

Brunswick County Public Utilities - NC

PO Box 249
Bolivia, NC 28422-0249

LELAND N.C.

Client Project# NORTHWEST WATER PLANT
Samples Received: 3/7/2025

Analytical Report 0325-748

PFAS by Isotope Dilution (non-potable water)

Report Issue Date: 4/11/2025

I certify that to the best of my knowledge all analytical data presented in this report have been checked for completeness, accuracy, errors and legibility in addition to having been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s). This analytical report was prepared in Portable Document Format (.PDF) and contains 31 pages. This report shall not be reproduced except in full without approval of the laboratory. This will provide assurance that parts of the report are not taken out of context.

Amendment(s):

Signature:



Alexandra Mejia, Quality Assurance Associate I



Enthalpy Analytical, LLC – Wilmington
Christina Kurnath, Senior Project Manager
chkurnath@montrose-env.com / www.enthalpy.com
O: 910-876-6895
2714 Exchange Drive, Wilmington, NC 28405

Table of Contents

Case Narrative	
General Reporting Notes	
PFAS Acronym List.....	
Results	
Summary of Results	
Detailed Results	
QC Data	
Method Blank.....	
LCS.....	
Sample Custody.....	
Chain of Custody	

Narrative Summary



Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0325-748-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

1. Custody

Jayson-Shane Santos received the samples at 5.3 °C after being relinquished by Brunswick County Public Utilities - NC.

The samples were received in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, LLC.

Table 1 - Sample Inventory

EU Lab Sample ID	Client Sample ID	Matrix	Received
0325-748-001-1	030725-SO1	aqueous	2025-03-07
0325-748-001-1A	030725-SO1	aqueous	2025-03-07
0325-748-001-1B	030725-SO1	aqueous	2025-03-07
0325-748-002-1	030725-EO1	aqueous	2025-03-07
0325-748-002-1A	030725-EO1	aqueous	2025-03-07

2. Methods and Analytes

A list of analytes of interest and corresponding methods of analysis is shown in Table 3. Abbreviations are defined in the listed Appendices.

Table 3 - Methods and Analytes

EU Method	Analytes	Cleanup Method
EU047	Custom List	ENVI-Carb

3. Analysis

The samples were analyzed using Sciex Triple Quad 7500 (LC/MS/MS "Jetfire") and using Waters Acquity UPLC equipped with Xevo TQ MS (LC/MS/MS "Pippin").

Polar compound PFPrA in the samples, including the method blank (MB) and Ongoing Precision Recovery (OPR) samples, was analyzed by direct inject calibration.

Select sample(s) were analyzed using more than one batch preparation and analytical sequence to meet method acceptance criteria.

4. Calibration

In the initial calibration, the reported analytes exhibited R^2 of = 0.99. The reported analytes in the calibration standards, Initial Calibration Verification (ICV) and continuing calibration (concal) met the accuracy criterion for native analytes.

Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0325-748-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

The Standards that did not were:

- SID BH56 (PFMOBA)
- SID BH57 (PFMOBA)
- SID BH62 (EVE Acid, PFECA-G, PFMOPrA, PFO4DA) The alternate supplier unlabeled standard solution used in the ICV does not contain select analytes of interest.

Analyte PFMOBA that exceeded method control limits in the concals was not detected >LOQ in the samples. The data is reported without adverse impact.

5. QC Notes

Except where noted below, the QC sample analyses passed all method criteria.

QC samples that did not meet method acceptance criteria were:

- MB_19109_PFAS (M2PFTeDA, d3-N-MeFOSA, d5-N-EtFOSA) - See Reporting Notes below.
- OPR_19097_PFAS (PFPrA)
- OPR_19109_PFAS (PFTTrDA)

Analyte(s) that exceeded method recovery criteria in the ongoing precision recovery (OPR) QC samples were not detected >LOQ in the samples. Data is reported without adverse impact.

- OPR_19109_PFAS M2PFTeDA, d3-N-MeFOSA, d5-N-EtFOSA) - See Reporting Notes below.

PFAS by Isotope Dilution (non-potable water) samples were extracted within 28 days, and extracts analyzed within 28 days.

6. Reporting Notes

The results presented in this report are representative of the samples as provided to the laboratory.

Some labeled extraction standards (ES) in the analyses recovered outside method control limits for ES recovery, as denoted by the "Q" qualifier. The target analytes are quantified based on their ratio to their labeled standard analogs. As a result, low or high labeled standard recovery do not cause any change to ratios or contribute any additional error in the measurement of the target analytes. When detected at a signal-to-noise above 10:1 the ES peak area is used to quantify its respective target analyte using accepted isotope dilution principles. The data is reported without adverse impact.

These analyses met the requirements of the TNI Standard. Any deviations from the requirements of the reference method or TNI Standard have been stated above.

Enthalpy Analytical, LLC in Wilmington NC is accredited by the Louisiana Department of Environmental Quality to the 2016 TNI Standard under certificate number 05075.

General Reporting Notes – Data Qualifiers

The following are general reporting notes that are applicable to all Enthalpy Analytical, LLC - Wilmington, NC data reports, unless specifically noted otherwise.

General Data Qualifiers

- Ac - Alternate calculation flag indicates the es recovery was calculated using the opening concal when either of the following situations is encountered in the data processing software: the ES recovery is over 400% or the JS is not detected.
- B – The analyte was found in the method blank, at a concentration that was at least 10% of the amount in the sample.
- Cxx – Two or more congeners co-elute. In EDDs, C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group ('xx') are shown with the number of the lowest IUPAC co-eluter.
- E – The reported concentration exceeds the calibration range (upper point of the calibration curve). For HRMS data, this condition does not imply additional measurement uncertainty. For LC-MS/MS data, these values should be considered as having measurement uncertainty higher than values within the calibration range.
- EDL – Estimated Detection Level: The EDL is unique to isotope dilution methods and reflects the conditions of analysis at the time of analysis, including the equipment used. Where the MDL is a static value, the EDL is a dynamic value.
- EMPC – Estimated Maximum Possible Concentration: EMPC is specific to Dioxin/Furan tests to indicate the determined ion-abundance ratio was outside the allowed theoretical range (usually due to being near the detection limit, although it can very rarely be caused by a co-eluting interference). The EMPC concentration is adjusted to reflect the value at the theoretical ion-abundance ratio.
- I/IR – The ion ratio between the primary and secondary ions was observed to be outside the method criteria. The analyte concentration may be inaccurate due to interference.
- J – The analyte has a concentration below the minimum calibration level (LOQ value) but greater than the LOD. These values should be considered as having measurement uncertainty higher than values within the calibration range
- L - For reports containing PFAS analytes only, this flag indicates that an analyte has a concentration below the Minimum Detection Limit (MDL) . The reported concentration is not recommended for regulatory use as the analyte signal may have a signal-to-noise ratio less than the criteria deemed necessary to be considered a detected analyte.
- LOD – Limit of Detection: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOD. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the minimum detection limit (MDL). The LOD is adjusted for sample weight or volume.

General Reporting Notes – Data Qualifiers

- LOQ – Limit of Quantitation: For reports conforming to the DOD ELAP QSM, this is the QSM-defined LOQ. For reports conforming to TNI requirements (but not DOD ELAP QSM requirements), this value is the reporting limit (RL). The LOQ is adjusted for sample weight or volume.
- <LOD() – Analyte was not found at a concentration high enough to be reported as detected. It is reported as less than the LOD, and the LOD is given in the parentheses.
- <LOQ() – Analyte was not found at a concentration high enough to be reported as above the QSM-defined LOQ or TNI defined Reporting Limit. It is reported as less than the LOQ, and the LOQ is given in the parentheses.
- ND – Indicates a non-detect.
- NR – Indicates a value that is not reportable due to issues observed in sample preparation or analysis.
- PR – The associated congener(s) is(are) poorly resolved.
- QI – Indicates the presence of a quantitative interference.
- RL – Reporting Limit. Lowest reportable value. The level is higher than the MDL.
- SI – Denotes “Single Ion Mode” and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.
- U – The analyte was not detected.
- V / Q – The labeled standard recovery is not within method control limits.
- X – Indicates the result is from re-injection/repeat/second-column analysis.

Lab Identifiers/ Data Attributes

- AR – Indicates use of the archived portion of the sample extract.
- CU – Indicates a sample that required additional clean-up prior to HRMS injection/processing.
- D – Dilution Data. Result was obtained from the analysis of a dilution. The number that follows the “D” indicates the dilution factor.
- DE – Indicates a dilution performed with the addition of ES (Extraction Standard) solution.
- DUP – Designation for a duplicate sample.
- MS – Designation for a matrix spike.
- MSD – Designation for a matrix spike duplicate.



General Reporting Notes – Data Qualifiers

- R – Indicates a re-extraction of the sample.
- RJ – Indicates a reinjection of the sample extract.
- S – Indicates a sample split. The number that follows the “S” indicates the split factor.
- SAT – Indicates an analyte saturated the detector.

PFAS Compound Acronym List			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
Target Analytes								
PFBA	375-22-4	Perfluorobutanoic Acid	X	X	X		X	X
PFPeA	2706-90-3	Perfluoropentanoic Acid	X	X	X		X	X
PFHxA	307-24-4	Perfluorohexanoic Acid	X	X	X	X	X	X
PFHpA	375-85-9	Perfluoroheptanoic Acid	X	X	X	X	X	X
PFOA	335-67-1	Perfluorooctanoic Acid	X	X	X	X	X	X
PFNA	375-95-1	Perfluorononanoic Acid	X	X	X	X	X	X
PFDA	335-76-2	Perfluorodecanoic acid	X	X	X	X	X	X
PFUnA (PFUnDA)	2058-94-8	Perfluoroundecanoic acid	X	X	X	X	X	X
PFDoA (PFDoDA)	307-55-1	Perfluorododecanoic acid	X	X	X	X		X
PFTrDA (PFTriA, PFTrDA)	72629-94-8	Perfluorotridecanoic acid	X	X	X	X		X
PFTeDA (PFTA, PFTreA)	376-06-7	Perfluorotetradecanoic acid	X	X	X	X		X
PFBS	375-73-5	Perfluorobutane sulfonic acid	X	X	X	X	X	X
PFPeS	2706-91-4	Perfluoropentane sulfonic acid	X	X	X		X	X
PFHxS	355-46-4	Perfluorohexane sulfonic acid	X	X	X	X	X	X
PFHpS	375-92-8	Perfluoroheptane sulfonic acid	X	X	X		X	X
PFOS	1763-23-1	Perfluorooctane sulfonic acid	X	X	X	X	X	X
PFNS	68259-12-1	Perfluorononane sulfonic acid	X	X	X			X
PFDS	335-77-3	Perfluorodecane sulfonic acid	X	X	X			X
4:2 FTS	757124-72-4	4:2 fluorotelomer sulfonic acid	X	X	X		X	X
6:2 FTS	27619-97-2	6:2 fluorotelomer sulfonic acid	X	X	X		X	X
8:2 FTS	39108-34-4	8:2 fluorotelomer sulfonic acid	X	X	X		X	X
10:2 FTS	120226-60-0	Fluorotelomer sulfonate 10:2						X
FHxSA	41997-13-1	Perfluorohexanesulfonamide			X			X
PFOSA (FOSA)	754-91-6	Perfluorooctane sulfonamide	X	X	X			X
N-MeFOSAA	2355-31-9	N-methyl perfluorooctane sulfonamido acetic acid	X	X	X	X		X
N-MeFOSA	31506-32-8	N-methylperfluoro-1-octanesulfonamide	X	X	X			X
N-MeFOSE	24448-09-7	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	X	X	X			X
N-EtFOSAA	2991-50-6	N-ethyl perfluorooctane sulfonamido acetic acid	X	X	X	X		X
N-EtFOSA	4151-50-2	N-ethylperfluoro-1-octanesulfonamide	X	X	X			X
N-EtFOSE	1691-99-2	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol	X	X	X			X
HFPO-DA	13252-13-6	Hexafluoropropyleneoxide dimer acid (GenX)	X	X	X	X	X	X
11Cl-PF3OUds	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	X	X	X	X	X	X
9Cl-PF3ONS	756426-58-1	9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	X	X	X	X	X	X
ADONA	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid	X	X	X	X	X	X
PFESA	113507-82-7	Perfluoro(2-ethoxyethane)sulfonic acid		X	X		X	X
PFMOBA (PFMBA)	863090-89-5	Perfluoro-4-methoxybutanoic acid		X	X		X	X
NFDHA	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid		X	X		X	X
PFMOPrA (PFMPA)	377-73-1	Perfluoro-3-methoxypropanoic acid		X	X		X	X
PFPrA	422-64-0	Perfluoropropionic acid, 2,2,3,3,3-Pentafluoropropionic acid			X			X
PFPrS (PFPS)	423-41-6	Perfluoropropanesulfonic acid			X			X



PFAS Compound Acronym List			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
PFMOAA	674-13-5	Perfluoro-2-methoxyacetic acid;			X			X
PFO2HxA	39492-88-1	Perfluoro (3,5-dioxahexanoic) acid			X			X
PFO3OA	39492-89-2	Perfluoro (3,5,7-trioxaoctanoic) acid			X			X
PFO4DA	39492-90-5	Perfluoro (3,5,7,9-tetraoxadecanoic) acid			X			X
PFO5DA	39492-91-6	Perfluoro(3,5,7,9,11-pentaoxadodecanoic) acid			X			X
Nafion Byproduct 1 (PS Acid)	29311-67-9	1,1,2,2-tetrafluoro-2-[1,1,1,2,3,3-hexafluoro-3-(1,2,2-trifluoroethenoxy)propan-2-yl]oxyethanesulfonic acid			X			X
Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	Perfluoro-2-[[perfluoro-3-(perfluoroethoxy)-2-propanyl]oxy]ethanesulfonic acid (Hydro-PS Acid)			X			X
PEPA	267239-61-2	Perfluoro-2-ethoxypropanoic acid			X			X
PMPA	13140-29-9	Perfluoro-2-methoxypropanoic acid			X			X
PFECA-G, (PFPE-1)	801212-59-9	4-(Heptafluoroisopropoxy)hexafluorobutanoic acid, Perfluoro-4-isopropoxybutanoic acid			X			X
PFHxDA	67905-19-5	Perfluorohexadecanoic acid			X			
R-PSDA (Nafion Byproduct 4)	2416366-18-0	Perfluoro-4-(2-sulfoethoxy)pentanoic acid; 2,2,3,3,4,5,5-Octafluoro-4-(1,1,2,2-tetrafluoro-2-sulfoethoxy)pentanoic acid			X			X
Hydrolyzed PSDA (Nafion Byproduct 5)	2416366-19-1	2-fluoro-2-[1,1,2,3,3,3-hexafluoro-2-(1,1,2,2-tetrafluoro-2-sulfoethoxy)propoxy]-acetic acid			X			X
R-PSDCA (Nafion Byproduct 6)	2416366-21-5	1,1,2,2-tetrafluoro-2-[1,2,2,3,3-pentafluoro-1-(trifluoromethyl)propoxy] ethanesulfonic acid			X			X
EVE Acid	69087-46-3	2,2,3,3-tetrafluoro-3-((1,1,1,2,3,3-hexafluoro-3-[(1,2,2-trifluoroethenyl)oxy]propan-2-yl)oxy)propionic acid			X			X
FBSA	30334-69-1	Perfluorobutylsulfonamide			X			X
MeFBSA	68298-12-4	1-Butanesulfonamide; (N-(Methyl)nonafluorobutanesulfonamide); 1,1,2,2,3,3,4,4,4-nonafluoro-N-methyl-1-Butanesulfonamide			X			X
Hydro-EVE Acid	773804-62-9	2,2,3,3-Tetrafluoro-3-[[1,1,1,2,3,3-hexafluoro-3-(1,2,2,2-tetrafluoroethoxy)propan-2-yl]oxy}propanoic acid			X			X
R-EVE Acid	2416366-22-6	4-(2-carboxy-1,1,2,2-tetrafluoroethoxy)-2,2,3,3,4,5,5,5-octafluoro-pentanoic acid			X			X
NVHOS	1132933-86-8	Perfluoroethoxysulfonic acid; 1,1,2,2-Tetrafluoro-2-(1,2,2,2-tetrafluoroethoxy)ethane-1-sulfonic acid			X			X

PFAS Compound Acronym List			Methods					
Acronym	CAS #	Compound Name	SOP EU047	EPA 1633 (B-24)	EPA 1633X	EPA 537.1	EPA 533	EPA 8327*
PFDoS	79780-39-5	Perfluorododecane sulfonic acid		X	X			X
PFOA	16517-11-6	Perfluorooctadecanoic acid			X			
3:3 FTCA	356-02-5	2H,2H,3H,3H-Perfluorohexanoic acid		X	X			X
5:3 FTCA	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid		X	X			X
7:3 FTCA	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid		X	X			X
N-AP-FHxSA	50598-28-2	N-(3-(Dimethylamino)propyl)tridecafluoro-1-hexanesulfonamide			X			X
N-CMAmP-6:2 FOSA	34455-29-3	N-(Carboxymethyl)-N,N-dimethyl-3-(((3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)sulfonyl)amino)1-propanaminium			X			X
BPAF	1478-61-1	Bisphenol AF			X			X
HQ-115	90076-65-6	Bis(trifluoromethane)sulfonimide lithium salt			X			X

* Accreditation pending

Results

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Summary

	Compound	CAS	030725-SO1 ng/L	030725-EO1 ng/L
Acids	PFPfA	422-64-0	ND U	ND U
	PFBA	375-22-4	3.70	2.40
	PFPeA	2706-90-3	4.50	4.82
	PFHxA	307-24-4	4.57	5.02
	PFHpA	375-85-9	2.28	2.39
	PFOA	335-67-1	5.84	5.84
	PFNA	375-95-1	0.581	0.579
	PFDA	335-76-2	0.251 J	0.256 J
	PFUnDA	2058-94-8	ND U	ND U
	PFDoDA	307-55-1	ND U	ND U
	PFTrDA	72629-94-8	ND U	ND U
	PFTeDA	376-06-7	ND U	ND U
	PFHxDA	67905-19-5	ND U	ND U
	Sulfonates	PFBS	375-73-5	3.11
PFPeS		2706-91-4	0.332 J	0.278 J
PFHxS		355-46-4	3.05	3.30
PFHpS		375-92-8	0.139 L	0.178 L
PFOS		1763-23-1	11.2	9.78
PFNS		68259-12-1	ND U	ND U
PFDS		335-77-3	ND U	ND U
4:2 FTS		757124-72-4	ND U	ND U
6:2 FTS		27619-97-2	0.114 L	0.106 L
8:2 FTS		39108-34-4	ND U	0.00305 L
10:2 FTS		120226-60-0	ND U	ND U
Sulfonamidos	FBSA	30334-69-1	0.0929 L	0.0842 L
	N-EtFOSA	4151-50-2	ND U	ND U
	N-EtFOSAA	2991-50-6	ND U	ND U
	N-EtFOSE	1691-99-2	ND U	ND U
	N-MeFOSA	31506-32-8	ND U	ND U
	N-MeFOSAA	2355-31-9	ND U	ND U
	N-MeFOSE	24448-09-7	ND U	ND U
	PFOSA	754-91-6	0.555 J	ND U
PFECAs	ADONA	919005-14-4	ND U	ND U
	EVE Acid	69087-46-3	0.000676 L	0.000419 L
	HFPO-DA	13252-13-6	2.60	2.34
	Hydro-EVE Acid	773804-62-9	0.0862 L	0.0757 L
	NFDHA	151772-58-6	ND U	ND U
	PEPA	267239-61-2	3.53	2.95
	PFECA-G	801212-59-9	ND U	ND U
	PFMOAA	674-13-5	27.1	21.3
	PFMOBA	863090-89-5	ND U	ND U
	PFMOPrA	377-73-1	ND U	ND U
	PFO2HxA	39492-88-1	2.60	2.36
	PFO3OA	39492-89-2	0.777	0.721
	PFO4DA	39492-90-5	0.102 L	0.0960 L
	PFO5DA	39492-91-6	0.0154 L	0.0158 L
	PMPA	13140-29-9	5.75	6.22
	R-EVE	2416366-22-6	4.69	5.65
	PFESAs	11Cl-PF3OUds	763051-92-9	ND U
9Cl-PF3ONS		756426-58-1	ND U	ND U
Hydrolyzed PSDA		2416366-19-1	1.23	1.35
Nafion Byproduct 1 (PS Acid)		29311-67-9	ND U	ND U
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	0.249 L	0.175 L
NVHOS		1132933-86-8	ND U	ND U
PFEESA		113507-82-7	ND U	ND U
R-PSDA		2416366-18-0	3.86	4.45
R-PSDCA		2416366-21-5	ND U	ND U

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-SO1		
Sampling Site			
Enthalpy ID	0325-748-001-1	Prep Batch	eu19097
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-03-07 13:30	Instrument	Jetfire
Received Date	2025-03-07	Sample Vol mL	0.1
Prep Date	2025-03-13 09:00	Extract Vol mL	0.2
AnalysisDate	2025-03-14 21:12	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	J140325-03142112	ND	700	1530			U
ES	13C3-PFPrA		J140325-03142112				20-150%	103%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name 030725-SO1
 Sampling Site
 Enthalpy ID 0325-748-001-1A Prep Batch EU19109
 Matrix aqueous Analyst bmay
 Sampling Date 2025-03-07 13:30 Instrument Pippin
 Received Date 2025-03-07 Sample Vol mL 283.98
 Prep Date 2025-03-17 11:43 Extract Vol mL 0.4
 AnalysisDate 2025-03-19 04:46 Split Factor N/A
 SampleType Sample Method Code EU-047-NPW
 Bottle ID A

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P180325043	3.70	0.224	0.563				
	PFPeA	2706-90-3	P180325043	4.50	0.161	0.563				
	PFFhxA	307-24-4	P180325043	4.57	0.188	0.563				
	PFFHpA	375-85-9	P180325043	2.28	0.197	0.563				
	PFOA	335-67-1	P180325043	5.84	0.129	0.563				
	PFNA	375-95-1	P180325043	0.581	0.127	0.563				
	PFDA	335-76-2	P180325043	0.251	0.161	0.563			J	
	PFUnDA	2058-94-8	P180325043	ND	0.127	0.563			U	
	PFDODA	307-55-1	P180325043	ND	0.229	0.563			U	
	PFTTrDA	72629-94-8	P180325043	ND	0.187	0.563			U	
	PFTeDA	376-06-7	P180325043	ND	0.215	0.563			U	
	PFFhxDA	67905-19-5	P180325043	ND	0.299	0.563			U	
	Sulfonates	PFBS	375-73-5	P180325043	3.11	0.299	0.563			
PFFPeS		2706-91-4	P180325043	0.332	0.116	0.531			J	
PFFhXS		355-46-4	P180325043	3.05	0.435	0.516				
PFFHpS		375-92-8	P180325043	0.139	0.273	0.537			L	
PFOS		1763-23-1	P180325043	11.2	0.298	0.522				
PFNS		68259-12-1	P180325043	ND	0.175	0.543			U	
PFDS		335-77-3	P180325043	ND	0.296	0.543			U	
4:2 FTS		757124-72-4	P180325043	ND	0.0731	0.528			U	
6:2 FTS		27619-97-2	P180325043	0.114	0.266	0.537			L	
8:2 FTS		39108-34-4	P180325043	ND	0.126	0.540			U	
10:2 FTS	120226-60-0	P180325043	ND	0.431	0.563			U		
Sulfonamidos	FBSA	30334-69-1	P180325043	0.0929	0.268	0.563			L	
	N-EiFOSAA	2991-50-6	P180325043	ND	0.229	0.563			U	
	N-EiFOSE	1691-99-2	P180325043	ND	0.863	2.54			U	
	N-MeFOSA	31506-32-8	P180325043	ND	0.232	0.563			U	
	N-MeFOSAA	2355-31-9	P180325043	ND	0.158	0.563			U	
	N-MeFOSE	24448-09-7	P180325043	ND	0.535	2.54			U	
	PFOSA	754-91-6	P180325043	0.555	0.0791	0.563			J	
	PFECAs	ADONA	919005-14-4	P180325043	ND	0.153	0.534			U
		EVE Acid	69087-46-3	P180325043	0.000676	0.180	1.27			L
		HFPO-DA	13252-13-6	P180325043	2.60	0.0597	0.563			
Hydro-EVE Acid		773804-62-9	P180325043	0.0862	0.185	0.563			L	
NFDHA		151772-58-6	P180325043	ND	0.118	0.563			U	
PEPA		267239-61-2	P180325043	3.53	0.106	0.563				
PFECA-G		801212-59-9	P180325043	ND	0.0752	0.563			U	
PFMOAA		674-13-5	P180325043	27.1	0.285	0.563				
PFMOBA		863090-89-5	P180325043	ND	0.945	1.27			U	
PFMOPrA		377-73-1	P180325043	ND	0.201	0.563			U	
PFESAs	PFO2HxA	39492-88-1	P180325043	2.60	0.181	0.563				
	PFO3OA	39492-89-2	P180325043	0.777	0.259	0.563				
	PFO4DA	39492-90-5	P180325043	0.102	0.445	2.82			L	
	PFO5DA	39492-91-6	P180325043	0.0154	0.451	2.82			L	
	PMPA	13140-29-9	P180325043	5.75	0.133	0.563				
	R-EVE	2416366-22-6	P180325043	4.69	0.935	1.27				
	11Cl-PF3OUds	763051-92-9	P180325043	ND	0.266	0.531			U	
	9Cl-PF3ONS	756426-58-1	P180325043	ND	0.361	0.525			U	
	Hydrolyzed PSDA	2416366-19-1	P180325043	1.23	0.375	0.563				
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P180325043	ND	0.301	0.563			U	
ES	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P180325043	0.249	0.467	0.563			L	
	NVHOS	1132933-86-8	P180325043	ND	0.0868	0.563			U	
	PFEESA	113507-82-7	P180325043	ND	0.169	0.563			U	
	R-PSDA	2416366-18-0	P180325043	3.86	2.48	2.48				
	R-PSDCA	2416366-21-5	P180325043	ND	0.238	0.563			U	
	MPFBA		P180325043				20-150%	86.4%		
	M5PFPeA		P180325043				20-150%	371%	Q	
	M3PFBS		P180325043				20-150%	78.6%	Ac	
	M2-4:2 FTS		P180325043				20-150%	184%	Q	
	M5PFHxA		P180325043				20-150%	100%		
M3HFPO-DA		P180325043				20-150%	101%			
M4PFHpA		P180325043				20-150%	92.9%			
M3PFHXS		P180325043				20-150%	124%			

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-SO1		
Sampling Site			
Enthalpy ID	0325-748-001-1A	Prep Batch	EU19109
Matrix	aqueous	Analyst	bmay
Sampling Date	2025-03-07 13:30	Instrument	Pippin
Received Date	2025-03-07	Sample Vol mL	283.98
Prep Date	2025-03-17 11:43	Extract Vol mL	0.4
AnalysisDate	2025-03-19 04:46	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M2-6:2 FTS		P180325043				20-150%	131%	
M8PFOA		P180325043				20-150%	89.4%	
M9PFNA		P180325043				20-150%	63.8%	
M8PFOS		P180325043				20-150%	78.5%	
M2-8:2 FTS		P180325043				20-150%	70.7%	
M8FOSA-I		P180325043				20-150%	47.0%	
M6PFDA		P180325043				20-150%	81.0%	
d3-N-MeFOSAA		P180325043				20-150%	69.1%	
d5-N-EtFOSAA		P180325043				20-150%	57.6%	
M7PFUdA		P180325043				20-150%	49.6%	
MPPDoA		P180325043				20-150%	22.4%	
M2PFTeDA		P180325043				20-150%	3.44%	Q
d3-N-MeFOSA		P180325043				10-200%	0.0381%	Q
d7-N-MeFOSE		P180325043				10-200%	16.7%	
d9-N-EtFOSE		P180325043				10-200%	10.1%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-SO1		
Sampling Site			
Enthalpy ID	0325-748-001-1B	Prep Batch	EU19185
Matrix	aqueous	Analyst	jacksullivan
Sampling Date	2025-03-07 13:30	Instrument	Pippin
Received Date	2025-03-07	Sample Vol mL	288.53
Prep Date	2025-03-28 13:05	Extract Vol mL	0.4
AnalysisDate	2025-03-30 00:11	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	B		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Sulfonamidos	N-EtFOSA	4151-50-2	P280325138	ND	0.343	0.555			U
ES	d5-N-EtFOSA		P280325138				10-200%	0.0817%	Q

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-EO1		
Sampling Site			
Enthalpy ID	0325-748-002-1	Prep Batch	eu19097
Matrix	aqueous	Analyst	zoeamdt
Sampling Date	2025-03-07 13:30	Instrument	Jetfire
Received Date	2025-03-07	Sample Vol mL	0.1
Prep Date	2025-03-13 09:00	Extract Vol mL	0.2
AnalysisDate	2025-03-14 21:23	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPfA	422-64-0	J140325-03142123	ND	700	1530			U
ES	13C3-PFPfA		J140325-03142123				20-150%	93.8%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-EO1	Prep Batch	EU19109
Sampling Site		Analyst	bmay
Enthalpy ID	0325-748-002-1A	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	292.31
Sampling Date	2025-03-07 13:30	Extract Vol mL	0.4
Received Date	2025-03-07	Split Factor	N/A
Prep Date	2025-03-17 11:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-19 05:09		
SampleType	Sample		
Bottle ID	A		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P180325044	2.40	0.217	0.547				
	PFPeA	2706-90-3	P180325044	4.82	0.157	0.547				
	PFFhxA	307-24-4	P180325044	5.02	0.183	0.547				
	PFFHpA	375-85-9	P180325044	2.39	0.192	0.547				
	PFOA	335-67-1	P180325044	5.84	0.125	0.547				
	PFNA	375-95-1	P180325044	0.579	0.124	0.547				
	PFDA	335-76-2	P180325044	0.256	0.157	0.547			J	
	PFUnDA	2058-94-8	P180325044	ND	0.124	0.547			U	
	PFFDoDA	307-55-1	P180325044	ND	0.222	0.547			U	
	PFFTrDA	72629-94-8	P180325044	ND	0.181	0.547			U	
	PFFTeDA	376-06-7	P180325044	ND	0.209	0.547			U	
	PFFhxDA	67905-19-5	P180325044	ND	0.291	0.547			U	
	Sulfonates	PFBS	375-73-5	P180325044	3.33	0.291	0.547			
		PFFPeS	2706-91-4	P180325044	0.278	0.112	0.516			J
PFFHxS		355-46-4	P180325044	3.30	0.422	0.501				
PFFHpS		375-92-8	P180325044	0.178	0.265	0.521			L	
PFOs		1763-23-1	P180325044	9.78	0.289	0.507				
PFNS		68259-12-1	P180325044	ND	0.170	0.527			U	
PFDs		335-77-3	P180325044	ND	0.287	0.527			U	
4:2 FTS		757124-72-4	P180325044	ND	0.0710	0.513			U	
6:2 FTS		27619-97-2	P180325044	0.106	0.258	0.521			L	
8:2 FTS		39108-34-4	P180325044	0.00305	0.123	0.524			L	
10:2 FTS	120226-60-0	P180325044	ND	0.419	0.547			U		
Sulfonamidos	FBSA	30334-69-1	P180325044	0.0842	0.260	0.547			L	
	N-EiFOSA	4151-50-2	P180325044	ND	0.339	0.547			U	
	N-EiFOSAA	2991-50-6	P180325044	ND	0.222	0.547			U	
	N-EiFOSE	1691-99-2	P180325044	ND	0.838	2.46			U	
	N-MeFOSA	31506-32-8	P180325044	ND	0.226	0.547			U	
	N-MeFOSAA	2355-31-9	P180325044	ND	0.154	0.547			U	
	N-MeFOSE	24448-09-7	P180325044	ND	0.520	2.46			U	
	PFOsA	754-91-6	P180325044	ND	0.0768	0.547			U	
	ADONA	919005-14-4	P180325044	ND	0.148	0.519			U	
	EVE Acid	69087-46-3	P180325044	0.000419	0.174	1.23			L	
PFECAs	HFPO-DA	13252-13-6	P180325044	2.34	0.0580	0.547				
	Hydro-EVE Acid	773804-62-9	P180325044	0.0757	0.180	0.547			L	
	NFDHA	151772-58-6	P180325044	ND	0.115	0.547			U	
	PEPA	267239-61-2	P180325044	2.95	0.103	0.547				
	PFECA-G	801212-59-9	P180325044	ND	0.0730	0.547			U	
	PfMOAA	674-13-5	P180325044	21.3	0.277	0.547				
	PfMOBA	863090-89-5	P180325044	ND	0.919	1.23			U	
	PfMOPrA	377-73-1	P180325044	ND	0.195	0.547			U	
	PFO2HxA	39492-88-1	P180325044	2.36	0.176	0.547				
	PFO3OA	39492-89-2	P180325044	0.721	0.251	0.547				
	PFO4DA	39492-90-5	P180325044	0.0960	0.433	2.74			L	
	PFO5DA	39492-91-6	P180325044	0.0158	0.438	2.74			L	
	PMPA	13140-29-9	P180325044	6.22	0.129	0.547				
	R-EVE	2416366-22-6	P180325044	5.65	0.908	1.23				
PFESAs	11CI-PF3OUdS	763051-92-9	P180325044	ND	0.258	0.516			U	
	9CI-PF3ONS	756426-58-1	P180325044	ND	0.351	0.510			U	
	Hydrolyzed PSDA	2416366-19-1	P180325044	1.35	0.364	0.547				
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P180325044	ND	0.292	0.547			U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P180325044	0.175	0.453	0.547			L	
	NVHOS	1132933-86-8	P180325044	ND	0.0843	0.547			U	
	PFEESA	113507-82-7	P180325044	ND	0.165	0.547			U	
	R-PSDA	2416366-18-0	P180325044	4.45	2.41	2.41				
	R-PSDCA	2416366-21-5	P180325044	ND	0.231	0.547			U	
ES	MPFBA		P180325044				20-150%	87.3%		
	M5PFPeA		P180325044				20-150%	341%	Q	
	M3PFBS		P180325044				20-150%	84.9%	Ac	
	M2-4:2 FTS		P180325044				20-150%	156%	Q	
	M5PFFhxA		P180325044				20-150%	98.6%		
	M3HFPO-DA		P180325044				20-150%	101%		
	M4PFFHpA		P180325044				20-150%	91.4%		

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	030725-EO1		
Sampling Site			
Enthalpy ID	0325-748-002-1A	Prep Batch	EU19109
Matrix	aqueous	Analyst	bmay
Sampling Date	2025-03-07 13:30	Instrument	Pippin
Received Date	2025-03-07	Sample Vol mL	292.31
Prep Date	2025-03-17 11:43	Extract Vol mL	0.4
AnalysisDate	2025-03-19 05:09	Split Factor	N/A
SampleType	Sample	Method Code	EU-047-NPW
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P180325044				20-150%	110%	
M2-6:2 FTS		P180325044				20-150%	117%	
M8PFOA		P180325044				20-150%	88.4%	
M9PFNA		P180325044				20-150%	67.2%	
M8PFOS		P180325044				20-150%	85.9%	
M2-8:2 FTS		P180325044				20-150%	78.5%	
M8FOSA-I		P180325044				20-150%	42.9%	
M6PFDA		P180325044				20-150%	85.0%	
d3-N-MeFOSAA		P180325044				20-150%	73.6%	
d5-N-EtFOSAA		P180325044				20-150%	65.2%	
M7PFUdA		P180325044				20-150%	60.1%	
MPFDoA		P180325044				20-150%	32.0%	
M2PFTeDA		P180325044				20-150%	8.98%	Q
d3-N-MeFOSA		P180325044				10-200%	0.302%	Q
d5-N-EtFOSA		P180325044				10-200%	0.236%	Q
d7-N-MeFOSE		P180325044				10-200%	19.0%	
d9-N-EtFOSE		P180325044				10-200%	10.8%	

QC Data



Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19097_PFAS		
Sampling Site			
Enthalpy ID	MB_19097_PFAS	Prep Batch	eu19097
Matrix	aqueous	Analyst	zoeamdt
Sampling Date		Instrument	Jetfire
Received Date		Sample Vol mL	0.1
Prep Date	2025-03-13 09:00	Extract Vol mL	0.2
AnalysisDate	2025-03-14 20:37	Split Factor	N/A
SampleType	Blank	Method Code	EU-047-NPW
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPfA	422-64-0	J140325-03142037	ND	700	1530			U
ES	13C3-PFPfA		J140325-03142037				20-150%	98.2%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19109_PFAS	Prep Batch	EU19109
Sampling Site		Analyst	bmay
Enthalpy ID	MB_19109_PFAS	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-03-17 11:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-18 23:05		
SampleType	Blank		
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	P180325028	ND	0.254	0.640			U	
	PFPeA	2706-90-3	P180325028	ND	0.183	0.640			U	
	PFFhxA	307-24-4	P180325028	ND	0.214	0.640			U	
	PFFHpA	375-85-9	P180325028	ND	0.224	0.640			U	
	PFOA	335-67-1	P180325028	ND	0.146	0.640			U	
	PFNA	375-95-1	P180325028	ND	0.145	0.640			U	
	PFDA	335-76-2	P180325028	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	P180325028	ND	0.145	0.640			U	
	PFDODA	307-55-1	P180325028	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	P180325028	ND	0.212	0.640			U	
	PFTeDA	376-06-7	P180325028	ND	0.244	0.640			U	
	PFFhxDA	67905-19-5	P180325028	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	P180325028	ND	0.340	0.640			U
		PFPeS	2706-91-4	P180325028	ND	0.131	0.603			U
PFFhXS		355-46-4	P180325028	ND	0.494	0.586			U	
PFFHpS		375-92-8	P180325028	ND	0.310	0.610			U	
PFOS		1763-23-1	P180325028	ND	0.338	0.593			U	
PFNS		68259-12-1	P180325028	ND	0.199	0.616			U	
PFDS		335-77-3	P180325028	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	P180325028	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	P180325028	0.0205	0.302	0.610			L	
8:2 FTS		39108-34-4	P180325028	ND	0.143	0.613			U	
10:2 FTS	120226-60-0	P180325028	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	P180325028	ND	0.304	0.640			U	
	N-EiFOSA	4151-50-2	P180325028	ND	0.396	0.640			U	
	N-EiFOSAA	2991-50-6	P180325028	ND	0.260	0.640			U	
	N-EiFOSE	1691-99-2	P180325028	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	P180325028	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	P180325028	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	P180325028	ND	0.608	2.88			U	
	PFOSA	754-91-6	P180325028	ND	0.0898	0.640			U	
	ADONA	919005-14-4	P180325028	ND	0.173	0.606			U	
	EVE Acid	69087-46-3	P180325028	0.000430	0.204	1.44			L	
PFECAs	HFPO-DA	13252-13-6	P180325028	ND	0.0678	0.640			U	
	Hydro-EVE Acid	773804-62-9	P180325028	ND	0.210	0.640			U	
	NFDHA	151772-58-6	P180325028	ND	0.135	0.640			U	
	PEPA	267239-61-2	P180325028	ND	0.120	0.640			U	
	PFECA-G	801212-59-9	P180325028	ND	0.0854	0.640			U	
	PFMOAA	674-13-5	P180325028	ND	0.324	0.640			U	
	PFMOBA	863090-89-5	P180325028	ND	1.07	1.44			U	
	PFMOPrA	377-73-1	P180325028	ND	0.228	0.640			U	
	PFO2HxA	39492-88-1	P180325028	ND	0.206	0.640			U	
	PFO3OA	39492-89-2	P180325028	ND	0.294	0.640			U	
	PFO4DA	39492-90-5	P180325028	ND	0.506	3.20			U	
	PFO5DA	39492-91-6	P180325028	ND	0.512	3.20			U	
	PMPA	13140-29-9	P180325028	ND	0.151	0.640			U	
	R-EVE	2416366-22-6	P180325028	ND	1.06	1.44			U	
	PFESAs	11Cl-PF3OUdS	763051-92-9	P180325028	ND	0.302	0.603			U
		9Cl-PF3ONS	756426-58-1	P180325028	ND	0.410	0.596			U
Hydrolyzed PSDA		2416366-19-1	P180325028	ND	0.426	0.640			U	
Nafion Byproduct 1 (PS Acid)		29311-67-9	P180325028	ND	0.342	0.640			U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	P180325028	ND	0.530	0.640			U	
NVHOS		1132933-86-8	P180325028	ND	0.0986	0.640			U	
PFEESA		113507-82-7	P180325028	ND	0.192	0.640			U	
R-PSDA		2416366-18-0	P180325028	ND	2.82	2.82			U	
R-PSDCA		2416366-21-5	P180325028	ND	0.270	0.640			U	
ES		MPFBA		P180325028				20-150%	69.2%	
	M5PFPeA		P180325028				20-150%	81.2%		
	M3PFBS		P180325028				20-150%	73.8%		
	M2-4:2 FTS		P180325028				20-150%	78.4%		
	M5PFFhxA		P180325028				20-150%	76.1%		
	M3HFPO-DA		P180325028				20-150%	80.2%		
	M4PFFHpA		P180325028				20-150%	87.7%		

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19109_PFA5	Prep Batch	EU19109
Sampling Site		Analyst	bmay
Enthalpy ID	MB_19109_PFA5	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-03-17 11:43	Method Code	EU-047-NPW
AnalysisDate	2025-03-18 23:05		
SampleType	Blank		
Bottle ID	-		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P180325028				20-150%	91.0%	
M2-6:2 FTS		P180325028				20-150%	78.5%	
M8PFOA		P180325028				20-150%	83.3%	
M9PFNA		P180325028				20-150%	79.8%	
M8PFOS		P180325028				20-150%	76.9%	
M2-8:2 FTS		P180325028				20-150%	71.4%	
M8FOSA-I		P180325028				20-150%	27.5%	
M6PFDA		P180325028				20-150%	80.2%	
d3-N-MeFOSAA		P180325028				20-150%	64.2%	
d5-N-EtFOSAA		P180325028				20-150%	57.4%	
M7PFUdA		P180325028				20-150%	67.2%	
MPFDoA		P180325028				20-150%	50.8%	
M2PFTeDA		P180325028				20-150%	6.79%	Q
d3-N-MeFOSA		P180325028				10-200%	0.131%	Q
d5-N-EtFOSA		P180325028				10-200%	0.130%	Q
d7-N-MeFOSE		P180325028				10-200%	16.5%	
d9-N-EtFOSE		P180325028				10-200%	13.3%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Details

Sample Name	MB_19185_PFAS		
Sampling Site			
Enthalpy ID	MB_19185_PFAS	Prep Batch	EU19185
Matrix	aqueous	Analyst	jacksullivan
Sampling Date		Instrument	Pippin
Received Date		Sample Vol mL	250
Prep Date	2025-03-28 13:05	Extract Vol mL	0.4
AnalysisDate	2025-03-29 22:40	Split Factor	N/A
SampleType	Blank	Method Code	EU-047-NPW
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Sulfonamidos	N-EtFOSA	4151-50-2	P280325134	ND	0.396	0.640			U
ES	d5-N-EtFOSA		P280325134				10-200%	15.7%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_19097_PFAS	Prep Batch	eu19097	Sample Vol (mL)	0.08
Sample Name	OPR_19097_PFAS	Prep Date	2025-03-13 09:00	Extract Vol (mL)	0.2
Matrix	aqueous	Analysis Date	2025-03-14 20:48	Split Factor	N/A
Sampling Date		Analyst	zoeamdt	Method Code	EU-047-NPW
Received Date		Instrument	Jetfire	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Formatted Result ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	J140325-03142048	39600	875	1910	40-150%	158%	Q
ES	13C3-PFPrA		J140325-03142048				20-150%	89.1%	

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_19109_PFAS	Prep Batch	EU19109	Sample Vol (mL)	250
Sample Name	OPR_19109_PFAS	Prep Date	2025-03-17 11:43	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-03-18 23:28	Split Factor	N/A
Sampling Date		Analyst	bmay	Method Code	EU-047-NPW
Received Date		Instrument	Pippin	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Formatted Result ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFBA	375-22-4	P180325029	17.7	0.254	0.640	47.9-144%	88.7%	
	PFPeA	2706-90-3	P180325029	19.2	0.183	0.640	41.7-159%	96.0%	
	PFHxA	307-24-4	P180325029	20.0	0.214	0.640	43.2-154%	100%	
	PFHpA	375-85-9	P180325029	17.7	0.224	0.640	42.1-155%	88.3%	
	PFOA	335-67-1	P180325029	20.7	0.146	0.640	51.1-148%	103%	
	PFNA	375-95-1	P180325029	19.5	0.145	0.640	51.6-153%	97.5%	
	PFDA	335-76-2	P180325029	19.3	0.183	0.640	44.5-156%	96.6%	
	PFUnDA	2058-94-8	P180325029	19.9	0.145	0.640	40.3-156%	99.6%	
	PFDoDA	307-55-1	P180325029	19.4	0.260	0.640	40.4-158%	96.9%	
	PFTrDA	72629-94-8	P180325029	65.7	0.212	0.640	42.2-201%	328%	Q
	PFTeDA	376-06-7	P180325029	18.9	0.244	0.640	43-162%	94.7%	
Sulfonates	PFBS	375-73-5	P180325029	18.9	0.340	0.640	42.7-155%	107%	
	PFPeS	2706-91-4	P180325029	16.8	0.131	0.603	40.3-152%	89.3%	
	PFHxS	355-46-4	P180325029	17.3	0.494	0.586	45-148%	94.4%	
	PFHpS	375-92-8	P180325029	20.8	0.310	0.610	39.8-166%	109%	
	PFOS	1763-23-1	P180325029	19.1	0.338	0.593	59.2-132%	103%	
	PFNS	68259-12-1	P180325029	15.5	0.199	0.616	38.1-153%	80.5%	
	PFDS	335-77-3	P180325029	9.67	0.336	0.616	28.6-148%	50.1%	
	4:2 FTS	757124-72-4	P180325029	19.3	0.0830	0.600	41.5-157%	103%	
	6:2 FTS	27619-97-2	P180325029	19.6	0.302	0.610	44.5-160%	103%	
	8:2 FTS	39108-34-4	P180325029	19.5	0.143	0.613	39.4-166%	102%	
Sulfonamidos	N-EtFOSA	4151-50-2	P200325099	21.5	0.396	0.640	26.7-172%	108%	
	N-EtFOSAA	2991-50-6	P180325029	20.2	0.260	0.640	42.8-156%	101%	
	N-EtFOSE	1691-99-2	P180325029	84.2	0.980	2.88	38.9-161%	93.6%	
	N-MeFOSA	31506-32-8	P180325029	24.2	0.264	0.640	26.4-183%	121%	
	N-MeFOSAA	2355-31-9	P180325029	20.6	0.180	0.640	42-155%	103%	
	N-MeFOSE	24448-09-7	P180325029	84.4	0.608	2.88	37.6-155%	93.8%	
	PFOSA	754-91-6	P180325029	19.3	0.0898	0.640	39.1-158%	96.7%	
PFECAs	ADONA	919005-14-4	P180325029	21.2	0.173	0.606	32.2-151%	106%	
	HFPO-DA	13252-13-6	P180325029	19.5	0.0678	0.640	61.8-131%	97.4%	
PFESAs	11Cl-PF3OUdS	763051-92-9	P180325029	9.82	0.302	0.603	21.8-141%	49.1%	
	9Cl-PF3ONS	756426-58-1	P180325029	18.8	0.410	0.596	37.6-146%	93.8%	
ES	MPFBA		P180325029				20-150%	82.4%	
	M5PFPeA		P180325029				20-150%	95.8%	
	M3PFBS		P180325029				20-150%	92.7%	
	M2-4:2 FTS		P180325029				20-150%	105%	
	M5PFHxA		P180325029				20-150%	88.7%	
	M3HFPO-DA		P180325029				20-150%	92.4%	
	M4PFHpA		P180325029				20-150%	92.6%	
	M3PFHxS		P180325029				20-150%	105%	
	M2-6:2 FTS		P180325029				20-150%	93.9%	
	M8PFOA		P180325029				20-150%	80.7%	
	M9PFNA		P180325029				20-150%	69.8%	
	M8PFOS		P180325029				20-150%	80.3%	
	M2-8:2 FTS		P180325029				20-150%	70.7%	
	M8FOSA-I		P180325029				20-150%	43.0%	
	M6PFDA		P180325029				20-150%	86.2%	
	d3-N-MeFOSAA		P180325029				20-150%	64.0%	
	d5-N-EtFOSAA		P180325029				20-150%	53.1%	
	M7PFUdA		P180325029				20-150%	54.7%	
	MPFDaA		P180325029				20-150%	31.3%	
	M2PFTeDA		P180325029				20-150%	4.83%	Q
	d3-N-MeFOSA		P180325029				10-200%	0.380%	Q
d5-N-EtFOSA		P200325099				10-200%	0.335%	Q	
d7-N-MeFOSE		P180325029				10-200%	30.6%		
d9-N-EtFOSE		P180325029				10-200%	21.1%		

Enthalpy Analytical

Job No.: 0325-748-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_19185_PFAS	Prep Batch	EU19185	Sample Vol (mL)	250
Sample Name	OPR_19185_PFAS	Prep Date	2025-03-28 13:05	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-03-29 23:03	Split Factor	N/A
Sampling Date		Analyst	jacksullivan	Method Code	EU-047-NPW
Received Date		Instrument	Pippin	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Sulfonamidos	N-EtFOSA	4151-50-2	P280325135	24.6	0.396	0.640	26.7-172%	123%	
ES	d5-N-EtFOSA		P280325135				10-200%	10.7%	

Sample Custody



0325-748 Chain of Custody Record

Enthalpy Ultratrace Job#: _____ COC Page 1 of 1

Special Handling:
 Standard Turn Around Time
 Rush Turn Around Time -- Date Needed _____
 • All Fast TATs Subject to Approval by Enthalpy Analytical, Inc.
 • All Samples Disposed of After 6 months Unless Otherwise Instructed.
 Enthalpy Analytical-Wilmington, NC has added enhancements to standard methods to improve accuracy, precision and permit an assessment of laboratory performance in the context of your specific data needs. For more information email Cindy.James@enthalpy.com.

Client Name: BRUNSWICK COUNTY UTILITIES
 Project Manager: GLENN WALKER
 Report To: SAME

Project Number: _____
 Site Name: NORTHWEST WATER PLANT
 Location: LELAND N.C.

PO#: _____
 Telephone#: _____
 Email: _____

This Chain of Custody is applicable to Non-Air samples. Standard TAT differ per analysis and are provided by request.

Client Special Instructions:
 Matrix: GW-Groundwater, WW-Wastewater, NW-Non-Potable Water, DW-Drinking Water, S-Soil, SL-Sludge, BT-Biological Tissue, O-Other
 Type: G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	Sample Containers				Analyses							Notes:			
						# of Bottles	# of Jars	# of Bags	# Other	Method 1613	Method 8290	Method 1668A/B/C/PCE	PFAS by LC/MS/MS	PAHs by HRC/HRMS	Sample on Hold	Method 23		ALL PFAS		
030725-SO1	3/7/2025	1330PM	250 ml	G	NW	2												X	Please Add PFPrA and	
030725-EO1	3/7/2025	1330PM	250 ml	G	DW	2													X	PFHpA To The Testing.
																				Mark Hager Knows About
																				This if you Have Questions

Relinquished By	Date	Received By	Date	Time	Sample Temperature Upon Receipt
BILLY BENTON	3/7/2025		3/7/25	14:11	<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient °C <u>5.3</u> <input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____ <input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____

JOB ID: 0325-748 Date / Time: 3/7/25 14:11 Initials: S.S.
 OR
 Client: Brunswick County Utilities

Cooler 1 of 1

Temp °C: 5.3 Thermometer ID: T15

Received via FedEx <input type="checkbox"/> UPS <input type="checkbox"/> DHL <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input checked="" type="checkbox"/> Other <input type="checkbox"/>	Check one On ice: <input checked="" type="checkbox"/> Melted ice: <input type="checkbox"/> Ambient: <input type="checkbox"/>	Check one in a Box: <input type="checkbox"/> in a Cooler: <input checked="" type="checkbox"/> Cooler in Box: <input type="checkbox"/>	Yes No Cooler seals: <input type="checkbox"/> <input checked="" type="checkbox"/> Sample seals: <input type="checkbox"/> <input checked="" type="checkbox"/> Good condition: <input checked="" type="checkbox"/> <input type="checkbox"/>
	Comment: <input type="text"/>		

Temp °C: Thermometer ID: Cooler of

Received via FedEx <input type="checkbox"/> UPS <input type="checkbox"/> DHL <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Other <input type="checkbox"/>	Check one On ice: <input type="checkbox"/> Melted ice: <input type="checkbox"/> Ambient: <input type="checkbox"/>	Check one in a Box: <input type="checkbox"/> in a Cooler: <input type="checkbox"/> Cooler in Box: <input type="checkbox"/>	Yes No Cooler seals: <input type="checkbox"/> <input type="checkbox"/> Sample seals: <input type="checkbox"/> <input type="checkbox"/> Good condition: <input type="checkbox"/> <input type="checkbox"/>
	Comment: <input type="text"/>		

Temp °C: Thermometer ID: Cooler of

Received via FedEx <input type="checkbox"/> UPS <input type="checkbox"/> DHL <input type="checkbox"/> USPS <input type="checkbox"/> Courier <input type="checkbox"/> Other <input type="checkbox"/>	Check one On ice: <input type="checkbox"/> Melted ice: <input type="checkbox"/> Ambient: <input type="checkbox"/>	Check one in a Box: <input type="checkbox"/> in a Cooler: <input type="checkbox"/> Cooler in Box: <input type="checkbox"/>	Yes No Cooler seals: <input type="checkbox"/> <input type="checkbox"/> Sample seals: <input type="checkbox"/> <input type="checkbox"/> Good condition: <input type="checkbox"/> <input type="checkbox"/>
	Comment: <input type="text"/>		