:**	NA
Due Date:	14-Oct-23	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	00356341				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	NA	10.00	10.00
2	CO	PPM	0	100	100	NA	10.00	20.00
3	H2S	PPM	0	25	50	NA	5.00	15.00
4	O2	%	0	18.0	25	NA	19.50	18.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	86	72.00%	58	50.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	97	-3.00%	60	100.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	20	25.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18	0.00%	18	18.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 14-Apr-23	**Date:** 14-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	14-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**220902-0002**	**Asset#:**	NA
Due Date:	14-Oct-23	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	199193				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:								
Sensor No.:	**Sensor Type**	**Unit**	**Zero Gas Value**	**Span Gas Value**	**Range Gas Value**	**Caution Setpoint**	**Warning Setpoint**	**Alarm Setpoint**
1	LEL	%	0	50	100	10.00	10.00	
2	CO	PPM	0	100	100	10.00	20.00	
3	H2S	PPM	0	25	50	5.00	15.00	
4	O2	%	0	18.0	25	19.50	18.00	

Sensor No.:	**Gas**	**Gas Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	92	84.00%	50	0.00%
Sensor 2	**Zero**	**0**	-30	0.00%	0	0.00%
	Span	**100**	95	-5.00%	100	0.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	25	0.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	20.4	13.33%	18	0.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 14-Apr-23	**Date:** 14-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	2100P				
As Left Status:	**Initial Condt**	**Serial #:**	030300030469				
Instrument Visual Inspection:		**Range:**	0-1000 NTU		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Turbidity Analyzer				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Unit of measurement:	NTU
Range of the meter:	1000
Verification Standard Value:	10
Calibration Standard Solution 1:	20
Calibration Standard Solution 2:	100
Calibration Standard Solution 3:	800
Verification as found & left value:	10.3/10
Verification result:	Pass

Turbidity Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
20.00	**20.00**	19.30	-3.50%	20.30	1.50%
100.00	**100.00**	98.10	-1.90%	99.60	-0.40%
800.00	**800.00**	783.00	-2.13%	793.00	-0.88%

Comments		**Test Equipment Used**			
		Name / Type		**Serial No.**	**Due Date**
Calibrated Successfully		10 NTU		Lot #A3052	Jun-24
		20 NTU		Lot #A3041	Jun-24
		100 NTU		Lot #A3055	Jun-24
		800 NTU		Lot # A3065	Jun-24
		Technician Name		**Witness Name**	
		Vaibhav Patel		Justin Porter	
Calibration Result:	**Pass**	**Date:**	12-Apr-23	**Date:**	12-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	CL10	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1210C00498781	**Sensor:**	140545001879	
Instrument Visual Inspection:		**Range:**	0-20 mg/l		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Total Chlorine Analyzer				
As found Display information:	**OK**	**Process/Location Descrpition:**	Low Lift				

Instrument Information:	
Unit of measurement:	mg/l
Range	20
DPD Kit Value:	0.53

DPD Kit Reading	**Chlorine Meter Reading**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.53	**0.37**	0.37	-43.24%	0.53	0.00%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Adjust the value and Verified SuccessFully.		DPD kit	19110A001768	Aug-23
Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel		Nicole Moore
Within Specification:	**Yes**	**Date:** 12-Apr-23		**Date:** 12-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	DR300 - LPV445.97.00110				
As Left Status:	**Initial Condt**	**Serial #:**	20030A001000				
Instrument Visual Inspection:		**Range:**	NA		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Chlorine Meter				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:		
Unit of measurement:	mg/l	
Range of the meter:	NA	
Calibration Standard Solution 1:	0.21	+-0.09
Calibration Standard Solution 2:	0.91	+-0.10
Calibration Standard Solution 3:	1.59	+-0.14

Chlorine Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.21	**0.21**	0.21	0.00%	0.21	0.00%
0.91	**0.91**	0.89	-2.20%	0.91	0.00%
1.59	**1.59**	1.61	1.26%	1.59	0.00%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Calibrated Successfully		DPD Chlrine LR Standard Kit	Lot #A2027	Feb-24
		Technician Name	**Witness Name**	
		Vaibhav Patel	Justine Porter	
Calibration Result:	**Pass**	**Date:** 12-Apr-23	**Date:** 12-Apr-23	

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	Pocket Colorimeter II				
As Left Status:	**Initial Condt**	**Serial #:**	18030E350957				
Instrument Visual Inspection:		**Range:**	NA	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable Chlorine Meter				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:		
Unit of measurement:	mg/l	
Range of the meter:	NA	
Calibration Standard Solution 1:	0.21	+-0.09
Calibration Standard Solution 2:	0.91	+-.10
Calibration Standard Solution 3:	1.59	+-.14

Chlorine Standard	**Output Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
0.21	**0.21**	0.21	0.00%	0.21	0.00%
0.91	**0.91**	1.89	107.69%	1.89	107.69%
1.59	**1.59**	1.59	0.00%	1.59	0.00%

Comments		**Test Equipment Used**		
		Name / Type	**Serial No.**	**Due Date**
Verified SuccessFully.		DPD Chlorine LR Standard Kit	Lot #A2027	Feb-24
		Technician Name	**Witness Name**	
		Vaibhav Patel	Justine Porter	
Verification Result	**Pass**	**Date:** 12-Apr-23	**Date:** 12-Apr-23	

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	HQ2200	**Sensor:**	PHC101	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	213282200038	**Sensor:**	220452561210	
Instrument Visual Inspection:		**Range:**	0-14 PH		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable PH Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range:	14
Slope:	96%
Offset:	-4.3 mV

Input	**Input %**	**Temp. °C**	**As Found**	**Deviation**	**As Left**	**Deviation**
4.01	**28.64%**	**20.80**	4.03	0.50%	4.01	0.00%
7.00	**50.00%**	**20.80**	7.05	0.71%	6.98	-0.29%
10.00	**71.43%**	**20.80**	10.60	6.00%	9.98	-0.20%

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Calibrated Successfully	pH 4.00 Cat 2283449	Lot#A2045	Feb-26
	pH 7.00 Cat2283549	Lot #A2059	Mar-24
	pH 10.00 Cat2283649	Lot #A2341	Dec-23
	Technician Name	**Witness Name**	
	Vaibhav Patel	Justin Porter	
Calibration Result: **Pass**	**Date:** 12-Apr-23	**Date:**	12-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	HQ2200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	213282200038	**Sensor:**	90292592005	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	NA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range	Auto
Temperature:	20.0 Degree C
Offset	0
Slope	101.50%

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		8.52	-5.65%	8.52	-5.65%

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.			
As left reading was 8.52 mg/l in air.			
Disolved oxygen in Air depends on the various parameter such as temperature, pressure			
and weather conditins.			
	Technician Name	**Witness Name**	
	Vaibhav Patel	Justin Porter	
Calibration Result: **Pass**	**Date:** 12-Apr-23	**Date:** 12-Apr-23	

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1412CO0116822	**Sensor:**	150470000034	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range at 4 mA:	Auto Range
Range at 20 mA:	Auto Range
Temperature:	21 Degree C
Slope correction	0.69

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		11.40	26.25%	9.50	5.20%

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.			
As left reading was 9.5 mg/l in air.			
Disolved oxygen in Air depends on the various parameter such as temperature, pressure			
and weather conditins.			

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter	
Within Specification:	**Yes**	**Date:**	12-Apr-23	**Date:**	12-Apr-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southampton						
Plant Name and address:	Southampton WWTP - 18 Caroline St W, southampton, ON						
Service Date:	12-Apr-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230295-0001**	**Asset#:**	NA
Due Date:	12-Apr-24	**Manufacturer:**	Hach				
Follow-Up Required:	**No**	**Model:**	**Transmitter:**	SC200	**Sensor:**	LDO	
As Left Status:	**Initial Condt**	**Serial #:**	**Transmitter:**	1412CO0116822	**Sensor:**	152160000061	
Instrument Visual Inspection:		**Range:**	NA		**Output:**	4-20 mA	
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Portable DO Probe				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator Room				

Instrument Information:	
Range at 4 mA:	Auto Range
Range at 20 mA:	Auto Range
Temperature:	21 Degree C
Slope correction	0.76

Input		**mg/L**		**As Found**	**Deviation**	**As Left**	**Deviation**
Dissolved oxygen from Air	**Should be between 8 to10 mg/l**	**9.03**		12.50	38.43%	9.76	8.08%

Comments	**Test Equipment Used**		
	Name / Type	**Serial No.**	**Due Date**
Air calibration was performed.			
As left reading was 9.76 mg/l in air.			
Disolved oxygen in Air depends on the various parameter such as temperature, pressure			
and weather conditins.			

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter	
Within Specification:	**Yes**	**Date:**	12-Apr-23	**Date:**	12-Apr-23

FLOWMETRIX

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL	
CUSTOMER	OCWA - Georgian Highlands - Bruce Hub
CONTACT	Dan MacLeod
	Senior Operations Manager
	18 Caroline Street West
	Southampton, ON N0H 2L0
	Ph: 519-379-0431
	E: danmacleod@ocwa.com
VER. BY - FM	Paris Machuk / Mike White

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

EQUIPMENT DETAIL		
[MUT] MANUFACTURER		Krohne
MODEL		IFC 100W
SERIAL NUMBER		C12501984
FUSE		Wall switch to right of unit
PLANT ID		Southampton WWTP
METER ID		Return Activated Sludge #1 (West Side)
FIT ID		N/A
CLIENT TAG		N/A
OTHER		ORG #5613
GPS COORDINATES	N44 30.103	W081 21.236
VERIFICATION DATE		May 16, 2023
CAL. FREQUENCY		Annual
CAL. DUE DATE		May, 2024

PROGRAMMING PARAMETERS		
DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	172.6
F.S. RANGE - O/P	LPS	63.09
CAL. k-FACTOR	GKL	6.4107
Zero Offset Flow	LPS	0.0000

FORWARD TOTALIZER INFORMATION		
AS FOUND	5479253.23	M3
AS LEFT	5479311.57	M3
DIFFERENCE	58.34	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.

FLOW TUBE SIMULATION

				0.0		0.5	1.0	2.0	m/s
				0.0		5.0	10.0	20.0	% F.S. Flow
				0.0		13.7	27.4	54.7	% F.S. Range
REF. FLOW RATE				**0.0**		**8.6**	**17.3**	**34.5**	LPS
MUT [Reading]				0.0		8.6	17.2	34.5	LPS
MUT [Difference]				0.0		0.0	-0.1	0.0	LPS
MUT [% Error]				n/a		-0.38	-0.38	-0.09	%
mA OUTPUT				**4.000**		**6.189**	**8.378**	**12.757**	mA
MUT [Reading]	min.	4.000	mA	3.995		6.176	8.370	12.747	mA
MUT [Difference]	max.	20.000	mA	-0.005		-0.013	-0.008	-0.010	mA
MUT [% Error]				-0.12		-0.21	-0.10	-0.08	%
TOTALIZER - REF. FLOW RATE								**34.530**	LPS
TOTALIZER [MUT]								2	M3
TEST TIME								57.89	SECONDS
CALC. TOTALIZER								1.999	M3
ERROR								0.05	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	1
PROCESS METER	PM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	Yes

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.28	PASS
mA OUTPUT	-0.13	PASS
TOTALIZER	0.05	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.

FLOWMETRIX

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL

CUSTOMER	OCWA - Georgian Highlands - Bruce Hub
CONTACT	Dan MacLeod
	Senior Operations Manager
	18 Caroline Street West
	Southampton, ON N0H 2L0
	Ph: 519-379-0431
	E: danmacleod@ocwa.com
VER. BY - FM	Paris Machuk / Mike White

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

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Krohne
MODEL	IFC 100W
SERIAL NUMBER	C12501983
FUSE	Wall switch to right of unit
PLANT ID	Southampton WWTP
METER ID	Return Activated Sludge #2 (East Side)
FIT ID	N/A
CLIENT TAG	N/A
OTHER	ORG #5613
GPS COORDINATES	N44 30.103 W081 21.236
VERIFICATION DATE	May 16, 2023
CAL. FREQUENCY	Annual
CAL. DUE DATE	May, 2024

PROGRAMMING PARAMETERS

DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	165.9
F.S. RANGE - O/P	LPS	63.09
CAL. k-FACTOR	GKL	6.1613
Zero Offset Flow	LPS	0.0000

FORWARD TOTALIZER INFORMATION

AS FOUND	5676944.25	M3
AS LEFT	5676950.56	M3
DIFFERENCE	6.31	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.

FLOW TUBE SIMULATION

				0.0		**0.5**	**1.0**	**2.0**	**m/s**
				0.0		**5.0**	**10.0**	**20.0**	**% F.S. Flow**
				0.0		**13.2**	**26.3**	**52.6**	**% F.S. Range**
REF. FLOW RATE				**0.0**		**8.3**	**16.6**	**33.2**	LPS
MUT [Reading]				0.0		8.3	16.6	33.2	LPS
MUT [Difference]				0.0		0.0	0.0	0.0	LPS
MUT [% Error]				n/a		0.04	0.04	0.04	%
mA OUTPUT				**4.000**		**6.104**	**8.208**	**12.416**	mA
MUT [Reading]	min.	4.000	mA	4.000		6.114	8.222	12.425	mA
MUT [Difference]	max.	20.000	mA	0.000		0.010	0.014	0.009	mA
MUT [% Error]				0.00		0.16	0.17	0.07	%
TOTALIZER - REF. FLOW RATE								**33.186**	LPS
TOTALIZER [MUT]								2	M3
TEST TIME								59.77	SECONDS
CALC. TOTALIZER								1.984	M3
ERROR								0.82	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	1
PROCESS METER	PM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	yes

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	0.04	PASS
mA OUTPUT	0.10	PASS
TOTALIZER	0.82	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.

v-Notch Weir
Verification/Calibration Report

FLOWMETRIX

AS FOUND CERTIFICATION

PASS

CLIENT DETAIL

CUSTOMER OCWA - Georgian Highlands - Bruce Hub
CONTACT Dan MacLeod
Senior Operations Manager
18 Caroline Street West
Southampton, ON N0H 2L0
Ph: 519-379-0431
E: danmacleod@ocwa.com

VER. BY - FM Paris Machuk / Mike White

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

EQUIPMENT DETAIL

[MUT] MANUFACTURER	Greyline
MODEL	OCM (SLT-32)
CONVERTER SERIAL NUMBER	38872-R
PLANT ID	Southampton WWTP
METER ID	Final Effluent
FIT ID	LIT-1
CLIENT TAG	OCWA# 74302
OTHER	ORG# 5613
GPS COORDINATES	N44 30.103 W081 21.236
VERIFICATION DATE	May 16, 2023
CAL. FREQUENCY	Annual
CAL. DUE DATE	May, 2024

PROGRAMMING PARAMETERS

NOTCH ANGLE (ϕ)	inches	90
EMPTY DISTANCE, TX to notch	m	0.755
TRANSDUCER (TX), to sump flo	m	1.112
SUMP LEVEL, zero flow	m	0.357
MAX. HEAD	m	0.325
BLANKING DISTANCE	m	0.305
DEAD ZONE	m	0.125
MAX. FLOW	M3/D	7179.6
F.S. RANGE - O/P	M3/D	7179.6

Ultrasonic sensor installed to ensure full scale flow condition

TOTALIZER

AS FOUND	9704550	M3
AS LEFT	9704601	M3
DIFFERENCE	51	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.

AS FOUND TEST RESULTS

				42.1	57.2	68.9	81.9	96.2	% F.S. Range
				0.230	0.260	0.280	0.300	0.320	m
REF. FLOW RATE				**3024.9**	**4109.9**	**4946.4**	**5877.5**	**6906.7**	M3/D
MUT [Reading]				3198.0	4286.0	5219.0	6136.0	7181.0	M3/D
MUT [Difference]				173.1	176.1	272.6	258.5	274.3	M3/D
MUT [% Error]				2.4	2.5	3.8	3.6	3.8	%
mA OUTPUT				**10.741**	**13.159**	**15.023**	**17.098**	**19.392**	mA
MUT [Reading]	min.	4.000	mA	11.136	13.524	15.629	17.665	19.985	mA
MUT [Difference]	max.	20.000	mA	0.395	0.365	0.606	0.567	0.593	mA
MUT [% Error]				1.97	1.83	3.03	2.83	2.97	%
TOTALIZER - REF. FLOW RATE								**6906.655**	M3/D
TOTALIZER [MUT]								5	M3
TEST TIME								57.43	SECONDS
CALC. TOTALIZER								4.591	M3
ERROR								8.18	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] LEVEL	Sim. BOARD	Yes
PROCESS METER	PM	20
STOP WATCH	SW	Yes

RESULTS

TEST	AVG %FS	PASS FAIL
DISPLAY	3.42	PASS
mA OUTPUT	2.53	PASS
TOTALIZER	8.18	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.

Proportional Weir

Customer	OCWA - Southampton Area
Contact	Dan MacLeod
	Cluster Manager
	519-370-0431
Test Performed By:	*Paris Machuk / Mike White*
	Field Representative

Plant ID	Southampton WWTP	Date of Verification	16-May-23
Meter ID	Influent - South Channel	Calibration Frequency	Annual
FIT ID	n/a	Date of Next Verification	May-24
Client Tag	OCWA# 74303		
GPS Coordinates	N44 30.103 & W081 21.236		

Converter Details

Manufacturer	Greyline
Model	SLT32-A
Converter S/N:	38873-R
Fuse	Panel

Totalizer Information

As Found	10891172	m3
As Left	10891196	m3
Difference	24	m3

Programming Parameters

Weir Type	Proportional	
Weir Length	m	degrees
Max. Head	0.326	m
Max. Flow	5888.65	m3/d
Max Range	0.726	m

Note: off set from zero to bottom of South channel = 133mm

Note: off set from zero to bottom of North channel = 138mm

Verification Instruments

Steel Ruler/Simulation Board	Yes
Digital Multimeter (DMM)	3
Stop Watch	1/100 th second
Display Accuracy Verified	Yes
mA Output Accuracy Verified	Yes
Totalizer Accuracy Verified	Yes

AS FOUND	**0**	**31%**	**61%**	**92%**	**98%**	**% F.S. Flow**
FLOW TUBE SIMULATION*	0.00001	0.100	0.200	0.300	0.320	**m**
Display	**0.000**	**1806.335**	**3612.669**	**5419.004**	**5780.271**	m3/d
MUT (As Found)	0.00	1673.00	3525.00	5355.00	5687.00	m3/d
MUT (Error)**	n/a	-2.26%	-1.49%	-1.09%	-1.58%	%
mA Output	**4.000**	**8.908**	**13.816**	**18.724**	**19.706**	mA
MUT (As Found)	4.004	8.535	13.579	18.550	19.460	mA
MUT (Error)**	0.10	-4.19	-1.72	-0.93	-1.25	%
Totalizer					**5780.271**	m3/d
Test Volume					5	m3
Time					77.40	Seconds
Calc. Flowrate					5581.40	m3/d
% Error					-3.44	%

** All values are for "As Found" values. If the values are not within acceptable limits an "As Left" certificate will be issued unless otherwise noted.*

Comments

Errror represented as % of full scale

Grey Line K&n factor for Q calc is k=458.809 and n = 1 for Greyline OCF calibration

k=2.25038 n =1

Checked Weir Zero and found to be good.

Note: checked South Side @ head 0.0m unit reading: HEAD=0.0m

@ head 0.32m unit reading: HEAD=0.315m

Results

	Avg. % Error	PASS/FAIL
Display	**-0.02**	**PASS**
mA Output	**-2.02**	**PASS**
Totalizer	**-3.44**	**PASS**

This record only validates the operational integrity and accuracy verification results of the Secondary flow converter ONLY!!! This is not a complete calibration of the entire flow meter whereby, this verification does not validate the integrity of the primary measurement device using a comparative technique or traceable standard.

FLOWMETRIX

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	OCWA - Georgian Highlands - Bruce Hub	[MUT] MANUFACTURER	Krohne
CONTACT	Dan MacLeod	MODEL	IFC100W
	Senior Operations Manager	SERIAL NUMBER	C10 1442
	18 Caroline Street West	FUSE	in Panel ULF4
	Southampton, ON N0H 2L0		
	Ph: 519-379-0431	PLANT ID	Southampton PS#4
	E: danmacleod@ocwa.com	METER ID	Station Flow
		FIT ID	FIT-01
		CLIENT TAG	OCWA #??
		OTHER	n/a
VER. BY - FM	Paris Machuk / Mike White	GPS COORDINATES	N44 30.969 W081 21.481
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 15, 2023
		CAL. FREQUENCY	Annual
		CAL. DUE DATE	May, 2024

PROGRAMMING PARAMETERS		
DIAMETER (DN)	mm	150
F.S. FLOW - MAG	LPS	163.0
F.S. RANGE - O/P	LPS	100.0
CAL. k-FACTOR	GKL	6.05280
Zero Offset Flow	LPS	0

FORWARD TOTALIZER INFORMATION		
AS FOUND	319468.45	M3
AS LEFT	319484.38	M3
DIFFERENCE	15.93	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.

FLOW TUBE SIMULATION

				0.0	**0.5**	**1.0**	**2.0**	**5.0**	**m/s**
				0.0	**5.0**	**10.0**	**20.0**	**50.0**	**% F.S. Flow**
				0.0	**8.2**	**16.3**	**32.6**	**81.5**	**% F.S. Range**
REF. FLOW RATE				**0.0**	**8.2**	**16.3**	**32.6**	**81.5**	LPS
MUT [Reading]				0.0	8.1	16.2	32.5	81.4	LPS
MUT [Difference]				0.0	-0.1	-0.1	-0.1	-0.1	LPS
MUT [% Error]				n/a	-0.62	-0.62	-0.31	-0.13	%
mA OUTPUT				**4.000**	**5.304**	**6.608**	**9.216**	**17.041**	mA
MUT [Reading]	min.	4.000	mA	3.998	5.288	6.594	9.202	17.032	mA
MUT [Difference]	max.	20.000	mA	-0.002	-0.016	-0.014	-0.014	-0.009	mA
MUT [% Error]				-0.05	-0.30	-0.21	-0.16	-0.05	%
TOTALIZER - REF. FLOW RATE								**81.505**	LPS
TOTALIZER [MUT]								9	M3
TEST TIME								110.40	SECONDS
CALC. TOTALIZER								8.998	M3
ERROR								0.02	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	1
PROCESS METER	DMM	1
ANALOG METER	AM	N/A
STOP WATCH	SW	YES

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.42	PASS
mA OUTPUT	-0.15	PASS
TOTALIZER	0.02	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.

FLOWMETRIX

AS FOUND CERTIFICATION

FORWARD FLOW DIRECTION

PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	OCWA - Georgian Highlands - Bruce Hub	[MUT] MANUFACTURER	Krohne
CONTACT	Dan MacLeod	MODEL	IFC100W
	Senior Operations Manager	SERIAL NUMBER	C185000439
	18 Caroline Street West	FUSE	in Panel ULF4
	Southampton, ON N0H 2L0		
	Ph: 519-379-0431	PLANT ID	Southampton PS#5
	E: danmacleod@ocwa.com	METER ID	Station Flow
		FIT ID	FIT-02
		CLIENT TAG	OCWA #??
		OTHER	n/a
VER. BY - FM	Paris Machuk / Mike White	GPS COORDINATES	N44 30.347 W081 22.196
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 15, 2023
		CAL. FREQUENCY	Annual
		CAL. DUE DATE	May, 2024

PROGRAMMING PARAMETERS		
DIAMETER (DN)	mm	200
F.S. FLOW - MAG	LPS	406.9
F.S. RANGE - O/P	LPS	120.0
CAL. k-FACTOR	GKL	8.4993
Zero Offset Flow	LPS	0

FORWARD TOTALIZER INFORMATION		
AS FOUND	1770571.81	M3
AS LEFT	1770587.52	M3
DIFFERENCE	15.71	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.

FLOW TUBE SIMULATION

				0.0		**0.5**	**1.0**	**2.0**	**m/s**
				0.0		**5.0**	**10.0**	**20.0**	**% F.S. Flow**
				0.0		**17.0**	**33.9**	**67.8**	**% F.S. Range**
REF. FLOW RATE				**0.0**		**20.3**	**40.7**	**81.4**	LPS
MUT [Reading]				0.0		20.3	40.6	81.3	LPS
MUT [Difference]				0.0		0.0	-0.1	-0.1	LPS
MUT [% Error]				n/a		-0.23	-0.23	-0.11	%
mA OUTPUT				**4.000**		**6.713**	**9.426**	**14.851**	mA
MUT [Reading]	min.	4.000	mA	3.999		6.701	9.416	14.848	mA
MUT [Difference]	max.	20.000	mA	-0.001		-0.012	-0.010	-0.003	mA
MUT [% Error]				-0.02		-0.18	-0.10	-0.02	%
TOTALIZER - REF. FLOW RATE								**81.386**	LPS
TOTALIZER [MUT]								9.00	M3
TEST TIME								110.87	SECONDS
CALC. TOTALIZER								9.023	M3
ERROR								-0.26	%

COMMENTS

QUALITY MANAGEMENT STANDARDS INFO.

[QMS] INFORMATION	IDENT.	ID #
[REFERENCE] FTS	KRO	1
PROCESS METER	DMM	20
ANALOG METER	AM	N/A
STOP WATCH	SW	YES

RESULTS

TEST	AVG % o.r.	PASS FAIL
DISPLAY	-0.19	PASS
mA OUTPUT	-0.08	PASS
TOTALIZER	-0.26	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.

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	17-Oct-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230882-0001**	**Asset#:**	NA
Due Date:	17-Apr-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200115001C				
Instrument Visual Inspection:		**Range:**	0-25 O2%, 0- 50 PPM H2S	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Oxygen Gas & H2S Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	O2	%	0	20.80	0-25	NA	19.50	18.00
2	H2S	PPM	0	40	0-50	NA	5.00	15.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**20.8**	20.80	0.00%	20.80	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**40**	38.40	4.00%	40	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025
	CalGas H2S 40 PPM	304-402184551-1, Aug-2024

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	17-Oct-23	**Date:**	17-Oct-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	86 Saugeen St ON						
Service Date:	17-Oct-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230882-0001**	**Asset#:**	NA
Due Date:	17-Apr-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ULTIMA - X 5000				
As Left Status:	**Initial Condt**	**Serial #:**	000100200117001B				
Instrument Visual Inspection:		**Range:**	0-100% LEL	**Output:**	4-20 mA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	Monitoring Methane Gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Saugeen St pumping station				

Instrument Information:	
Sensor Type and unit:	LEL, %
Zero Gas Value:	0
Span Gas Value:	50
Gas Range Value:	0-100
Caution Level:	NA
Warning Level:	10
Alarm Level:	20

Gas	**Gas Value**	**As Found**	**Deviation**	**As Left**	**Deviation**
Zero	**0**	0	0.00%	0	0.00%
Span	**50**	52	4.00%	50	0.00%

Comments	**Test Equipment Used**	
	Name / Type	**Serial and Due Date**
Calibrated successfully	CalGas Methane 2.5% Vol (50%)	304-402205618-1, Aug-2025
	CalGas Oxygen 20.8% Vol	304-402190658-1, Aug-2025

Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not Tested**	Vaibhav Patel		Jusin Porter	
Within Specification:	**Yes**	**Date:**	17-Oct-23	**Date:**	17-Oct-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton						
Plant Name and address:	18 Caroline st, Southhampton						
Service Date:	17-Oct-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230882-0001**	**Asset#:**	NA
Due Date:	17-Apr-24	**Manufacturer:**	MSA				
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X				
As Left Status:	**Initial Condt**	**Serial #:**	00356341				
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA		
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA				
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas				
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room				

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	NA	10.00	10.00
2	CO	PPM	0	100	100	NA	10.00	20.00
3	H2S	PPM	0	25	50	NA	5.00	15.00
4	O2	%	0	18.0	25	NA	19.50	18.00

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	45	-10.00%	58	50.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	97	-3.00%	60	100.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	20	25.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18	0.00%	18	18.00%

Comments		**Test Equipment Used**	
		Name / Type	**Serial and Due Date**
Calibrated Successfully		MSA Quadgas	304-402541925-1 ; Sept-2026
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)	
Other Outputs Tested:	**Not tested**	**Technician Name**	**Witness Name**
Loop Check Performed:	**Not tested**	Vaibhav Patel	Justin Porter
Within Specification:	**Yes**	**Date:** 17-Oct-23	**Date:** 17-Oct-23

CALIBRATION / VERIFICATION

3230B American Dr, Mississauga,
Ontario L4V 1B3. **Tel:** (905) 678-2882
Email: service@spdsales.com
Web Site: www.spdsales.com

Customer Name:	OCWA - Southhampton							
Plant Name and address:	18 Caroline st, Southhampton							
Service Date:	17-Oct-23	**Instrument Type:**	**AIT**	**W.O. Number:**	**230882-0001**	**Asset#:**	NA	
Due Date:	17-Apr-24	**Manufacturer:**	MSA					
Follow-Up Required:	**No**	**Model:**	ALTAIR 4X					
As Left Status:	**Initial Condt**	**Serial #:**	199193					
Instrument Visual Inspection:		**Range:**	0-100%,0-100PPM,0-50PPM,0-25%	**Output:**	NA			
Mechanical Inspection:	**OK**	**Tag Infomration:**	NA					
Electrical Inspection:	**OK**	**Description:**	MSA ALTAIR 4X Handheld gas					
As found Display information:	**OK**	**Process/Location Descrpition:**	Operator room					

Instrument Information:

Sensor No.:	Sensor Type	Unit	Zero Gas Value	Span Gas Value	Range Gas Value	Caution Setpoint	Warning Setpoint	Alarm Setpoint
1	LEL	%	0	50	100	10.00	10.00	
2	CO	PPM	0	100	100	10.00	20.00	
3	H2S	PPM	0	25	50	5.00	15.00	
4	O2	%	0	18.0	25	19.50	18.00	

Sensor No.:	Gas	Gas Value	As Found	Deviation	As Left	Deviation
Sensor 1	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**50**	50	0.00%	50	0.00%
Sensor 2	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**100**	104	4.00%	100	0.00%
Sensor 3	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**25**	25	0.00%	25	0.00%
Sensor 4	**Zero**	**0**	0	0.00%	0	0.00%
	Span	**18.0**	18.6	3.33%	18	0.00%

Comments		**Test Equipment Used**			
		Name / Type		**Serial and Due Date**	
Calibrated Successfully		MSA Quadgas		304-402541925-1 ; Sept-2026	
		(100 PPM CO, 25 PPM H2S, 50 %LEL, 18% O2)			
Other Outputs Tested:	**Not tested**	**Technician Name**		**Witness Name**	
Loop Check Performed:	**Not tested**	Vaibhav Patel		Justin Porter	
Within Specification:	**Yes**	**Date:**	17-Oct-23	**Date:**	17-Oct-23

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

Appendix E

Community Complaints

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Georgian Highlands Logbook Report

Start: 2023-Jan-04 00:00:00
End: 2023-Jan-05 00:00:00
Run Time: 2024-Mar-14 11:47:24

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-01-04 00:00:00		00:00-23:59 ORO: Justin Porter (jporter) 07:00-15:30 Duty OIC: Justyn Becker (jbecker) 07:00-15:30 OIC: Justin Porter (jporter)	Justin Porter	2023-01-04 13:05:06
2023-01-04 08:07:00		Completed rounds at pump stations, checks good.	Justyn Becker	2023-01-04 08:07:38
2023-01-04 13:05:00	Community Complaint, Facility Checks, Maintenance, Southampton WWTP	Completed morning rounds at wpcp. Checks good - refer to check sheets. Shut off air and took decant off of primary digester. Replaced pH probe on handheld meter. The probe bulb was cracked. Ditch 2 online DO readings not matching hand held readings. Pulled up both ditch 1 and ditch 2 probes to clean and inspect caps. Caps in good conditions. Cleaned probes and returned to service - readings now more consistent with hand held. Drive belt cage on ditch 2 was open during checks. Don’t know why it was open. Secured cage shut. Investigated odour complaints with Justyn Becker and SOM Dan MacLeod along Blanchfield and conjoining neighbours. Unable to identify the odours mentioned by residents in complaints submitted to SOM and ToSS. Shovelled grit out of south grit channel and put south channel into service. Removed north channel from service .	Justin Porter	2023-01-04 13:13:02

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Georgian Highlands Logbook Report

Start: 2023-Jan-04 00:00:00
End: 2023-Jan-05 00:00:00
Run Time: 2024-Mar-14 11:47:24

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-01-04 15:00:00		Decanted secondary digester. Transferred ~ 40 cubic meters of sludge secondary to ht4. Finished in house lab from yesterday. Investigated odour complaints coming from north side of Saugeen river with Justin Porter and SOM. Checked manholes in the area and pump stations 4 & 5. Nothing noticed to note. Removed rain catchers for winter season from manholes at Blanchfield and oak and also at Blanchfield and Turner st where ps4 force main goes to gravity.	Justyn Becker	2023-01-04 15:02:55

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Georgian Highlands Logbook Report

Start: 2023-Jan-13 00:00:00
End: 2023-Jan-14 00:00:00
Run Time: 2024-Mar-14 11:48:04

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-01-13 00:00:00		00:00-23:59 ORO: Justin Porter (jporter) 07:00-15:30 Duty OIC: Justin Porter (jporter)	Justin Porter	2023-01-13 15:09:40
2023-01-13 15:09:00	Community Complaint, Facility Checks, Southampton WWTP	Completed am and pm rounds at pump stations and wpcp. Checks good - refer to check sheets for details. Investigated odour complaint at 282 Tyendinaga. Spoke with the resident who mentioned the odour is consistent and most noticeable at the corner of Tyendinaga and Mississauga street. I did not notice any odour in or around the neighborhood, but there was some debris in the manhole at that intersection. Sent findings to SOM. Took garbage to dump. Swept and mopped the floors. Cleaned lab dishes. Took decant off of primary digester. Connected clarifier hose to a functioning hose bib, but the exposed hose going to the clarifier building had froze.	Justin Porter	2023-01-13 15:13:52

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Georgian Highlands Logbook Report

Start: 2023-Jan-19 00:00:00
End: 2023-Jan-20 00:00:00
Run Time: 2024-Mar-14 11:48:46

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-01-19 00:00:00		00:00-23:59 ORO: Justin Porter (jporter) 07:00-15:30 Duty OIC: Justyn Becker (jbecker) 07:00-15:30 OIC: Justin Porter (jporter)	Justin Porter	2023-01-19 15:11:02
2023-01-19 09:49:00	Facility Checks	PanelView plus 1000 displaying “Application MERuntime.exe encountered a serious error and must be shut down”, during morning checks. Reset power to screen and acknowledged/cleared alarm queue, no issues after reset. Skimmed clarifiers and pulled rags off bar screens. Measured Alum flow to be 56 mL/min at west pit and 58 mL/min at east pit since balancing yesterday.	Justyn Becker	2023-01-19 09:50:28
2023-01-19 15:16:00	Facility Checks, Maintenance, PS5	Completed am rounds at pump stations. Attended ops meeting at wpcp. Checked check valves at pump station 5. No negative flow seen on the flow meter after a pump run. Peak flow rate on pump 3 was about 10 lps lower then pump 4. Recommend lifting and inspecting pumps. Checking well for obstructions. Picked up new battery for y2k genset	Justin Porter	2023-01-19 15:29:38
2023-01-19 16:00:00		Attended monthly OPS meeting. Wasted sludge to primary digester and ht1. Replaced 5 burnt out 4 ft fluorescent ceiling light bulbs in mens bathroom and lab with new LED bulbs provided by ToSS electrician. Investigated bad smell complaint from area around ps5 with SOM. Only noticed a slight smell on pedestrian walking path approximately one meter from wet well. Completed Thursday in house lab. Completed pm rounds at WWTP. Shut off air to ht1 to decant tomorrow.	Justyn Becker	2023-01-20 15:01:07

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Georgian Highlands Logbook Report

Start: 2023-Jul-06 00:00:00
End: 2023-Jul-07 00:00:00
Run Time: 2024-Mar-14 11:49:49

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-07-06 00:00:00		00:00-23:59 ORO: Justin Porter (jporter) 07:00-15:30 Duty OIC: Justyn Becker (jbecker) 07:00-15:30 OIC: Justin Porter (jporter)	Justin Porter	2023-07-06 15:57:20
2023-07-06 15:15:00		Assisted with morning checks at WWTP. Decanted primary digester. Transferred sludge from primary to secondary and ht4 after decant. Tradesafe on site doing annual inspection of lifting equipment.	Justyn Becker	2023-07-06 15:17:05
2023-07-06 15:57:00	Community Complaint, Facility Checks, PS5, Southampton WWTP	Completed am and pm checks at pump stations and wpcp with the assistance of JB. Wasted to holding tank 1. Worked with Dan MacLeod investigating odour complaints along shore road. Reference Maximo work order 3480013 log for details. Entered June rounds data into Wiski7	Justin Porter	2023-07-06 15:59:32

Dan MacLeod and I went to investigate the continuing odour complaints along Shore Road.

These complaints described the odour along Shore Road and Deer Run Ct, just north of pump station 5.

We were able to smell faint odour at the intersection of Shore and Deer Run. We removed a rain catcher at the dead end of Der Run, and put it at the intersection. Ordered an additional rain catcher for the man hole immediately after the intersection towards the beach.

Deodourizer was poured down each manhole inspected. Dan suggested we incorporate deodourizing the dead end at Deer Run into weekly checks, hoping the low flow and ample benching would provide space for the deodourizer to sit, and flow down towards the other man holes when flow goes through.

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Georgian Highlands Logbook Report

Start: 2023-Jun-22 00:00:00
End: 2023-Jun-23 00:00:00
Run Time: 2024-Mar-14 11:49:16

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-06-22 00:00:00		00:00-23:59 ORO: Joshua Marx (jmarx) 07:00-15:30 Duty OIC: Justin Porter (jporter)	Justin Porter	2023-06-22 15:11:07
2023-06-22 15:11:00	Community Complaint, Facility Checks, Health & Safety, Maintenance, PS1, PS5, Southampton WWTP	Completed am and pm rounds at pump stations and wpcp. Noticed wet well ventilation fan off at pump station 1, and LEL elevated on gas monitoring (still working safe limits). Turned fan on to bring fresh air down to well. De ragged RAS pump 2. All other checks good. Measured alum flow at 120 ml/min. Installed new belt on blower 4. Cleaned and aligned pulleys. Installed new emergency exit sign above the door leading to the stair way from the map/server room after noticing old sign flickering. Cleaned north grit channel after switching to south grit channel. Investigated odour complaint by pump station 5. No odour noticed. Poured deodorizer down wet well, flow meter pit, adjacent catch basins, and the near by gravity sewer entering wet well 5. Turned well ventilation fan back on after it had been off for weeks.	Justin Porter	2023-06-22 15:20:07

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Georgian Highlands Logbook Report

Start: 2023-Oct-19 00:00:00
End: 2023-Oct-20 00:00:00
Run Time: 2024-Mar-14 11:51:06

SOUTHAMPTON WWTF Logbook

Entry Time	Label	Entry Text	Operator	Created Time
2023-10-19 11:30:00		06:30-17:00 OIC: Justyn Becker (jbecker) 00:00-23:59 ORO: Joshua Marx (jmarx) 07:00-15:30 Duty OIC: Nicole Moore (nmoore)	Justyn Becker	2023-10-19 18:01:05
2023-10-19 11:31:00		Changed chart at wpcp all checks good, took set test and took DO and temp and pH.	Nicole Moore	2023-10-19 11:32:14
2023-10-19 11:34:00		Received rebuild blow motor from trucking company, dropped off in shop.	Nicole Moore	2023-10-19 11:35:01
2023-10-19 13:31:00		Investigated possible sewage smell in area around 281 Edward st with SOM. Opened closest manhole to address. Nothing out of ordinary to note.	Justyn Becker	2023-10-20 07:40:38
2023-10-19 17:02:00	Facility Checks	On site early starting rounds at pump stations. Completed morning checks at WWTP. Skimmed clarifiers and pulled rags off bar screens. Wasted sludge to primary digester. Completed afternoon rounds at WWTP.	Justyn Becker	2023-10-19 18:09:11