



Municipality of
Leamington
live | play | work



Leamington Pollution Control Center 2025 Annual Report

Submitted to:
Ontario Ministry of the Environment, Conservation and Parks
March 2026

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Symbols & Abbreviations

CBOD	Carbonaceous Biochemical Oxygen Demand (5-day) (mg/l)
kg/d	kilograms per day
m ³	cubic meters
m ³ /d	cubic meters per day
mg/l	milligrams per litre
MIGD	million imperial gallons per day
MI	megalitres
pH	Negative logarithm of the hydrogen ion concentration
SS	Suspended Solids (mg/l)
t	tonne
TP	Total Phosphorus (mg/l as P)
UV	Ultra Violet (light)

Executive Summary

This annual report was prepared to summarize the Leamington Pollution Control Centre (LPCC) 2025 operations. The report is being submitted to the Ontario Ministry of the Environment, Conservation and Parks (MECP), in addition to the monthly reports (R1) submitted each month during 2025, to satisfy the requirements of Environmental Compliance Approval (ECA) number 8491-AQBJ73, issued on March 23, 2018.

The LPCC is a conventional activated sludge plant that treats the combined influent from the municipal sewer system, imported sewage, and leachate from the closed Essex-Windsor Solid Waste Landfill #2.

In 2025, the LPCC treated a total of 6,986,841 m³ of sewage; an average of 19,124 m³/day. The average effluent quality for the LPCC was:

Contaminant	Concentrations (mg/l unless otherwise noted)		
	ECA Limit (monthly average)	Annual Effluent Monthly Average	Maximum Effluent Monthly Average
C.B.O.D.	15.0	2.4	3.5
Suspended Solids	15.0	8.5	12.8
Total Phosphorus	1.0	0.21	0.40
E.coli (org/100mL)	200	5	19
pH (pH units)	6.0 – 9.5	7.6	Range 7.2 – 8.1
Contaminant	Loadings (kg/d)		
	ECA Limit (monthly average)	Annual Effluent Monthly Average	Maximum Effluent Monthly Average
C.B.O.D.	525	47.9	82.6
Suspended Solids	525	166	293
Total Phosphorus	35	4.0	6.3

During 2025, there were no plant bypass events, however there was one plant overflow event on July 31 due to wet weather and design flow exceedance. The overflow resulted in a discharge of preliminary treated sewage to the Selkirk Drain via the plant's overflow structure and was reported to Spills Action Centre and to MECP.

In 2025, LPCC produced 9,209 tonnes of N-Viro lime stabilized biosolids, at an average of 62.7% solids. This final product was applied to farmland in Essex County and surrounding areas.

1.0 Summary of Performance

This report was prepared to summarize the Leamington Pollution Control Centre (LPCC) 2025 operations. This report is being submitted to the Ontario Ministry of the Environment, Conservation and Parks (MECP), in addition to the monthly reports (R1) submitted during 2025, to satisfy the requirements of Environmental Compliance Approval (ECA) number 8491-AQBJ73 issued on March 23, 2018.

The LPCC is a conventional activated sludge facility that treats the combined influent from the municipal sewer system, imported sewage from licensed haulers, leachate from the closed Essex-Windsor Solid Waste Authority Landfill #2 and wastewater from a large industrial user. The facility has an average day rated capacity of 35,000 m³/day with a peak flow rate of 70,000 m³/day. The facility also includes an offline storage basin (OSB) that allows the full amount of the headworks capacity to be utilized for a peak flow rate of 105,000 m³/day. The facility includes preliminary treatment (screening and grit removal), two primary clarifiers, two aeration tanks, two secondary clarifiers, UV disinfection and sludge processing. UV disinfection is operated continuously throughout the year. Phosphorus removal is achieved through dosing of aluminum sulphate and supplementary suspended solids removal is achieved through dosing of polymer as required throughout the year.

Primary settled sludge and waste activated sludge are dewatered by centrifugation and neutralized with alkaline additive prior to being heated to form the final N-Viro biosolids product. The final biosolids product is managed by Walker Industries Inc. and is applied to farmland in Essex County and surrounding areas.

Monthly plant average results, flow measurements, and other relevant 2025 operating data for the LPCC are provided in **Appendix A**. This data includes any plant overflows/bypasses and the influent and final effluent sample analytical results. All sample results are based on twenty-four (24) hour composite samples collected by automatic samplers. Influent samples are collected following screening and grit removal, while final effluent samples are collected following disinfection. Also included in **Appendix A** is a monthly tabulation of imported sewage, and landfill leachate volumes and analytical data. Historical data and trends for 2016 through 2025 for ECA required parameters is provided in **Appendix B**.

Monthly dewatering data and N-Viro product processing data for the LPCC are included in **Appendix D**. This data provides monthly averages of the volume of sludge pumped, sludge characteristics, amount of centrifuged sludge cake removed (on a wet and dry basis) and the amounts of polymer and lime used in dewatering. Quarterly sample results for the LPCC N-Viro biosolids are also provided in **Appendix D**.

2.0 Plant Operations

2.1 Monitoring Data and Schedule

2.1.1 Influent, Imported Sewage and Landfill Leachate

Wastewater inflows at the LPCC are comprised of municipal sewage, imported sewage from septic tanks and holding tanks throughout Essex County, landfill leachate via force main from the Essex-Windsor Solid Waste Authority closed Landfill #2 and wastewater from a large industrial user. In 2025, the LPCC treated a total of 6,986,841 m³ of wastewater; an average of 19,124 m³/day. This average daily influent flow is within the rated capacity of the LPCC of 35,000 m³/day and represents approximately 55% of plant rated capacity. The peak daily flow of 49,850 m³/day was recorded in July and represents 71% of peak plant rated capacity.

Flows from the various sources are provided in Table 1. The total municipal flow reported includes the volume of imported sewage and landfill leachate, however, LPCC has included those volumes in the table for ECA reporting purposes.

Table 1: 2025 Influent Volumes

Source	Volume (m ³)
Municipal	4,787,228
Industrial User	2,199,613
Imported Sewage	42,287
Landfill Leachate	26,474

Landfill leachate daily flows ranged from 40.5 to 141 m³/day, which is well below the ECA limit of 860 m³/day. Detailed monthly volumes for all wastewater streams and associated plant data are included in **Appendix A**, while historical data and trending for ECA required parameters only is provided in **Appendix B**.

2.1.2 Final Effluent

Final effluent from the LPCC is discharged through a parshall flume prior to entering the final outfall sewer. The final outfall sewer travels approximately 1.2 km along the bank of the Selkirk Drain from the LPCC to Lake Erie where it is released to the environment. In 2025, a total of 6,986,841 m³ of effluent was released to Lake Erie.

The final effluent parshall flume does not currently provide accurate flow measurements due to high levels in Lake Erie. On March 27, 2018, the MECP provided direction to the LPCC related to the final effluent parshall flume and approval to report on sewage flows from the plant using data recorded from the influent flow meter.

Monthly effluent water quality results for the LPCC are provided in **Appendix A**. Historical data and trending for ECA required parameters is provided in **Appendix B**. A

summary of the results when compared to the ECA effluent objectives and limits is provided in Table 2 and 3.

Table 2: Final Effluent Design Objectives

Contaminant	ECA Objective (monthly average)	Result Summary
C.B.O.D.	10.0 mg/L	All monthly average results were below 10 mg/L
Suspended Solids	10.0 mg/L	Three months exceeded the 10 mg/L objective
Total Phosphorus	0.8 mg/L	All monthly average results were below the 0.8 mg/L objective
E.coli	150 CFU/100mL	All monthly geometric average results were below 150 CFU/100mL
pH	6.5 – 8.5 pH units (single result)	7.2 min, 8.1 max – all results met ECA objective

In 2025, the LPCC was in compliance with the MECP Effluent Objectives, as specified in Condition 6 of the ECA, with the exception of three (3) monthly average TSS results, as identified above. All objectives were met for more than 50% of the year.

Table 3: Final Effluent Compliance Limits

Contaminant	Concentrations (mg/l)		
	ECA Limit (monthly average)	Annual Effluent Monthly Geometric Average	Maximum Effluent Monthly Average
C.B.O.D.	15.0	2.4	3.5
Suspended Solids	15.0	8.5	12.8
Total Phosphorus	1.0	0.21	0.4
E.coli	200 CFU/100 mL	5	19
pH	6.0 – 9.5 (single result)	range 7.2 – 8.1	
Contaminant	Loadings (kg/d)		
	ECA Limit (monthly average)	Annual Effluent Monthly Average	Maximum Effluent Monthly Average
C.B.O.D.	525	47.9	82.6
Suspended Solids	525	166	293
Total Phosphorus	35	4.0	6.3

In 2025, the LPCC was in compliance with the MECP Effluent Limits, as specified in Condition 7 and Schedule C of the ECA.

2.1.3 Annual Comparisons

Annual average wastewater characteristics and flow data for 2016 through 2025 are presented in **Appendix B**.

2.1.4 Monitoring Schedule

The 2025 monitoring schedule is provided in **Appendix C**. All grab and composite samples were collected and analyzed on Wednesday's, however it should be noted that composite sampling took place over the previous 24-hour period. Grab samples of imported sewage were collected and analyzed on Tuesday's. In 2025, there were nine (9) deviations from the sampling schedule as outlined below:

- On February 12 an overnight sample delivery was delayed to an ice storm and was delivered the following day. E. coli analysis was completed outside of hold time requirements.
- On March 12 the sample was not picked up by the courier and E. coli was resampled on March 13.
- On April 22 chloride analysis was not performed as it was missed on the lab chain of custody.
- On May 20 no total influent sample was collected as the automatic sampler faulted. Total influent weekly sample data was based on the May 21 sample.
- The imported sewage sample was collected on June 30 rather than July 1, as the plant was closed for Canada Day.
- The imported sewage sample was collected on November 12, rather than November 11, as the plant was closed for Remembrance Day.
- The imported sewage sample was collected on December 17, rather than December 16.
- Samples were collected on December 22 and 29 due to the laboratory holiday schedule.

The 2026 monitoring schedule is provided in **Appendix C**. All grab and composite samples are scheduled to be collected on Monday's and Tuesday's for the 2026 calendar year.

2.2 Operating Problems & Corrective Actions

There were no major operational concerns at the LPCC in 2025.

2.3 Maintenance and Capital Works Summary

Routine maintenance is carried out on all equipment at the LPCC. The *Allmax Antero* computerized maintenance program is used to maintain an inventory of all equipment at the plant, develop work orders for routine maintenance and provide a record of all maintenance and repairs carried out. Sample work orders are provided in **Appendix E**.

In addition to routine preventative maintenance, LPCC completed the following activities in 2025:

- One (1) new turbo blower, installed in December 2024 to provide system redundancy, was commissioned in February 2025.
- Installed two (2) Onset HOBO data loggers to monitor air temperature, air relative humidity, medium temperature and medium moisture content at the biofilter and integrated the data collection through SCADA.
- Conducted troubleshooting and repairs on lower screw pump 1 and 2.
- Finalized the wastewater masterplan and submitted the report to the MECP for review and comment. Upon receipt of MECP comments, the masterplan will be posted for stakeholder review and commenting in spring 2026.

2.4 Effluent Quality Assurance & Control Measures

Ongoing internal QA/QC activities are routinely undertaken in the laboratory to ensure accuracy of test results. QA/QC results for samples that are sent to an external accredited laboratory are reported on the lab certificates of analyses. There were no unusual QA/QC issues identified in 2025.

2.5 Monitoring Equipment – Calibration and Maintenance

Flow measuring devices are calibrated by an independent entity on an annual basis. Sampling devices are calibrated on a regular basis by in-house staff to ensure adequate samples are taken. Maintenance on all devices is part of the regular preventive maintenance program discussed in Section 2.3. Specific information regarding the calibration of flow meters and the maintenance of effluent monitoring equipment is provided in **Appendix E**.

2.6 Biosolids Management

A total of 63,580 m³ of raw sludge, averaging 4.2% solids, was dewatered during the year. The dewatered centrifuged cake (average 30.9% solids) was combined with alkaline admixture (cement kiln dust) and heat dried to form 9,209 tonnes of N-Viro stabilized biosolids (averaging 62.7% solids).

Operating data for the LPCC biosolids process is provided in **Appendix D**. The LPCC biosolids currently meets all criteria as set by the Ontario Ministry of Agriculture, Food &

Rural Affairs (OMAFRA) and the MECP. Detailed quarterly analysis reports are provided in **Appendix D**.

For 2026, LPCC anticipates that raw sludge and N-Viro biosolid volumes will increase by approximately 2-5%.

2.7 Complaints

No complaints were received during the 2025 calendar year.

When received, complaints are logged on the Complaint Form and filed in the Complaint Binder in the LPCC Administration building. The Complaint Form is forwarded to the MECP within two (2) days of receiving the complaint as required by Condition 3.1 of ECA Air #2964-AN3R54, issued on September 20, 2017.

2.8 By-Passes, Overflows and Spills

The facility includes an offline storage basin (OSB) that allows the full amount of the headworks capacity to be utilized for a peak flow rate of 105,000 m³/day. During periods of high flow, excess flow is diverted to the OSB. After the storm event, the OSB is emptied, and the flow is directed back to the treatment plant.

During 2025, there were no plant bypass events, however, there was one (1) overflow event on July 31. The event resulted in preliminary treated sewage being discharged into the Selkirk Drain via the plant's overflow structure. The event was a result of wet weather that resulted in a design flow exceedance and was reported to Spills Action Centre and to MECP via the online portal and through quarterly reports. Overflow data is provided in **Appendix A**.

There were no on-site spills during 2025.

2.9 Notice of Modifications to Sewage Works

The turbo blower installed in 2024 was brought into commission in February 2025. There were no other modifications to the sewage works completed in 2025.

2.10 Procedure F-5-1

No sewer separation projects were completed in 2025.

2.11 Staffing

Staff at the LPCC includes the Manager of Environmental Services, PCC Supervisor, six (6) Wastewater Operators, one (1) Mechanic, one (1) Laboratory Technician and one (1) Environmental Service technician.

LPCC staff participated in 435 hours of formal training programs during the year. This included both in-house training provided by LPCC staff on the operation of the plant, and California State University Study programs, virtual webinars and courses, etc.

Appendix A
2025 Monitoring Data



Leamington PCC Annual Plant Data 2025

Flow Data	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average	Yearly Total
Municipal Flow (m ³)	421,525	385,886	517,530	511,881	502,813	374,925	407,762	421,937	307,429	292,756	296,533	346,251	398,936	4,787,228
Industrial User Flow (m ³)	106,845	95,480	125,429	120,036	101,042	144,407	188,457	299,466	356,193	403,180	156,988	102,090	183,301	2,199,613
Total Plant Flow (m ³)	528,370	481,366	642,960	631,917	603,855	519,331	596,220	721,403	663,622	695,935	453,522	448,341	582,237	6,986,841
Daily High (m ³)	26,692	27,844	29,959	48,137	37,860	24,613	49,850	47,390	32,795	26,382	21,456	26,796	49,850	max daily
Daily Low (m ³)	12,299	12,866	15,843	12,847	13,308	12,284	10,987	14,003	19,453	17,258	11,536	10,340	10,340	min daily
Daily Average (m ³)	17,044	17,192	20,741	21,064	19,479	17,311	19,233	23,271	22,121	22,450	15,117	14,463	19,124	average
Plant Overflow (hrs)	0	0	0	0	0	0	5.5	0	0	0	0	0		5.5
Overflow Volume (m ³)	0.0	0.0	0.0	0.0	0.0	0.0	4,544	0.0	0.0	0.0	0.0	0.0		4,544
No. of Overflow Occurrences	0	0	0	0	0	0	1	0	0	0	0	0		1
Plant Bypass (hrs)	0	0	0	0	0	0	0	0	0	0	0	0		0
Bypass Volume (m ³)	0	0	0	0	0	0	0	0	0	0	0	0		0
No. of Bypass Occurrences	0	0	0	0	0	0	0	0	0	0	0	0		0

Final Effluent	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
pH	7.6	7.6	7.7	7.7	7.6	7.7	7.7	7.7	7.7	7.7	7.6	7.6	7.6
T.S.S. (mg/l)	9.6	10.6	7.8	7.5	9.9	6.0	5.1	6.1	7.5	12.8	8.2	11.4	8.5
C.O.D. (mg/l)	23.2	28.8	23.8	16.8	28.8	17.8	14.8	11.5	19.7	27.4	20.4	22.3	21.3
C.B.O.D. (mg/l)	2.6	2.6	2.0	2.1	3.3	2.0	1.6	1.8	2.1	3.5	2.4	2.8	2.4
B.O.D. (mg/l)	3.5	2.9	2.3	2.4	3.9	2.2	1.8	2.0	2.6	4.5	2.9	3.5	2.9
TAN (mg/l)	0.11	0.28	0.12	0.06	0.23	0.12	0.09	0.07	0.10	0.08	0.06	0.10	0.12
TKN-N (mg/l)	2.14	2.39	2.24	1.91	2.66	2.43	3.30	3.24	1.77	2.68	2.38	2.63	2.5
Total-P (mg/l)	0.30	0.21	0.10	0.06	0.19	0.14	0.40	0.13	0.24	0.20	0.33	0.25	0.21
NO2-N (mg/l)	0.133	1.878	0.676	0.270	0.075	0.017	0.024	0.010	0.015	0.067	0.046	0.080	0.274
NO3-N (mg/l)	6.10	7.83	5.03	4.87	4.98	4.13	5.22	3.28	3.66	3.13	5.15	5.10	4.87
Conductivity (µS/cm)	1,126	1,969	1,077	991	880	863	862	880	756	738	828	936	992
Alkalinity (mg/l)	164	153	176	185	173	159	124	157	133	147	129	130	152
Chloride (mg/l)	269	478	273	250	238	208	205	182	140	145	192	250	236
E. Coli (CFU/100 ml)	2	2	1	9	6	1	1	2	4	19	5	4	5
Temperature (°C) (grab)	12.0	12.2	12.8	15.5	17.4	21.6	24.2	24.6	25.4	23.8	16.2	13.2	18.2
pH (grab)	7.3	7.3	7.3	7.4	7.2	7.3	7.3	7.3	7.2	7.2	7.1	7.2	7.3
Unionized Ammonia (µg/L)	0.47	1.10	0.61	0.41	1.33	1.23	1.16	0.76	0.99	0.80	0.25	0.39	0.79
Boron (µg/L)		75			92			72			71		77.5
Cobalt (µg/L)		<0.5			<0.5			<0.5			<0.5		<0.50
Magnesium (µg/L)		15,000			16,000			13,000			13,000		14,250
Manganese (µg/L)		32			37			8			10		21.8
Potassium (µg/L)		15,000			14,000			23,000			15,000		16,750
Strontium (µg/L)		810			920			650			590		743
Bis (2-ethylhexyl) Phthlate (µg/L)		<1			<1			<1			<1		<1
TSS Loading (kg/d)	162.9	188.6	161.2	163.0	207.0	102.3	98.5	139.6	171.2	292.7	123.6	178.7	166
CBOD5 Loading (kg/d)	47.7	45.8	41.0	46.0	70.1	36.8	32.9	43.0	48.9	82.6	38.0	42.1	47.9
Total-P Loading (kg/d)	6.3	4.0	2.0	1.2	4.5	2.4	5.8	2.8	5.1	4.7	4.8	4.8	4.0

Influent	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average
pH	7.4	7.2	7.4	7.3	7.3	7.2	7.2	6.9	6.8	6.5	7.2	7.1	7.1
T.S.S. (mg/l)	257	270	244	202	187	232	221	290	552	797	330	260	320
C.O.D. (mg/l)	653	525	598	545	452	738	524	709	717	946	628	588	635
B.O.D. (mg/l)	223	235	211	233	213	295	227	293	361	472	325	311	283
TAN (mg/l)	14.78	14.62	11.62	14.88	7.36	9.69	14.10	9.72	12.92	11.92	15.43	16.62	12.8
TKN-N (mg/l)	26.59	23.36	24.07	25.22	18.55	28.22	25.95	26.16	28.96	33.09	27.25	27.94	26.3
Total-P (mg/l)	4.9	4.8	4.2	3.9	3.4	4.4	4.2	6.0	5.2	5.8	9.6	5.4	5.1
Soluble-P (mg/l)	2.0	1.7	1.5	1.5	1.0	1.2	1.4	1.2	1.2	1.1	5.0	1.6	1.7
NO2-N (mg/l)	0.189	0.093	0.311	0.190	0.169	0.014	0.055	0.011	0.009	0.019	0.346	0.038	0.120
NO3-N (mg/l)	4.3	3.6	2.8	3.9	2.7	3.1	2.3	2.8	2.8	5.3	4.8	3.3	3.5
Conductivity (µS/cm)	1,145	1,324	1,076	1,072	884	879	923	867	820	776	867	1,075	976
Alkalinity (mg/l)	265	253	264	275	255	232	228	167	172	158	218	217	225
Chloride (mg/l)	253	315	264	263	247	195	209	173	159	181	183	292	228

Imported Sewage	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly Total
Septage Waste (Imp gals)	606,590	495,850	806,800	932,550	938,655	858,259	898,700	828,867	778,070	713,070	700,960	743,520	9,301,891
													Average
pH	7.3	7.1	7.7	7.3	6.5	7.4	6.8	7.0	7.6	7.7	7.3	7.8	7.3
T.S.S. (mg/l)	13,398.0	3,187.3	3,384.5	1,258.4	552.8	1,606.4	2,779.3	5,343.0	1,279.2	319.0	5,508.5	387.6	3,250
B.O.D. (mg/l)	3,046	2,787	1,067	811	355	1,084	2,030	2,284	817	329	1,416	332	1,363
TKN-N (mg/l)	306.8	177.7	87.3	121.5	59.6	78.1	110.3	194.1	99.8	84.8	166.3	54.9	128
Total-P (mg/l)	547.4	168.9	113.8	26.3	27.4	18.2	30.9	27.8	24.6	18.0	130.7	20.1	96.2

Leachate Data	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly Total
Total (m ³)	2,660	2,470	2,661	4,231	3,302	2,084	1,903	1,448	1,554	1,498	1,214	1,451	26,474
Average (m ³ /d)	85.8	88.2	85.8	141.0	106.5	69.5	61.4	46.7	51.8	48.3	40.5	46.8	72.7



Plant Overflow Form

Operator(s) on Duty: Jason Felte Date: July 31/2015

Reason for Overflow: Planned Emergency/Unplanned Structural
 Mechanical Design Flow Exceedance Wet Weather Electrical/PLC

Type of Overflow: Raw Sewage Combined Sewer Overflow
 Continuous Intermittent

Any Treatment: Screening Grit Removal Other: _____

Did overflow receive any form of disinfection? Yes No

Overflow to: Selkirk Drain (Lake Erie) Outfall

Overflow Point: Through PSO-MV2 Other: _____

Sample Collected: Yes No

Were additional samples required every 8 hours? Yes No

If yes, how many additional samples were collected?

Overflow Start Time: 1945 h Overflow End Time: 0115 h

Minutes Overflow Gate Open: 279 Overflow Total (m³): 4544

Notifications	Start of Overflow		End of Overflow	
	Time	Contact Person	Time	Contact Person
Spills Action Centre 1-800-268-6060 MECP Reference # <u>1219</u>	2020	BOB # P918FD	0220	BRENDA
Medical Officer of Health 519-258-2146	2030	LEFT VM	_____	_____
Union Water Supply System 519-326-4447	2030	BOB HUNTER	0225	BOB HUNTER
Wheatley Water Treatment 226-229-2696	0816 (Aug 1)	TODD		
Leamington Area Drip Irrigation	2040	_____	_____	_____

Text to 519-796-1354 and 519-796-7741 during daytime hours only.

Other Actions Taken/Description/Comments:

(note any efforts to maximize flow through downstream treatment, why overflow was not avoided and/or other related information):
Could not reach wheatley Water Treatment until Aug 1/25
Plant intake flow @ capacity - all equipment required 1/5

REC'D CALL BACK FROM HEALTH UNIT. → JENNI T.
→ INFORMED OF DISCHARGE LOCATION.
 System ID# 120001069, Leamington.ca

Plant Overflow Data

Date/Time	July 31/25 20:00hr
PH	7.4
TSS mg/l	274
BOD mg/l	128.5
TKN mg/l	16.69
Total Phosphorus mg/l	2.4

Appendix B
Annual Comparison Data and Trends
2016-2025



Leamington PCC Annual Data Comparison

Flows	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Municipal Flow (m ³)	4,976,507	4,953,354	5,277,231	5,268,775	5,046,195	5,427,198	4,433,038	4,958,735	4,839,646	4,787,228
Industrial User Flow (m ³)	1,717,926	2,021,265	1,910,259	2,282,962	1,691,898	1,804,170	2,070,062	2,343,189	1,892,413	2,199,613
Total Plant Flow (m ³)	6,694,433	6,974,619	7,187,490	7,551,737	6,738,093	7,231,368	6,503,101	7,301,923	6,732,059	6,986,841
Daily High (m ³)	37,447	37,121	40,899	42,012	37,598	39,143	30,648	41,017	50,403	49,850
Daily Low (m ³)	8,885	10,957	10,441	11,375	9,994	10,085	4,965	10,488	9,660	10,340
Daily Average (m ³)	18,297	19,134	19,729	20,711	18,416	19,792	17,831	19,992	18,383	19,124
Overflow time (hrs)	26	11	23.7	0	0.58	0	0	68	0	5.5
Overflow Volume (m ³)	43,483	17,363	8,568	0	359	0	0	122,322	0	4,544
No. of Overflow Occurrences	8	1	2	0	2	0	0	1	0	1

Other Wastewater Inputs	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Imported Sewage (m ³)	19,205	21,387	21,476	22,433	29,687	41,513	29,784	42,147	42,407	42,287
Landfill Leachate (m ³)	31,487	35,614	37,835	28,704	29,191	22,816	28,885	32,143	35,582	26,474

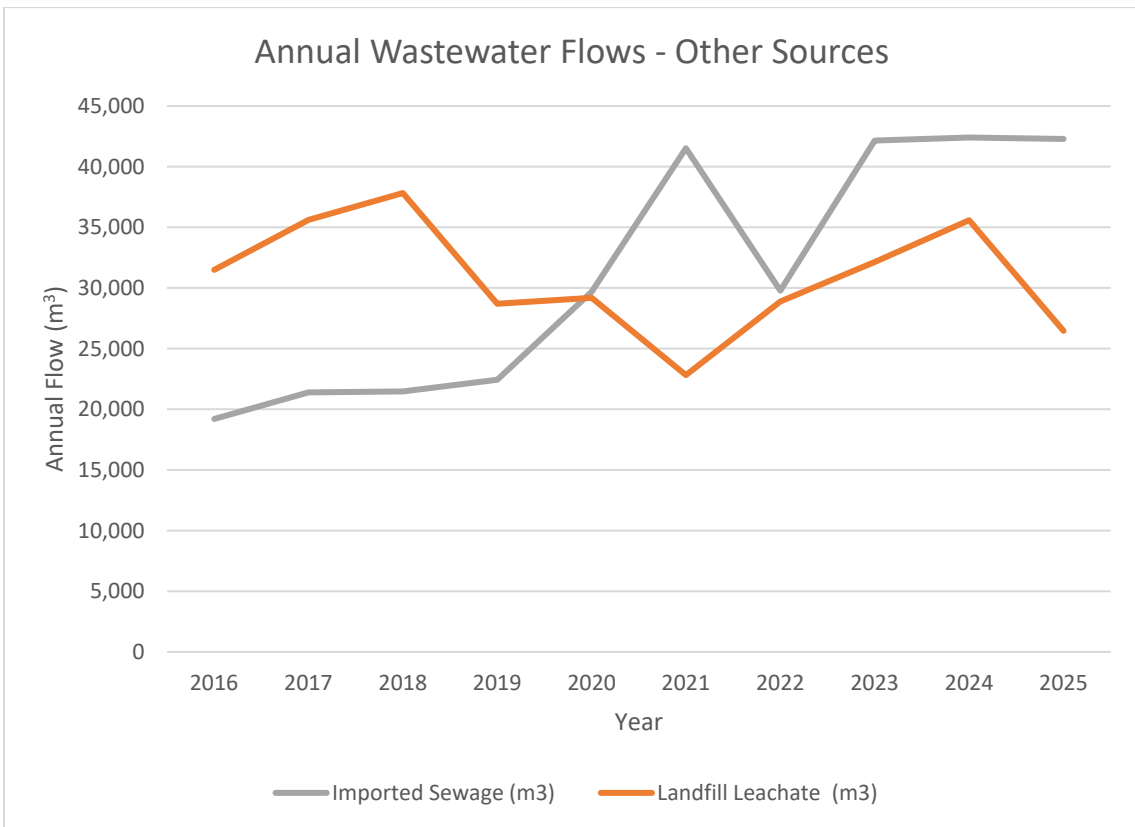
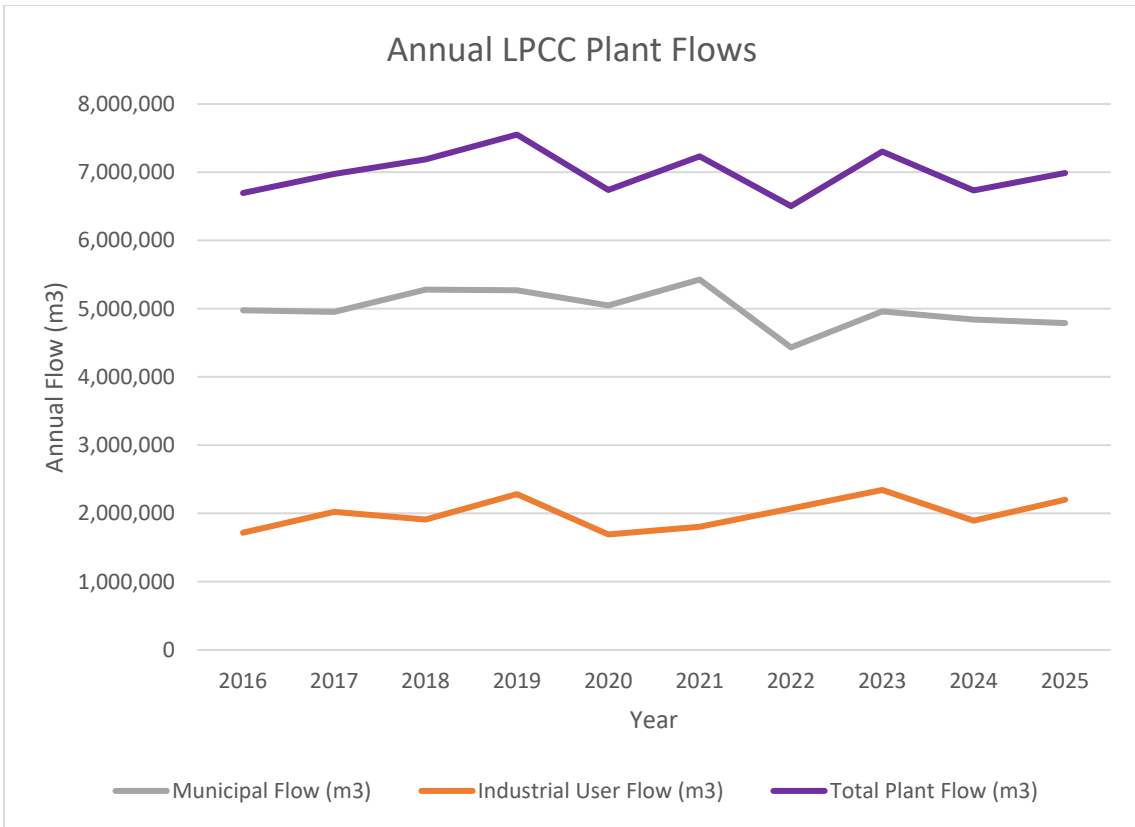
*volumes are already accounted for in Municipal and Total Plant Flows shown above

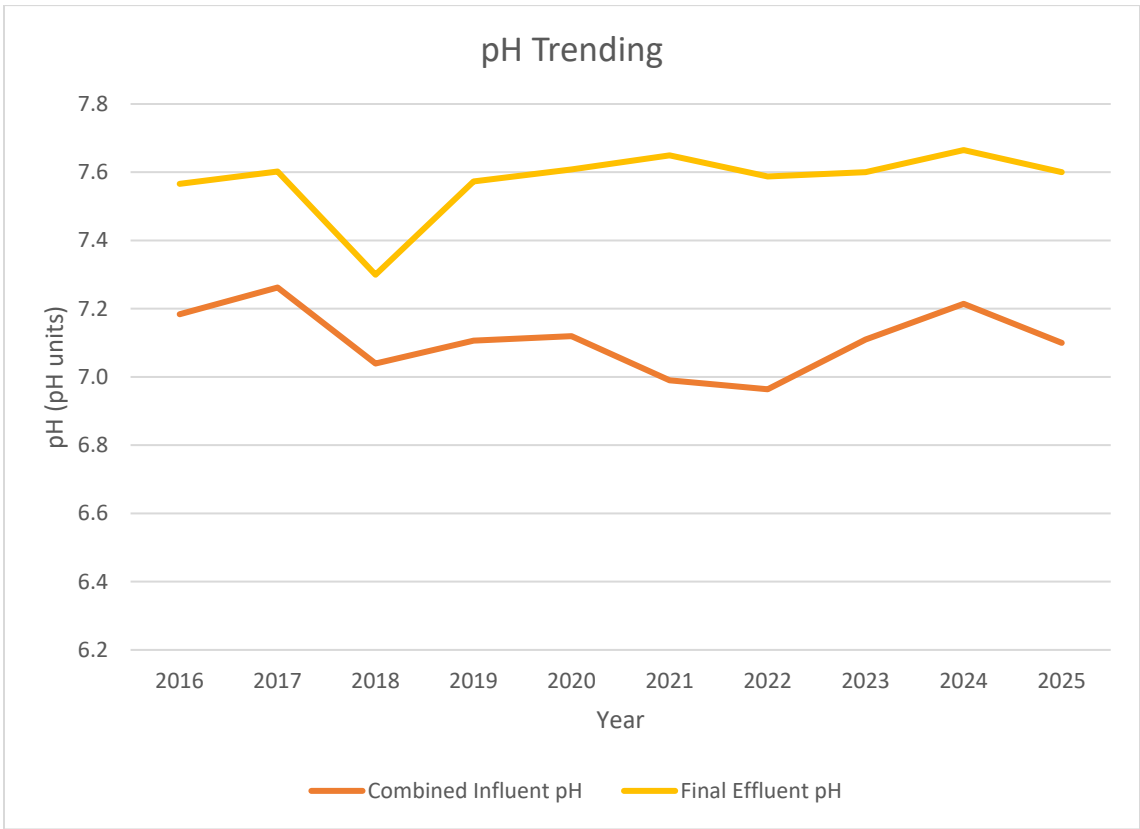
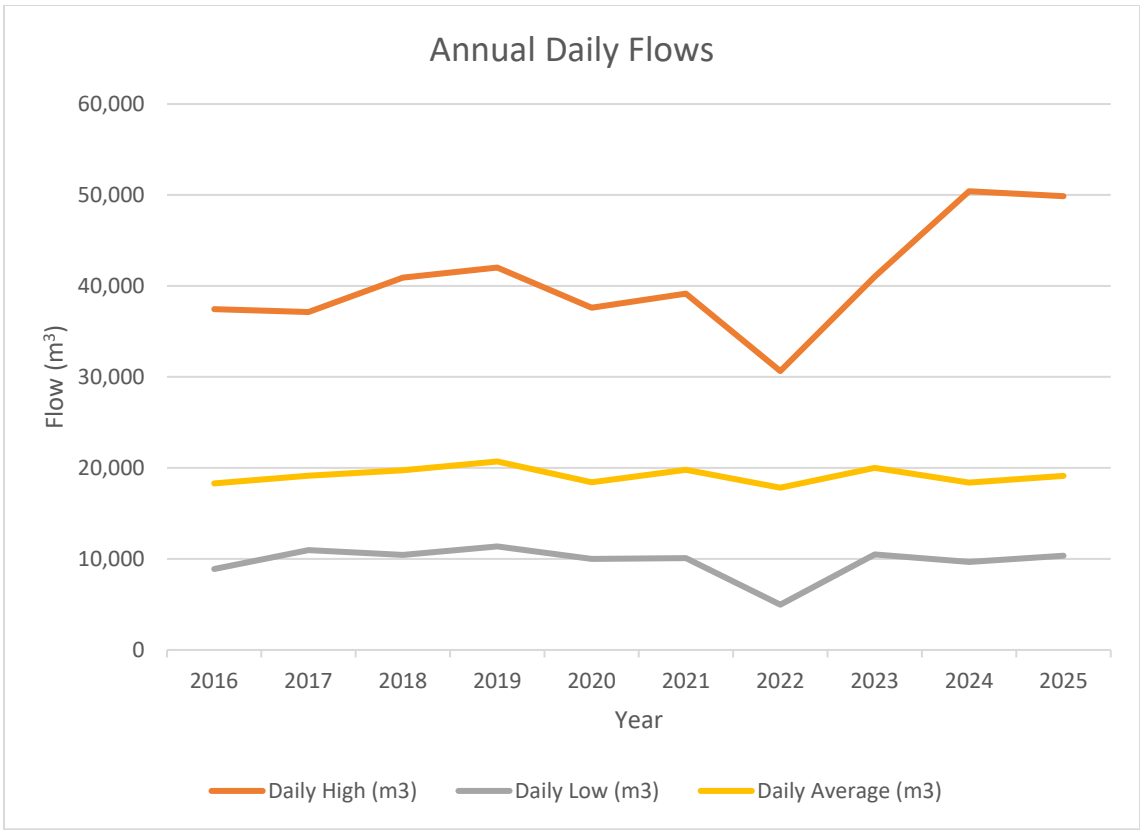
Influent	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
pH	7.2	7.3	7.0	7.1	7.1	7.0	7.0	7.1	7.2	7.1
T.S.S. (mg/l)	317	326	385	336	269	360	274	271	301	320
B.O.D. (mg/l)	242	246	325	248	277	313	289	265	288	283
TAN (mg/l)	10.1	10.3	10.0	9.4	12.5	11.3	13.2	12.4	15.0	12.8
TKN-N (mg/l)	18.0	19.4	19.4	16.3	22.7	24.3	24.6	23.8	28.3	26.3
Total-P (mg/l)	5.4	4.4	3.6	2.9	3.6	3.4	3.3	4.9	5.9	5.1
NO3-N (mg/l)	6.3	5.9	2.4	1.2	1.2	3.9	4.3	3.8	5.4	3.5
Conductivity (µS/cm)	987	889	947	883	976	1,029	937	875	957	976
Chloride (mg/l)	186	194	257	272	235	303	240	215	224	228

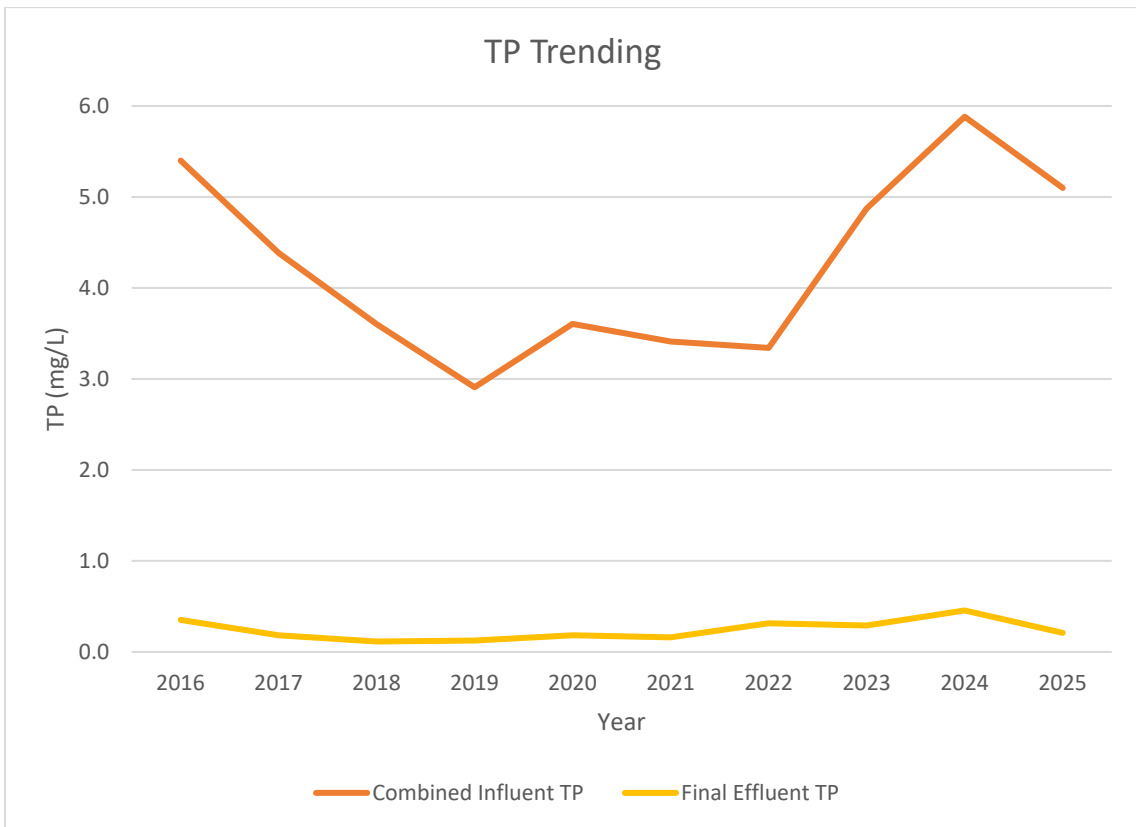
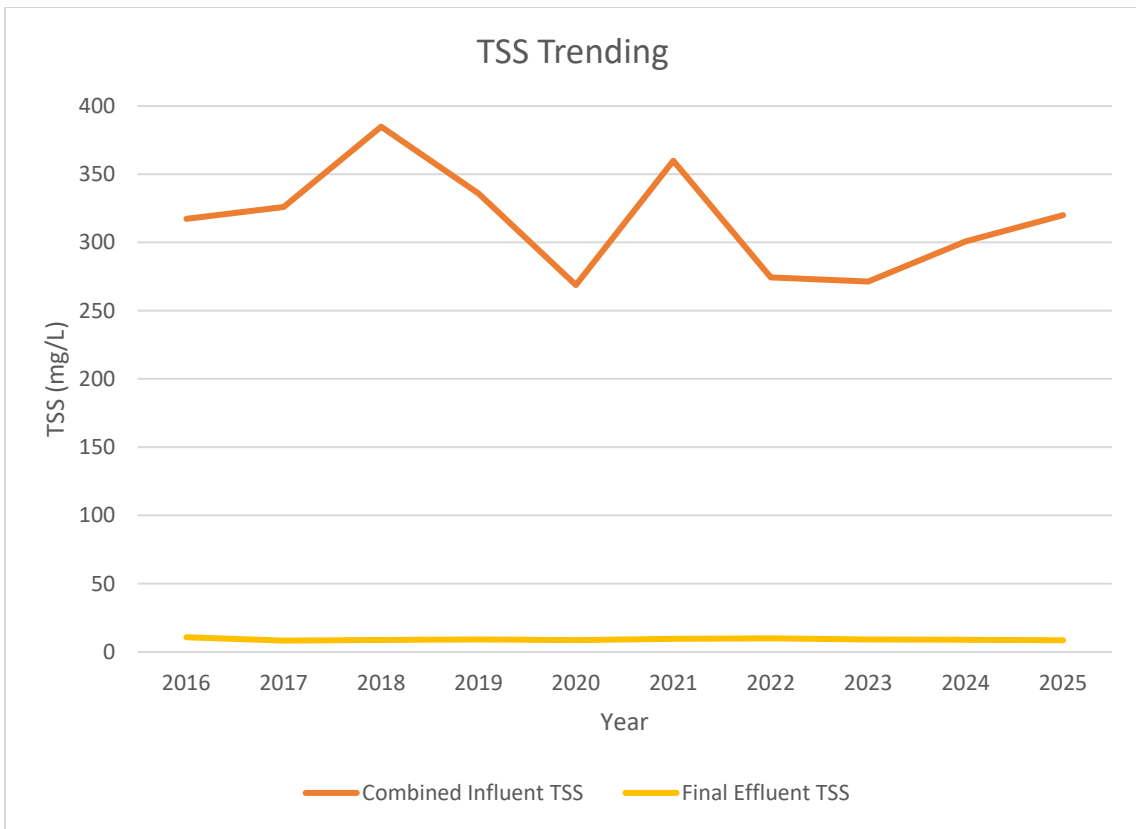
Imported Sewage	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
B.O.D. (mg/l)	-	-	1,622	1,244	1,744	685	1,814	1,749	1,425	1,363
T.S.S. (mg/l)	-	-	4,947	2,343	4,423	1,955	2,737	3,444	3,398	3,250
Total-P (mg/l)	-	-	45	27	40	28	31	30	35	96
TKN-N (mg/l)	-	-	228	109	202	126	172	118	114	128

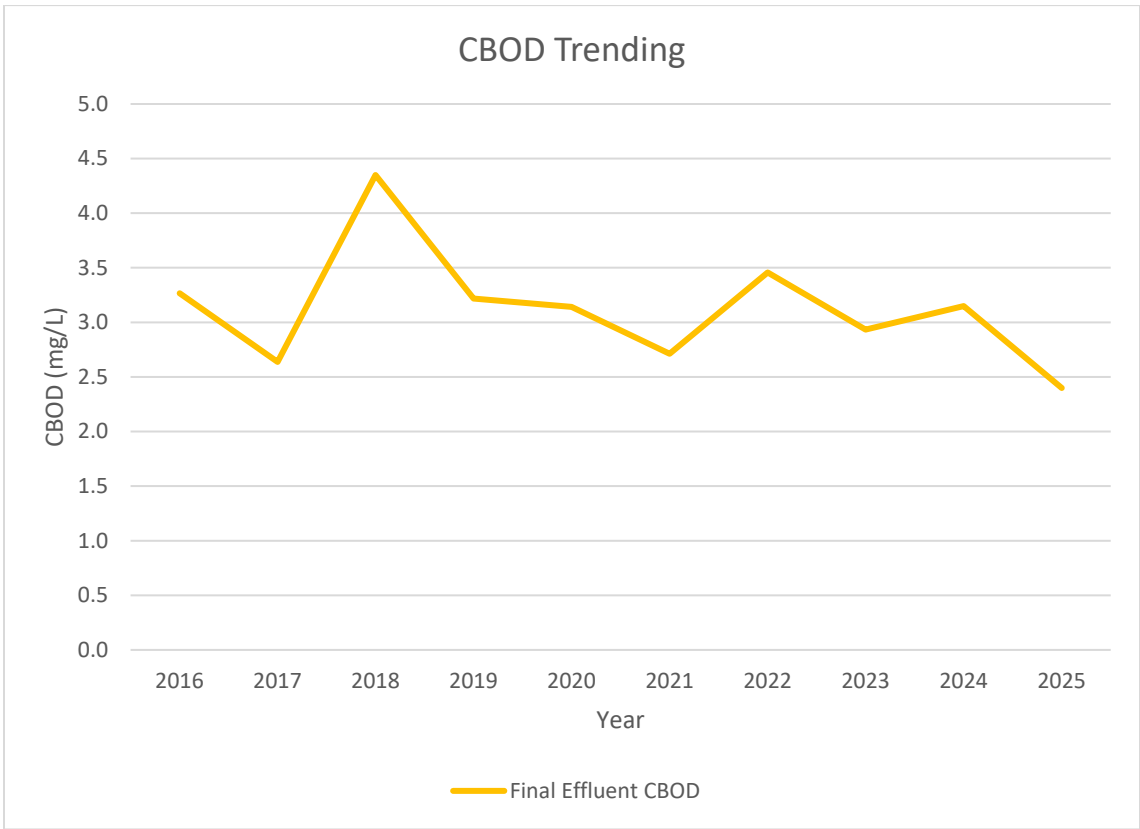
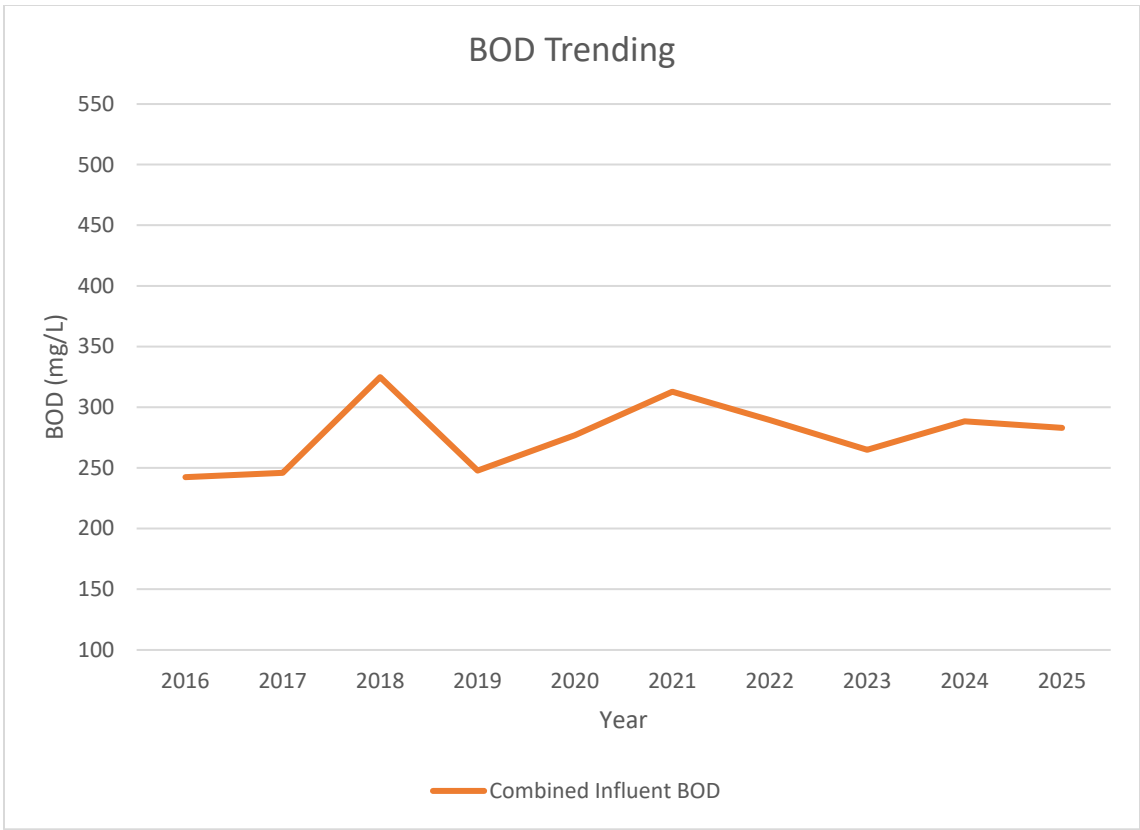
Leamington PCC Annual Data Comparison

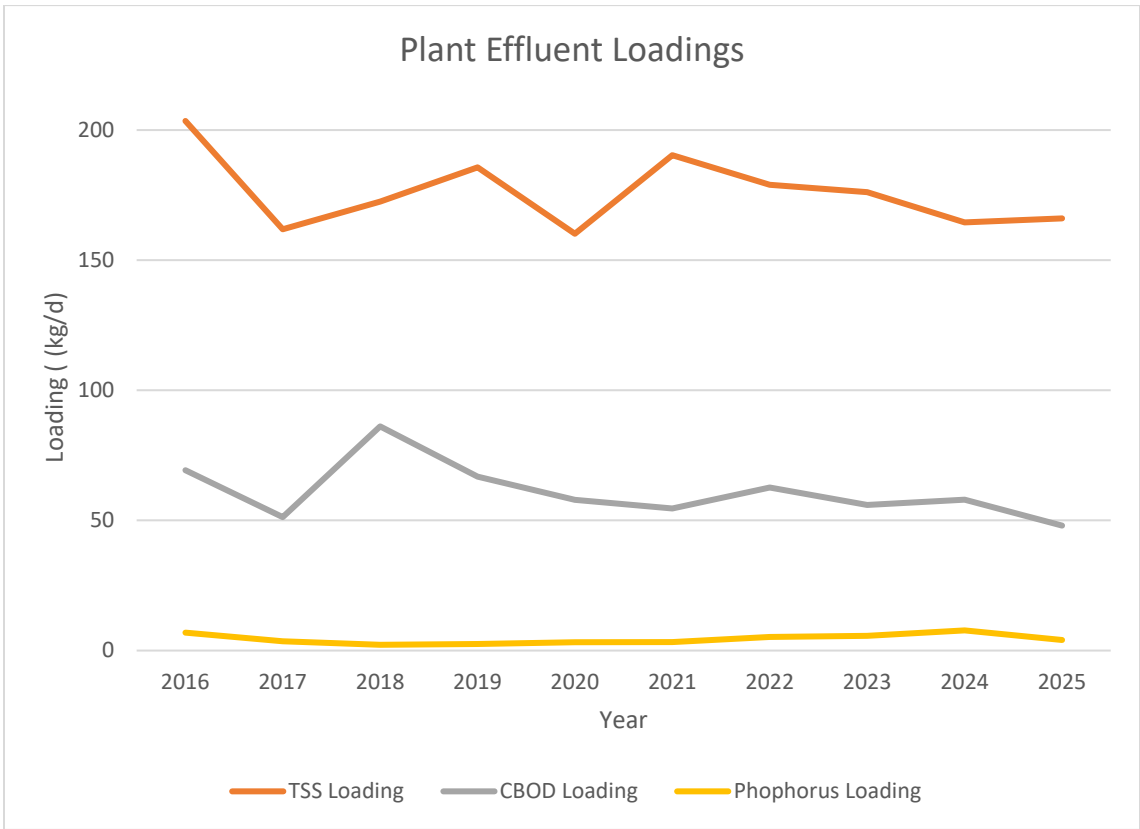
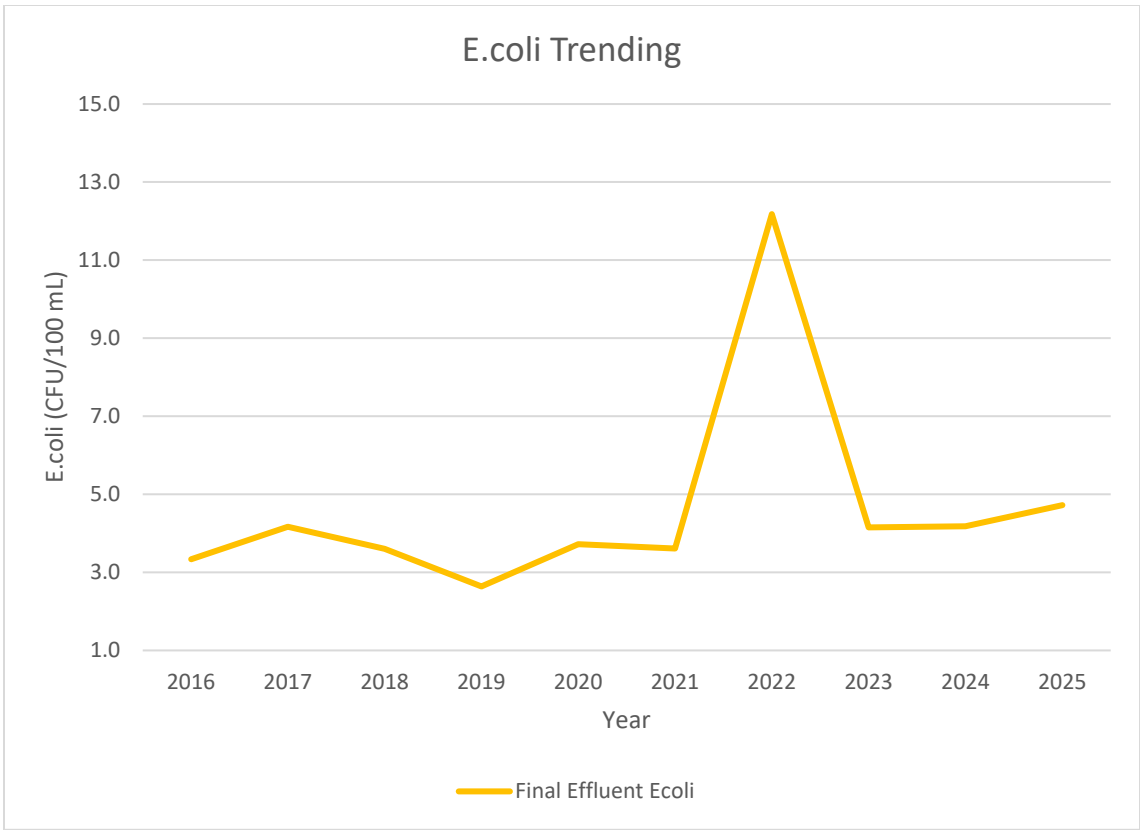
Final Effluent	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
pH	7.6	7.6	7.3	7.6	7.6	7.6	7.6	7.6	7.7	7.6
T.S.S. (mg/l)	10.7	8.3	8.7	9.0	8.6	9.6	9.9	9.0	8.8	8.5
C.B.O.D. (mg/l)	3.3	2.6	4.3	3.2	3.1	2.7	3.5	2.9	3.1	2.4
TAN (mg/l)	0.66	1.6	3.1	2.8	0.14	0.12	0.30	0.18	0.29	0.12
TKN-N (mg/l)	1.6	3.0	5.3	4.4	1.7	2.5	2.8	2.4	2.5	2.5
Total-P (mg/l)	0.35	0.18	0.12	0.12	0.18	0.16	0.32	0.29	0.46	0.21
NO2-N (mg/l)	0.119	0.517	1.7	0.91	0.076	0.76	0.33	0.11	0.25	0.27
NO3-N (mg/l)	17.8	15.5	8.0	7.3	10.3	10.0	8.4	5.4	7.6	4.9
E. Coli (CFU/100 ml)	3	4	4	3	4	4	12	4	4	5
Temperature (°C) (grab)	-	-	17.6	18.0	18.2	18.5	18.8	18.4	19.0	18.2
pH (grab)	-	-	7.3	7.3	7.3	7.3	7.2	7.2	7.3	7.3
Unionized Ammonia (ug/L)	-	-	17.9	16.0	0.93	0.84	1.9	0.9	1.8	0.79
Boron (mg/l)	-	-	0.09	0.10	0.12	0.13	0.13	0.10	0.12	0.078
Cobalt (mg/l)	-	-	0.001	0.001	0.0003	0.0003	0.0003	0.0005	<0.0005	<0.0005
Magnesium (mg/l)	-	-	13.0	10.5	13.0	15.0	14	43	13.75	14.25
Manganese (mg/l)	-	-	0.015	0.010	0.008	0.010	0.006	0.014	0.0088	0.022
Potassium (mg/l)	-	-	13.8	9.9	14.8	15.2	15.9	47.5	17.25	16.75
Strontium (mg/l)	-	-	0.70	0.75	0.67	0.79	0.64	0.67	0.625	0.743
Bis (2-ethylhexyl) Phthlate (ug/l)	-	-	0.18	0.23	0.10	0.23	0.35	0.50	<0.001	<0.001
TSS Loading (kg/d)	203	162	173	186	160	190	179	176	164	166
CBOD5 Loading (kg/d)	69	51	86	67	58	55	63	56	58	48
Total-P Loading (kg/d)	6.8	3.5	2.2	2.5	3.2	3.2	5.2	5.6	7.7	4.0

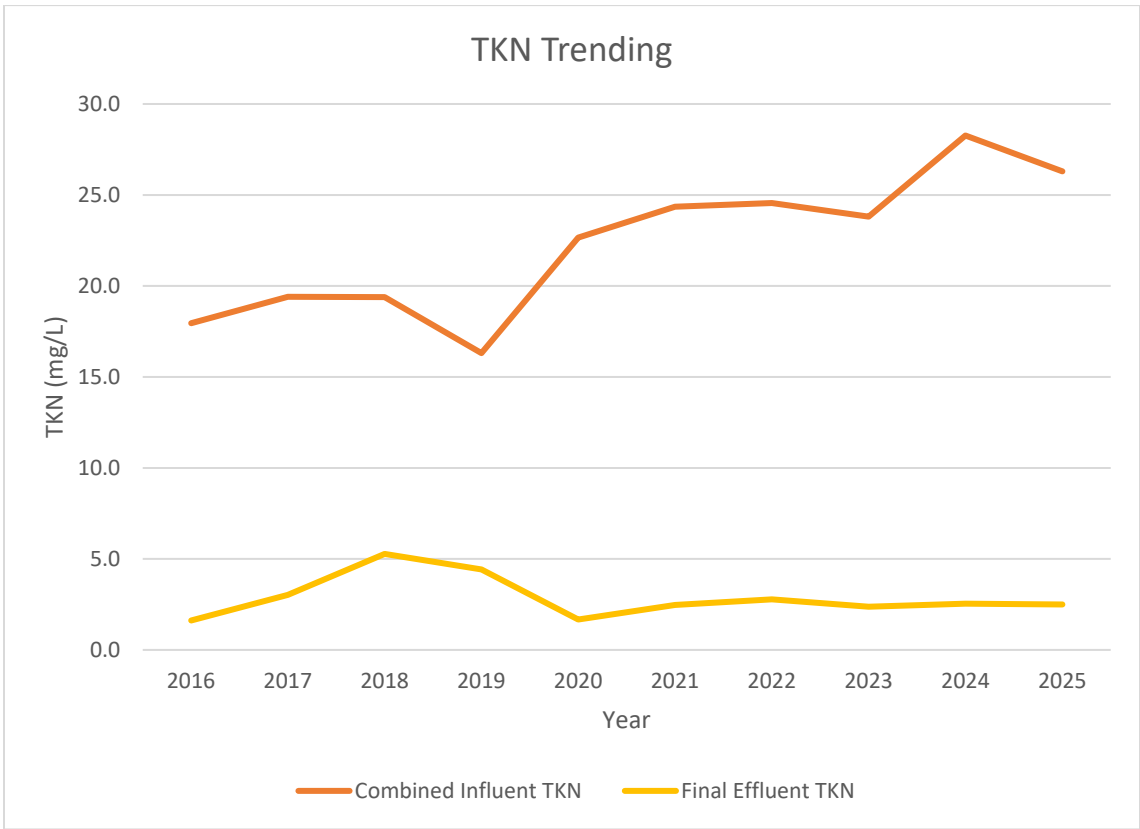
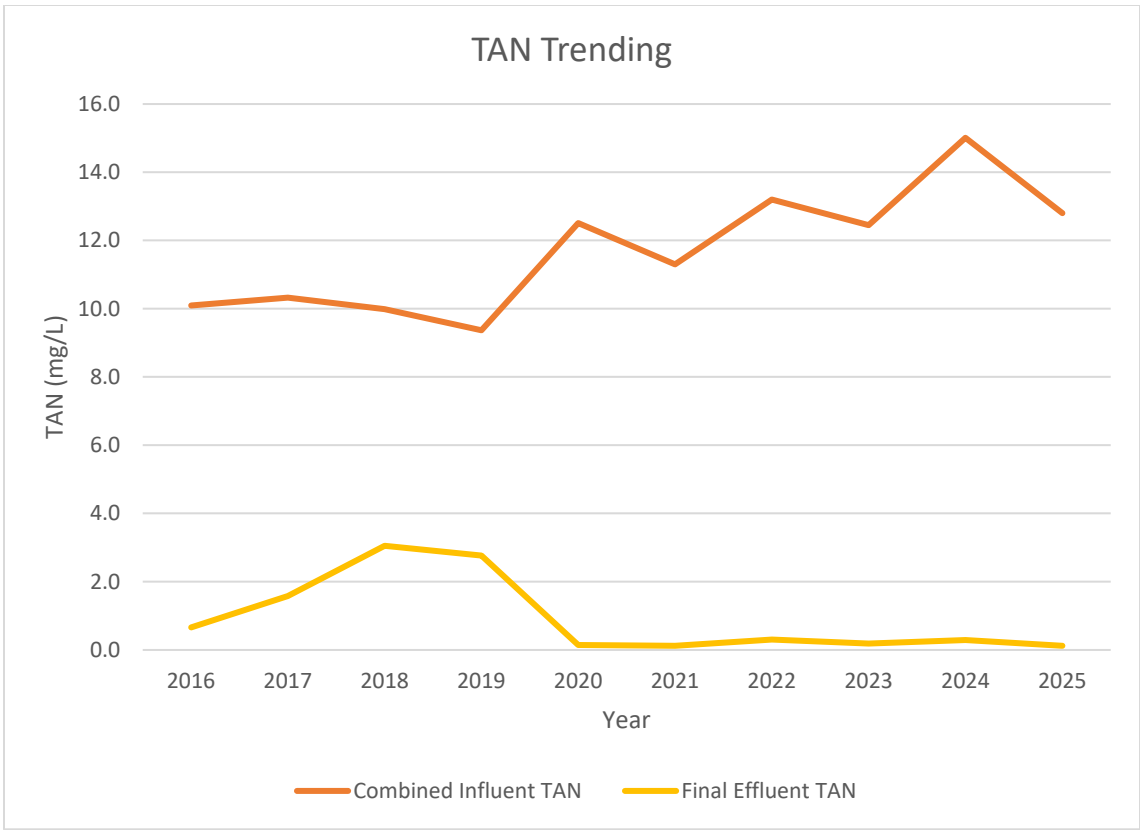


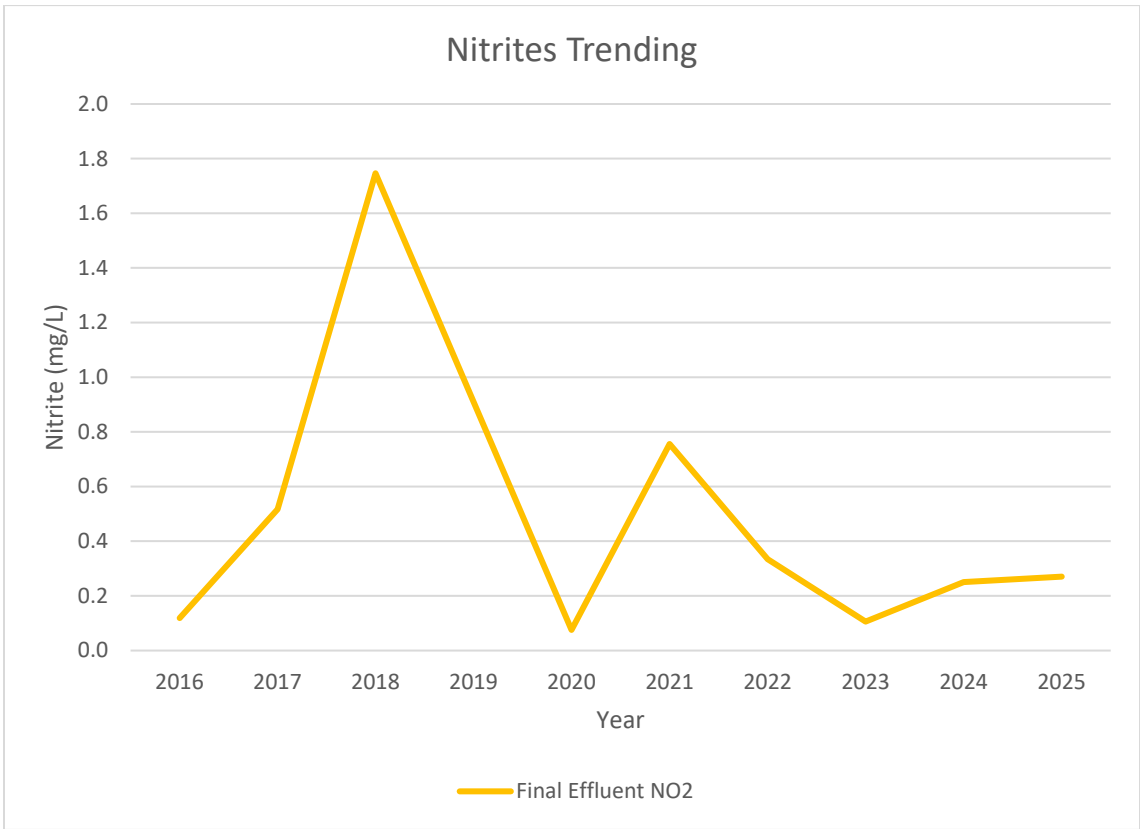
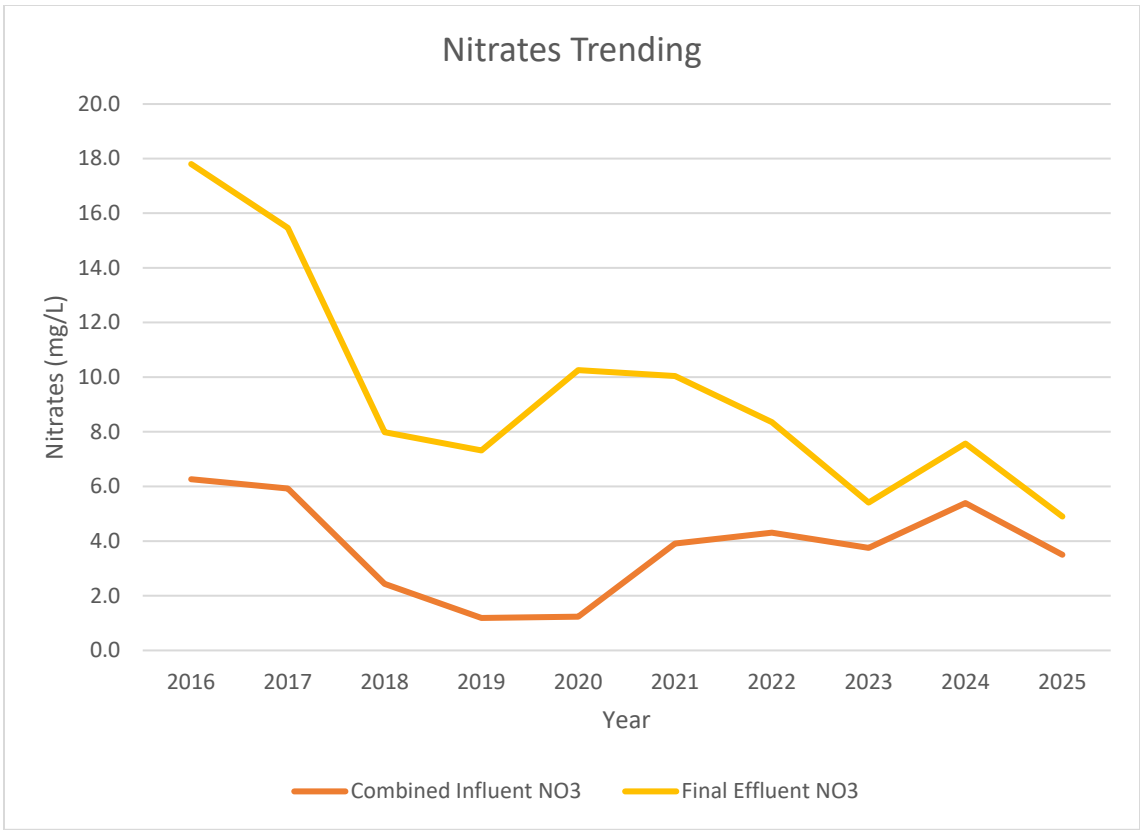


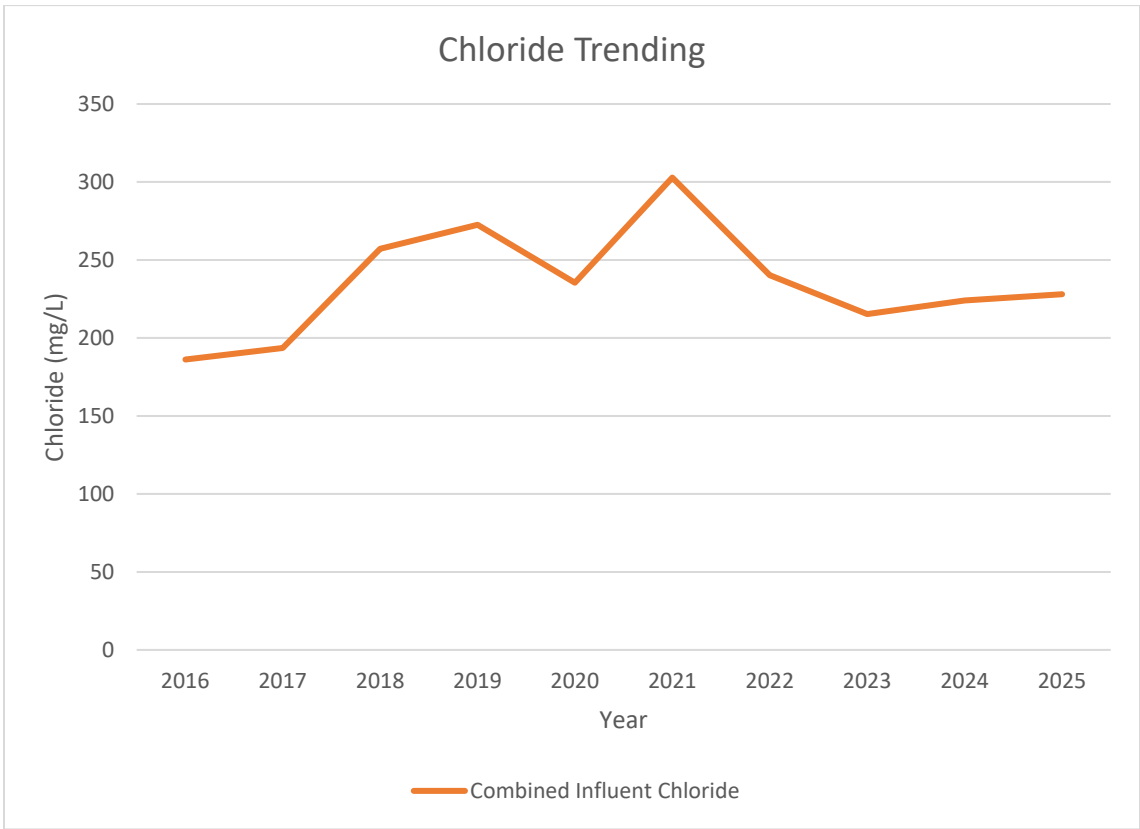
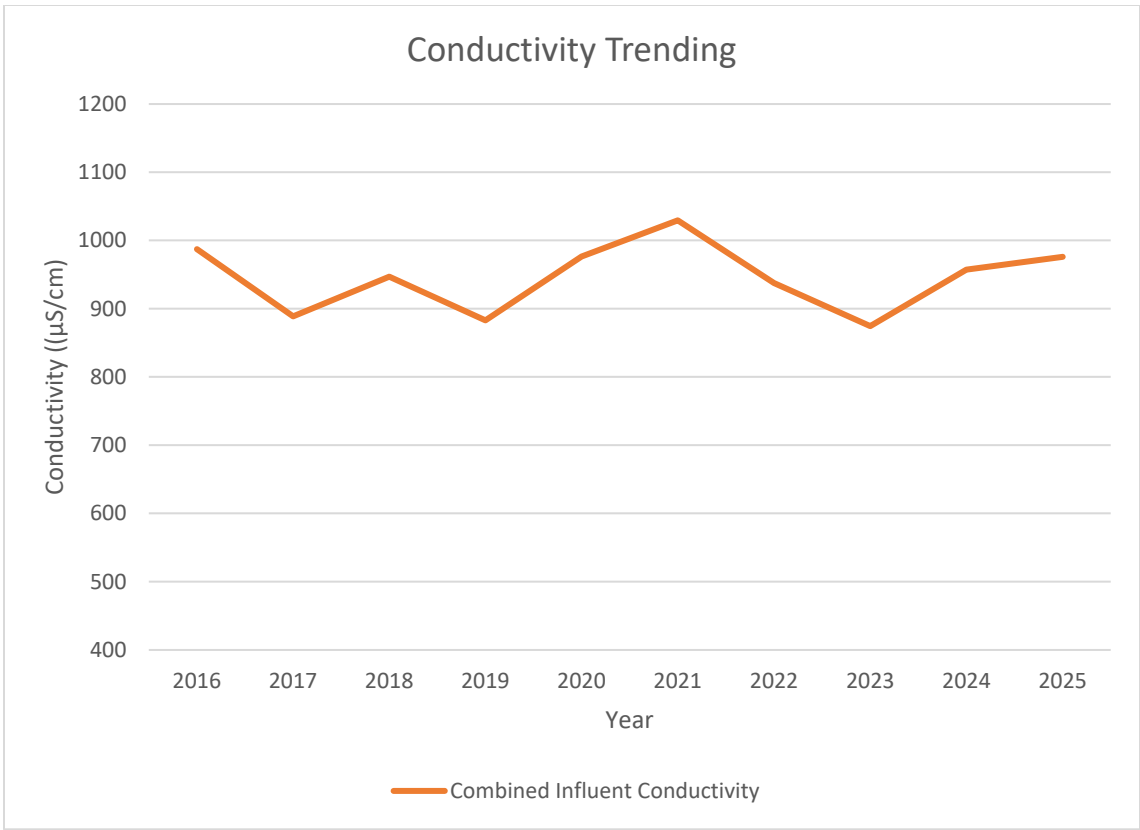












Appendix C
2025 and 2026 Sampling Schedule



2025 Sampling Schedule

In order to meet the requirements of ECA #8491-AQBJ73 the following tests must be completed according to the tables below. Additional tests are completed as needed for plant operations.

Total Influent

Parameter	Sample Type	Frequency
BOD5	Composite	Weekly (Wednesday)
Total Suspended Solids		
Total Phosphorus		
TKN		
TAN	Composite/Grab	
Nitrates		
pH		
Conductivity		
Chlorides		

Imported Sewage

Parameter	Sample Type	Frequency
BOD5	Grab	Weekly (Tuesday)
Total Suspended Solids		
Total Phosphorus		
TKN		

Overflow of Raw Sewage from Plant

Parameter	Sample Type	Frequency
BOD5	Grab	By occurrence/ every 8 hrs
Total Suspended Solids		
Total Phosphorus		
TKN		



Total Effluent

Parameter	Sample Type	Frequency
CBOD5	Composite	Weekly (Wednesday)
Total Suspended Solids		
Total Phosphorus		
TAN		Monthly (2 nd Wednesday)
TKN		
Nitrites		
Nitrates		
E. Coli	Grab	Weekly (Wednesday)
pH	Grab	Weekly (Tuesday)
Temperature	Grab	Weekly (Tuesday)
Unionized Ammonia	As Calculated	Weekly (Wednesday)
Boron	Grab	Quarterly (3 rd week of Feb, May, Aug and Nov)
Cobalt		
Magnesium		
Manganese		
Potassium		
Strontium		
Bis (2-ethylhexyl) Phthalate		

Bypass Event The owner shall collect daily samples of the Final Effluent, inclusive of the event except when the event occurs on a scheduled monitoring day. Samples analyzed for all effluent parameters except, E.Coli, Toxicity, Grab PH, Grab Temperature, unionized ammonia and Metals.

2026 Sampling Schedule

In order to meet the requirements of ECA #8491-AQBJ73 the following tests must be completed according to the tables below. Additional tests are completed as needed for plant operations.

Total Influent

Parameter	Sample Type	Frequency
BOD5	Composite	Weekly (Tuesday)
Total Suspended Solids		
Total Phosphorus		
TKN		
TAN	Composite/Grab	
Nitrates		
pH		
Conductivity		
Chlorides		

Imported Sewage

Parameter	Sample Type	Frequency
BOD5	Grab	Weekly (Monday)
Total Suspended Solids		
Total Phosphorus		
TKN		

Overflow of Raw Sewage from Plant

Parameter	Sample Type	Frequency
BOD5	Grab	By occurrence/ every 8 hrs.
Total Suspended Solids		
Total Phosphorus		
TKN		



Total Effluent

Parameter	Sample Type	Frequency
CBOD5	Composite	Weekly (Tuesday)
Total Suspended Solids		
Total Phosphorus		
TAN		Monthly (2 nd Tuesday)
TKN		
Nitrites		
Nitrates	Grab	Weekly (Tuesday)
E. Coli		Weekly (Monday)
pH	Grab	Weekly (Monday)
Temperature	Grab	Weekly (Monday)
Unionized Ammonia	As Calculated	Weekly (Tuesday)
Boron	Grab	Quarterly (3 rd week of Feb, May, Aug and Nov)
Cobalt		
Magnesium		
Manganese		
Potassium		
Strontium		
Bis (2-ethylhexyl) Phthalate		

Bypass Event The owner shall collect daily samples of the Final Effluent, inclusive of the event except when the event occurs on a scheduled monitoring day. Samples analyzed for all effluent parameters except, E.Coli, Toxicity, Grab PH, Grab Temperature, unionized ammonia and Metals.

Appendix D
2025 Biosolids Data and Laboratory
Certificates of Analyses



Biosolids 2025 Year-End N-Viro Data

2025	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals	Average
CENTRIFUGE TOTALS														
Machine Hours	180.71	204.10	218.85	219.92	197.99	191.96	169.60	354.66	349.14	587.92	249.39	213.94	3,138	262
Feed m ³	4,467.8	6,755.3	5,039.3	4,025.5	4,508.7	3,926.0	3,163.8	8,280.2	5,212.4	8,286.3	5,257.4	4,657.4	63,580	5,298
Feed % sol.	3.07	2.61	3.62	5.37	3.52	3.32	3.62	3.15	6.31	7.33	4.63	3.64		4.2
% Volatile	73.7	76.6	66.2	69.6	74.4	75.9	71.1	69.2	42.2	37.6	62.4	73.8		66.1
TDS	128.82	163.47	170.27	202.54	160.48	116.31	107.65	247.02	316.97	568.76	189.67	164.13	2,536	211
Cake % Sol.	27.2	25.2	30.8	28.9	28.2	29.5	33.2	30.0	37.3	39.4	32.4	28.6		30.9
Poly. Used kg Liq.	2,235.1	2,691.4	2,931.2	3,420.8	2,986.0	3,062.9	2,857.6	6,401.3	6,543.8	9,837.1	4,446.1	3,891.8	51,305	4,275
Poly. kg/tds	18.53	16.77	18.02	17.82	21.70	27.60	27.96	28.92	21.16	17.90	23.89	24.62		22.1
Dewatered Sludge to Landfill (tonne)	0	0	0	0	0	0	0	0	0	0	0	0	0	
CSP MIXER														
Cake by Calc. kg	477,397	648,020	553,420	699,844	489,567	396,774	320,613	826,684	843,816	1,439,996	587,370	567,260	7,850,761	654,230
AA Used kg	193,266	252,571	206,206	275,794	247,963	280,446	147,832	357,671	335,216	598,807	240,130	235,228	3,371,126	280,927
AA Received tonne	95.2	171.0	76.7	138.8	157.9	161.6	73.9	185.3	181.5	320.1	65.4	181.0	1,808	151
Infeed Solids % to Dryer/Bypass	49.0	49.6	48.4	53.1	47.1	49.0	47.8	46.3	49.8	52.1	48.9	48.1		49.1
FINAL PRODUCT														
Temp. Hi	52.6	54.9	52.3	57.6	55.6	60.3	59.3	59.7	60.1	55.9	63.2	60.9		58
Temp. Lo	50.1	52.5	50.0	52.8	53.2	57.6	56.4	56.9	57.9	53.9	60.8	59.1		55
pH	12.3	12.5	12.3	12.4	12.4	12.4	12.3	12.2	12.4	12.5	12.4	12.6		12.4
% Solids	59.8	60.7	57.7	62.4	62.0	67.5	64.0	60.2	68.2	69.5	60.9	59.5		62.7
Tonnes Produced	557.4	698.2	659.6	621.4	656.3	593.0	403.4	999.5	951.2	1689.2	708.9	670.8	9,209	767

Attachment 1 – Leamington Quarterly Sampling Results

2025 CFIA Quarterly Testing			Leamington Q1	Leamington Q2	Leamington Q3	Leamington Q4
			825387	832984	840411	847476
Leamington			E3	E3	E3	E3
			April 17, 2025	July 22, 2025	Oct 27, 2025	January 7, 2026
METAL REGULATIONS						
	DWB					
	CFIA	Max 45 yr	Max application rate 3500 kg/ha dry weight			
Trace Elements (Max)	ppm (mg/kg)					
Arsenic (mg/kg)	75	95	4.2	3.9	5.4	5.2
Cadmium (mg/kg)	20	25	1.2	1.30	2.30	2.70
Chromium (mg/kg)	1100	1330	37.5	30.3	27.4	25.0
Cobalt (mg/kg)	150	188	4.2	4.00	4.60	4.10
Copper (mg/kg)	850	952	43.4	44.6	53.3	60.4
Lead (mg/kg)	500	635	184.0	153.0	87.3	81.2
Mercury (mg/kg)	5.0	6.3	<0.05	0.1	0.2	0.0
Molybdenum (mg/kg)	20	25	12.7	11.30	10.60	4.30
Nickel (mg/kg)	180	228	19.0	17.9	10.9	19.3
Selenium (mg/kg)	14	18	3.7	3.40	2.70	2.40
Zinc (mg/kg)	1850	2348	185.0	219.0	199.0	192.0
Thallium	5.56		<0.05	<0.5	0.50	0.00
Vanadium		825	86.1	83.9	36.5	48.7
PATHOGEN REGULATIONS						
CFIA Maximum Levels	CFIA					
Pathogen	Maximum					
Fecal Coliform MPN/g	<1000		<2	<2	<2	1.0
Salmonella (P-A/25g/ml)	Negative		Negative	Negative	Negative	Absent
CFIA LABEL						
AGRICULTURAL ANALYSIS						
	DWB	DWB				
Total Nitrogen (%)	DWB	DWB	1.80	1.8	2.2	1.7
Phosphorus as P ₀₅ (%)	DWB	DWB	0.60	0.7	1.1	1.5
Potassium as K ₂ O (%)	DWB	DWB	2.20	2.2	1.9	2.0
Water Insoluble N (WIN) %	DWB	DWB	0.40	0.5	0.7	0.9
Magnesium (%)	DWB	DWB	1.30	1.0	0.8	0.7
Calcium (%)	DWB	DWB	29.90	24.7	16.6	11.8
Sulfur (%)	DWB	DWB	2.30	1.9	1.5	1.3
Sodium (%)	DWB	DWB	NT	NT	0.14	0.1
Ammonium (%)			0.07	0.06	0.03	0.0001
Total Solids	%	%	60.6	64.7	64.9	66.5
Agricultural Analysis "As Is"						
	24-29 Label	Back up Label				
Total Nitrogen (%)	0.8	0.5	1.1	1.2	1.4	1.1
Phosphorus as P ₀₅ (%)	0.4	0.3	0.4	0.5	0.7	1.0
Potassium as K ₂ O (%)	2.2	1.8	1.3	1.4	1.2	1.3
Water Insoluble N (WIN) %	n/a	n/a	0.2	0.3	0.45	0.6
Magnesium (%)	0.5	0.5	0.8	0.7	0.5	0.5
Calcium (%)	10	10	18.1	16.0	10.8	7.8
Sulfur (%)	1.0	0.9	1.4	1.2	1.0	0.9
Sodium (%)	n/a	n/a	NT	NT	0.09	0.1
Organic Matter (%)	24	24	30.1	30.3	28.7	25.70
Neutralizing Value	35	35	66.1	65.9	54.4	53.1
Moisture (Max %)	40	42	39.4	35.3	35.1	33.5
Finess #10 mesh %	90	90	99.9	99.1	99.5	99.9
Finess #60 mesh %			87.4	57.2	62.8	71.9
Finess #100 mesh %	45	45	86.1	55.0	61.0	71.1
Free Lime CaO %	20	20	36.4	36.0	29.5	29.0
Soil Neutralization Ability						
TNV*	%	%	66.1	65.9	54.4	53.1
ECCE**			61.1	48.7	42.2	44.1
Lime:Blend	Ratio	Ratio	1.0	1.3	1.5	1.4
*TNV - Total Neutralizing Value						
Other						
pH			12.2	12.2	12.3	12.3
Bulk Density	kg/m3		560.0	652.0	731.0	758.0
Electrical Conductivity	mS/cm		NT	NT	13.0	10.7
PFAS Numbers						
	ng/g = ppb					
Bureau Veritas ID	ug/kg = ppb			APIQ28	AVAW66	
Sampling Date				3/27/2025	9/9/2025	
Bureau Veritas Job #				C533909	C5B3218	
PFOS	ug/kg			2.4	<2.0	
PFOA	ug/kg			<2.0	<2.0	



Sample ID: Leamington Q1 2025 Comp.
 Project: N-Viro Systems (Leamington)
 Lab ID: 825387
 Date Collected: 2025-04-07
 Date Received: 2025-04-08
 Date Reported: 2025-04-17

E3 Laboratories Inc.

CFIA

Trace Elements (Max)

ppm (mg/kg)

Arsenic (mg/kg)	75	4.16
Boron (mg/Kg)		54.1
Cadmium (mg/kg)	20	1.20
Chromium (mg/kg)	1100	37.5
Cobalt (mg/Kg)	150	4.20
Copper (mg/Kg)		43.4
Lead (mg/kg)	500	184
Mercury (mg/kg)	5.0	<0.05
Molybdenum (mg/kg)	20	12.7
Nickel (mg/kg)	180	19.0
Selenium (mg/kg)	14	3.70
Zinc (mg/kg)	1850	185
Thallium (mg/kg)	12 mg/kg @19000 kg/ha	<0.50
Vanadium (mg/kg)	1400 mg/kg @19000 kg/ha	86.1

CFIA

Pathogens

Maximum

E.Coli MPN/g dry	<1000	<2
Salmonella (P/A)	<3	Negative

AGRICULTURAL ANALYSIS

"Dry"

Total Nitrogen (%)		1.8
Phosphorus as P ₂ O ₅ (%)		0.6
Potassium as K ₂ O (%)		2.2
Water Insoluble N (WIN) %		0.4
Magnesium (%)		1.3
Calcium (%)		29.9
Sulfur (%)		2.3
Total Solids (%)		60.6

Agricultural Analysis

CFIA

"As Is"

Label

Total Nitrogen (%)	1	1.1
Phosphorus as P ₂ O ₅ (%)	0.6	0.4
Potassium as K ₂ O (%)	2.5	1.3
Water Insoluble N (WIN) %	0.6	0.3
Magnesium (%)	0.5	0.8
Calcium (%)	12	18.1
Sulfur (%)	1.0	1.4
Bulk Density (kg/m ³)		560

"Dry"

Organic Matter (%)	25	30.1
Neutralizing Value (TNV)	35	66.1
Moisture (%)		39.4
Fines #10 mesh %	90	99.9
Fines #60 mesh %	50	87.4
Fines #100 mesh %	45	86.1
Ammonia (%)		0.07
Total Neutralizing Value (TNV)	%	66.1
Free Lime CaO	%	36.4
ECCE	%	61.1
Lime:Blend	Ratio*	1.0

*Assume Agricultural Index = 64

Other

pH	>12	12.15
----	-----	-------

Results relate only to items tested as received.

Reported by: Nilou Ghazi
Signature (Nilou Ghazi)

All work has been performed using accepted testing methodologies, except where otherwise agreed to by the client in writing. Our total liability in connection with this work shall be limited to the amount paid by the client.

Nilou Ghazi, Ph.D., P.Eng.

Attachment 2: E3 Laboratory Certificate



Sample ID: Leamington Q2 2025
 Project: N-Viro Systems (Leamington)
 Lab ID: 832984
 Date Collected: 2025-07-07
 Date Received: 2025-07-08
 Date Reported: 2025-07-22

E3 Laboratories Inc.

Trace Elements (Max)		CFIA ppm (mg/kg)	
Arsenic (mg/kg)		75	3.88
Boron (mg/kg)			55.6
Cadmium (mg/kg)	20		1.30
Chromium (mg/kg)	1100		30.3
Cobalt (mg/kg)	150		4.00
Copper (mg/kg)			44.6
Lead (mg/kg)	500		153
Mercury (mg/kg)	5.0		0.14
Molybdenum (mg/kg)	20		11.3
Nickel (mg/kg)	180		17.9
Selenium (mg/kg)	14		3.40
Zinc (mg/kg)	1050		219
Thallium (mg/kg)	12 mg/kg @10000 kg/ha		<0.50
Vanadium (mg/kg)	1400 mg/kg @10000 kg/ha		83.0

Pathogens		CFIA Maximum	
E. Coli MPN/g dry	<1000		<2
Salmonella (P/A)	<3		Negative

AGRICULTURAL ANALYSIS

"Dry"		
Total Nitrogen (%)		1.8
Phosphorus as P ₂ O ₅ (%)		0.7
Potassium as K ₂ O (%)		2.2
Water insoluble N (WIN) %		0.5
Magnesium (%)		1.0
Calcium (%)		24.7
Sulfur (%)		1.9

Total Solids (%)		64.7
------------------	--	------

Agricultural Analysis

"As Is"		CFIA Label
Total Nitrogen (%)	1	1.2
Phosphorus as P ₂ O ₅ (%)	0.6	0.5
Potassium as K ₂ O (%)	2.5	1.4
Water insoluble N (WIN) %	0.6	0.3
Magnesium (%)	0.5	0.7
Calcium (%)	12	16.0
Sulfur (%)	1.0	1.2
Bulk Density (kg/m ³)		852

"Dry"		
Organic Matter (%)	25	30.3
Neutralizing Value (TNV)	35	65.0
Moisture (%)		35.3
Fines #10 mesh %	99	89.1
Fines #60 mesh %	50	57.2
Fines #100 mesh %	45	55.0
Ammonia (%)		0.06

Total Neutralizing Value (TNV)	%	65.0
Free Lime CaO	%	36.0
EOCE	%	48.7
Lime Blend	Ratio*	1:3

*Assumes Agricultural Index = 64

Other		
pH	>12	12.24

Results valid only in terms listed on material

All work has been performed using recognized testing methodologies, except where otherwise agreed to by the client in writing. Our total liability in connection with this work shall be limited to the amount paid by the client.



N-Viro Chem, Ph.D., F.Dog.

Attachment 2: E3 Laboratory Certificate



Sample ID: Leamington Q3 2025 Comp.
 Project: N-Viro Systems (Leamington)
 Lab ID: 840411
 Date Collected: 2025-10-02
 Date Received: 2025-10-03
 Date Reported: 2025-10-27

E3 Laboratories Inc.

Trace Elements (Max)	CFIA ppm (mg/kg)	
Arsenic (mg/kg)	75	5.41
Boron (mg/Kg)		30.4
Cadmium (mg/kg)	20	2.30
Chromium (mg/kg)	1100	27.4
Cobalt (mg/Kg)	150	4.60
Copper (mg/Kg)		53.3
Lead (mg/kg)	500	87.3
Mercury (mg/kg)	5.0	0.16
Molybdenum (mg/kg)	20	10.6
Nickel (mg/kg)	180	10.9
Selenium (mg/kg)	14	2.70
Zinc (mg/kg)	1850	199
Thallium (mg/kg)	12 mg/kg @19000 kg/ha	<0.50
Vanadium (mg/kg)	1400 mg/kg @19000 kg/ha	36.5

Pathogens	CFIA Maximum	
Fecal Coliform MPN/g dry	<1000	<2
Salmonella (PIA)	<3	Negative

AGRICULTURAL ANALYSIS

"Dry"		
Total Nitrogen (%)		2.2
Phosphorus as P ₂ O ₅ (%)		1.1
Potassium as K ₂ O (%)		1.9
Water Insoluble N (WIN) %		0.7
Magnesium (%)		0.8
Calcium (%)		16.6
Sodium (%)		0.14
Sulfur (%)		1.5
Total Solids (%)		64.9

Agricultural Analysis

"As Is"	CFIA Label	
Total Nitrogen (%)	1	1.4
Phosphorus as P ₂ O ₅ (%)	0.6	0.7
Potassium as K ₂ O (%)	2.5	1.2
Water Insoluble N (WIN) %	0.6	0.4
Magnesium (%)	0.5	0.5
Calcium (%)	12	10.8
Sodium (%)		0.1
Sulfur (%)	1.0	1.0
Bulk Density (kg/m ³)		731

"Dry"		
Organic Matter (%)	25	28.7
Neutralizing Value (TNV)	35	54.4
Moisture (%)		35.1
Finess #10 mesh %	90	99.5
Finess #60 mesh %	50	62.8
Finess #100 mesh %	45	61.0
Ammonia (%)		0.03
Total Neutralizing Value (TNV)	%	54.4
Free Lime CaO	%	29.5
ECCE	%	42.2
Lime Blend	Ratio*	1.5

*Assume Agricultural Index = 64

Other		
pH	>12	12.32
Electrical Conductivity (mS/cm)		13.0

Results relate only to items tested as received.

Reported by: Nilou Ghazi

All work has been performed using accepted testing methodologies, except where otherwise agreed to by the client in writing. Our test methods are in accordance with the methods described in the referenced standards and specifications.

Nilou Ghazi, Ph.D., P.Eng.

Attachment 2: E3 Laboratory Certificate



Sample ID: Leamington Q4 2025 Comp
 Project: N-Viro Systems (Leamington)
 Lab ID: 847476
 Date Collected: 2026-01-07
 Date Received: 2026-01-08
 Date Reported: 2026-01-23

E3 Laboratories Inc.

<u>Trace Elements (Max)</u>	<u>CFIA</u> <u>ppm (mg/kg)</u>	
Arsenic (mg/kg)	75	5.22
Boron (mg/Kg)		10.5
Cadmium (mg/kg)	20	2.70
Chromium (mg/kg)	1100	25.0
Cobalt (mg/Kg)	150	4.10
Copper (mg/Kg)		60.4
Lead (mg/kg)	500	81.2
Mercury (mg/kg)	5.0	<0.05
Molybdenum (mg/kg)	20	4.3
Nickel (mg/kg)	180	19.3
Selenium (mg/kg)	14	2.40
Zinc (mg/kg)	1850	192
Thallium (mg/kg)	12 mg/kg @19000 kg/ha	<0.50
Vanadium (mg/kg)	1400 mg/kg @19000 kg/ha	48.7

<u>Pathogens</u>	<u>CFIA</u> <u>Maximum</u>	
Fecal Coliform MPN/g dry	<1000	1
Salmonella (PIA)	<3	Absent

AGRICULTURAL ANALYSIS

<u>"Dry"</u>		
Total Nitrogen (%)		1.7
Phosphorus as P ₂ O ₅ (%)		1.5
Potassium as K ₂ O (%)		2.0
Water Insoluble N (WIN) %		0.9
Magnesium (%)		0.7
Calcium (%)		11.8
Sodium (%)		0.12
Sulfur (%)		1.3
Total Solids (%)		66.5

Agricultural Analysis

<u>"As Is"</u>	<u>CFIA</u> <u>Label</u>	
Total Nitrogen (%)	1	1.1
Phosphorus as P ₂ O ₅ (%)	0.6	1.0
Potassium as K ₂ O (%)	2.5	1.3
Water Insoluble N (WIN) %	0.6	0.6
Magnesium (%)	0.5	0.5
Calcium (%)	12	7.8
Sodium (%)		0.08
Sulfur (%)	1.0	0.9
Bulk Density (kg/m ³)		758

<u>"Dry"</u>		
Organic Matter (%)	25	25.7
Neutralizing Value (TNV)	35	53.1
Moisture (%)		33.5
Fines #10 mesh %	90	99.9
Fines #60 mesh %	50	71.9
Fines #100 mesh %	45	71.1
Ammonia (%)		0.05
Ammonium (%)		0.0001
Total Neutralizing Value (TNV)	%	53.1
Free Lime CaO	%	29.0
ECCE	%	44.1
Lime Blend	Ratio*	1.4

*Assume Agricultural Index = 64

<u>Other</u>		
pH	>12	12.29
Electrical Conductivity (mS/cm)		10.7

Results relate only to items tested as received.

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Nilou Ghazi, Ph.D., P.Eng.



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CERTIFICATE OF ANALYSIS

Walker Environmental Group Inc.
 Misty Croney
 P.O. Box 100
 Thorold
 L2V 3Y8
 Tel: 905-329-4285

Fax: E-mail
Email: misty.crony@lpconsulting.ca

Work Order No.:2670279
 Received : 2025-04-08
 PO Number: NVLP10565
 Reported: 2025-04-17
 Project Name: N-Viro Systems Canada LP
 (Leamington)
 Chain of Custody No.: 2670279

Client Sample ID	Sample		Parameter	Result	Unit	RDL	Date		Method
	Date	Lab ID					Analyzed		
Leamington Q1 2025 Comp	2025-04-07	825387	Ammonia (Total)	739	mg/Kg	0.03	2025-04-09		APHA 4500
			Arsenic	4.16	mg/Kg	1.00	2025-04-15		Hydr/Vap Gen EPA3050
			Boron	54.1	mg/Kg	1.0	2025-04-14		EPA 3050B
			Cadmium	1.2	mg/Kg	0.3	2025-04-14		EPA 3050B
			Calcium	299000	mg/Kg	100	2025-04-14		EPA 3050B
			Chromium	37.5	mg/Kg	0.3	2025-04-14		EPA 3050B
			Cobalt	4.2	mg/Kg	0.3	2025-04-14		EPA 3050B
			Copper	43.4	mg/Kg	2.0	2025-04-14		EPA 3050B
			E.coli	<2	MPN/g dry	1	2025-04-08		APHA 9223B
			Lead	184	mg/Kg	0.4	2025-04-14		EPA 3050B
			Magnesium	12900	mg/Kg	500	2025-04-14		EPA 3050B
			Mercury	<0.05	mg/Kg	0.05	2025-04-15		Hydr/Vap Gen EPA3050
			Moisture	39.4	%	0.1	2025-04-12		Moisture Handbook
			Molybdenum	12.7	mg/Kg	0.3	2025-04-14		EPA 3050B
			Nickel	19.0	mg/Kg	1.0	2025-04-14		EPA 3050B
			Organic Matter-Total	30.1	%	0.1	2025-04-12		APHA 2540E,G (GRAV) E3530
			pH	12.15	SU	N/A	2025-04-16		
			Phosphorus	2760	mg/Kg	5.0	2025-04-14		EPA 3050B
			Potassium	18000	mg/Kg	2	2025-04-14		EPA 3050B
			Salmonella	Negative	P/A (25g)	N/A	2025-04-08		TMECC 07.02
			Selenium	3.7	mg/Kg	0.2	2025-04-15		Hydr/Vap Gen EPA3050
			Sulfur	22500	mg/Kg	3.0	2025-04-14		EPA 3050B
			Thallium	<0.50	mg/Kg	0.50	2025-04-14		EPA 3050B
			Total Nitrogen	18200	mg/Kg		2025-04-10		AOAC 955.04
			TS (Total Solids)	60.6	%	0.1	2025-04-12		APHA 2540 B mod
			Vanadium	86.1	mg/Kg	0.3	2025-04-14		EPA 3050B
			Water Insol.Nitrogen	4380	mg/Kg		2025-04-10		AOAC 955.04
			Zinc	185	mg/Kg	2.0	2025-04-14		EPA 3050B

Reported by:

 Nilou Ghazi, Ph.D.,P.Eng.
 Laboratory Manager

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Email: misty.crony@lpconsulting.ca

Work Order No.:2670279

Received : 2025-04-08

PO Number: NVLP10565

Reported: 2025-04-17

Project Name: N-Viro Systems Canada LP (Leamington)

Chain of Custody No.: 2670279

Quality Control Summary

Lab ID	Analyte	QC Recovery	QC limits	Spike Recovery	Spike Limits	Dup RPD	Dup Limits	Blank
825387	Ammonia (Total)	97	80-120	98	80-120	4	0-20	<0.03
	Arsenic	99	80-120	109	70-130	0	0-20	<1.00
	Boron	101	80-120	101	70-130	0	0-20	<1.0
	Cadmium	97	80-120	101	70-130	0	0-20	<0.3
	Calcium	96	80-120	100	70-130	0	0-20	<100
	Chromium	102	80-120	100	70-130	0	0-20	<0.3
	Cobalt	105	80-120	101	70-130	0	0-20	<0.3
	Copper	101	80-120	101	70-130	0	0-20	<2.0
	E.coli	N/A	N/A	N/A	N/A		0-20	
	Lead	102	80-120	103	70-130	0	0-20	<0.4
	Magnesium	100	80-120	89	70-130	0	0-20	<500
	Mercury	96	80-120	100	70-130	0	0-20	<0.05
	Moisture	119				1		
	Molybdenum	108	80-120	104	70-130	0	0-20	<0.3
	Nickel	101	80-120	100	70-130	0	0-20	<1.0
	Organic Matter-Total							
	pH	102	97-103	N/A	N/A	0	0-20	N/A
	Phosphorus	86	80-120	96	80-120	0	0-8.12	<5.0
	Potassium	97	80-120	99	70-130	0	0-20	<2
	Salmonella							
	Selenium	106	80-120	116	70-130	0	0-20	<0.2
	Sulfur	99	80-120	100	70-130	0		<3.0
	Thallium	104	80-120	102	70-130	0	0-20	<0.50
	Total Nitrogen	99	80-120	99	80-120	1	0-20	0
	TS (Total Solids)	95	80-120	N/A	N/A	3	0-20	<0.1
	Vanadium	94	80-120	99	70-130	0	0-20	<0.3
	Water Insol.Nitrogen	99		99		1		0
	Zinc	100	80-120	103	70-130	0	0-20	<2.0



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CERTIFICATE OF ANALYSIS

Municipality of Leamington
Sherry Badz
111 Erie Street North
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Work Order No.:2673225
Received : 2025-07-08
PO Number:
Reported: 2025-07-15
Project Name: NPRI
Chain of Custody No.: 2673225

Note: Re-issued to correct sample ID (Originally reported earlier today).

Client Sample ID	Sample		Parameter	Result	Unit	Date		Method
	Date	Lab ID				RDL	Analyzed	
Q2 N-Rich	2025-07-02	832983	Ammonia (Total)	366	mg/L	0.03	2025-07-09	APHA 4500

Reported by:

Nilou Ghazi, Ph.D.,P.Eng.
Laboratory Manager



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Work Order No.:2673225
Received : 2025-07-08
PO Number:
Reported: 2025-07-15
Project Name: NPRI
Chain of Custody No.: 2673225

Note: Re-issued to correct sample ID (Originally reported earlier today).

Quality Control Summary

Lab ID	Analyte	QC Recovery	QC limits	Spike Recovery	Spike Limits	Dup RPD	Dup Limits	Blank
832983	Ammonia (Total)	99	80-120	98	80-120	2	0-20	<0.03



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CERTIFICATE OF ANALYSIS

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 Sherry Badz
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Work Order No.:2676191
 Received : 2025-10-03
 PO Number:
 Reported: 2025-10-10
 Project Name: NPRI
 Chain of Custody No.: 2676191

Client Sample ID	Sample		Parameter	Result	Unit	Date		Method
	Date	Lab ID				RDL	Analyzed	
Leamington Q3 N-Rich	2025-10-02	840410	Ammonia (Total)	424	mg/L	0.03	2025-10-09	APHA 4500

Reported by: *Nilou Ghazi*

Nilou Ghazi, Ph.D.,P.Eng.
 Laboratory Manager

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Work Order No.:2676191
Received : 2025-10-03
PO Number:
Reported: 2025-10-10
Project Name: NPRI
Chain of Custody No.: 2676191

Quality Control Summary

Lab ID	Analyte	QC Recovery	QC limits	Spike Recovery	Spike Limits	Dup RPD	Dup Limits	Blank
840410	Ammonia (Total)	101	80-120	101	80-120	0	0-20	<0.03



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Work Order No.:2678871
Received : 2026-01-08
PO Number:
Reported: 2026-01-14
Project Name: NPRI
Chain of Custody No.: 2678871

Client Sample ID	Sample		Parameter	Result	Unit	RDL	Date	Method
	Date	Lab ID					Analyzed	
Leamington Q4 2025	2026-01-02	847475	Ammonia (Total)	398	mg/L	0.03	2026-01-13	APHA 4500

Reported by:

Nilou Ghazi, Ph.D.,P.Eng.
Laboratory Manager

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Results relate only to items tested as received.



E3 Laboratories Inc.

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CERTIFICATE OF ANALYSIS

Municipality of Leamington
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Email: sbadz@leamington.ca

Work Order No.:2678871
Received : 2026-01-08
PO Number:
Reported: 2026-01-14
Project Name: NPRI
Chain of Custody No.: 2678871

Quality Control Summary

Lab ID	Analyte	QC Recovery	QC limits	Spike Recovery	Spike Limits	Dup RPD	Dup Limits	Blank
847475	Ammonia (Total)	97	80-120	103	80-120	1	0-20	<0.03



Your P.O. #: NVLP10573
 Your Project #: PFAS
 Site Location: LEAMINGTON
 Your C.O.C. #: C#1038768-01-01

Attention: Tom Harz

Leamington Pollution Control Centre
 435 Seacliff Drive East
 Leamington, ON
 Canada N8H 3V7

Report Date: 2025/04/11
 Report #: R8519468
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C533909

Received: 2025/03/28, 09:20

Sample Matrix: Solid
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Moisture	1	N/A	2025/03/29	CAM SOP-00445	Carter 2nd ed 70.2 m
PFAS in Biosolids by LCMSMS (1)	1	2025/04/04	2025/04/06	CAM SOP-00985	EPA 1633 m
Total Solids	1	N/A	2025/03/29	CAM SOP-00428	SM 24 2540 G m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.



Your P.O. #: NVLP10573
Your Project #: PFAS
Site Location: LEAMINGTON
Your C.O.C. #: C#1038768-01-01

Attention: Tom Harz

Leamington Pollution Control Centre
435 Seacliff Drive East
Leamington, ON
Canada N8H 3V7

Report Date: 2025/04/11
Report #: R8519468
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C533909

Received: 2025/03/28, 09:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Jolanta Goralczyk, Project Manager
Email: Jolanta.Goralczyk@bureauveritas.com
Phone# (905)817-5751

=====

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

RESULTS OF ANALYSES OF SOLID

Bureau Veritas ID		APIO28			
Sampling Date		2025/03/27 10:00			
COC Number		C#1038768-01-01			
	UNITS	LEAMINATON BIOSOLIDS	RDL	MDL	QC Batch
Inorganics					
Moisture	%	40	1.0	0.50	9900818
Total Solids	%	60	1	1	9900578
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					



BUREAU
VERITAS

Bureau Veritas Job #: C533909

Report Date: 2025/04/11

Leamington Pollution Control Centre

Client Project #: PFAS

Site Location: LEAMINGTON

Your P.O. #: NVLP10573

Sampler Initials: SB

PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		APIO28	APIO28			
Sampling Date		2025/03/27 10:00	2025/03/27 10:00			
COC Number		C#1038768-01-01	C#1038768-01-01			
	UNITS	LEAMINATON BIOSOLIDS	LEAMINATON BIOSOLIDS Lab-Dup	RDL	MDL	QC Batch

Perfluorinated Compounds						
Perfluorobutanoic acid (PFBA)	ug/kg	<2.0	<2.0	2.0	0.017	9904479
Perfluoropentanoic acid (PFPeA)	ug/kg	<2.0	<2.0	2.0	0.034	9904479
Perfluorohexanoic acid (PFHxA)	ug/kg	<2.0	<2.0	2.0	0.032	9904479
Perfluoroheptanoic acid (PFHpA)	ug/kg	<2.0	<2.0	2.0	0.030	9904479
Perfluorooctanoic acid (PFOA)	ug/kg	<2.0	<2.0	2.0	0.038	9904479
Perfluorononanoic acid (PFNA)	ug/kg	<2.0	<2.0	2.0	0.032	9904479
Perfluorodecanoic acid (PFDA)	ug/kg	<2.0	<2.0	2.0	0.034	9904479
Perfluoroundecanoic acid (PFUnA)	ug/kg	<2.0	<2.0	2.0	0.026	9904479
Perfluorododecanoic acid (PFDoA)	ug/kg	<2.0	<2.0	2.0	0.014	9904479
Perfluorotridecanoic acid (PFTrDA)	ug/kg	<2.0	<2.0	2.0	0.017	9904479
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	<2.0	<2.0	2.0	0.024	9904479
Perfluorohexadecanoic acid (PFHxDA)	ug/kg	<2.0	<2.0	2.0	0.0094	9904479
Perfluorooctadecanoic acid (PFODA)	ug/kg	<2.0	<2.0	2.0	0.040	9904479
Perfluoropropanesulfonic acid PFPrS	ug/kg	<2.0	<2.0	2.0	N/A	9904479
Perfluorobutanesulfonic acid (PFBS)	ug/kg	<2.0	<2.0	2.0	0.060	9904479
Perfluoropentanesulfonic acid PFPeS	ug/kg	<2.0	<2.0	2.0	0.048	9904479
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	<2.0	<2.0	2.0	0.036	9904479
Perfluoroheptanesulfonic acid PFHpS	ug/kg	<2.0	<2.0	2.0	0.026	9904479
Perfluorooctanesulfonic acid (PFOS)	ug/kg	2.4 (1)	2.0 (1)	2.0	0.048	9904479
Perfluorononanesulfonic acid (PFNS)	ug/kg	<2.0	<2.0	2.0	0.042	9904479
Perfluorodecanesulfonic acid (PFDS)	ug/kg	<2.0	<2.0	2.0	0.040	9904479
Perfluorododecanesulfonic acid	ug/kg	<2.0	<2.0	2.0	0.044	9904479
2H-Perfluorooctenoic Acid	ug/kg	<2.0	<2.0	2.0	0.058	9904479
2H-Perfluoro-decenoic Acid	ug/kg	<2.0	<2.0	2.0	0.050	9904479
4:2 Fluorotelomer sulfonic acid	ug/kg	<2.0	<2.0	2.0	0.062	9904479
6:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	<4.0	4.0	0.10	9904479

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) Result is estimated as analyte confirmation criterion (ion ratio) was not met.



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		APIO28	APIO28			
Sampling Date		2025/03/27 10:00	2025/03/27 10:00			
COC Number		C#1038768-01-01	C#1038768-01-01			
	UNITS	LEAMINATON BIOSOLIDS	LEAMINATON BIOSOLIDS Lab-Dup	RDL	MDL	QC Batch
8:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	<4.0	4.0	0.16	9904479
10:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	<4.0	4.0	0.11	9904479
Perfluorooctane Sulfonamide (PFOSA)	ug/kg	<4.0	<4.0	4.0	0.014	9904479
MeFOSA	ug/kg	<4.0	<4.0	4.0	0.12	9904479
EtFOSA	ug/kg	<4.0	<4.0	4.0	0.048	9904479
MeFOSAA	ug/kg	<4.0	<4.0	4.0	0.096	9904479
EtFOSAA	ug/kg	<4.0	<4.0	4.0	0.090	9904479
MeFOSE	ug/kg	<4.0	<4.0	4.0	0.088	9904479
EtFOSE	ug/kg	<4.0	<4.0	4.0	0.078	9904479
Hexafluoropropyleneoxide dimer acid	ug/kg	<4.0	<4.0	4.0	0.066	9904479
4,8-Dioxa-3H-perfluorononanoic acid	ug/kg	<2.0	<2.0	2.0	0.014	9904479
Perfluoro-3-methoxypropanoic acid	ug/kg	<2.0	<2.0	2.0	0.015	9904479
Perfluoro-4-methoxybutanoic acid	ug/kg	<2.0	<2.0	2.0	0.013	9904479
Nonafluoro-3,6-dioxaheptanoic acid	ug/kg	<4.0	<4.0	4.0	0.18	9904479
9Cl-PF3ONS (F-53B Major)	ug/kg	<2.0	<2.0	2.0	0.024	9904479
11Cl-PF3OUdS (F-53B Minor)	ug/kg	<2.0	<2.0	2.0	0.026	9904479
Perfluoro2ethoxyethanesulfonic acid	ug/kg	<2.0	<2.0	2.0	0.024	9904479
PFECHS	ug/kg	<2.0	<2.0	2.0	N/A	9904479
3-Perfluoropropylpropanoic acid	ug/kg	<10	<10	10	0.17	9904479
2H2H3H3H-Perfluorooctanoic acid	ug/kg	10	9.2	4.0	0.18	9904479
3-Perfluoroheptylpropanoic acid	ug/kg	<4.0	<4.0	4.0	0.090	9904479
Surrogate Recovery (%)						
13C2-2H-Perfluoro-decenoic Acid	%	130	125			9904479
13C2-2H-Perfluorooctenoic Acid	%	144	124			9904479
13C2-4:2-Fluorotelomersulfonic Acid	%	334 (1)	296			9904479
13C2-6:2-Fluorotelomersulfonic Acid	%	296	276			9904479
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.						



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		APIO28	APIO28			
Sampling Date		2025/03/27 10:00	2025/03/27 10:00			
COC Number		C#1038768-01-01	C#1038768-01-01			
	UNITS	LEAMINATON BIOSOLIDS	LEAMINATON BIOSOLIDS Lab-Dup	RDL	MDL	QC Batch
13C2-8:2-Fluorotelomersulfonic Acid	%	349 (1)	365 (1)			9904479
13C2D4-10:2Fluorotelomersulfonic Ac	%	213 (1)	261 (1)			9904479
13C2-Perfluorodecanoic acid	%	112	113			9904479
13C2-Perfluorododecanoic acid	%	69	73			9904479
13C2-Perfluorohexadecanoic acid	%	78	78			9904479
13C2-Perfluorohexanoic acid	%	111	107			9904479
13C2-Perfluorotetradecanoic acid	%	68	72			9904479
13C3-HFPO-DA	%	76	71			9904479
13C3-Perfluorobutanesulfonic acid	%	104	99			9904479
13C3-Perfluorobutanoic Acid	%	87	86			9904479
13C3-Perfluorohexanesulfonic Acid	%	72	73			9904479
13C4-Perfluorobutanoic acid	%	84	57			9904479
13C4-Perfluoroheptanoic acid	%	83	79			9904479
13C4-Perfluorooctanesulfonic acid	%	84	88			9904479
13C4-Perfluorooctanoic acid	%	117	114			9904479
13C5-Perfluorohexanoic Acid	%	86	81			9904479
13C5-Perfluorononanoic acid	%	116	114			9904479
13C5-Perfluoropentanoic acid	%	75	62			9904479
13C6-Perfluorodecanoic Acid	%	88	85			9904479
13C7-Perfluoroundecanoic Acid	%	77	73			9904479
13C8-Perfluorooctane Sulfonamide	%	115	109			9904479
13C8-Perfluorooctanesulfonic Acid	%	87	82			9904479
13C8-Perfluorooctanoic Acid	%	81	79			9904479
13C9-Perfluorononanoic Acid	%	91	89			9904479
18O2-Perfluorohexanesulfonic acid	%	84	81			9904479
D3-MeFOSA	%	26	26			9904479
D3-MeFOSAA	%	111	118			9904479
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.						



PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		APIO28	APIO28			
Sampling Date		2025/03/27 10:00	2025/03/27 10:00			
COC Number		C#1038768-01-01	C#1038768-01-01			
	UNITS	LEAMINATON BIOSOLIDS	LEAMINATON BIOSOLIDS Lab-Dup	RDL	MDL	QC Batch
D5-EtFOSA	%	7.8 (1)	7.5 (1)			9904479
D5-EtFOSAA	%	118	119			9904479
D7-MeFOSE	%	12 (1)	11 (1)			9904479
D9-EtFOSE	%	49	50			9904479
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.						



GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.0°C
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Sample APIO28 [LEAMINGTON BIOSOLIDS] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9900818	R1P	RPD	Moisture	2025/03/29	3.4		%	20
9904479	ATN	Matrix Spike [APIO28-01]	13C2-2H-Perfluoro-decenoic Acid	2025/04/06		128	%	20 - 150
			13C2-2H-Perfluorooctenoic Acid	2025/04/06		131	%	20 - 150
			13C2-4:2-Fluorotelomersulfonic Acid	2025/04/06		289	%	40 - 300
			13C2-6:2-Fluorotelomersulfonic Acid	2025/04/06		174	%	40 - 300
			13C2-8:2-Fluorotelomersulfonic Acid	2025/04/06		315 (1)	%	40 - 300
			13C2D4-10:2Fluorotelomersulfonic Ac	2025/04/06		203 (1)	%	20 - 150
			13C2-Perfluorodecanoic acid	2025/04/06		114	%	50 - 200
			13C2-Perfluorododecanoic acid	2025/04/06		87	%	40 - 130
			13C2-Perfluorohexadecanoic acid	2025/04/06		78	%	20 - 150
			13C2-Perfluorohexanoic acid	2025/04/06		100	%	50 - 200
			13C2-Perfluorotetradecanoic acid	2025/04/06		71	%	10 - 160
			13C3-HFPO-DA	2025/04/06		77	%	40 - 130
			13C3-Perfluorobutanesulfonic acid	2025/04/06		91	%	40 - 150
			13C3-Perfluorobutanoic Acid	2025/04/06		86	%	50 - 200
			13C3-Perfluorohexanesulfonic Acid	2025/04/06		71	%	40 - 140
			13C4-Perfluorobutanoic acid	2025/04/06		59	%	5 - 130
			13C4-Perfluoroheptanoic acid	2025/04/06		84	%	40 - 130
			13C4-Perfluorooctanesulfonic acid	2025/04/06		85	%	50 - 200
			13C4-Perfluorooctanoic acid	2025/04/06		108	%	50 - 200
			13C5-Perfluorohexanoic Acid	2025/04/06		83	%	40 - 130
			13C5-Perfluorononanoic acid	2025/04/06		112	%	50 - 200
			13C5-Perfluoropentanoic acid	2025/04/06		70	%	35 - 130
			13C6-Perfluorodecanoic Acid	2025/04/06		84	%	40 - 130
			13C7-Perfluoroundecanoic Acid	2025/04/06		76	%	40 - 130
			13C8-Perfluorooctane Sulfonamide	2025/04/06		110	%	20 - 140
			13C8-Perfluorooctanesulfonic Acid	2025/04/06		87	%	40 - 130
			13C8-Perfluorooctanoic Acid	2025/04/06		81	%	40 - 130
			13C9-Perfluorononanoic Acid	2025/04/06		87	%	40 - 145
			18O2-Perfluorohexanesulfonic acid	2025/04/06		90	%	50 - 200
			D3-MeFOSA	2025/04/06		27	%	20 - 130
			D3-MeFOSAA	2025/04/06		104	%	30 - 150
			D5-EtFOSA	2025/04/06		9.9 (1)	%	20 - 130
			D5-EtFOSAA	2025/04/06		99	%	20 - 140
			D7-MeFOSE	2025/04/06		12 (1)	%	25 - 130
			D9-EtFOSE	2025/04/06		54	%	20 - 130
			Perfluorobutanoic acid (PFBA)	2025/04/06		95	%	70 - 140
			Perfluoropentanoic acid (PFPeA)	2025/04/06		80	%	60 - 150
			Perfluorohexanoic acid (PFHxA)	2025/04/06		96	%	65 - 140
			Perfluoroheptanoic acid (PFHpA)	2025/04/06		96	%	65 - 145
			Perfluorooctanoic acid (PFOA)	2025/04/06		94	%	70 - 150
			Perfluorononanoic acid (PFNA)	2025/04/06		93	%	70 - 155
			Perfluorodecanoic acid (PFDA)	2025/04/06		102	%	70 - 155
			Perfluoroundecanoic acid (PFUnA)	2025/04/06		94	%	70 - 155
			Perfluorododecanoic acid (PFDoA)	2025/04/06		100	%	70 - 150
			Perfluorotridecanoic acid (PFTTrDA)	2025/04/06		125	%	65 - 150
			Perfluorotetradecanoic acid(PFTTeDA)	2025/04/06		96	%	65 - 150
			Perfluorohexadecanoic acid (PFHxDA)	2025/04/06		89	%	40 - 150
			Perfluorooctadecanoic acid (PFODA)	2025/04/06		77	%	40 - 150
			Perfluoropropanesulfonic acid PFPrS	2025/04/06		82	%	40 - 150



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluorobutanesulfonic acid (PFBS)	2025/04/06		97	%	65 - 145
			Perfluoropentanesulfonic acid PFPeS	2025/04/06		118	%	55 - 160
			Perfluorohexanesulfonic acid(PFHxS)	2025/04/06		106	%	60 - 150
			Perfluoroheptanesulfonic acid PFPHpS	2025/04/06		100	%	65 - 155
			Perfluorooctanesulfonic acid (PFOS)	2025/04/06		98	%	65 - 160
			Perfluorononanesulfonic acid (PFNS)	2025/04/06		85	%	55 - 140
			Perfluorodecanesulfonic acid (PFDS)	2025/04/06		83	%	40 - 155
			Perfluorododecanesulfonic acid	2025/04/06		93	%	25 - 160
			2H-Perfluorooctenoic Acid	2025/04/06		92	%	40 - 150
			2H-Perfluoro-decenoic Acid	2025/04/06		93	%	40 - 150
			4:2 Fluorotelomer sulfonic acid	2025/04/06		88	%	60 - 150
			6:2 Fluorotelomer sulfonic acid	2025/04/06		96	%	55 - 200
			8:2 Fluorotelomer sulfonic acid	2025/04/06		89	%	70 - 150
			10:2 Fluorotelomer sulfonic acid	2025/04/06		104	%	40 - 150
			Perfluorooctane Sulfonamide (PFOSA)	2025/04/06		90	%	70 - 140
			MeFOSA	2025/04/06		103	%	70 - 155
			EtFOSA	2025/04/06		278 (2)	%	70 - 140
			MeFOSAA	2025/04/06		99	%	65 - 155
			EtFOSAA	2025/04/06		96	%	65 - 165
			MeFOSE	2025/04/06		190 (2)	%	70 - 140
			EtFOSE	2025/04/06		58 (3)	%	70 - 135
			Hexafluoropropyleneoxide dimer acid	2025/04/06		95	%	70 - 140
			4,8-Dioxa-3H-perfluorononanoic acid	2025/04/06		103	%	70 - 160
			Perfluoro-3-methoxypropanoic acid	2025/04/06		81	%	30 - 140
			Perfluoro-4-methoxybutanoic acid	2025/04/06		99	%	60 - 150
			Nonafluoro-3,6-dioxaheptanoic acid	2025/04/06		87	%	60 - 155
			9Cl-PF3ONS (F-53B Major)	2025/04/06		92	%	70 - 150
			11Cl-PF3OUdS (F-53B Minor)	2025/04/06		99	%	45 - 160
			Perfluoro2ethoxyethanesulfonic acid	2025/04/06		92	%	70 - 140
			PFECHS	2025/04/06		99	%	40 - 150
			3-Perfluoropropylpropanoic acid	2025/04/06		60	%	45 - 130
			2H2H3H3H-Perfluorooctanoic acid	2025/04/06		145 (2)	%	60 - 130
			3-Perfluoroheptylpropanoic acid	2025/04/06		144	%	60 - 150
9904479	ATN	Spiked Blank	13C2-2H-Perfluoro-decenoic Acid	2025/04/06		78	%	20 - 150
			13C2-2H-Perfluorooctenoic Acid	2025/04/06		82	%	20 - 150
			13C2-4:2-Fluorotelomersulfonic Acid	2025/04/06		80	%	40 - 300
			13C2-6:2-Fluorotelomersulfonic Acid	2025/04/06		80	%	40 - 300
			13C2-8:2-Fluorotelomersulfonic Acid	2025/04/06		80	%	40 - 300
			13C2D4-10:2Fluorotelomersulfonic Ac	2025/04/06		74	%	20 - 150
			13C2-Perfluorodecanoic acid	2025/04/06		87	%	50 - 200
			13C2-Perfluorododecanoic acid	2025/04/06		68	%	40 - 130
			13C2-Perfluorohexadecanoic acid	2025/04/06		65	%	20 - 150
			13C2-Perfluorohexanoic acid	2025/04/06		83	%	50 - 200
			13C2-Perfluorotetradecanoic acid	2025/04/06		70	%	10 - 160
			13C3-HFPO-DA	2025/04/06		83	%	40 - 130
			13C3-Perfluorobutanesulfonic acid	2025/04/06		81	%	40 - 150
			13C3-Perfluorobutanoic Acid	2025/04/06		82	%	50 - 200
			13C3-Perfluorohexanesulfonic Acid	2025/04/06		80	%	40 - 140
			13C4-Perfluorobutanoic acid	2025/04/06		62	%	5 - 130
			13C4-Perfluoroheptanoic acid	2025/04/06		81	%	40 - 130



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			13C4-Perfluorooctanesulfonic acid	2025/04/06		83	%	50 - 200
			13C4-Perfluorooctanoic acid	2025/04/06		87	%	50 - 200
			13C5-Perfluorohexanoic Acid	2025/04/06		86	%	40 - 130
			13C5-Perfluorononanoic acid	2025/04/06		81	%	50 - 200
			13C5-Perfluoropentanoic acid	2025/04/06		85	%	35 - 130
			13C6-Perfluorodecanoic Acid	2025/04/06		76	%	40 - 130
			13C7-Perfluoroundecanoic Acid	2025/04/06		72	%	40 - 130
			13C8-Perfluorooctane Sulfonamide	2025/04/06		80	%	20 - 140
			13C8-Perfluorooctanesulfonic Acid	2025/04/06		80	%	40 - 130
			13C8-Perfluorooctanoic Acid	2025/04/06		79	%	40 - 130
			13C9-Perfluorononanoic Acid	2025/04/06		80	%	40 - 145
			18O2-Perfluorohexanesulfonic acid	2025/04/06		84	%	50 - 200
			D3-MeFOSA	2025/04/06		71	%	20 - 130
			D3-MeFOSAA	2025/04/06		77	%	30 - 150
			D5-EtFOSA	2025/04/06		67	%	20 - 130
			D5-EtFOSAA	2025/04/06		78	%	20 - 140
			D7-MeFOSE	2025/04/06		75	%	25 - 130
			D9-EtFOSE	2025/04/06		76	%	20 - 130
			Perfluorobutanoic acid (PFBA)	2025/04/06		94	%	70 - 140
			Perfluoropentanoic acid (PFPeA)	2025/04/06		81	%	60 - 150
			Perfluorohexanoic acid (PFHxA)	2025/04/06		94	%	65 - 140
			Perfluoroheptanoic acid (PFHpA)	2025/04/06		92	%	65 - 145
			Perfluorooctanoic acid (PFOA)	2025/04/06		91	%	70 - 150
			Perfluorononanoic acid (PFNA)	2025/04/06		96	%	70 - 155
			Perfluorodecanoic acid (PFDA)	2025/04/06		94	%	70 - 155
			Perfluoroundecanoic acid (PFUnA)	2025/04/06		95	%	70 - 155
			Perfluorododecanoic acid (PFDoA)	2025/04/06		98	%	70 - 150
			Perfluorotridecanoic acid (PFTTrDA)	2025/04/06		97	%	65 - 150
			Perfluorotetradecanoic acid(PFTeDA)	2025/04/06		91	%	65 - 150
			Perfluorohexadecanoic acid (PFHxDA)	2025/04/06		93	%	40 - 150
			Perfluorooctadecanoic acid (PFODA)	2025/04/06		96	%	40 - 150
			Perfluoropropanesulfonic acid PFPrS	2025/04/06		93	%	40 - 150
			Perfluorobutanesulfonic acid (PFBS)	2025/04/06		97	%	65 - 145
			Perfluoropentanesulfonic acid PFPeS	2025/04/06		97	%	55 - 160
			Perfluorohexanesulfonic acid(PFHxS)	2025/04/06		87	%	60 - 150
			Perfluoroheptanesulfonic acid PFHpS	2025/04/06		94	%	65 - 155
			Perfluorooctanesulfonic acid (PFOS)	2025/04/06		88	%	65 - 160
			Perfluorononanesulfonic acid (PFNS)	2025/04/06		91	%	55 - 140
			Perfluorodecanesulfonic acid (PFDS)	2025/04/06		84	%	40 - 155
			Perfluorododecanesulfonic acid	2025/04/06		82	%	25 - 160
			2H-Perfluorooctenoic Acid	2025/04/06		91	%	40 - 150
			2H-Perfluoro-decenoic Acid	2025/04/06		93	%	40 - 150
			4:2 Fluorotelomer sulfonic acid	2025/04/06		95	%	60 - 150
			6:2 Fluorotelomer sulfonic acid	2025/04/06		95	%	55 - 200
			8:2 Fluorotelomer sulfonic acid	2025/04/06		91	%	70 - 150
			10:2 Fluorotelomer sulfonic acid	2025/04/06		99	%	40 - 150
			Perfluorooctane Sulfonamide (PFOSA)	2025/04/06		99	%	70 - 140
			MeFOSA	2025/04/06		96	%	70 - 155
			EtFOSA	2025/04/06		92	%	70 - 140
			MeFOSAA	2025/04/06		95	%	65 - 155



BUREAU
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Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			EtFOSAA	2025/04/06		91	%	65 - 165
			MeFOSE	2025/04/06		97	%	70 - 140
			EtFOSE	2025/04/06		92	%	70 - 135
			Hexafluoropropyleneoxide dimer acid	2025/04/06		96	%	70 - 140
			4,8-Dioxa-3H-perfluorononanoic acid	2025/04/06		95	%	70 - 160
			Perfluoro-3-methoxypropanoic acid	2025/04/06		85	%	30 - 140
			Perfluoro-4-methoxybutanoic acid	2025/04/06		97	%	60 - 150
			Nonafluoro-3,6-dioxaheptanoic acid	2025/04/06		94	%	60 - 155
			9Cl-PF3ONS (F-53B Major)	2025/04/06		94	%	70 - 150
			11Cl-PF3OUdS (F-53B Minor)	2025/04/06		87	%	45 - 160
			Perfluoro2ethoxyethanesulfonic acid	2025/04/06		94	%	70 - 140
			PFECHS	2025/04/06		92	%	40 - 150
			3-Perfluoropropylpropanoic acid	2025/04/06		86	%	45 - 130
			2H2H3H3H-Perfluorooctanoic acid	2025/04/06		91	%	60 - 130
			3-Perfluoroheptylpropanoic acid	2025/04/06		84	%	60 - 150
9904479	ATN	Method Blank	13C2-2H-Perfluoro-decenoic Acid	2025/04/06		85	%	20 - 150
			13C2-2H-Perfluorooctenoic Acid	2025/04/06		92	%	20 - 150
			13C2-4:2-Fluorotelomersulfonic Acid	2025/04/06		87	%	40 - 300
			13C2-6:2-Fluorotelomersulfonic Acid	2025/04/06		98	%	40 - 300
			13C2-8:2-Fluorotelomersulfonic Acid	2025/04/06		97	%	40 - 300
			13C2D4-10:2Fluorotelomersulfonic Ac	2025/04/06		74	%	20 - 150
			13C2-Perfluorodecanoic acid	2025/04/06		98	%	50 - 200
			13C2-Perfluorododecanoic acid	2025/04/06		71	%	40 - 130
			13C2-Perfluorohexadecanoic acid	2025/04/06		74	%	20 - 150
			13C2-Perfluorohexanoic acid	2025/04/06		99	%	50 - 200
			13C2-Perfluorotetradecanoic acid	2025/04/06		64	%	10 - 160
			13C3-HFPO-DA	2025/04/06		84	%	40 - 130
			13C3-Perfluorobutanesulfonic acid	2025/04/06		90	%	40 - 150
			13C3-Perfluorobutanoic Acid	2025/04/06		97	%	50 - 200
			13C3-Perfluorohexanesulfonic Acid	2025/04/06		82	%	40 - 140
			13C4-Perfluorobutanoic acid	2025/04/06		75	%	5 - 130
			13C4-Perfluoroheptanoic acid	2025/04/06		83	%	40 - 130
			13C4-Perfluorooctanesulfonic acid	2025/04/06		101	%	50 - 200
			13C4-Perfluorooctanoic acid	2025/04/06		93	%	50 - 200
			13C5-Perfluorohexanoic Acid	2025/04/06		87	%	40 - 130
			13C5-Perfluorononanoic acid	2025/04/06		97	%	50 - 200
			13C5-Perfluoropentanoic acid	2025/04/06		84	%	35 - 130
			13C6-Perfluorodecanoic Acid	2025/04/06		84	%	40 - 130
			13C7-Perfluoroundecanoic Acid	2025/04/06		80	%	40 - 130
			13C8-Perfluorooctane Sulfonamide	2025/04/06		78	%	20 - 140
			13C8-Perfluorooctanesulfonic Acid	2025/04/06		77	%	40 - 130
			13C8-Perfluorooctanoic Acid	2025/04/06		85	%	40 - 130
			13C9-Perfluorononanoic Acid	2025/04/06		88	%	40 - 145
			18O2-Perfluorohexanesulfonic acid	2025/04/06		99	%	50 - 200
			D3-MeFOSA	2025/04/06		66	%	20 - 130
			D3-MeFOSAA	2025/04/06		82	%	30 - 150
			D5-EtFOSA	2025/04/06		50	%	20 - 130
			D5-EtFOSAA	2025/04/06		86	%	20 - 140
			D7-MeFOSE	2025/04/06		77	%	25 - 130
			D9-EtFOSE	2025/04/06		76	%	20 - 130



BUREAU
VERITAS

Bureau Veritas Job #: C533909
Report Date: 2025/04/11

Leamington Pollution Control Centre
Client Project #: PFAS
Site Location: LEAMINGTON
Your P.O. #: NVLP10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluorobutanoic acid (PFBA)	2025/04/06	<1.0		ug/kg	
			Perfluoropentanoic acid (PFPeA)	2025/04/06	<1.0		ug/kg	
			Perfluorohexanoic acid (PFHxA)	2025/04/06	<1.0		ug/kg	
			Perfluoroheptanoic acid (PFHpA)	2025/04/06	<1.0		ug/kg	
			Perfluorooctanoic acid (PFOA)	2025/04/06	<1.0		ug/kg	
			Perfluorononanoic acid (PFNA)	2025/04/06	<1.0		ug/kg	
			Perfluorodecanoic acid (PFDA)	2025/04/06	<1.0		ug/kg	
			Perfluoroundecanoic acid (PFUnA)	2025/04/06	<1.0		ug/kg	
			Perfluorododecanoic acid (PFDoA)	2025/04/06	<1.0		ug/kg	
			Perfluorotridecanoic acid (PFTrDA)	2025/04/06	<1.0		ug/kg	
			Perfluorotetradecanoic acid(PFTeDA)	2025/04/06	<1.0		ug/kg	
			Perfluorohexadecanoic acid (PFHxDA)	2025/04/06	<1.0		ug/kg	
			Perfluorooctadecanoic acid (PFODA)	2025/04/06	<1.0		ug/kg	
			Perfluoropropanesulfonic acid PFPrS	2025/04/06	<1.0		ug/kg	
			Perfluorobutanesulfonic acid (PFBS)	2025/04/06	<1.0		ug/kg	
			Perfluoropentanesulfonic acid PFPeS	2025/04/06	<1.0		ug/kg	
			Perfluorohexanesulfonic acid(PFHxS)	2025/04/06	<1.0		ug/kg	
			Perfluoroheptanesulfonic acid PFHpS	2025/04/06	<1.0		ug/kg	
			Perfluorooctanesulfonic acid (PFOS)	2025/04/06	<1.0		ug/kg	
			Perfluorononanesulfonic acid (PFNS)	2025/04/06	<1.0		ug/kg	
			Perfluorodecanesulfonic acid (PFDS)	2025/04/06	<1.0		ug/kg	
			Perfluorododecanesulfonic acid	2025/04/06	<1.0		ug/kg	
			2H-Perfluorooctenoic Acid	2025/04/06	<1.0		ug/kg	
			2H-Perfluoro-decenoic Acid	2025/04/06	<1.0		ug/kg	
			4:2 Fluorotelomer sulfonic acid	2025/04/06	<1.0		ug/kg	
			6:2 Fluorotelomer sulfonic acid	2025/04/06	<2.0		ug/kg	
			8:2 Fluorotelomer sulfonic acid	2025/04/06	<2.0		ug/kg	
			10:2 Fluorotelomer sulfonic acid	2025/04/06	<2.0		ug/kg	
			Perfluorooctane Sulfonamide (PFOSA)	2025/04/06	<2.0		ug/kg	
			MeFOSA	2025/04/06	<2.0		ug/kg	
			EtFOSA	2025/04/06	<2.0		ug/kg	
			MeFOSAA	2025/04/06	<2.0		ug/kg	
			EtFOSAA	2025/04/06	<2.0		ug/kg	
			MeFOSE	2025/04/06	<2.0		ug/kg	
			EtFOSE	2025/04/06	<2.0		ug/kg	
			Hexafluoropropyleneoxide dimer acid	2025/04/06	<2.0		ug/kg	
			4,8-Dioxa-3H-perfluorononanoic acid	2025/04/06	<1.0		ug/kg	
			Perfluoro-3-methoxypropanoic acid	2025/04/06	<1.0		ug/kg	
			Perfluoro-4-methoxybutanoic acid	2025/04/06	<1.0		ug/kg	
			Nonafluoro-3,6-dioxaheptanoic acid	2025/04/06	<2.0		ug/kg	
			9Cl-PF3ONS (F-53B Major)	2025/04/06	<1.0		ug/kg	
			11Cl-PF3OUdS (F-53B Minor)	2025/04/06	<1.0		ug/kg	
			Perfluoro2ethoxyethanesulfonic acid	2025/04/06	<1.0		ug/kg	
			PFECHS	2025/04/06	<1.0		ug/kg	
			3-Perfluoropropylpropanoic acid	2025/04/06	<5.0		ug/kg	
			2H2H3H3H-Perfluorooctanoic acid	2025/04/06	<2.0		ug/kg	
			3-Perfluoroheptylpropanoic acid	2025/04/06	<2.0		ug/kg	
9904479	ATN	RPD [APIO28-01]	Perfluorobutanoic acid (PFBA)	2025/04/06	NC		%	30
			Perfluoropentanoic acid (PFPeA)	2025/04/06	NC		%	30
			Perfluorohexanoic acid (PFHxA)	2025/04/06	NC		%	30



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluoroheptanoic acid (PFHpA)	2025/04/06	NC		%	30
			Perfluorooctanoic acid (PFOA)	2025/04/06	NC		%	30
			Perfluorononanoic acid (PFNA)	2025/04/06	NC		%	30
			Perfluorodecanoic acid (PFDA)	2025/04/06	NC		%	30
			Perfluoroundecanoic acid (PFUnA)	2025/04/06	NC		%	30
			Perfluorododecanoic acid (PFDoA)	2025/04/06	NC		%	30
			Perfluorotridecanoic acid (PFTrDA)	2025/04/06	NC		%	30
			Perfluorotetradecanoic acid(PFTeDA)	2025/04/06	NC		%	30
			Perfluorohexadecanoic acid (PFHxDA)	2025/04/06	NC		%	30
			Perfluorooctadecanoic acid (PFODA)	2025/04/06	NC		%	30
			Perfluoropropanesulfonic acid PFPrS	2025/04/06	NC		%	30
			Perfluorobutanesulfonic acid (PFBS)	2025/04/06	NC		%	30
			Perfluoropentanesulfonic acid PFPeS	2025/04/06	NC		%	30
			Perfluorohexanesulfonic acid(PFHxS)	2025/04/06	NC		%	30
			Perfluoroheptanesulfonic acid PFHpS	2025/04/06	NC		%	30
			Perfluorooctanesulfonic acid (PFOS)	2025/04/06	15 (4)		%	30
			Perfluorononanesulfonic acid (PFNS)	2025/04/06	NC		%	30
			Perfluorodecanesulfonic acid (PFDS)	2025/04/06	NC		%	30
			Perfluorododecanesulfonic acid	2025/04/06	NC		%	30
			2H-Perfluorooctenoic Acid	2025/04/06	NC		%	30
			2H-Perfluoro-decenoic Acid	2025/04/06	NC		%	30
			4:2 Fluorotelomer sulfonic acid	2025/04/06	NC		%	30
			6:2 Fluorotelomer sulfonic acid	2025/04/06	NC		%	30
			8:2 Fluorotelomer sulfonic acid	2025/04/06	NC		%	30
			10:2 Fluorotelomer sulfonic acid	2025/04/06	NC		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2025/04/06	NC		%	30
			MeFOSA	2025/04/06	NC		%	30
			EtFOSA	2025/04/06	NC		%	30
			MeFOSAA	2025/04/06	NC		%	30
			EtFOSAA	2025/04/06	NC		%	30
			MeFOSE	2025/04/06	NC		%	30
			EtFOSE	2025/04/06	NC		%	30
			Hexafluoropropyleneoxide dimer acid	2025/04/06	NC		%	30
			4,8-Dioxa-3H-perfluorononanoic acid	2025/04/06	NC		%	30
			Perfluoro-3-methoxypropanoic acid	2025/04/06	NC		%	30
			Perfluoro-4-methoxybutanoic acid	2025/04/06	NC		%	30
			Nonafluoro-3,6-dioxaheptanoic acid	2025/04/06	NC		%	30
			9Cl-PF3ONS (F-53B Major)	2025/04/06	NC		%	30
			11Cl-PF3OUdS (F-53B Minor)	2025/04/06	NC		%	30
			Perfluoro2ethoxyethanesulfonic acid	2025/04/06	NC		%	30
			PFECHS	2025/04/06	NC		%	30
			3-Perfluoropropylpropanoic acid	2025/04/06	NC		%	30
			2H2H3H3H-Perfluorooctanoic acid	2025/04/06	10		%	30



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Leamington Pollution Control Centre
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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				3-Perfluoroheptylpropanoic acid	2025/04/06	NC		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.

(2) Recovery of the matrix spike was above the upper control limit. Laboratory control sample (Spike) resulted in satisfactory recovery of the compound of interest. When considered together, these QC data suggest that matrix interferences may be biasing the data high. For results that were not detected (ND), this potential bias has no impact.

(3) Recovery of the matrix spike was below the lower control limit. Laboratory control sample (Spike) resulted in satisfactory recovery of the compound of interest. When considered together, these QC data suggest that matrix interferences may be biasing the data low.

(4) Result is estimated as analyte confirmation criterion (ion ratio) was not met.



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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Janet Dalisay, Senior Analyst

Louise Harding, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

C533909
2025/03/28 09:20

IMMEDIATE
Bureau Veritas
6740 Centipede Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6286 Fax:(905) 817-5777 www.bvna.com

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NONT-2025-03-5878

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:	
Company Name: #39476 N-Viro Systems Canada Inc.	Company Name: #36047 Leamington Pollution Control Centre	Quotation #: C42469	Bottle Order #: 1038768		
Attention: Accounts Payable	Attention: Tom Harz	P.O. #:	Project Manager: Jolanta Goralczyk		
Address: 3865 Thorold Townline Rd. Thorold ON L2V 3Y8	Address: 435 Seaciff Drive East Leamington ON N8H 3V7	Project: PESA	Project Name: Leamington		
Tel: Fax:	Tel: (902) 220-5930 Fax:	Site #: Leamington	COC #: 1038768-01-01		
Email: apinvoices@walkerind.com	Email: tharz@walkerind.com; misty.croney@lpconsulting.ca;ha	Sampled By: Sherry Badz	Barcode: 1038768-01-01		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY						ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects				
Regulation 153 (2014)			Other Regulations			Special Instructions	Field Filtered (please circle): Metals / Hg / Cr VI	PFAS in Biosolids by LC/MS/MS											Regular (Standard) TAT: <i>(will be applied if Rush TAT is not specified)</i>	
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw												Standard TAT = 5-7 Working days for most tests. <i>Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 6 days - contact your Project Manager for details.</i>				
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw												Job Specific Rush TAT (if applies to entire submission)				
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agr/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____												Date Required: _____ Time Required: _____				
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table _____												Rush Confirmation Number: _____ (call lab for #)				
Include Criteria on Certificate of Analysis (Y/N)?																				
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix													# of Bottles	Comments		
1	Leamington Biosolids	March 27/25	10 A	BS													1			
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

* RELINQUISHED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)		Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only				
<i>Sherry Badz</i>		25/3/27	11:00 A	<i>Tom Harz</i>		25/3/27	09:00		Time Sensitive	Temperature (°C) on Raceol	Custody Seal	Yes	No
										57.5°C	Intact		

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COG-TERMS-AND-CONDITIONS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client



Your P.O. #: NVLP 10573
 Your Project #: LCMSMS PFAS
 Site#: LEAMINGTON
 Site Location: PFAS BIOSOILDS
 Your C.O.C. #: 1060095-01-01

Attention: Tom Harz

Leamington Pollution Control Centre
 435 Seacliff Drive East
 Leamington, ON
 Canada N8H 3V7

Report Date: 2025/10/08
 Report #: R8628194
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C5B3218

Received: 2025/09/11, 10:51

Sample Matrix: Solid
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Moisture	1	N/A	2025/09/15	CAM SOP-00445	Carter 2nd ed 70.2 m
PFAS in Biosolids by LCMSMS (1)	1	2025/09/29	2025/09/29	CAM SOP-00985	EPA 1633 m
Total Solids	1	N/A	2025/10/02	CAM SOP-00428	SM 24 2540 G m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Per- and polyfluoroalkyl substances (PFAS) identified as surrogates on the certificate of analysis represent the extracted internal standard.



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Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Jolanta Goralczyk, Project Manager
Email: Jolanta.Goralczyk@bureauveritas.com
Phone# (905)817-5751

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C5B3218
Report Date: 2025/10/08

Leamington Pollution Control Centre
Client Project #: LCMSMS PFAS
Site Location: PFAS BIOSOILDS
Your P.O. #: NVLP 10573
Sampler Initials: SB

RESULTS OF ANALYSES OF SOLID

Bureau Veritas ID		AVAW66			
Sampling Date		2025/09/09 14:30			
COC Number		1060095-01-01			
	UNITS	LEAMINGTON LCMSMS PFAS	RDL	MDL	QC Batch
Inorganics					
Moisture	%	30	1.0	0.50	A010509
Total Solids	%	70	1	1	A023397
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					



PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		AVAW66				AVAW66			
Sampling Date		2025/09/09 14:30				2025/09/09 14:30			
COC Number		1060095-01-01				1060095-01-01			
	UNITS	LEAMINGTON LCMSMS PFAS	RDL	MDL	QC Batch	LEAMINGTON LCMSMS PFAS Lab-Dup	RDL	MDL	QC Batch

Perfluorinated Compounds									
Perfluorobutanoic acid (PFBA)	ug/kg	<2.0	2.0	0.017	A020706				
Perfluoropentanoic acid (PFPeA)	ug/kg	<2.0	2.0	0.034	A020706				
Perfluorohexanoic acid (PFHxA)	ug/kg	<2.0	2.0	0.032	A020706				
Perfluoroheptanoic acid (PFHpA)	ug/kg	<2.0	2.0	0.030	A020706				
Perfluorooctanoic acid (PFOA)	ug/kg	<2.0	2.0	0.038	A020706				
Perfluorononanoic acid (PFNA)	ug/kg	<2.0	2.0	0.032	A020706				
Perfluorodecanoic acid (PFDA)	ug/kg	<2.0	2.0	0.034	A020706				
Perfluoroundecanoic acid (PFUnA)	ug/kg	<2.0	2.0	0.026	A020706				
Perfluorododecanoic acid (PFDoA)	ug/kg	<2.0	2.0	0.014	A020706				
Perfluorotridecanoic acid (PFTrDA)	ug/kg	<2.0	2.0	0.017	A020706				
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	<2.0	2.0	0.024	A020706				
Perfluorohexadecanoic acid (PFHxDA)	ug/kg	<2.0	2.0	0.0094	A020706				
Perfluorooctadecanoic acid (PFODA)	ug/kg	<2.0	2.0	0.040	A020706				
Perfluoropropanesulfonic acid PFPrS	ug/kg	<2.0	2.0	N/A	A020706				
Perfluorobutanesulfonic acid (PFBS)	ug/kg	<2.0	2.0	0.060	A020706				
Perfluoropentanesulfonic acid PFPeS	ug/kg	<2.0	2.0	0.048	A020706				
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	<2.0	2.0	0.036	A020706				
Perfluoroheptanesulfonic acid PFHpS	ug/kg	<2.0	2.0	0.026	A020706				
Perfluorooctanesulfonic acid (PFOS)	ug/kg	<2.0	2.0	0.048	A020706				
Perfluorononanesulfonic acid (PFNS)	ug/kg	<2.0	2.0	0.042	A020706				
Perfluorodecanesulfonic acid (PFDS)	ug/kg	<2.0	2.0	0.040	A020706				
Perfluorododecanesulfonic acid	ug/kg	<2.0	2.0	0.044	A020706				
2H-Perfluorooctenoic Acid	ug/kg	<2.0	2.0	0.058	A020706				
2H-Perfluoro-decenoic Acid	ug/kg	<2.0	2.0	0.050	A022374	<2.0	2.0	0.050	A022374
4:2 Fluorotelomer sulfonic acid	ug/kg	<2.0	2.0	0.062	A020706				
6:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	4.0	0.10	A020706				

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable



PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		AVAW66				AVAW66			
Sampling Date		2025/09/09 14:30				2025/09/09 14:30			
COC Number		1060095-01-01				1060095-01-01			
	UNITS	LEAMINGTON LCMSMS PFAS	RDL	MDL	QC Batch	LEAMINGTON LCMSMS PFAS Lab-Dup	RDL	MDL	QC Batch
8:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	4.0	0.16	A020706				
10:2 Fluorotelomer sulfonic acid	ug/kg	<4.0	4.0	0.11	A020706				
Perfluorooctane Sulfonamide (PFOSA)	ug/kg	<4.0	4.0	0.014	A020706				
MeFOSA	ug/kg	<4.0	4.0	0.12	A020706				
EtFOSA	ug/kg	<4.0	4.0	0.048	A020706				
MeFOSAA	ug/kg	<4.0	4.0	0.096	A020706				
EtFOSAA	ug/kg	<4.0	4.0	0.090	A020706				
MeFOSE	ug/kg	5.7	4.0	0.088	A022374	5.3	4.0	0.088	A022374
EtFOSE	ug/kg	<4.0	4.0	0.078	A022374	<4.0	4.0	0.078	A022374
Hexafluoropropyleneoxide dimer acid	ug/kg	<4.0	4.0	0.066	A020706				
4,8-Dioxa-3H-perfluorononanoic acid	ug/kg	<2.0	2.0	0.014	A020706				
Perfluoro-3-methoxypropanoic acid	ug/kg	<2.0	2.0	0.015	A020706				
Perfluoro-4-methoxybutanoic acid	ug/kg	<2.0	2.0	0.013	A020706				
Nonafluoro-3,6-dioxaheptanoic acid	ug/kg	<4.0	4.0	0.18	A020706				
9Cl-PF3ONS (F-53B Major)	ug/kg	<2.0	2.0	0.024	A020706				
11Cl-PF3OUdS (F-53B Minor)	ug/kg	<2.0	2.0	0.026	A020706				
Perfluoro2ethoxyethanesulfonic acid	ug/kg	<2.0	2.0	0.024	A020706				
PFECHS	ug/kg	<2.0	2.0	N/A	A020706				
3-Perfluoropropylpropanoic acid	ug/kg	<10	10	0.17	A020706				
2H2H3H3H-Perfluorooctanoic acid	ug/kg	<4.0	4.0	0.18	A020706				
3-Perfluoroheptylpropanoic acid	ug/kg	<4.0	4.0	0.090	A020706				
Surrogate Recovery (%)									
13C2-2H-Perfluoro-decenoic Acid	%	124			A022374	120			A022374
13C2-2H-Perfluorooctenoic Acid	%	124			A020706				
13C2-4:2-Fluorotelomersulfonic Acid	%	250			A020706				
13C2-6:2-Fluorotelomersulfonic Acid	%	122			A020706				
13C2-8:2-Fluorotelomersulfonic Acid	%	125			A020706				
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									



BUREAU
VERITAS

Bureau Veritas Job #: C5B3218
Report Date: 2025/10/08

Leamington Pollution Control Centre
Client Project #: LCMSMS PFAS
Site Location: PFAS BIOSOILDS
Your P.O. #: NVLP 10573
Sampler Initials: SB

PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		AVAW66				AVAW66			
Sampling Date		2025/09/09 14:30				2025/09/09 14:30			
COC Number		1060095-01-01				1060095-01-01			
	UNITS	LEAMINGTON LCMSMS PFAS	RDL	MDL	QC Batch	LEAMINGTON LCMSMS PFAS Lab-Dup	RDL	MDL	QC Batch
13C2D4-10:2Fluorotelomersulfonic Ac	%	94			A020706				
13C2-Perfluorodecanoic acid	%	99			A020706				
13C2-Perfluorododecanoic acid	%	89			A020706				
13C2-Perfluorohexadecanoic acid	%	95			A020706				
13C2-Perfluorohexanoic acid	%	107			A020706				
13C2-Perfluorotetradecanoic acid	%	89			A020706				
13C3-HFPO-DA	%	106			A020706				
13C3-Perfluorobutanesulfonic acid	%	108			A020706				
13C3-Perfluorobutanoic Acid	%	100			A020706				
13C3-Perfluorohexanesulfonic Acid	%	110			A020706				
13C4-Perfluorobutanoic acid	%	64			A020706				
13C4-Perfluoroheptanoic acid	%	109			A020706				
13C4-Perfluorooctanesulfonic acid	%	96			A020706				
13C4-Perfluorooctanoic acid	%	105			A020706				
13C5-Perfluorohexanoic Acid	%	107			A020706				
13C5-Perfluorononanoic acid	%	103			A020706				
13C5-Perfluoropentanoic acid	%	95			A020706				
13C6-Perfluorodecanoic Acid	%	112			A020706				
13C7-Perfluoroundecanoic Acid	%	89			A020706				
13C8-Perfluorooctane Sulfonamide	%	110			A020706				
13C8-Perfluorooctanesulfonic Acid	%	114			A020706				
13C8-Perfluorooctanoic Acid	%	110			A020706				
13C9-Perfluorononanoic Acid	%	111			A020706				
18O2-Perfluorohexanesulfonic acid	%	106			A020706				
D3-MeFOSA	%	84			A020706				
D3-MeFOSAA	%	101			A020706				
D5-EtFOSA	%	69			A020706				
D5-EtFOSAA	%	122			A020706				
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PERFLUOROALKYL SUBSTANCES (SOLID)

Bureau Veritas ID		AVAW66				AVAW66			
Sampling Date		2025/09/09 14:30				2025/09/09 14:30			
COC Number		1060095-01-01				1060095-01-01			
	UNITS	LEAMINGTON LCMSMS PFAS	RDL	MDL	QC Batch	LEAMINGTON LCMSMS PFAS Lab-Dup	RDL	MDL	QC Batch
D7-MeFOSE	%	21 (1)			A022374	11 (1)			A022374
D9-EtFOSE	%	12 (1)			A022374	11 (1)			A022374

RDL = Reportable Detection Limit

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Lab-Dup = Laboratory Initiated Duplicate

(1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.



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Leamington Pollution Control Centre
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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	15.7°C
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Sample(s) received at a temperature above 10 C. Analysis performed with client's consent.

Sample AVAW66 [LEAMINGTON LCMSMS PFAS] : Per- and polyfluoroalkyl substances (PFAS): Detection limits were adjusted for high moisture content.
Sample AVAW66, PFAS in Biosolids by LCMSMS: Test repeated.

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C5B3218
Report Date: 2025/10/08

Leamington Pollution Control Centre
Client Project #: LCMSMS PFAS
Site Location: PFAS BIOSOILDS
Your P.O. #: NVLP 10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
	A010509	NTP	RPD	Moisture	2025/09/15	8.3		%	20
	A020706	YZO	Matrix Spike	13C2-2H-Perfluorooctenoic Acid	2025/09/29		115	%	20 - 150
				13C2-4:2-Fluorotelomersulfonic Acid	2025/09/29		79	%	40 - 300
				13C2-6:2-Fluorotelomersulfonic Acid	2025/09/29		79	%	40 - 300
				13C2-8:2-Fluorotelomersulfonic Acid	2025/09/29		108	%	40 - 300
				13C2D4-10:2Fluorotelomersulfonic Ac	2025/09/29		63	%	20 - 150
				13C2-Perfluorodecanoic acid	2025/09/29		105	%	50 - 200
				13C2-Perfluorododecanoic acid	2025/09/29		72	%	40 - 130
				13C2-Perfluorohexadecanoic acid	2025/09/29		27	%	20 - 150
				13C2-Perfluorohexanoic acid	2025/09/29		99	%	50 - 200
				13C2-Perfluorotetradecanoic acid	2025/09/29		47	%	10 - 160
				13C3-HFPO-DA	2025/09/29		112	%	40 - 130
				13C3-Perfluorobutanesulfonic acid	2025/09/29		106	%	40 - 150
				13C3-Perfluorobutanoic Acid	2025/09/29		99	%	50 - 200
				13C3-Perfluorohexanesulfonic Acid	2025/09/29		106	%	40 - 140
				13C4-Perfluorobutanoic acid	2025/09/29		99	%	5 - 130
				13C4-Perfluoroheptanoic acid	2025/09/29		109	%	40 - 130
				13C4-Perfluorooctanesulfonic acid	2025/09/29		93	%	50 - 200
				13C4-Perfluorooctanoic acid	2025/09/29		100	%	50 - 200
				13C5-Perfluorohexanoic Acid	2025/09/29		108	%	40 - 130
				13C5-Perfluorononanoic acid	2025/09/29		98	%	50 - 200
				13C5-Perfluoropentanoic acid	2025/09/29		109	%	35 - 130
				13C6-Perfluorodecanoic Acid	2025/09/29		108	%	40 - 130
				13C7-Perfluoroundecanoic Acid	2025/09/29		70	%	40 - 130
				13C8-Perfluorooctane Sulfonamide	2025/09/29		126	%	20 - 140
				13C8-Perfluorooctanesulfonic Acid	2025/09/29		102	%	40 - 130
				13C8-Perfluorooctanoic Acid	2025/09/29		110	%	40 - 130
				13C9-Perfluorononanoic Acid	2025/09/29		113	%	40 - 145
				18O2-Perfluorohexanesulfonic acid	2025/09/29		101	%	50 - 200
				D3-MeFOSA	2025/09/29		105	%	20 - 130
				D3-MeFOSAA	2025/09/29		100	%	30 - 150
				D5-EtFOSA	2025/09/29		94	%	20 - 130
				D5-EtFOSAA	2025/09/29		91	%	20 - 140
				Perfluorobutanoic acid (PFBA)	2025/09/29		87	%	70 - 140
				Perfluoropentanoic acid (PFPeA)	2025/09/29		82	%	60 - 150
				Perfluorohexanoic acid (PFHxA)	2025/09/29		78	%	65 - 140
				Perfluoroheptanoic acid (PFHpA)	2025/09/29		76	%	65 - 145
				Perfluorooctanoic acid (PFOA)	2025/09/29		82	%	70 - 150
				Perfluorononanoic acid (PFNA)	2025/09/29		82	%	70 - 155
				Perfluorodecanoic acid (PFDA)	2025/09/29		86	%	70 - 155
				Perfluoroundecanoic acid (PFUnA)	2025/09/29		87	%	70 - 155
				Perfluorododecanoic acid (PFDoA)	2025/09/29		82	%	70 - 150
				Perfluorotridecanoic acid (PFTrDA)	2025/09/29		117	%	65 - 150
				Perfluorotetradecanoic acid(PFTeDA)	2025/09/29		85	%	65 - 150
				Perfluorohexadecanoic acid (PFHxDA)	2025/09/29		83	%	40 - 150
				Perfluorooctadecanoic acid (PFODA)	2025/09/29		75	%	40 - 150
				Perfluoropropanesulfonic acid PFPrS	2025/09/29		86	%	40 - 150
				Perfluorobutanesulfonic acid (PFBS)	2025/09/29		86	%	65 - 145
				Perfluoropentanesulfonic acid PFPeS	2025/09/29		84	%	55 - 160
				Perfluorohexanesulfonic acid(PFHxS)	2025/09/29		80	%	60 - 150



BUREAU
VERITAS

Bureau Veritas Job #: C5B3218
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Leamington Pollution Control Centre
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Your P.O. #: NVLP 10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluoroheptanesulfonic acid PFHpS	2025/09/29		97	%	65 - 155
			Perfluorooctanesulfonic acid (PFOS)	2025/09/29		90	%	65 - 160
			Perfluorononanesulfonic acid (PFNS)	2025/09/29		63	%	55 - 140
			Perfluorodecanesulfonic acid (PFDS)	2025/09/29		46	%	40 - 155
			Perfluorododecanesulfonic acid	2025/09/29		49	%	25 - 160
			2H-Perfluorooctenoic Acid	2025/09/29		84	%	40 - 150
			4:2 Fluorotelomer sulfonic acid	2025/09/29		89	%	60 - 150
			6:2 Fluorotelomer sulfonic acid	2025/09/29		83	%	55 - 200
			8:2 Fluorotelomer sulfonic acid	2025/09/29		86	%	70 - 150
			10:2 Fluorotelomer sulfonic acid	2025/09/29		76	%	40 - 150
			Perfluorooctane Sulfonamide (PFOSA)	2025/09/29		86	%	70 - 140
			MeFOSA	2025/09/29		89	%	70 - 155
			EtFOSA	2025/09/29		87	%	70 - 140
			MeFOSAA	2025/09/29		84	%	65 - 155
			EtFOSAA	2025/09/29		85	%	65 - 165
			Hexafluoropropyleneoxide dimer acid	2025/09/29		80	%	70 - 140
			4,8-Dioxa-3H-perfluorononanoic acid	2025/09/29		91	%	70 - 160
			Perfluoro-3-methoxypropanoic acid	2025/09/29		85	%	30 - 140
			Perfluoro-4-methoxybutanoic acid	2025/09/29		84	%	60 - 150
			Nonafluoro-3,6-dioxaheptanoic acid	2025/09/29		84	%	60 - 155
			9Cl-PF3ONS (F-53B Major)	2025/09/29		72	%	70 - 150
			11Cl-PF3OUdS (F-53B Minor)	2025/09/29		74	%	45 - 160
			Perfluoro2ethoxyethanesulfonic acid	2025/09/29		89	%	70 - 140
			PFECHS	2025/09/29		87	%	40 - 150
			3-Perfluoropropylpropanoic acid	2025/09/29		79	%	45 - 130
			2H2H3H3H-Perfluorooctanoic acid	2025/09/29		87	%	60 - 130
			3-Perfluoroheptylpropanoic acid	2025/09/29		87	%	60 - 150
A020706	YZO	Spiked Blank	13C2-2H-Perfluorooctenoic Acid	2025/09/29		102	%	20 - 150
			13C2-4:2-Fluorotelomersulfonic Acid	2025/09/29		92	%	40 - 300
			13C2-6:2-Fluorotelomersulfonic Acid	2025/09/29		93	%	40 - 300
			13C2-8:2-Fluorotelomersulfonic Acid	2025/09/29		91	%	40 - 300
			13C2D4-10:2Fluorotelomersulfonic Ac	2025/09/29		80	%	20 - 150
			13C2-Perfluorodecanoic acid	2025/09/29		98	%	50 - 200
			13C2-Perfluorododecanoic acid	2025/09/29		86	%	40 - 130
			13C2-Perfluorohexadecanoic acid	2025/09/29		87	%	20 - 150
			13C2-Perfluorohexanoic acid	2025/09/29		97	%	50 - 200
			13C2-Perfluorotetradecanoic acid	2025/09/29		82	%	10 - 160
			13C3-HFPO-DA	2025/09/29		104	%	40 - 130
			13C3-Perfluorobutanesulfonic acid	2025/09/29		103	%	40 - 150
			13C3-Perfluorobutanoic Acid	2025/09/29		98	%	50 - 200
			13C3-Perfluorohexanesulfonic Acid	2025/09/29		101	%	40 - 140
			13C4-Perfluorobutanoic acid	2025/09/29		103	%	5 - 130
			13C4-Perfluoroheptanoic acid	2025/09/29		102	%	40 - 130
			13C4-Perfluorooctanesulfonic acid	2025/09/29		97	%	50 - 200
			13C4-Perfluorooctanoic acid	2025/09/29		98	%	50 - 200
			13C5-Perfluorohexanoic Acid	2025/09/29		102	%	40 - 130
			13C5-Perfluorononanoic acid	2025/09/29		98	%	50 - 200
			13C5-Perfluoropentanoic acid	2025/09/29		103	%	35 - 130
			13C6-Perfluorodecanoic Acid	2025/09/29		96	%	40 - 130
			13C7-Perfluoroundecanoic Acid	2025/09/29		88	%	40 - 130



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Bureau Veritas Job #: C5B3218
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Leamington Pollution Control Centre
Client Project #: LCMSMS PFAS
Site Location: PFAS BIOSOILDS
Your P.O. #: NVLP 10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			13C8-Perfluorooctane Sulfonamide	2025/09/29		92	%	20 - 140
			13C8-Perfluorooctanesulfonic Acid	2025/09/29		92	%	40 - 130
			13C8-Perfluorooctanoic Acid	2025/09/29		99	%	40 - 130
			13C9-Perfluorononanoic Acid	2025/09/29		101	%	40 - 145
			18O2-Perfluorohexanesulfonic acid	2025/09/29		97	%	50 - 200
			D3-MeFOSA	2025/09/29		65	%	20 - 130
			D3-MeFOSAA	2025/09/29		94	%	30 - 150
			D5-EtFOSA	2025/09/29		61	%	20 - 130
			D5-EtFOSAA	2025/09/29		85	%	20 - 140
			Perfluorobutanoic acid (PFBA)	2025/09/29		89	%	70 - 140
			Perfluoropentanoic acid (PFPeA)	2025/09/29		84	%	60 - 150
			Perfluorohexanoic acid (PFHxA)	2025/09/29		80	%	65 - 140
			Perfluoroheptanoic acid (PFHpA)	2025/09/29		79	%	65 - 145
			Perfluorooctanoic acid (PFOA)	2025/09/29		88	%	70 - 150
			Perfluorononanoic acid (PFNA)	2025/09/29		84	%	70 - 155
			Perfluorodecanoic acid (PFDA)	2025/09/29		87	%	70 - 155
			Perfluoroundecanoic acid (PFUnA)	2025/09/29		91	%	70 - 155
			Perfluorododecanoic acid (PFDoA)	2025/09/29		84	%	70 - 150
			Perfluorotridecanoic acid (PFTTrDA)	2025/09/29		75	%	65 - 150
			Perfluorotetradecanoic acid(PFTTeDA)	2025/09/29		88	%	65 - 150
			Perfluorohexadecanoic acid (PFHxDA)	2025/09/29		83	%	40 - 150
			Perfluorooctadecanoic acid (PFODA)	2025/09/29		84	%	40 - 150
			Perfluoropropanesulfonic acid PFPrS	2025/09/29		86	%	40 - 150
			Perfluorobutanesulfonic acid (PFBS)	2025/09/29		88	%	65 - 145
			Perfluoropentanesulfonic acid PFPeS	2025/09/29		86	%	55 - 160
			Perfluorohexanesulfonic acid(PFHxS)	2025/09/29		82	%	60 - 150
			Perfluoroheptanesulfonic acid PFHpS	2025/09/29		93	%	65 - 155
			Perfluorooctanesulfonic acid (PFOS)	2025/09/29		90	%	65 - 160
			Perfluorononanesulfonic acid (PFNS)	2025/09/29		81	%	55 - 140
			Perfluorodecanesulfonic acid (PFDS)	2025/09/29		72	%	40 - 155
			Perfluorododecanesulfonic acid	2025/09/29		82	%	25 - 160
			2H-Perfluorooctenoic Acid	2025/09/29		86	%	40 - 150
			4:2 Fluorotelomer sulfonic acid	2025/09/29		90	%	60 - 150
			6:2 Fluorotelomer sulfonic acid	2025/09/29		85	%	55 - 200
			8:2 Fluorotelomer sulfonic acid	2025/09/29		86	%	70 - 150
			10:2 Fluorotelomer sulfonic acid	2025/09/29		78	%	40 - 150
			Perfluorooctane Sulfonamide (PFOSA)	2025/09/29		90	%	70 - 140
			MeFOSA	2025/09/29		93	%	70 - 155
			EtFOSA	2025/09/29		86	%	70 - 140
			MeFOSAA	2025/09/29		86	%	65 - 155
			EtFOSAA	2025/09/29		87	%	65 - 165
			Hexafluoropropyleneoxide dimer acid	2025/09/29		86	%	70 - 140
			4,8-Dioxa-3H-perfluorononanoic acid	2025/09/29		96	%	70 - 160
			Perfluoro-3-methoxypropanoic acid	2025/09/29		90	%	30 - 140
			Perfluoro-4-methoxybutanoic acid	2025/09/29		88	%	60 - 150
			Nonafluoro-3,6-dioxaheptanoic acid	2025/09/29		82	%	60 - 155
			9Cl-PF3ONS (F-53B Major)	2025/09/29		77	%	70 - 150
			11Cl-PF3OUdS (F-53B Minor)	2025/09/29		68	%	45 - 160
			Perfluoro2ethoxyethanesulfonic acid	2025/09/29		91	%	70 - 140
			PFECHS	2025/09/29		84	%	40 - 150



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Leamington Pollution Control Centre
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Your P.O. #: NVLP 10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A020706	YZO	Method Blank	3-Perfluoropropylpropanoic acid	2025/09/29		87	%	45 - 130
			2H2H3H3H-Perfluorooctanoic acid	2025/09/29		85	%	60 - 130
			3-Perfluoroheptylpropanoic acid	2025/09/29		75	%	60 - 150
			13C2-2H-Perfluorooctenoic Acid	2025/09/29		106	%	20 - 150
			13C2-4:2-Fluorotelomersulfonic Acid	2025/09/29		112	%	40 - 300
			13C2-6:2-Fluorotelomersulfonic Acid	2025/09/29		129	%	40 - 300
			13C2-8:2-Fluorotelomersulfonic Acid	2025/09/29		120	%	40 - 300
			13C2D4-10:2Fluorotelomersulfonic Ac	2025/09/29		94	%	20 - 150
			13C2-Perfluorodecanoic acid	2025/09/29		103	%	50 - 200
			13C2-Perfluorododecanoic acid	2025/09/29		92	%	40 - 130
			13C2-Perfluorohexadecanoic acid	2025/09/29		86	%	20 - 150
			13C2-Perfluorohexanoic acid	2025/09/29		103	%	50 - 200
			13C2-Perfluorotetradecanoic acid	2025/09/29		87	%	10 - 160
			13C3-HFPO-DA	2025/09/29		102	%	40 - 130
			13C3-Perfluorobutanesulfonic acid	2025/09/29		115	%	40 - 150
			13C3-Perfluorobutanoic Acid	2025/09/29		102	%	50 - 200
			13C3-Perfluorohexanesulfonic Acid	2025/09/29		107	%	40 - 140
			13C4-Perfluorobutanoic acid	2025/09/29		109	%	5 - 130
			13C4-Perfluoroheptanoic acid	2025/09/29		107	%	40 - 130
			13C4-Perfluorooctanesulfonic acid	2025/09/29		102	%	50 - 200
			13C4-Perfluorooctanoic acid	2025/09/29		102	%	50 - 200
			13C5-Perfluorohexanoic Acid	2025/09/29		112	%	40 - 130
			13C5-Perfluorononanoic acid	2025/09/29		103	%	50 - 200
			13C5-Perfluoropentanoic acid	2025/09/29		109	%	35 - 130
			13C6-Perfluorodecanoic Acid	2025/09/29		101	%	40 - 130
			13C7-Perfluoroundecanoic Acid	2025/09/29		95	%	40 - 130
			13C8-Perfluorooctane Sulfonamide	2025/09/29		106	%	20 - 140
			13C8-Perfluorooctanesulfonic Acid	2025/09/29		100	%	40 - 130
			13C8-Perfluorooctanoic Acid	2025/09/29		107	%	40 - 130
			13C9-Perfluorononanoic Acid	2025/09/29		104	%	40 - 145
			18O2-Perfluorohexanesulfonic acid	2025/09/29		100	%	50 - 200
			D3-MeFOSA	2025/09/29		71	%	20 - 130
			D3-MeFOSAA	2025/09/29		102	%	30 - 150
D5-EtFOSA	2025/09/29		67	%	20 - 130			
D5-EtFOSAA	2025/09/29		108	%	20 - 140			
Perfluorobutanoic acid (PFBA)	2025/09/29		<1.0		ug/kg			
Perfluoropentanoic acid (PFPeA)	2025/09/29		<1.0		ug/kg			
Perfluorohexanoic acid (PFHxA)	2025/09/29		<1.0		ug/kg			
Perfluoroheptanoic acid (PFHpA)	2025/09/29		<1.0		ug/kg			
Perfluorooctanoic acid (PFOA)	2025/09/29		<1.0		ug/kg			
Perfluorononanoic acid (PFNA)	2025/09/29		<1.0		ug/kg			
Perfluorodecanoic acid (PFDA)	2025/09/29		<1.0		ug/kg			
Perfluoroundecanoic acid (PFUnA)	2025/09/29		<1.0		ug/kg			
Perfluorododecanoic acid (PFDoA)	2025/09/29		<1.0		ug/kg			
Perfluorotridecanoic acid (PFTTrDA)	2025/09/29		<1.0		ug/kg			
Perfluorotetradecanoic acid(PFTTeDA)	2025/09/29		<1.0		ug/kg			
Perfluorohexadecanoic acid (PFHxDA)	2025/09/29		<1.0		ug/kg			
Perfluorooctadecanoic acid (PFODA)	2025/09/29		<1.0		ug/kg			
Perfluoropropanesulfonic acid PFPrS	2025/09/29		<1.0		ug/kg			
Perfluorobutanesulfonic acid (PFBS)	2025/09/29		<1.0		ug/kg			



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Leamington Pollution Control Centre
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Your P.O. #: NVLP 10573
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluoropentanesulfonic acid PFPeS	2025/09/29	<1.0		ug/kg	
			Perfluorohexanesulfonic acid(PFHxS)	2025/09/29	<1.0		ug/kg	
			Perfluoroheptanesulfonic acid PFHpS	2025/09/29	<1.0		ug/kg	
			Perfluorooctanesulfonic acid (PFOS)	2025/09/29	<1.0		ug/kg	
			Perfluorononanesulfonic acid (PFNS)	2025/09/29	<1.0		ug/kg	
			Perfluorodecanesulfonic acid (PFDS)	2025/09/29	<1.0		ug/kg	
			Perfluorododecanesulfonic acid	2025/09/29	<1.0		ug/kg	
			2H-Perfluorooctenoic Acid	2025/09/29	<1.0		ug/kg	
			4:2 Fluorotelomer sulfonic acid	2025/09/29	<1.0		ug/kg	
			6:2 Fluorotelomer sulfonic acid	2025/09/29	<2.0		ug/kg	
			8:2 Fluorotelomer sulfonic acid	2025/09/29	<2.0		ug/kg	
			10:2 Fluorotelomer sulfonic acid	2025/09/29	<2.0		ug/kg	
			Perfluorooctane Sulfonamide (PFOSA)	2025/09/29	<2.0		ug/kg	
			MeFOSA	2025/09/29	<2.0		ug/kg	
			EtFOSA	2025/09/29	<2.0		ug/kg	
			MeFOSAA	2025/09/29	<2.0		ug/kg	
			EtFOSAA	2025/09/29	<2.0		ug/kg	
			Hexafluoropropyleneoxide dimer acid	2025/09/29	<2.0		ug/kg	
			4,8-Dioxa-3H-perfluorononanoic acid	2025/09/29	<1.0		ug/kg	
			Perfluoro-3-methoxypropanoic acid	2025/09/29	<1.0		ug/kg	
			Perfluoro-4-methoxybutanoic acid	2025/09/29	<1.0		ug/kg	
			Nonafluoro-3,6-dioxaheptanoic acid	2025/09/29	<2.0		ug/kg	
			9Cl-PF3ONS (F-53B Major)	2025/09/29	<1.0		ug/kg	
			11Cl-PF3OUdS (F-53B Minor)	2025/09/29	<1.0		ug/kg	
			Perfluoro2ethoxyethanesulfonic acid	2025/09/29	<1.0		ug/kg	
			PFECHS	2025/09/29	<1.0		ug/kg	
			3-Perfluoropropylpropanoic acid	2025/09/29	<5.0		ug/kg	
			2H2H3H3H-Perfluorooctanoic acid	2025/09/29	<2.0		ug/kg	
			3-Perfluoroheptylpropanoic acid	2025/09/29	<2.0		ug/kg	
A020706	YZO	RPD	Perfluorobutanoic acid (PFBA)	2025/09/30	NC		%	30
			Perfluoropentanoic acid (PFPeA)	2025/09/30	NC		%	30
			Perfluorohexanoic acid (PFHxA)	2025/09/30	NC		%	30
			Perfluoroheptanoic acid (PFHpA)	2025/09/30	NC		%	30
			Perfluorooctanoic acid (PFOA)	2025/09/30	NC		%	30
			Perfluorononanoic acid (PFNA)	2025/09/30	NC		%	30
			Perfluorodecanoic acid (PFDA)	2025/09/30	NC		%	30
			Perfluoroundecanoic acid (PFUnA)	2025/09/30	NC		%	30
			Perfluorododecanoic acid (PFDoA)	2025/09/30	NC		%	30
			Perfluorotridecanoic acid (PFTrDA)	2025/09/30	NC		%	30
			Perfluorotetradecanoic acid(PFTeDA)	2025/09/30	NC		%	30
			Perfluorohexadecanoic acid (PFHxDA)	2025/09/30	NC		%	30
			Perfluorooctadecanoic acid (PFODA)	2025/09/30	NC		%	30
			Perfluoropropanesulfonic acid PFPrS	2025/09/30	NC		%	30
			Perfluorobutanesulfonic acid (PFBS)	2025/09/30	NC		%	30
			Perfluoropentanesulfonic acid PFPeS	2025/09/30	NC		%	30
			Perfluorohexanesulfonic acid(PFHxS)	2025/09/30	NC		%	30
			Perfluoroheptanesulfonic acid PFHpS	2025/09/30	NC		%	30
			Perfluorooctanesulfonic acid (PFOS)	2025/09/30	NC		%	30
			Perfluorononanesulfonic acid (PFNS)	2025/09/30	NC		%	30
			Perfluorodecanesulfonic acid (PFDS)	2025/09/30	NC		%	30



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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Perfluorododecanesulfonic acid	2025/09/30	NC		%	30
			2H-Perfluorooctenoic Acid	2025/09/30	NC		%	30
			4:2 Fluorotelomer sulfonic acid	2025/09/30	NC		%	30
			6:2 Fluorotelomer sulfonic acid	2025/09/30	NC		%	30
			8:2 Fluorotelomer sulfonic acid	2025/09/30	NC		%	30
			10:2 Fluorotelomer sulfonic acid	2025/09/30	NC		%	30
			Perfluorooctane Sulfonamide (PFOSA)	2025/09/30	NC		%	30
			MeFOSA	2025/09/30	NC		%	30
			EtFOSA	2025/09/30	NC		%	30
			MeFOSAA	2025/09/30	NC		%	30
			EtFOSAA	2025/09/30	NC		%	30
			Hexafluoropropyleneoxide dimer acid	2025/09/30	NC		%	30
			4,8-Dioxa-3H-perfluorononanoic acid	2025/09/30	NC		%	30
			Perfluoro-3-methoxypropanoic acid	2025/09/30	NC		%	30
			Perfluoro-4-methoxybutanoic acid	2025/09/30	NC		%	30
			Nonafluoro-3,6-dioxaheptanoic acid	2025/09/30	NC		%	30
			9Cl-PF3ONS (F-53B Major)	2025/09/30	NC		%	30
			11Cl-PF3OUdS (F-53B Minor)	2025/09/30	NC		%	30
			Perfluoro2ethoxyethanesulfonic acid	2025/09/30	NC		%	30
			PFECHS	2025/09/30	NC		%	30
			3-Perfluoropropylpropanoic acid	2025/09/30	NC		%	30
			2H2H3H3H-Perfluorooctanoic acid	2025/09/30	12		%	30
			3-Perfluoroheptylpropanoic acid	2025/09/30	NC		%	30
A022374	YZU	Matrix Spike [AVAW66-01]	13C2-2H-Perfluoro-decenoic Acid	2025/10/01		133	%	20 - 150
			D7-MeFOSE	2025/10/01		24 (1)	%	25 - 130
			D9-EtFOSE	2025/10/01		13 (1)	%	20 - 130
			2H-Perfluoro-decenoic Acid	2025/10/01		101	%	40 - 150
			MeFOSE	2025/10/01		104	%	70 - 140
			EtFOSE	2025/10/01		295 (2)	%	70 - 135
A022374	YZU	Spiked Blank	13C2-2H-Perfluoro-decenoic Acid	2025/10/01		100	%	20 - 150
			D7-MeFOSE	2025/10/01		79	%	25 - 130
			D9-EtFOSE	2025/10/01		76	%	20 - 130
			2H-Perfluoro-decenoic Acid	2025/10/01		98	%	40 - 150
			MeFOSE	2025/10/01		95	%	70 - 140
			EtFOSE	2025/10/01		97	%	70 - 135
A022374	YZU	Method Blank	13C2-2H-Perfluoro-decenoic Acid	2025/10/01		88	%	20 - 150
			D7-MeFOSE	2025/10/01		77	%	25 - 130
			D9-EtFOSE	2025/10/01		72	%	20 - 130
			2H-Perfluoro-decenoic Acid	2025/10/01	<1.0		ug/kg	
			MeFOSE	2025/10/01	<2.0		ug/kg	
			EtFOSE	2025/10/01	<2.0		ug/kg	
A022374	YZU	RPD [AVAW66-01]	2H-Perfluoro-decenoic Acid	2025/10/01	NC		%	30
			MeFOSE	2025/10/01	6.5		%	30



QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
				EtFOSE	2025/10/01	NC		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Extracted internal standard analyte recovery exceeds control limits. This may result in increased variability of the associated native analyte result.

(2) Recovery of the matrix spike was above the upper control limit. Laboratory control sample (Spike) resulted in satisfactory recovery of the compound of interest. When considered together, these QC data suggest that matrix interferences may be biasing the data high. For results that were not detected (ND), this potential bias has no impact.



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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Janet Dalisay, Senior Analyst

Louise Harding, Scientific Specialist

Marian Godax, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

C5B3218
2025/09/11 10:51

Bureau Veritas
 6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free: 800-563-6266 Fax: (905) 817-5777 www.bvna.com



NONT-2025-09-2226

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Invoice To: Company: #39476 N-Viro Systems Canada Inc. Attention: Accounts Payable Address: 3865 Thorold Townline Rd. Thorold ON L2V 3Y8 Tel: _____ Fax: _____ Email: apinvoices@walkerind.com		Report To: Company: #36047 Leamington Pollution Control Centre Attention: Tom Harz Address: 435 Seacliff Drive East Leamington ON N8H 3V7 Tel: (902) 220-5930 Fax: _____ Email: tharz@walkerind.com; misty.croney@lpconsulting.ca;ha		PROJECT INFORMATION: Quotation #: C42469 P.O. # _____ Project: LCMSMS PFAS Project Name: PFAS Biosolids Site #: Leamington Sampled By: Sherry Badz		Bottle Order #: 1060095 Project Manager: Jolanta Goralczyk
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MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY					ANALYSIS REQUESTED (PLEASE BE SPECIFIC)										Turnaround Time (TAT) Required: Please provide advance notice for rush projects				
Regulation 153 (2011)			Other Regulations		Special Instructions											Regular (Standard) TAT: (will be applied if Rush TAT is not specified): Standard TAT = 5-7 Working days for most tests. Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.			
<input type="checkbox"/> Table 1	<input type="checkbox"/> Res/Park	<input type="checkbox"/> Medium/Fine	<input type="checkbox"/> CCME	<input type="checkbox"/> Sanitary Sewer Bylaw												Job Specific Rush TAT (if applies to entire submission) Date Required: _____ Time Required: _____ Rush Confirmation Number: _____ (call lab for #)			
<input type="checkbox"/> Table 2	<input type="checkbox"/> Ind/Comm	<input type="checkbox"/> Coarse	<input type="checkbox"/> Reg 558	<input type="checkbox"/> Storm Sewer Bylaw												# of Bottles			
<input type="checkbox"/> Table 3	<input type="checkbox"/> Agri/Other	<input type="checkbox"/> For RSC	<input type="checkbox"/> MISA	Municipality _____												Comments			
<input type="checkbox"/> Table _____			<input type="checkbox"/> PWQO	<input type="checkbox"/> Reg 406 Table _____															
			<input type="checkbox"/> Other _____																
Include Criteria on Certificate of Analysis (Y/N)?																			
Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr/Vi	PFAS in Biosolids by LCMSMS													
	Leamington LCMSMS PFAS	Sept 9/25	2:30 pm	BS		X													
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished By (Print): <i>Sherry Badz</i>	Date: (YY/MM/DD) 25/9/10	Time 11:30	RECEIVED BY: (Signature/Print) <i>Anna... 512 40</i>	Date: (YY/MM/DD) 2025/09/11	Time 10:5	# jars used and not submitted	Laboratory Use Only							
						Time Sensitive		Temperature (°C) on Recl 15/16/16	Custody Seal Present	Yes	No	White: Bureau Veritas Yellow: Client		
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.							** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.				SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS		<i>Warm Separ 4</i>	



Your Project #: KILN DUST
 Site Location: Leamington PCC
 Your C.O.C. #: 988889-02-01

Attention: Sherry Badz

The Corporation of the Municipality of Leamington
 111 Erie St North
 Leamington, ON
 CANADA N8H 2Z9

Report Date: 2025/02/04
 Report #: R8481032
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C507460

Received: 2025/01/23, 09:45

Sample Matrix: Solid
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Silica on Bulk material by NIOSH 7500 (1)	1	2025/02/03	2025/02/04	NOV5SOP-00001	NIOSH 7500

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Novi, Michigan (IH), 22345 Roethel Drive, Novi, MI, 48375



Your Project #: KILN DUST
Site Location: Leamington PCC
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The Corporation of the Municipality of Leamington
111 Erie St North
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CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C507460

Received: 2025/01/23, 09:45

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:
Colby Coutu, Project Manager
Email: Colby.Coutu@bureauveritas.com
Phone# (905)817-5844

=====
This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



INDUSTRIAL HYGIENE (SOLID)

Bureau Veritas ID		ANLG21		
Sampling Date		2025/01/21 16:00		
COC Number		988889-02-01		
	UNITS	KILN DUST	RDL	QC Batch
Minerals				
Quartz	%w/w	1.0	0.25	9869817
Cristobalite	%w/w	ND	0.25	9869817
RDL = Reportable Detection Limit QC Batch = Quality Control Batch ND = Not Detected at a concentration equal or greater than the indicated Detection Limit.				



BUREAU
VERITAS

Bureau Veritas Job #: C507460
Report Date: 2025/02/04

The Corporation of the Municipality of Leamington
Client Project #: KILN DUST
Site Location: Leamington PCC

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.7°C
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Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C507460
Report Date: 2025/02/04

The Corporation of the Municipality of Leamington
Client Project #: KILN DUST
Site Location: Leamington PCC

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9869817	CSI	Spiked Blank	Quartz	2025/02/04		93	%	63 - 127
9869817	CSI	RPD	Quartz	2025/02/04	0.97		%	23
9869817	CSI	Method Blank	Quartz	2025/02/04	ND, RDL=0.25		%w/w	
			Cristobalite	2025/02/04	ND, RDL=0.25		%w/w	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.



BUREAU
VERITAS

Bureau Veritas Job #: C507460
Report Date: 2025/02/04

The Corporation of the Municipality of Leamington
Client Project #: KILN DUST
Site Location: Leamington PCC

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

A handwritten signature in black ink that reads 'Brittany A. Hernden'.

Brittany Hernden, Supervisor-XRD

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Appendix E
Preventive Maintenance Work Orders
& Calibration Certificates



Work Order Number

2

Leamington Pollution Control Centre

Antero Work Order

2024-12-27 8:09:10 AM

Work Order Info

Status	Type	Priority	Interval Days
Active	Scheduled	Low	7
Last Completed	Date Scheduled	Days to Complete	Date Delinquent
	1-6-2025	7	1-13-2025

Equipment/Task

Equipment **PG-EQUIP-Plant Equipment for PM**

Location **PG - Plant Grounds**

Task **PG-WKLY-INSP General Weekly Plant Checks Inspection #2**

The following tasks are to complete inspections noted below as part of Weekly Plant Checks #2 Inspection.

If you are unsure of the tasks or specific safety requirement(s), discuss with your Supervisor and JHSC (for safety related items) first. Follow all Plant SOPs. Lockout equipment where required. Any comments shall be noted on the Work Order. Sign and date once the tasks are completed.

- Refer to the operating manual for the equipment as needed for maintenance, general information, and troubleshooting tips.

Work below is to be checked off, date, initial, cleaned and or changed if needed once completed.

- Monday: Rotate Secondary Waste Pump - # ____
 - Open WSLP-M1 or M2 depending on which pump you are starting and close WSLP-M1 depending on which pump you are stopping.
- Monday: Rotate Non-Potable Pumps & Strainers - # ____

First turn on strainer that was off, then open suction valve, then open discharge valve.

2nd strainer being turned off needs to be cleaned first -

 - Turn strainer to hand, close discharge valve and wait 7mins.
 - Turn strainer to off.
 - Close suction valve.
 - Open then close drain valve on strainer to relief any pressure.
 - Rotate duty non potable pump.
 - Open drain valve for 2 to 3 minutes to remove any settled solids.
- Monday: Rotate Alum Pumps - # ____
 - Verify correct valve setup before rotating
 - Clean backend of Fine Bar Screens & splitter box after applying lockout devices. **This includes removing any debris on rollers or bracketing.** This is done daily.

Mon		Tues		Wed		Thurs		Fri	
-----	--	------	--	-----	--	-------	--	-----	--

- Headwork's Screening blg. air make-up intake filter, check & change if needed (turn off unit first) - ____
- Pump water out of FMRS1 ____ and FMRS2 ____ chambers

Completed Information

Completed Notes (Req)

Attention Required

Date Completed (Req)

Completed By

Labor

Labor Class	Labor Account	Est. Hours	Act. Hours
PO - Plant Operator or as Assigned	Facility Maintenance	3.00	_____

Work Order Number

6

Leamington Pollution Control Centre

Antero Work Order

2024-12-27 8:09:11 AM

Work Order Info

Status	Type	Priority	Interval Days
Active	Scheduled	Low	7
Last Completed	Date Scheduled	Days to Complete	Date Delinquent
	1-6-2025	0	1-6-2025

Equipment/Task

Equipment **PG-EQUIP-Plant Equipment for PM**

Location **PG - Plant Grounds**

Task **PG-WKLY-INSP General Weekly Plant Check Inspection #1**

The following tasks are to complete inspections noted below as part of Weekly Plant Checks #1 Inspection.

If you are unsure of the tasks or specific safety requirement(s), discuss with your Supervisor and JHSC (for safety related items) first. Follow all Plant SOPs. Lockout equipment where required. Any comments shall be noted on the Work Order. Sign and date once the tasks are completed.

- Refer to the operating manual for the equipment as needed for maintenance, general information, and troubleshooting tips.

To complete the weekly checs:

- Test UV air compressor dump valve - _____
- Run Eyewash/Shower for 2 minutes and clean bowl, shower, and eye covers (where supplied):

UV		Shop		Chem		Lab	
----	--	------	--	------	--	-----	--

NOTE: For Lab and Chemical building, get assistance to hold pail under the showers to flush. Run shower long enough to flush out. Connect drain line for flushing eyewash and remove once completed. Clean up any water as necessary.

- Check admin. washrooms, lunchroom and restock supplies -
- Remove Garbage from Admin. electrical room on Wed - ___ Fri - ___
- Remove Recyclables from Admin to bins outside back door once per week - _____
 - Corrugated cardboard goes out to large bin for monthly pickup.
 - Do not** put plastic bags into any bins or to roadside for pickup. They are not recycleable.

Completed Information

Completed Notes (Req)

Attention Required

Date Completed (Req)

Completed By

Labor

Labor Class	Labor Account	Est. Hours	Act. Hours
PO - Plant Operator or as Assigned	Facility Maintenance	2.00	_____
ASP - Assistant Plant Operator or as Assigned	Facility Maintenance	2.00	_____
DPF - Days Plant Floater or as Assigned	Facility Maintenance	2.00	_____

RESULTS
PASSED
CLIENT DETAIL

CUSTOMER Municipality of Leamington
 CONTACT Jason Charles, Supervisor
 Pollution Control Centre
 111 Erie St. N.
 Leamington, ON N8H 2Z9
 T: 519-326-5761 x4202
 E: jcharles@leamington.ca

DEVICE INFORMATION

[MUT] MANUFACTURER ENDRESS & HAUSER
 MODEL Promag 400
 CONVERTER SERIAL NUMBER 7604D419000

PLANT ID Leamington Pollution Control Center
 METER ID USP_FIT1 Flow
 FIT ID n/a
 CLIENT TAG Headworks Upper Flow
 OTHER n/a
 GPS COORDINATES n/a

VERIFICATION DATE April 14th 2025
 CAL. FREQUENCY Annual
 CAL. DUE DATE April 2026

VER. BY - FM Charles Francisco

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

CALIBRATION

DIAMETER (DN)	mm	1200
CALIBRATION FACTOR		1.3378
ZERO POINT		-1.0

TOTALIZER

AS FOUND	n/a	M3
AS LEFT	n/a	M3
DIFFERENCE	n/a	M3

VERIFICATION INFORMATION

OPERATING TIME (d/h/m/s)	d	748
	h	23
	m	6
	s	44
DATE/TIME	date (dd.mm.yy)	14.04.25
	time (hh:mm)	2:00
VERIFICATION ID		10

COMPONENTS TESTED

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

OVERALL VERIFICATION
PASSED
SENSOR

Coil Current Shot Time
 Coil Hold Voltage
 Coil Current

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

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

PASSED

PASSED
 PASSED
 PASSED

SENSOR ELECTRONIC MODULE

Reference Voltage

PASSED

PASSED

COMMENTS

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