Ontario Clean Water Agency
Agence Ontarienne Des Eaux

March 30, 2026

Aaron Todd
District Manager
Guelph District Office
Ministry of the Environment, Conservation and Parks
4th Floor, One Stone Road West
Guelph, ON N1G 4Y2

Re: 2025 Annual Performance Report for the Airport Sewage Treatment System

Dear Mr. Todd;

Attached is the 2025 Annual Performance Report for the Airport Sewage Treatment System located at 38 Greens Rd. in the County of Brant. This report has been completed in accordance with:

- Condition No. 10(6)(a)-(j) cited in Environmental Compliance Approval #8181-8TXHRN dated July 23, 2012 and issued to the Corporation of the County of Brant.

This report was prepared by the Ontario Clean Water Agency on behalf of the County of Brant based on the information we have in our records. The report covers the period from January 1, 2025 to December 31, 2025.

Sincerely,

Raisa Blitterswyk
Process and Compliance Technician (A)
Ontario Clean Water Agency

Cc.
Andrea Bazzard – Director of Environmental Services, County of Brant
Matthew D'Hondt – Solid Waste/Wastewater Operations Manager, County of Brant
Kevin Noll – Senior Environmental Officer, MECP
Stephanie Simpson – Safety, Process and Compliance Manager, OCWA
Sam Sianas – Regional Hub Manager, OCWA
Ben Madill – Senior Operations Manager, OCWA

2025

ANNUAL PERFORMANCE REPORT

AIRPORT SEWAGE TREATMENT SYSTEM

38 GREENS ROAD, BRANT COUNTY

MECP ENVIRONMENTAL COMPLIANCE APPROVAL #8181-8TXHRN

BY THE OPERATING AUTHORITY: ONTARIO CLEAN WATER AGENCY

PREPARED FOR THE MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS

ON BEHALF OF: THE COUNTY OF BRANT

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EXECUTIVE SUMMARY

The County of Brant is committed to providing a high level of service in the collection, treatment and management of wastewater. The Ontario Clean Water Agency (OCWA) is currently contracted by the County of Brant to operate the County's wastewater treatment facilities, pumping stations and provide Overall Responsible Operator and Operator in Charge services for the wastewater collection systems.

The Airport Sewage Treatment System (Airport STS) provides treatment of commercial, institutional and industrial water collected within the Airport Settlement Area. The treatment facility is located in the County of Brant at 38 Greens Road and is a large subsurface sewage disposal system. A copy of the Treatment System Site Grading and Servicing Plan is provided in *Appendix C*.

This report documents the performance of the sewage works in 2025, as required by the Environmental Compliance Approval (ECA) 8181-8TXHRN.

The Airport STS is a package Sequential Batch Reactor (SBR) with an anoxic phase for nitrate removal, with a capacity of 60 m^3/day. The SBR provides primary and secondary treatment consecutively during each batch. The final effluent flows through a pneumatically actuated backwashed filter system before entering the conventional absorption and shallow buried trench disposal beds. The system also has an 85 m^3 Equalization Tank (EQ) to handle increased flows for a limited period of time.

The average daily total wastewater flow for this reporting period was 33 m^3, which is up 12% from 2024 and it is 55% of the rated capacity. A maximum total batch flow of 83 m^3 was recorded on January 22, 2025. As shown in Table 4 of this report, the effluent quality data clearly demonstrates that the STS satisfied the compliance conditions of the ECA throughout the reporting period. The facility recorded the following annual removal efficiencies: biochemical oxygen demand (BOD5) – 97.3%, total suspended solids (TSS) – 97.0%, total phosphorus (TP) – 92.8%. and total Kjeldahl nitrogen (TKN) – 92.5%.

Solids generated during treatment are stored in the raw tank where they are removed as required and sent to the Paris WPCP to be dewatered. During the reporting period, a total of 568 m^3 of liquid biosolids were removed for dewatering, representing a 49.1% decrease from the previous year. This reduction is attributed to decreased wasting in the first quarter to support improved Mixed Liquor Suspended Solids (MLSS) concentrations. One hundred percent of that material was diverted from landfill and was beneficially land applied as a Canadian Food Inspection Agency (CFIA) approved Class A fertilizer.

The facility has the provision for primary or raw sewage bypass directly to the tile beds. During this reporting period there were no bypass events.

INTRODUCTION

Wastewater treatment and collection systems in Ontario are governed by the Ministry of the Environment, Conservation and Parks (MECP) and are also subject to federal legislation. The purpose of a wastewater treatment system is to remove solids and nutrients in order to minimize the impact of the effluent on the receiving waterbody. The Environmental Compliance Approval's (ECAs), issued under the Environmental Protection Act, are facility or system-specific documents through which the MECP sets discharge quality limits for that facility based on the sensitivity of the receiving natural environment. To comply with the ECAs, OCWA, on behalf of the County of Brant (the County), prepares an Annual Performance Report covering the operation and overall performance of the Airport STS.

This Annual Performance Report, for the period of January 1st to December 31st, 2025, is a legislative requirement under Condition 10 (6) of ECA 8181-8TXHRN. This report must be forwarded to the MECP no later than March 31 of each calendar year.

FACILITY AND SYSTEM OVERVIEW

The Airport Sewage Treatment System (Airport STS) located in the County of Brant at 38 Greens Road is a large subsurface sewage disposal system, a copy of the Treatment System Site Grading and Servicing Plan is provided in *Appendix C*. The Airport STS is classified as a class II plant (OWWCO Certificate# 7285), dated November 8, 2013, and is rated at 60 m^3/day. The Airport STS consists of:

- an 85 m^3 Equalization Tank;
- a raw wastewater pumping chamber (MH2A);
- an H2Flow ISAM Sequencing Batch Reactor Treatment System;
- a Treatment Control Building housing the ISAM Controls and cloth filter;
- an effluent pumping chamber (P.STN. 3A);
- a Disposal Control Building housing the flow meter and controls;
- a stand-by generator;
- conventional absorption beds (Disposal Beds 1A and 1B);
- shallow buried trench disposal beds (Disposal Bed 1C and 1D).

The wastewater from the Airport Settlement Area enters the site through MH1A (OHL01025) and then flows to pump chamber MH2A. There is an 85 m^3 Equalization Tank (EQ) connected to MH2A to attenuate high flows and an overflow bypass pipe from MH2A through MH5A to Disposal Beds 1A and 1B. This is only used in the event of over-filling of the EQ Tank.

Duplex grinder pumps are installed in MH2A with a rated capacity of the 4.5 L/s each. The duplex grinder pumps ensure that the ISAM Sequencing Batch Reactor treatment system (Figure 1 below) does not receive items that could clog the mechanical equipment in the treatment system. The pumping chamber (MH2A) evenly doses raw sewage to the treatment system on a timed basis. Due to the timed pumping, during high flows, the wastewater level will rise in pumping station MH2A and back up into the EQ Tank via the common EQ fill/empty line. Over time the pumping will outpace the incoming flow and the EQ Tank will empty through the common EQ fill/empty line back into MH2A.

The raw sewage is pumped from MH2A through a 75 mm diameter forcemain, into the first section of the treatment system (Anaerobic Chamber) which houses a trash trap to remove any larger solids. The sewage then enters the Integrated Surge Anoxic Mix (ISAM) Reactor by gravity where the raw sewage is mixed with nitrates recycled from the SBR (third tank) Basin for odour suppression and rapid denitrification. The SBR Basin pump is timer activated to pump from the ISAM Reactor in intervals, causing the SBR Basin to switch between aerobic and anoxic cycles at predetermined durations, until the SBR Basin reaches the Top Water Level (TWL) set point. Once TWL set point is reached a mixing pump runs for a set time to allow for chemical mixing and treatment to occur prior to being decanted. Once mixing is complete the Basin is decanted by gravity though an automated valve to the Post Equalization Tank until the Bottom Water Level (BWL) is reached in the SBR Basin.

The ISAM Sequencing Batch Reactor treatment system operates in batches with each batch size of approximately 13.3 m^3. Each batch is then pumped from the Post Equalization Tank to the cloth filter, then to pumping chamber MH3A where it is dosed to one of two conventional absorption beds or one of two shallow buried trench disposal beds in a pre-set sequence. The system injects Alum and Micro C2000 directly into the SBR Basin to assist with treatment. Alum assists with settling and phosphorous removal while Micro C2000 assists with nitrification and denitrification as well as provides a supplemental source of food for the microorganisms.

ECA 8181-8TXHRN contained the provision to install additional phases to the system within 5 years of the date of the ECA approval, which is July 23, 2012. Since the provision has lapsed an ECA amendment would be required to permit an expansion of the system.

The following report is presented such that it corresponds with ECA 8181-8TXHRN Section 10(6) (a) through (j).

PART 1 – SEWAGE TREATMENT SYSTEM (ECA 8181-8TXHRN) REQUIREMENTS

As per ECA 8181-8TXHRN samples are to be collected from the Airport STS in accordance with Tables 1 and 2 below, utilizing a grab sampling procedure. Analysis for these parameters is conducted at SGS Lakefield Analytical (SGS) in Lakefield, Ontario. SGS is a member of the Canadian Association for Laboratory Accreditation Incorporated, certificate #1999.

Table 1 – Influent Monitoring

Parameters	***Sample type***	***Frequency***
BOD_5	Grab	Quarterly
Total Suspended Solids	Grab	Quarterly
Total Phosphorus	Grab	Quarterly
Total Kjeldahl Nitrogen	Grab	Quarterly
Total Petroleum Hydrocarbons	Grab	Quarterly

Table 2 - Effluent Monitoring

Parameters	**Sample type**	**Frequency**
$CBOD_5$	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Ammonia Nitrogen	Grab	Monthly
Nitrate Nitrogen	Grab	Monthly
Chloride	Grab	Monthly
pH	Grab	Monthly
Total VOCs	Grab	Annually
ICP Scan of Metals	Grab	Annually
Total Petroleum Hydrocarbons	Grab	Annually

(I) SUMMARY AND INTERPRETATION OF ALL MONITORING DATA AND COMPARISON TO THE EFFLUENT LIMITS

As outlined in ECA 8181-8TXHRN Section 10(6) (a) the following is a summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Table 3 of this report, including an overview of the success and adequacy of the Airport STS.

The full annual sample dataset is included in Appendix B. A monthly summary of final effluent quality data provided by SGS is provided in Table 3. All ECA Annual Average limits were achieved for 2025. ECA objective exceedances, highlighted below, are discussed further in Table 15.

Table 3 – Final Effluent Average Monthly Concentrations

	$CBOD_5$ (mg/L)	Total Suspended Solids (mg/L)	Total Phosphorus (mg/L)	Total Ammonia Nitrogen (mg/L)	Nitrite + Nitrate Nitrogen (mg/L)	Total Ammonia Nitrogen +Nitrate Nitrogen (mg/L)	Chloride (mg/L)	pH
ECA Limits	**10**	**10**	**5**		**10**	**10**		
ECA Objective	**5**	**7**	**2**		**5**	**5**		
January	12	21	0.58	10.80	0.50	11.07	410	7.25
February	9	35	0.26	12.90	4.21	14.38	260	6.98
March	12	15	0.65	21.50	0.26	21.60	89	7.02
April	2	5	0.22	0.10	14.4	12.00	130	6.89
May	2	4	0.04	0.10	8.99	9.02	130	6.75
June	2	1	0.13	0.15	3.03	1.62	129	7.08
July	3	2	0.11	0.15	0.06	0.22	155	6.77
August	2	1	0.14	0.10	1.31	1.15	130	7.11
September	8	1	0.40	0.10	2.61	1.23	140	7.60
October	2	3	1.27	0.10	3.99	4.09	180	6.61
November	3	3	0.31	0.30	6.23	5.60	230	7.06
December	4	6	0.68	0.10	1.18	1.28	390	6.39
Annual Average	**4.7**	**7.1**	**0.36**	**3.34**	**3.35**	**6.08**	**190**	**6.93**

Notes:
**All ECA limits were achieved for 2025*
** ECA Objective exceedances are highlighted above*
**All analysis based on instantaneous grab sample*
** $CBOD_5$, TSS and TAN Objective exceedances are further discussed in Table 15*

Chloride concentrations have significantly increased since late 2019 and typically spike in the summer months which has resulted in the increase of chloride concentrations in the monitoring wells which surround the treatment facility. Chlorides can impact the Airport STS process by inhibiting the biological phosphorus process when influent concentrations exceed 1,500 mg/L. The chloride concentration experienced at the Airport STS in 2025 was not observed to have inhibited treatment performance.

Table 4 below shows the percent change in parameters from 2024 to 2025 in the annual final effluent sampling. Changes can be seen among all parameters. These changes are linked to operation challenges faced at the beginning the first quarter in 2025. Between the second and fourth quarter operational staff were able to correct the process and bring the annual averages below the limit threshold. A more detailed outline on the challenges experienced within the first quarter of 2025 can be found in section III, Operational Problems Encountered.

Table 4 – Interpretation and comparison of 2024 and 2025 final effluent samples to effluent limits

Parameter	Limit (mg/L)	2024 Average Concentration (mg/L)	2025 Average Concentration (mg/L)	% Change
$CBOD_5$	10.0	3.1	5.0	+65
Total Suspended Solids (mg/L)	10.0	3.8	8.0	+110
Total Phosphorus (mg/L)	5.0	0.2	0.49	+185
TAN + Nitrate Nitrogen	10.0	3.35	6.94	+72

Table 5 below summarizes the annual final effluent sampling concentrations for Total VOCs, ICP Scan of Metals and Total Petroleum Hydrocarbons. This sample was collected on February 25, 2025.

Table 5- Final Effluent Annual Total VOCs, ICP Scan of Metals and Total Petroleum Hydrocarbons Grab Sample

ICP Scan of Metals	**Concentration**
Aluminum (total) [mg/L]	2.53
Antimony (total) [mg/L]	<0.0009
Arsenic (total) [mg/L]	<0.0002
Barium (total) [mg/L]	0.106
Beryllium (total) [mg/L]	<0.000007
Bismuth (total) [mg/L]	0.00104
Boron (total) [mg/L]	0.026
Calcium (total) [mg/L]	80.6
Cadmium (total) [mg/L]	0.000803
Chromium (total) [mg/L]	0.00065
Cobalt (total) [mg/L]	0.000529
Copper (total) [mg/L]	0.017
Iron (total) [mg/L]	0.162
Potassium (total) [mg/L]	10.8
Lithium (total) [mg/L]	0.0033
Magnesium (total) [mg/L]	23.3
Manganese (total) [mg/L]	0.0204
Molybdenum (total) [mg/L]	0.0006
Nickel (total) [mg/L]	<0.0001
Phosphorus (total) [mg/L]	2.42
Lead (total) [mg/L]	0.00314
Selenium (total) [mg/L]	0.00043
Silicon (total) [mg/L]	5.17
Silver (total) [mg/L]	<0.00005
Sodium (total) [mg/L]	142
Strontium (total) [mg/L]	0.432
Tellurium (total) [mg/L]	<0.0001
Thallium (total) [mg/L]	<0.000005
Thorium (total) [mg/L]	<0.0001
Tin (total) [mg/L]	0.00032
Titanium (total) [mg/L]	0.0418
Tungsten (total) [mg/L]	<0.0002
Uranium (total) [mg/L]	0.000319
Vanadium (total) [mg/L]	0.00018
Zinc (total) [mg/L]	0.043
Zirconium (total) [mg/L]	<0.002
Total Petroleum Hydrocarbons	**Concentration**
CCME F1 (C6-C10) [ug/L]	<25
CCME F2 (C10-C16) [ug/L]	<100
CCME F1-BTEX (C6-C10) [ug/L]	<25
CCME F3 (C16-C34) [ug/L]	<200
CCME F4 (C34-C50) [ug/L]	<200
VOCs	**Concentration**
Acetone [ug/L]	<30
Benzene [ug/L]	<0.5
Bromodichloromethane [ug/L]	<0.5
Bromoform [ug/L]	<0.5

Bromomethane [ug/L]	<0.5
Carbon tetrachloride [ug/L]	<0.2
Chlorobenzene [ug/L]	<0.5
Chloroethane [ug/L]	<5
Chloroform [ug/L]	<0.5
Chloromethane [ug/L]	<5
Dibromochloromethane [ug/L]	<0.5
1,2-Dichlorobenzene [ug/L]	<0.5
1,3-Dichlorobenzene [ug/L]	<0.5
1,4-Dichlorobenzene [ug/L]	<0.5
1,1-Dichloroethane [ug/L]	<0.5
1,2-Dichloroethane [ug/L]	<0.5
cis-1,2-Dichloroethene [ug/L]	<0.5
1,1-Dichloroethylene [ug/L]	<0.5
1,2-Dichloropropane [ug/L]	<0.5
trans-1,2-Dichloroethene [ug/L]	<0.5
cis-1,3-Dichloropropene [ug/L]	<0.5
trans-1,3-Dichloropropene [ug/L]	<0.5
Ethylbenzene [ug/L]	<0.5
Ethylene Dibromide [ug/L]	<0.2
1,2 Dibromoethane	<0.2
Dichloromethane [ug/L]	<0.5
2-Hexanone [ug/L]	<20
Methyl-t-butyl Ether [ug/L]	<2
Methyl ethyl ketone [ug/L]	<20
Methyl Isobutyl ketone [ug/L]	<20
Styrene [ug/L]	<0.5
1,1,1,2-Tetrachloroethane [ug/L]	<0.5
1,1,2,2-Tetrachloroethane [ug/L]	<0.5
Tetrachloroethylene [ug/L]	<0.5
Toluene [ug/L]	<0.5
Trichloroethylene [ug/L]	<0.5
Vinyl Chloride [ug/L]	<0.2
Trichlorofluoromethane [ug/L]	<5
1,1,1-Trichloroethane [ug/L]	<0.5
1,1,2-Trichloroethane [ug/L]	<0.5
Xylene [ug/L]	<0.5
o-xylene [ug/L]	<0.5
m/p-xylene [ug/L]	<0.5

< represents a non-detect lab result

Table 6 below shows the percent change in the parameters from 2024 to 2025 in the annual final effluent sampling. Changes can be seen in the metal concentrations only. There is no comparison of Total Petroleum Hydrocarbons and Volatile Organic Compounds because their sampling results are non-detectable as noted in Table 5, therefore pose no concern.

Table 6 – Interpretation and comparison of 2024-2025 Annual Final Effluent Analysis

ICP Scan of Metals * Indicates total	PWQO	**Design Threshold Concentrations Activated Sludge (mg/L)	 Nitrification (mg/L)	2024	2025	% Change
Aluminum *[mg/L]	0.075	15-26		**0.377**	**2.53**	+571.0
Antimony *[mg/L]	0.020			<0.0009	<0.0009	--
Arsenic *[mg/L]	0.100	0.01		<0.0002	<0.0002	--
Barium *[mg/L]	--			0.0612	0.106	+73.0
Beryllium *[mg/L]	0.011			<0.000007	<0.000007	--
Bismuth *[mg/L]	--			0.00022	0.00104	+372.0
Boron *[mg/L]	0.200	0.05-100		0.009	0.026	+188.0
Calcium *[mg/L]	--	2500		70.4	80.6	+14.5
Cadmium *[mg/L]	0.020	10-100		0.000183	0.000803	+561.2
Chromium *[mg/L]	0.001	1-10	0.25	0.00035	0.00065	+85.7
Cobalt *[mg/L]	0.0009			0.000099	0.000529	+434.3
Copper *[mg/L]	0.005	1.0		0.003	**0.017**	+466.6
Iron *[mg/L]	0.300	1000	0.005-0.5	0.040	0.162	+305.0
Potassium [mg/L]	--			16.9	10.8	-36.1
Lithium *[mg/L]	--			0.0041	0.0033	-19.5
Magnesium *[mg/L]	--		50	19.6	23.3	+18.8
Manganese *[mg/L]	--	10		0.0158	0.0204	+29.1
Molybdenum *[mg/L]	0.007			0.0005	0.0006	+20.0
Nickel *[mg/L]	0.025	1-2.5	0.25	0.0011	<0.0001	-90.9
Phosphorus *[mg/L]	0.030			**0.410**	**2.42**	+490.2
Lead *[mg/L]	0.005	0.1	0.5	0.00089	0.00314	+252.8
Selenium *[mg/L]	0.100			0.00021	0.00043	+104.7
Silicon *[mg/L]	--			5.10	5.17	+1.3
Silver *[mg/L]	0.0001	5		<0.00005	<0.00005	--
Sodium *[mg/L]	--			142	142	--
Strontium *[mg/L]	--			0.362	0.432	+19.3
Tellurium *[mg/L]	--			<0.0001	<0.0001	--
Thallium *[mg/L]	0.0003			<0.000005	<0.000005	--
Thorium *[mg/L]	--			<0.0001	<0.0001	--
Tin *[mg/L]	--			<0.00006	0.00032	+433.3
Titanium *[mg/L]	--			0.00100	0.0418	+4080
Tungsten *[mg/L]	0.030			<0.0002	<0.0002	--
Uranium *[mg/L]	0.005			0.000101	0.000319	+215.8
Vanadium *[mg/L]	0.006			0.00024	0.00018	-25
Zinc *[mg/L]	0.030	0.08-10	0.08-0.5	**0.057**	**0.043**	-24.6
Zirconium *[mg/L]	0.004			<0.002	<0.002	--

** Bold indicates PWQO exceedance*

***Threshold Concentrations of Inorganic Pollutants Inhibitory to Biological Treatment Processes as per O&M Manual.*

As per the above Table 6, 2025 sample results did not exceed the Threshold Concentrations of inorganic pollutants inhibitory to biological treatment processes for any of the parameters tested.

To satisfy the requirement of the ECA to interpret the annual final effluent sample, the metals are compared to the Provincial Water Quality Objectives for Receiving Streams as this is the most applicable guideline for this site. It should be noted that the annual samples are a grab sample and reflective of what is in the effluent only at the time of sampling. All metals identified in the PWQO Guideline were compared to the 2024 and 2025 final effluent samples.

The following PWQO's for metals were exceeded for 2025: Aluminum, Copper, Phosphorus and Zinc.

Aluminum:

The PWQO states that at a pH greater than 6.5 but not more than 9.0, the 0.075 mg/L Aluminum objective is based on the total Aluminum measured in clay-free sample. Aluminum is recognized as potentially toxic to fish under certain pH conditions and shows no consistent, convincing evidence that it causes adverse health effects in humans. Airport STS effluent is discharged to a tile bed and not directly into a receiving stream, therefore the 2.53 mg/L sample result is not a concern.

Copper:

The 2025 Copper sample results exceeded the PWQO objective of 0.005 mg/L with a result of 0.017 mg/L. The PWQO states that current scientific evidence is insufficient to develop a firm objective for copper; however, small amounts are necessary to support plant and animal life. While exposure to high levels of copper is linked to several human health issues, this exceedance is not significantly concerning. The Airport STS effluent is discharged into a tile bed and is never directly consumed by humans or animals. Instead, the effluent must slowly percolate down through the soil to the underlying aquifer, a natural filtration process that provides extensive additional contaminant removal.

Phosphorus:

The 2025 Phosphorus sample result was 2.42 mg/L. The PWQO states that current scientific evidence is insufficient to develop a firm objective for phosphorus however, excessive plant growth in rivers and streams could be eliminated if the phosphorus is kept below 0.030 mg/L. Since the Airport STS effluent is discharged to a tile bed and not directly into a receiving stream, the level of phosphorus detected in the grab sample is not concerning as it relates to aquatic wildlife.

Zinc:

The PWQO was exceeded for Zinc in 2025 with a result of 0.043 mg/L compared to the 0.030 mg/L objective. Excess zinc in the soils can decrease the vegetation diversity in the tile bed and decrease the activity of microorganisms and earthworms, slowing the breakdown of organic matter.

The 2024-2025 comparison of heavy metals analysis in Table 6 has shown increases in the following parameters; Aluminum, Barium, Bismuth, Boron, Calcium, Cadmium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Molybdenum, Phosphorous, Lead, Selenium, Silicon, Strontium, Tin, Titanium, and Uranium. Most of the above parameters can be correlated with metal fabrication and electroplating industries. In high concentrations these substances could inhibit biomass growth and nitrification processes but no impacts have been observed at the facility to date. A collection system investigation, utilizing portable composite samplers placed strategically through the collection system, has been undertaken to trace the potential origins of the elevated parameters. The investigation consists of sampling and discussions with property owners. The investigation and discussion will continue into 2026.

(II) FLOW DATA

This section summarizes the influent characteristics for the Airport STS. Flow data for the 2025 reporting period is listed in Table 7 of this report and is represented in Graph 1. The average daily total daily wastewater flow for this reporting period was 33 m^3. A maximum daily flow of 83 m^3 was treated through the system on January 22, 2025. As a result of heavy rain and snow melt, the facility experienced, high flow events on March 5th, 11th and 18th 2025, requiring the diversion of 107 m^3. An additional 60 m^3 was diverted on September 18^{th,} 2025, which increased flows was suspected to be due to maintenance work by a system customer. A total of 167 m^3 of raw sewage was hauled to the Paris WPCP in 2025.

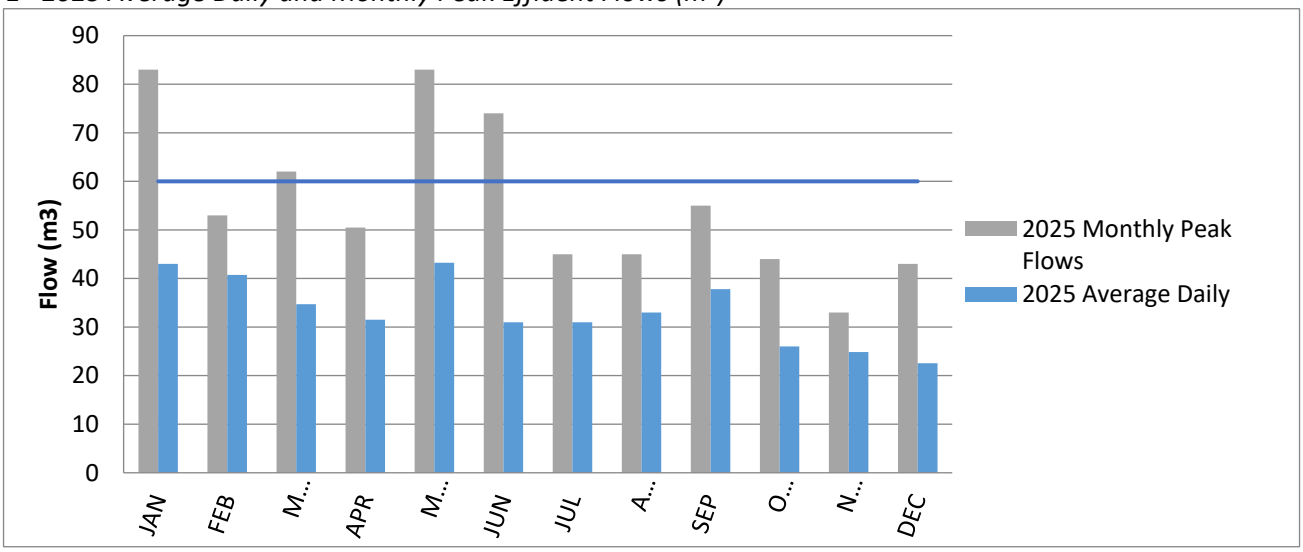
Table 7 below shows the average effluent flow, the total effluent flow and diverted flow for each month. Graph 1 shows the daily average and maximum flows for 2025 in comparison to the rated capacity and Graph 2 shows the total monthly flow comparison between 2024 and 2025.

Table 7 –Effluent Flow Data

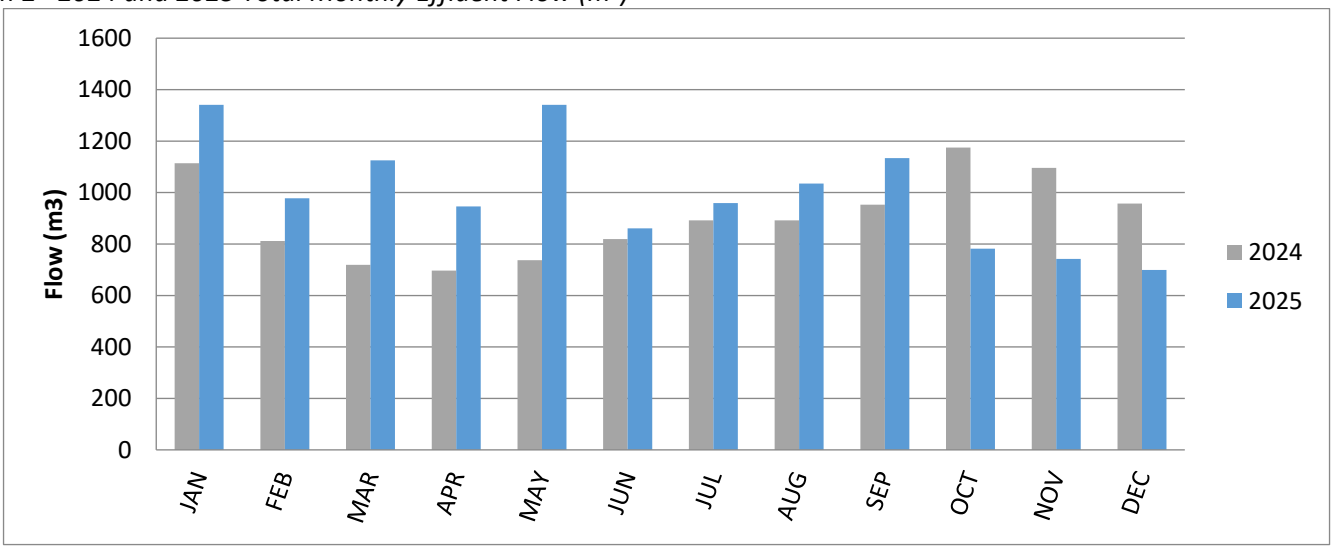
	Average Daily Flow (m^3)	Total Month Flow (m^3)	Max Day Flow (m^3)	Diverted Monthly Flow (m^3)
January	43	1,341	83	0
February	41	978	53	0
March	35	1,125	62	107
April	32	946	51	0
May	43	1,341	83	0
June	31	861	74	0
July	31	959	45	0
August	33	1,035	45	0
September	38	1,134	55	60
October	26	782	44	0
November	25	742	33	0
December	23	699	43	0
TOTAL	--	**11,943**	--	**167**
AVERAGE	**33**	--	**56**	--

Note: There is no flow meter on the influent, values based on effluent flow meter readings

Graph 1 –2025 Average Daily and Monthly Peak Effluent Flows (m^3)



Graph 2 –2024 and 2025 Total Monthly Effluent Flow (m^3)



(III) - OPERATING PROBLEMS ENCOUNTERED

There were no parameters that exceeded the annual ECA limits in 2025, however, objectives were exceeded for Total Suspended Solids, and Total Ammonia Nitrogen + Nitrate Nitrogen. Table 4 comparisons of final effluent concentrations from 2024 and 2025 illustrate an increase in all four parameters. Although no direct correlation was found, the following are suspected factors that may have contributed to elevated results observed in the first three months of 2025:

1. Fluctuation of daily flows to the Airport STS.
2. Low strength Raw Sewage resulting in inadequate food for the microorganisms.
3. Two (2) high inflows during rain events and snow melt.
4. Total ammonia nitrogen exceedances mainly occur due to the lack of nutrients coming into the plant.

Mitigation and best efforts to address this include increased in-house ammonia testing, reseeding the SBR, increased Micro C2000 chemical dosage to reduce nitrates, monitoring flows and using the EQ tank to reduce hydraulic loading during high flows or rain events.

The following are descriptions of actions taken at the operations level to ensure compliance with effluent objectives and limits:

- Airport STS was reseeded with Return Activated Sludge from the Paris WPCP on March 7, April 10 & 29, May 8 & 12 and June 27 in order to provide the facility with the required biomass to be able to provide effective treatment.
- Raw pump settings were adjusted at the Airport STS when the flow trending started to indicate a constant increase. The EQ tank was utilized when the flows were inconsistent or continued to stay high for a duration of time, allowing the system to continue to work within its design capacity.
- The installation of a large capacity chemical pump for dosing Micro-C, mostly eliminating the need for manual addition of Carbon (MicroC2000) to help reduce the nitrate levels

(IV) – MAINTENANCE PERFORMED ON MAJOR EQUIPMENT, STRUCTURES, EQUIPMENT

A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the WRRC, including repairs resulting from operating problems, is listed in Table 8.

Table 8 – Upgrades/Maintenance

Date	Work Performed	Status
10-Jan	Contractor replaced heat trace on waste sludge valve A	Completed
06-Feb	Contractor installed new fuel pump on generator	Completed
20-Mar	SBR mix pump was pulled from tank for inspection. Pump was sent out for repairs as it was not working properly. The lag aerobic mix pump was switched to anaerobic mix settings while a replacement unit is designed to be external to the tank for longer lifespan.	Pending
28-Mar	Effluent pump #2 didn't seem to be working and was pulled for inspection. Cleaned and put back into service. No issues found.	Completed
15-May	Third party contractor calibrated flow meter	Completed
16-May	Installed a larger capacity chemical dosing pump for addition of Micro-C	Completed
05-June	Cleaned SBR Mix pump air release line	Completed
25-June	Third party contractor replaced pneumatic backwash actuators for filter backwash system	Completed
26-June	Third party contractor on site to replace SBR PLC due to current one failing	Completed
29-Aug	Third party contractor replaced D.O probe due to calibration failing	Completed
23-Sept	Third party contractor completed annual lifting device inspection; no issues found	Completed
23-Oct	Third party contractor completed annual generator inspection	Completed
20-Nov	Annual ESA inspection, no deficiencies	Completed

(V) - Effluent Quality Assurance and Control Measures

Considerable effort goes into monitoring the characteristics of STS influent, effluent and intermediate process streams. This monitoring provides essential data for process optimization by operational staff and is required to meet the ECA monitoring and reporting conditions. Grab samples are routinely collected and analyzed through in-house analysis.

The influent is monitored for BOD_5, total suspended solids, total phosphorous and total Kjeldahl nitrogen, Chloride on a monthly basis by means of a grab sample. A monthly summary of the results is presented in Table 9, as required by ECA 8181- 8TXHRN, which specifies minimum quarterly and monthly sampling frequencies for the applicable parameters.

For any additional information please see Part 1(I). Summary and Interpretation of all Monitoring Data and Comparison to the Effluent Limits.

Table 9 – Influent Average Concentrations

	BOD_5 (mg/L)	TSS (mg/L)	TP (mg/L)	TKN (mg/L)	Chloride (mg/L)	CCME F1 (C6-C10) (ug/L)	CCME F2 (C10-C16) (ug/L)	CCME F3 (C16-C34) (ug/L)	CCME F4 (C34-C50) (ug/L)
January	194	222	5.47	59.50	280	--	--	--	--
February	77	86	2.15	21.45	230	<25	<100	<200	<200
March	604	944	11.00	94.00	99	--	--	--	--
April	42	20	2.08	24.80	106	--	--	--	--
May	223	188	4.48	42.70	79	28	<100	950	372
June	192	229	6.12	63.45	175	--	--	--	--
July	468	1068	26.10	110.05	86	--	--	--	--
August	48	55	2.54	37.40	66	<25	<100	253	<200
September	109	106	3.50	23.40	72	--	--	--	--
October	108	175	9.56	59.80	240	--	--	--	--
November	82	69	4.68	42.40	90	<25	<100	<200	<200
December	55	47	3.44	39.90	210	--	--	--	--

Note: Oil & Grease and total hydrocarbons are sampled once per quarter as per ECA 8181-8TXHRN

Table 9 shows the influent sample concentrations entering the facility. For most of the reporting period, the BOD_5 and Total Suspended Solids concentrations were very low and not ideal to sustain the biomass in the facility at certain times. In an effort to counteract the low strength influent and supplement the biomass, Micro C2000 is added. If Micro C2000 addition is not sufficient, reseeding is then implemented. Airport STS was reseeded with Return Activated Sludge from the Paris WPCP on March 7th, April 10 & 29, May 8 & 12, and June 27, in 2025 in order to ensure a sufficient biomass to support the biological process and ensure effective treatment.

Table 10 below are the additional parameters monitored in the treatment system for operational insight. Alkalinity is measured to ensure that the acids can be neutralized which ensures pH can be maintained within appropriate range to support the biological treatment process. Mixed liquor and volatile suspended solids are monitored to keep track of the microorganism population within the system.

TABLE 10- ALKALINITY, VOLATILE & MIXED LIQUOR SUSPENDED SOLIDS MONITORING

Month	Alkalinity (mg/L as $CaCO_3$)	Volatile Suspended Solids (mg/L)	Mixed Liquor Suspended Solids (mg/L)
January	357	1940	2350
February	307	1420	1720
March	388	1410	1660
April	294	2640	3120
May	206	3920	4540
June	341	3470	4135
July	349	5270	6275
August	366	6240	7840
September	673	6150	8000
October	352	4750	6080
November	402	5250	6750
December	408	5920	7420

(VI) - CALIBRATIONS

The sites pH meters, portable analyzers, dissolved oxygen probe and final effluent flow meter annual calibrations were performed on May 15, 2025; no other maintenance was required. The calibration report for the flow meter can be found in *Appendix A.*

(VII) – MEETING THE EFFLUENT OBJECTIVES OF CONDITION 6

Please see Part 1(I). Summary and Interpretation of all Monitoring Data and Comparison to the Effluent Limits.

(VIII) – SOLIDS/SLUDGE HANDLING AND DISPOSAL

The following table below shows the amount of liquid biosolids that were removed from the Airport STS in 2025. The biosolids that were removed were sent to the Paris WPCP digester for further treatment. It is anticipated that a slightly higher volume of sludge (110 m^3) will be generated in 2026 and require removal.

Table 11 –Liquid Biosolids Removed for 2025

Month	Quantity Removed (m^3)
January	0
February	14
March	0
April	10
May	0
June	0
July	0
August	0
September	12
October	0
November	0
December	20
Total	**56**

(IX) - SUMMARY OF COMPLAINTS RECEIVED

The Airport STS did not receive any complaints in 2025.

(X) - SUMMARY OF BY-PASS, SPILL OR ABNORMAL DISCHARGE EVENTS

There were no by-pass, spills or abnormal discharge events reported for the Airport STS during the 2025 reporting period.

(XI) – OTHER INFORMATION

Impact Assessment Report

In 2022, the MECP provided comments to the County stating that a detailed Impact Assessment should be prepared to support the non-compliance with respect to exceedances of Guideline B-7 Reasonable Use Concept. In 2024, the County completed an Impact Assessment Report for the Airport STS to assess and delineate the effects of the treatment system to all potential offsite receivers. The Impact Assessment included monitoring new groundwater wells and surface water locations. The Assessment report was submitted to the MECP in October 2024. The County received comments from the MECP in December 2025. The MECP comments require the ongoing monitoring of offsite groundwater and surface water locations be continued until the end of 2027. Next steps will be revisited with the MECP following the 2027 monitoring period. This item is discussed further in the "2025 Groundwater Monitoring Report – Airport Sewage Treatment System" prepared by WSP.

MECP Inspections

Wastewater system inspections are conducted by the Ministry of the Environment, Conservation and Parks (MECP) to verify that systems are operated in accordance with their Environmental Compliance Approval (ECA) and that all terms and conditions are being met. As part of these inspections, MECP inspector's reviews performance data to assess compliance with effluent limits, operational objectives, and reporting requirements. Inspections also confirm that the Operating Authority meets all sampling, monitoring, testing, treatment, and operator certification requirements. Additional inspections may be initiated by the MECP in response to elevated event frequency, inconsistent system performance (e.g., increased overflow events or incident reports), complaints or concerns received by the MECP, or as follow-up actions resulting from previous non-compliances.

The MECP completed a scheduled inspection of the Airport STS on March 17, 2025. The inspection identified two non-compliances and two recommendations, summarized below:
Non-Compliances 1:
The inspector determined that contingency plans and procedures for equipment breakdowns and abnormal operating conditions were not available for review during the inspection.

Action/Response:
These documents are maintained onsite in hard-copy format and are also accessible electronically through OCWA's shared network drive.

Non-compliance 2:
The potential or anticipated environmental impact related to the operations of the sewage works. This comment was related to the MECP 2022 requirement that the County comply with the B-7 Reasonable Use Guidelines, as discussed in section XI.

Action/Response:
The County has completed a detailed Impact Assessment Report and continues to complete additional monitoring related to the offsite impacts of the Airport STS. The Impact Assessment was completed over the period of 2022 to 2024, and submitted to the MECP on October 10, 2024. At time of the inspection the County was awaiting a response from the MECP on their review of the submitted Report. The County received a response from the MECP in December 2025. The MECP comments require that ongoing monitoring at offsite groundwater and surface water locations be continued until the end of 2027. Next steps will be revisited with the MECP following the 2027 monitoring period.

Recommendation 1:
The MECP noted that not all effluent objectives were met in 2021, 2022 and 2023.

Response: Although all ECA compliance limits were met throughout the 2021 and 2022 reporting year some of the objectives were not met on occasion. OCWA works to consistently meet the objective performance limits established by the MECP. In instances where these objectives were exceeded, corrective actions were implemented promptly. These actions typically included seeding the system with activated sludge from the Paris WPCP and reviewing process timing setpoints to optimize performance.

Recommendation 2:
The MECP noted the sewage works does not appear to be operating effectively and as designed.

Response:
This comment was due to the MECP requirement for the County to comply with the B-7 Reasonable Use Guidelines as discussed above in Non-Compliance 2.

APPENDIX A

CALIBRATION RECORDS

Certificate of Calibration — Electro-Magnetic Flow Meter

JBF CONTROLS LTD.
595758 Hwy 59 North RR6
Woodstock, ON. N4S 7W1
Ph#: 519-535-9835
Email: Jfranssen@jbfcontrols.com

☑ Verification
☐ Calibration
Calibration Date: May 15, 2025
Due Date: May 15, 2026

Client Information
Ontario Clean Water Agency - Southwest Region / Paris Cluster
120 Race Street,
Paris, Ontario, N3L 3X2

SCADA Reading Confirmation		
Instrument	SCADA	% Deviation
0.000	0.000	0.000%

Project: OCWA202201	Manufacturer: Krohne	As Found:	0.000 L/min
Client: OCWA	Transmitter Model: IFC 100W	As Left:	0.000 L/min
Client Contact: Ben Madill	Transmitter S/N: C12504886	Totalizer Reading:	82873.13 m3
Location: Brant	Flow Tube Model: ENVIROMAG 2000	K-Factor:	3.5503
Facility: Airport STS	Flow Tube S/N: C12504886	Current Output (mA):	4 to 20
Technician: Jeremy Franssen	Pipe Material: Stainless Steel	Flow Range:	0 to 300
Meter Purpose: Effluent Flow	Meter Size: 2"	Units:	L/min
Application: Waste Water	Tag Number: **FIT 248354**	Accuracy:	0.50% Reading

mA Output

Reference: mA	As Found: mA	% Deviation	As Left: mA	% Deviation	PASS/FAIL
4.000	4.002	0.012%	4.002	0.012%	PASS
8.000	8.004	0.025%	8.004	0.025%	PASS
12.000	12.006	0.038%	12.006	0.038%	PASS
16.000	16.008	0.050%	16.008	0.050%	PASS
20.000	20.010	0.063%	20.010	0.063%	PASS

Flow Rate Output

Reference: L/min	As Found: L/min	% Deviation	As Left: L/min	% Deviation	PASS/FAIL
0.000	0.037	0.012%	0.037	0.012%	PASS
75.000	75.075	0.025%	75.075	0.025%	PASS
150.000	150.113	0.038%	150.113	0.038%	PASS
225.000	225.150	0.050%	225.150	0.050%	PASS
300.000	300.188	0.063%	300.188	0.063%	PASS

Remarks:
Verification of Flow Meter Parameters. Confirm, OK.
Verification of 4-20 mA Output, Confirm, OK.
Verification of Instrument to SCADA Readings, Confirm, OK.
Cleaned and Certified

Calibration Standards Used

Description	Serial n°	Certificate n°	Calibration Date	Due Date
Fluke 705 Loop Calibrator	**4624185**	**59234-B**	**April 2025**	**April 2026**

Calibration standards used in the certificate are traceable to the National Institute of Standards and Technology (NIST).

Service Technician: Jeremy Franssen
Signature

This certificate shall not be reproduced except in full.

Version 1.0

APPENDIX B

2025 DATA SETS

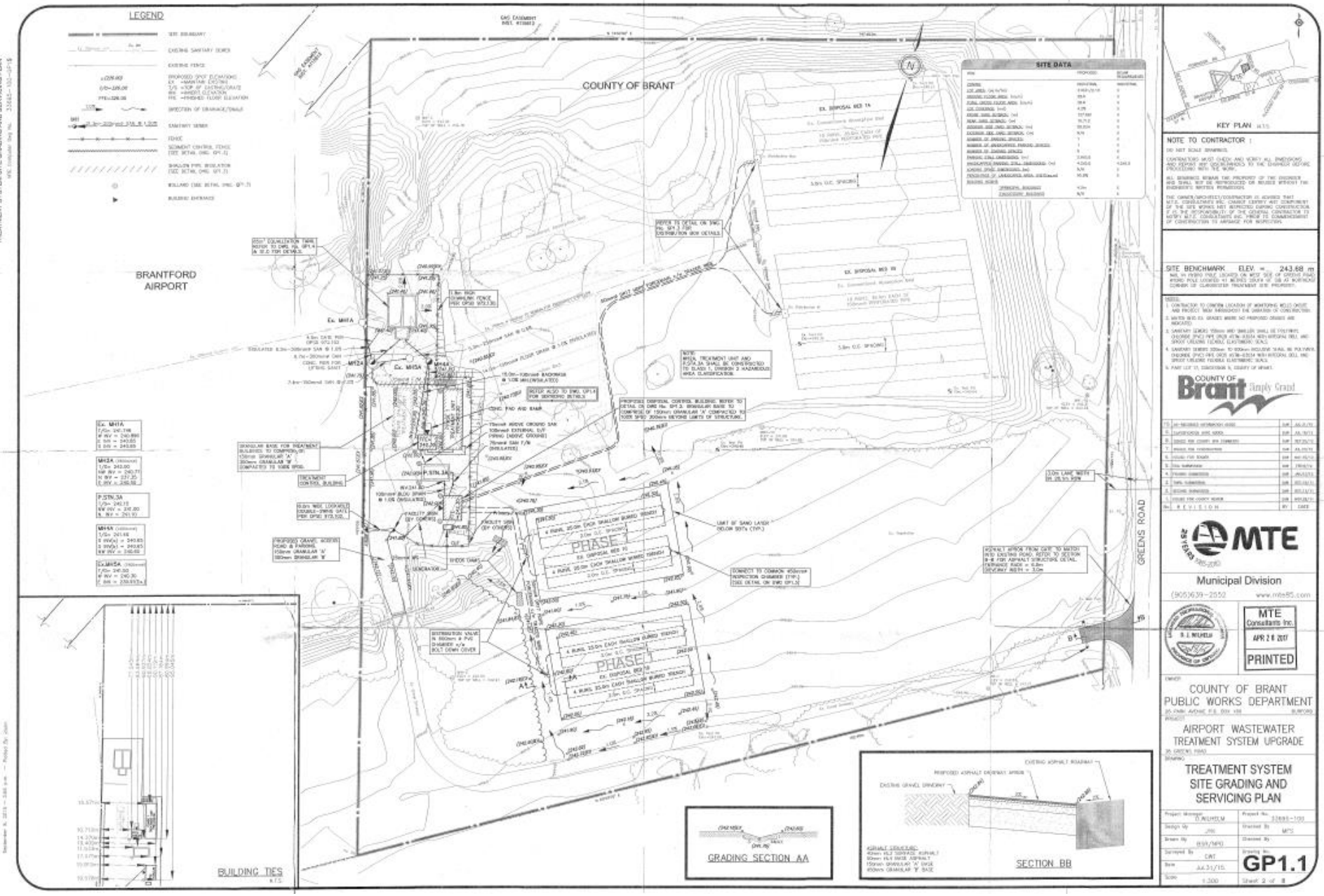
Full Data set of Airport STS Final Effluent, Raw & Mixed Liquor

	Final Effluent														
Date	Lab Temp (°C)	pH	field Temp (°C)		CBOD (mg/L)	BOD (mg/L)	TSS (mg/L)	TP (mG/L)	TKN (mg/L)		Ammonia + Ammonium (mg/L)	Chloride mg/L	Nitrite	Nitrate	Nitrite + Nitrate	TAN+
Objective					**5**		**7**	**2**							**5**	**5**
Limit					**10**		**10**	**5**							**10**	**10**
Annual Avg		**7.0**			**4.7**	**#DIV/0!**	**7.1**	**0.4**	**4.4**		**3.3**	**189.8**	**0.6**	**2.7**	**3.4**	**6.08**
31-Jan	5	7.25	16.6		12		21	0.58	12		10.8	410	0.23	0.27	0.5	11.07
26-Feb	7	6.98	12.6		9		35	0.26	14.9		12.9	260	2.73	1.48	4.21	14.38
25-Mar	5	7.02	12.1		12		15	0.65	22.6		21.5	89	0.16	0.1	0.26	21.6
09-Apr	6	6.89	13.6	<	2		5	0.22	0.8	<	0.1	130	2.5	11.9	14.4	12
20-May	8	6.75	16	<	2		4	0.04	0.5	<	0.1	130	0.07	8.92	8.99	9.02
04-Jun	15	7.32	15.8	<	2		1	0.13	0.6	<	0.1	88	0.15	2.88	3.03	2.98
18-Jun	21	6.83	19.4	<	2		1	0.12	0.7		0.2	170	0.03	0.06	0.06	0.26
03-Jul	15	6.63	21.3	<	4		2	0.14	1	<	0.1	180	0.03	0.06	0.06	0.16
15-Jul	13	6.9	22.8	<	2		1	0.09	0.7		0.2	130	0.06	0.07	0.13	0.27
19-Aug	21	7.11	23	<	2		1	0.14	0.5	<	0.1	130	0.26	1.05	1.31	1.15
15-Sep	13	7.6	24.9		8		1	0.4	0.8	<	0.1	140	1.48	1.13	2.61	1.23
31-Oct	6	6.61	15.5	<	2		3	1.27	2.5		0.1	180	0.03	3.99	3.99	4.09
25-Nov	7	7.06	16		3		3	0.31	2.9		0.3	230	0.93	5.3	6.23	5.6
10-Dec	6	6.39	17.7		4		6	0.68	1	<	0.1	390	0.03	1.18	1.18	1.28

	RAW Influent												Mixed Liquor SBR				
	Date	Temp	pH	BOD5	TSS	TP	TKN	chloride	CCME F1	CCME F2	CCME F3	CCME F4	Temp	MLSS	MLVSS	Ratio %	Alkalinity
31-Jan-25	5		194	222	5.47	59.5	280					5	2350	1940	82.6	357
26-Feb-25	7		27	52	1.25	13.4	230	<25	<100	<200	<200	7	1720	1420	82.6	307
25-Mar-25	5		604	944	11	94	99					5	1660	1410	84.9	388
28-Mar-25	5				6.71	58	99								#DIV/0!	
09-Apr-25	6		42	20	2.08	24.8	61					6	3120	2640	84.6	294
24-Apr-25	12		156	78	4.76		150								#DIV/0!	
12-May-25	6		374	247	7.18	78.2		28	<100	950	372				#DIV/0!	
20-May-25	8		71	129	1.78	7.1	79					8	4540	3920	86.3	206
04-Jun-25	15		264	189	7.65	85	160					15	4590	3800	82.8	344
18-Jun-25	21		120	268	4.59	41.9	190					21	3680	3140	85.3	337
03-Jul-25	15		864	2050	49.8	198	100					15	6280	5340	85.0	356
15-Jul-25	13		72	85	2.48	22.1	71					13	6270	5200	82.9	343
07-Aug-25	20		53	63	3.37	41.2			<100	253	<200				#DIV/0!	
19-Aug-25	21		67	69	3.7	33.6	100					21	7840	6240	79.6	366
25-Aug-25			16					<25							#DIV/0!	
25-Aug-25	22.4	7.51	39	33			66		<100	<200	<200				#DIV/0!	
15-Sep-25	13		109	106	3.5	23.4	72					24.9	8000	6150	76.9	673
31-Oct-25	6		108	175	9.56	59.8	240						6080	4750	78.1	352
13-Nov-25	13	7.33	106	80	3.44	24		<25	<100	<200	<200				#DIV/0!	
25-Nov-25	7		58	58	5.91	60.8	90					7	6750	5250	77.8	402
10-Dec-25	6		55	47	3.44	39.9	150					6	7420	5920	79.8	408
18-Dec-25	9	6.55	281	250			270		146	613	259					

APPENDIX C

SITE PLAN


LEGEND
COUNTY OF BRANT
BRANTFORD AIRPORT
GREENS ROAD
SITE DATA
PHASE 1
PHASE 2
GRADING SECTION AA
SECTION BB
BUILDING TIES
KEY PLAN
NOTE TO CONTRACTOR :
SITE BENCHMARK ELEV. = 243.68 m
COUNTY OF Brant Simply Grand
MTE
Municipal Division
(905)639-2552 www.mte85.com
MTE Consultants Inc.
APR 2 8 2017
PRINTED
COUNTY OF BRANT
PUBLIC WORKS DEPARTMENT
AIRPORT WASTEWATER
TREATMENT SYSTEM UPGRADE
TREATMENT SYSTEM
SITE GRADING AND
SERVICING PLAN
GP1.1

APPENDIX D

ISAM PLANT FLOW DIAGRAM