

# Brunswick County Public Utilities - NC

PO Box 249  
Bolivia, NC 28422-0249

## LELAND N.C.

Client Project# NORTHWEST WATER PLANT  
Samples Received: 7/25/2025

### Analytical Report 0725-1255

#### PFAS by Isotope Dilution (non-potable water)

Report Issue Date: 8/13/2025

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 28 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:



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# Narrative Summary



# Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	0725-1255-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 1. Custody

Jose Justiniano received the samples at 2.3 °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
0725-1255-001-1	072525-S01	aqueous	2025-07-25
0725-1255-001-1A	072525-S01	aqueous	2025-07-25
0725-1255-002-1	072525-E01	aqueous	2025-07-25
0725-1255-002-1A	072525-E01	aqueous	2025-07-25

## 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	Brunswick List	ENVI-Carb

## 3. Analysis

The samples were analyzed using LC/MS/MS instruments Bumblebee and Pippin.

The samples were analyzed using more than one batch preparation and analytical sequence to include all analytes of interest.

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

## 4. Calibration

In the initial calibration, the reported analytes exhibited  $R^2$  of  $\geq 0.99$ . 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.	0725-1255-1
Client ID.	NORTHWEST WATER PLANT Site: LELAND N.C.

## 5. QC Notes

Ongoing Precision Recovery (OPR) control limits have not been established for some analytes of interest.

The OPR results for polar analyte(s) are a qualitative measure not to be used for determining batch precision and recovery. The data is reported with no adverse impact.

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

QC samples that did not meet method acceptance criteria were:

- MB\_118459\_PFAS (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.

This report provides all results including detections below LOD following client instruction.

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*
<b>Target Analytes</b>								
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.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)

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

## Summary

	Compound	CAS	072525-S01 ng/L	072525-E01 ng/L
Acids	PFPrA	422-64-0	375 L	374 L
	PFBA	375-22-4	4.68	4.45
	PFPeA	2706-90-3	5.09	4.71
	PFHxA	307-24-4	4.62	4.33
	PFHpA	375-85-9	2.89	2.66
	PFOA	335-67-1	6.12	5.79
	PFNA	375-95-1	1.09	1.01
	PFDA	335-76-2	0.782	0.686
	PFUnDA	2058-94-8	0.138 J	0.0819 L
	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	2.67
PFPeS		2706-91-4	0.509	0.494 J
PFHxS		355-46-4	2.75	2.56
PFHpS		375-92-8	0.229 L	0.220 L
PFOS		1763-23-1	14.6	14.2
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	ND U	ND U
8:2 FTS		39108-34-4	0.00498 L	0.00447 L
10:2 FTS		120226-60-0	ND U	ND U
Sulfonamidos	FBSA	30334-69-1	0.234 L	0.180 L
	N-EtFOSA	4151-50-2	ND U	ND U
	N-EtFOSAA	2991-50-6	0.166 L	0.182 L
	N-EtFOSE	1691-99-2	ND U	ND U
	N-MeFOSA	31506-32-8	ND U	ND U
	N-MeFOSAA	2355-31-9	0.0599 L	0.0780 L
	N-MeFOSE	24448-09-7	ND U	ND U
	PFOSA	754-91-6	0.207 J	0.0113 L
PFECAs	ADONA	919005-14-4	ND U	ND U
	EVE Acid	69087-46-3	ND U	ND U
	HFPO-DA	13252-13-6	0.510 J	0.564
	Hydro-EVE Acid	773804-62-9	ND U	ND U
	NFDHA	151772-58-6	ND U	ND U
	PEPA	267239-61-2	ND U	ND U
	PFECA-G	801212-59-9	ND U	ND U
	PFMOAA	674-13-5	1.79	0.882
	PFMOBA	863090-89-5	ND U	ND U
	PFMOPrA	377-73-1	ND U	ND U
	PFO2HxA	39492-88-1	0.645	0.661
	PFO3OA	39492-89-2	ND U	ND U
	PFO4DA	39492-90-5	ND U	ND U
	PFO5DA	39492-91-6	ND U	ND U
	PMPA	13140-29-9	0.999	0.853
	R-EVE	2416366-22-6	ND U	ND U
	PFESAs	11Cl-PF3OUdS	763051-92-9	ND U
9Cl-PF3ONS		756426-58-1	ND U	ND U
Hydrolyzed PSDA		2416366-19-1	ND U	ND U
Nafion Byproduct 1 (PS Acid)		29311-67-9	ND U	ND U
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	ND U	ND U
NVHOS		1132933-86-8	0.601	0.831
PFEESA		113507-82-7	ND U	ND U
R-PSDA		2416366-18-0	ND U	ND U
R-PSDCA		2416366-21-5	ND U	ND U

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	072525-S01		
Sampling Site			
Enthalpy ID	0725-1255-001-1	Prep Batch	EU118460
Matrix	aqueous	Analyst	jogres
Sampling Date	2025-07-25 09:00	Instrument	Bumblebee
Received Date	2025-07-25	Sample Vol mL	0.1
Prep Date	2025-07-28 07:30	Extract Vol mL	0.2
AnalysisDate	2025-07-29 19:55	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	8290725-07291955	375	700	1530			L
ES	13C3-PFPrA		8290725-07291955				20-150%	52.3%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)

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

## Details

Sample Name	072525-S01	Prep Batch	EU118459
Sampling Site		Analyst	zoeardt
Enthalpy ID	0725-1255-001-1A	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	303.41
Sampling Date	2025-07-25 09:00	Extract Vol mL	0.4
Received Date	2025-07-25	Split Factor	N/A
Prep Date	2025-07-28 08:45	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 17:36		
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	P290725024	4.68	0.209	0.527				
	PFPeA	2706-90-3	P290725024	5.09	0.151	0.527				
	PFFhxA	307-24-4	P290725024	4.62	0.176	0.527				
	PFFHpA	375-85-9	P290725024	2.89	0.185	0.527				
	PFOA	335-67-1	P290725024	6.12	0.121	0.527				
	PFNA	375-95-1	P290725024	1.09	0.119	0.527				
	PFDA	335-76-2	P290725024	0.782	0.151	0.527				
	PFUnDA	2058-94-8	P290725024	0.138	0.119	0.527			J	
	PFFDoDA	307-55-1	P290725024	ND	0.214	0.527			U	
	PFFTrDA	72629-94-8	P290725024	ND	0.175	0.527			U	
	PFFTeDA	376-06-7	P290725024	ND	0.201	0.527			U	
	PFFHxDA	67905-19-5	P290725024	ND	0.280	0.527			U	
	Sulfonates	PFBS	375-73-5	P290725024	2.67	0.280	0.527			
PFPeS		2706-91-4	P290725024	0.509	0.108	0.497				
PFFhXS		355-46-4	P290725024	2.75	0.407	0.483				
PFFHpS		375-92-8	P290725024	0.229	0.255	0.502			L	
PFOS		1763-23-1	P290725024	14.6	0.279	0.488				
PFNS		68259-12-1	P290725024	ND	0.164	0.508			U	
PFDS		335-77-3	P290725024	ND	0.277	0.508			U	
4:2 FTS		757124-72-4	P290725024	ND	0.0684	0.494			U	
6:2 FTS		27619-97-2	P290725024	ND	0.249	0.502			U	
8:2 FTS		39108-34-4	P290725024	0.00498	0.118	0.505			L	
10:2 FTS	120226-60-0	P290725024	ND	0.404	0.527			U		
Sulfonamidos	FBSA	30334-69-1	P290725024	0.234	0.250	0.527			L	
	N-EiFOSA	4151-50-2	P290725024	ND	0.326	0.527			U	
	N-EiFOSAA	2991-50-6	P290725024	0.166	0.214	0.527			L	
	N-EiFOSE	1691-99-2	P290725024	ND	0.807	2.37			U	
	N-MeFOSA	31506-32-8	P290725024	ND	0.218	0.527			U	
	N-MeFOSAA	2355-31-9	P290725024	0.0599	0.148	0.527			L	
	N-MeFOSE	24448-09-7	P290725024	ND	0.501	2.37			U	
	PFOSA	754-91-6	P290725024	0.207	0.0740	0.527			J	
	ADONA	919005-14-4	P290725024	ND	0.143	0.500			U	
PFECAs	EVE Acid	69087-46-3	P290725024	ND	0.168	1.19			U	
	HFPO-DA	13252-13-6	P290725024	0.510	0.0559	0.527			J	
	Hydro-EVE Acid	773804-62-9	P290725024	ND	0.173	0.527			U	
	NFDHA	151772-58-6	P290725024	ND	0.111	0.527			U	
	PEPA	267239-61-2	P290725024	ND	0.0989	0.527			U	
	PFECA-G	801212-59-9	P290725024	ND	0.0704	0.527			U	
	PFMOAA	674-13-5	P290725024	1.79	0.267	0.527				
	PFMOBA	863090-89-5	P290725024	ND	0.885	1.19			U	
	PFMOPrA	377-73-1	P290725024	ND	0.188	0.527			U	
	PFO2HxA	39492-88-1	P290725024	0.645	0.170	0.527				
	PFO3OA	39492-89-2	P290725024	ND	0.242	0.527			U	
	PFO4DA	39492-90-5	P290725024	ND	0.417	2.64			U	
	PFO5DA	39492-91-6	P290725024	ND	0.422	2.64			U	
	PMPA	13140-29-9	P290725024	0.999	0.124	0.527				
	R-EVE	2416366-22-6	P290725024	ND	0.875	1.19			U	
	PFESAs	11Cl-PF3OUdS	763051-92-9	P290725024	ND	0.249	0.497			U
		9Cl-PF3ONS	756426-58-1	P290725024	ND	0.338	0.491			U
Hydrolyzed PSDA		2416366-19-1	P290725024	ND	0.351	0.527			U	
Nafion Byproduct 1 (PS Acid)		29311-67-9	P290725024	ND	0.282	0.527			U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	P290725024	ND	0.437	0.527			U	
NVHOS		1132933-86-8	P290725024	0.601	0.0812	0.527				
PFEESA		113507-82-7	P290725024	ND	0.159	0.527			U	
R-PSDA		2416366-18-0	P290725024	ND	2.32	2.32			U	
R-PSDCA		2416366-21-5	P290725024	ND	0.222	0.527			U	
ES	MPFBA		P290725024				20-150%	86.0%		
	M5PFPeA		P290725024				20-150%	140%		
	M3PFBS		P290725024				20-150%	158%	Q	
	M2-4:2 FTS		P290725024				20-150%	106%		
	M5PFFhxA		P290725024				20-150%	92.1%		
	M3HFPO-DA		P290725024				20-150%	90.9%		
	M4PFFHpA		P290725024				20-150%	94.4%		

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	072525-S01		
Sampling Site			
Enthalpy ID	0725-1255-001-1A	Prep Batch	EU118459
Matrix	aqueous	Analyst	zoeardt
Sampling Date	2025-07-25 09:00	Instrument	Pippin
Received Date	2025-07-25	Sample Vol mL	303.41
Prep Date	2025-07-28 08:45	Extract Vol mL	0.4
AnalysisDate	2025-07-29 17:36	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		P290725024				20-150%	101%	
M2-6:2 FTS		P290725024				20-150%	101%	
M8PFOA		P290725024				20-150%	102%	
M9PFNA		P290725024				20-150%	102%	
M8PFOS		P290725024				20-150%	105%	
M2-8:2 FTS		P290725024				20-150%	98.4%	
M8FOSA-I		P290725024				20-150%	92.1%	
M6PFDA		P290725024				20-150%	95.9%	
d3-N-MeFOSAA		P290725024				20-150%	104%	
d5-N-EtFOSAA		P290725024				20-150%	101%	
M7PFUdA		P290725024				20-150%	99.9%	
MPFDoA		P290725024				20-150%	85.0%	
M2PFTeDA		P290725024				20-150%	53.0%	
d3-N-MeFOSA		P290725024				10-200%	29.7%	
d5-N-EtFOSA		P290725024				10-200%	23.1%	
d7-N-MeFOSE		P290725024				10-200%	42.1%	
d9-N-EtFOSE		P290725024				10-200%	27.4%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	072525-E01	Prep Batch	EU118460
Sampling Site		Analyst	jogres
Enthalpy ID	0725-1255-002-1	Instrument	Bumblebee
Matrix	aqueous	Sample Vol mL	0.1
Sampling Date	2025-07-25 09:00	Extract Vol mL	0.2
Received Date	2025-07-25	Split Factor	N/A
Prep Date	2025-07-28 07:30	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 20:07		
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	PFPrA	422-64-0	8290725-07252007	374	700	1530			L
ES	13C3-PFPrA		8290725-07252007				20-150%	51.2%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)

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

## Details

Sample Name	072525-E01	Prep Batch	EU118459
Sampling Site		Analyst	zoeardt
Enthalpy ID	0725-1255-002-1A	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	304.58
Sampling Date	2025-07-25 09:00	Extract Vol mL	0.4
Received Date	2025-07-25	Split Factor	N/A
Prep Date	2025-07-28 08:45	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 17:59		
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	P290725025	4.45	0.208	0.525			
	PFPeA	2706-90-3	P290725025	4.71	0.150	0.525			
	PFHxA	307-24-4	P290725025	4.33	0.176	0.525			
	PFFHpA	375-85-9	P290725025	2.66	0.184	0.525			
	PFOA	335-67-1	P290725025	5.79	0.120	0.525			
	PFNA	375-95-1	P290725025	1.01	0.119	0.525			
	PFDA	335-76-2	P290725025	0.686	0.150	0.525			
	PFUnDA	2058-94-8	P290725025	0.0819	0.119	0.525			L
	PFDoDA	307-55-1	P290725025	ND	0.213	0.525			U
	PFTrDA	72629-94-8	P290725025	ND	0.174	0.525			U
	PFTeDA	376-06-7	P290725025	ND	0.200	0.525			U
	PFFhxDA	67905-19-5	P290725025	ND	0.279	0.525			U
	Sulfonates	PFBS	375-73-5	P290725025	2.45	0.279	0.525		
PFPeS		2706-91-4	P290725025	0.494	0.108	0.495			J
PFFhXS		355-46-4	P290725025	2.56	0.405	0.481			
PFFHpS		375-92-8	P290725025	0.220	0.254	0.500			L
PFOS		1763-23-1	P290725025	14.2	0.277	0.487			
PFNS		68259-12-1	P290725025	ND	0.163	0.506			U
PFDS		335-77-3	P290725025	ND	0.276	0.506			U
4:2 FTS		757124-72-4	P290725025	ND	0.0681	0.492			U
6:2 FTS		27619-97-2	P290725025	ND	0.248	0.500			U
8:2 FTS		39108-34-4	P290725025	0.00447	0.118	0.503			L
10:2 FTS	120226-60-0	P290725025	ND	0.402	0.525			U	
Sulfonamidos	FBSA	30334-69-1	P290725025	0.180	0.250	0.525			L
	N-EiFOSA	4151-50-2	P290725025	ND	0.325	0.525			U
	N-EiFOSAA	2991-50-6	P290725025	0.182	0.213	0.525			L
	N-EiFOSE	1691-99-2	P290725025	ND	0.804	2.36			U
	N-MeFOSA	31506-32-8	P290725025	ND	0.217	0.525			U
	N-MeFOSAA	2355-31-9	P290725025	0.0780	0.148	0.525			L
	N-MeFOSE	24448-09-7	P290725025	ND	0.499	2.36			U
	PFOSA	754-91-6	P290725025	0.0113	0.0737	0.525			L
PFECAs	ADONA	919005-14-4	P290725025	ND	0.142	0.498			U
	EVE Acid	69087-46-3	P290725025	ND	0.167	1.18			U
	HFPO-DA	13252-13-6	P290725025	0.564	0.0557	0.525			U
	Hydro-EVE Acid	773804-62-9	P290725025	ND	0.172	0.525			U
	NFDHA	151772-58-6	P290725025	ND	0.110	0.525			U
	PEPA	267239-61-2	P290725025	ND	0.0985	0.525			U
	PFECA-G	801212-59-9	P290725025	ND	0.0701	0.525			U
	PFMOAA	674-13-5	P290725025	0.882	0.266	0.525			U
	PFMOBA	863090-89-5	P290725025	ND	0.882	1.18			U
	PFMOPrA	377-73-1	P290725025	ND	0.187	0.525			U
	PFO2HxA	39492-88-1	P290725025	0.661	0.169	0.525			U
	PFO3OA	39492-89-2	P290725025	ND	0.241	0.525			U
	PFO4DA	39492-90-5	P290725025	ND	0.415	2.63			U
	PFO5DA	39492-91-6	P290725025	ND	0.420	2.63			U
	PMPA	13140-29-9	P290725025	0.853	0.124	0.525			U
	R-EVE	2416366-22-6	P290725025	ND	0.872	1.18			U
	PFESAs	11Cl-PF3OUdS	763051-92-9	P290725025	ND	0.248	0.495		
9Cl-PF3ONS		756426-58-1	P290725025	ND	0.337	0.489			U
Hydrolyzed PSDA		2416366-19-1	P290725025	ND	0.350	0.525			U
Nafion Byproduct 1 (PS Acid)		29311-67-9	P290725025	ND	0.281	0.525			U
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	P290725025	ND	0.435	0.525			U
NVHOS		1132933-86-8	P290725025	0.831	0.0809	0.525			U
PFEESA		113507-82-7	P290725025	ND	0.158	0.525			U
R-PSDA		2416366-18-0	P290725025	ND	2.31	2.31			U
R-PSDCA		2416366-21-5	P290725025	ND	0.222	0.525			U
ES	MPFBA		P290725025				20-150%	74.9%	
	M5PFPeA		P290725025				20-150%	137%	
	M3PFBS		P290725025				20-150%	188%	Q
	M2-4:2 FTS		P290725025				20-150%	105%	
	M5PFFhxA		P290725025				20-150%	84.5%	
	M3HFPO-DA		P290725025				20-150%	83.3%	
	M4PFFHpA		P290725025				20-150%	92.1%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	072525-E01		
Sampling Site			
Enthalpy ID	0725-1255-002-1A	Prep Batch	EU118459
Matrix	aqueous	Analyst	zoearndt
Sampling Date	2025-07-25 09:00	Instrument	Pippin
Received Date	2025-07-25	Sample Vol mL	304.58
Prep Date	2025-07-28 08:45	Extract Vol mL	0.4
AnalysisDate	2025-07-29 17:59	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		P290725025				20-150%	98.8%	
M2-6:2 FTS		P290725025				20-150%	104%	
M8PFOA		P290725025				20-150%	104%	
M9PFNA		P290725025				20-150%	109%	
M8PFOS		P290725025				20-150%	104%	
M2-8:2 FTS		P290725025				20-150%	107%	
M8FOSA-I		P290725025				20-150%	99.0%	
M6PFDA		P290725025				20-150%	96.6%	
d3-N-MeFOSAA		P290725025				20-150%	99.7%	
d5-N-EtFOSAA		P290725025				20-150%	110%	
M7PFUdA		P290725025				20-150%	101%	
MPFDoA		P290725025				20-150%	92.7%	
M2PFTeDA		P290725025				20-150%	68.0%	
d3-N-MeFOSA		P290725025				10-200%	39.8%	
d5-N-EtFOSA		P290725025				10-200%	32.2%	
d7-N-MeFOSE		P290725025				10-200%	75.8%	
d9-N-EtFOSE		P290725025				10-200%	75.2%	

# QC Data



# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)

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

## Details

Sample Name	MB_118459_PFAS	Prep Batch	EU118459
Sampling Site		Analyst	zoeardt
Enthalpy ID	MB_118459_PFAS	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-07-28 08:45	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 09:39		
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	P290725003	ND	0.254	0.640			U	
	PFPeA	2706-90-3	P290725003	ND	0.183	0.640			U	
	PFHxA	307-24-4	P290725003	ND	0.214	0.640			U	
	PFFHpA	375-85-9	P290725003	ND	0.224	0.640			U	
	PFOA	335-67-1	P290725003	ND	0.146	0.640			U	
	PFNA	375-95-1	P290725003	ND	0.145	0.640			U	
	PFDA	335-76-2	P290725003	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	P290725003	ND	0.145	0.640			U	
	PFDODA	307-55-1	P290725003	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	P290725003	ND	0.212	0.640			U	
	PFTeDA	376-06-7	P290725003	ND	0.244	0.640			U	
	PFFHxDA	67905-19-5	P290725003	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	P290725003	ND	0.340	0.640			U
		PFPeS	2706-91-4	P290725003	ND	0.131	0.603			U
PFFHxS		355-46-4	P290725003	ND	0.494	0.586			U	
PFFHpS		375-92-8	P290725003	ND	0.310	0.610			U	
PFOS		1763-23-1	P290725003	ND	0.338	0.593			U	
PFNS		68259-12-1	P290725003	ND	0.199	0.616			U	
PFDS		335-77-3	P290725003	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	P290725003	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	P290725003	ND	0.302	0.610			U	
8:2 FTS		39108-34-4	P290725003	ND	0.143	0.613			U	
10:2 FTS	120226-60-0	P290725003	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	P290725003	ND	0.304	0.640			U	
	N-EiFOSA	4151-50-2	P290725003	ND	0.396	0.640			U	
	N-EiFOSAA	2991-50-6	P290725003	ND	0.260	0.640			U	
	N-EiFOSE	1691-99-2	P290725003	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	P290725003	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	P290725003	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	P290725003	ND	0.608	2.88			U	
	PFOSA	754-91-6	P290725003	ND	0.0898	0.640			U	
PFECAs	ADONA	919005-14-4	P290725003	ND	0.173	0.606			U	
	EVE Acid	69087-46-3	P290725003	ND	0.204	1.44			U	
	HFPO-DA	13252-13-6	P290725003	ND	0.0678	0.640			U	
	Hydro-EVE Acid	773804-62-9	P290725003	ND	0.210	0.640			U	
	NFDHA	151772-58-6	P290725003	ND	0.135	0.640			U	
	PEPA	267239-61-2	P290725003	ND	0.120	0.640			U	
	PFECA-G	801212-59-9	P290725003	ND	0.0854	0.640			U	
	PFMOAA	674-13-5	P290725003	ND	0.324	0.640			U	
	PFMOBA	863090-89-5	P290725003	ND	1.07	1.44			U	
	PFMOPrA	377-73-1	P290725003	ND	0.228	0.640			U	
	PFO2HxA	39492-88-1	P290725003	ND	0.206	0.640			U	
	PFO3OA	39492-89-2	P290725003	ND	0.294	0.640			U	
	PFO4DA	39492-90-5	P290725003	ND	0.506	3.20			U	
	PFO5DA	39492-91-6	P290725003	ND	0.512	3.20			U	
	PMPA	13140-29-9	P290725003	ND	0.151	0.640			U	
	R-EVE	2416366-22-6	P290725003	ND	1.06	1.44			U	
PFESAs	11CI-PF3OUdS	763051-92-9	P290725003	ND	0.302	0.603			U	
	9CI-PF3ONS	756426-58-1	P290725003	ND	0.410	0.596			U	
	Hydrolyzed PSDA	2416366-19-1	P290725003	ND	0.426	0.640			U	
	Nafion Byproduct 1 (PS Acid)	29311-67-9	P290725003	ND	0.342	0.640			U	
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	P290725003	ND	0.530	0.640			U	
	NVHOS	1132933-86-8	P290725003	ND	0.0986	0.640			U	
	PFEESA	113507-82-7	P290725003	ND	0.192	0.640			U	
	R-PSDA	2416366-18-0	P290725003	ND	2.82	2.82			U	
	R-PSDCA	2416366-21-5	P290725003	ND	0.270	0.640			U	
	ES	MPFBA		P290725003				20-150%	94.4%	
M5PFPeA			P290725003				20-150%	102%		
M3PFBS			P290725003				20-150%	83.4%		
M2-4:2 FTS			P290725003				20-150%	99.4%		
M5PFFHxA			P290725003				20-150%	90.3%		
M3HFPO-DA			P290725003				20-150%	97.9%		
M4PFFHpA			P290725003				20-150%	86.2%		

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_118459_PFAS	Prep Batch	EU118459
Sampling Site		Analyst	zoeardt
Enthalpy ID	MB_118459_PFAS	Instrument	Pippin
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-07-28 08:45	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 09:39		
SampleType	Blank		
Bottle ID	-		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M3PFHxS		P290725003				20-150%	91.9%	
M2-6:2 FTS		P290725003				20-150%	89.9%	
M8PFOA		P290725003				20-150%	92.5%	
M9PFNA		P290725003				20-150%	84.1%	
M8PFOS		P290725003				20-150%	94.0%	
M2-8:2 FTS		P290725003				20-150%	86.5%	
M8FOSA-I		P290725003				20-150%	71.0%	
M6PFDA		P290725003				20-150%	91.0%	
d3-N-MeFOSAA		P290725003				20-150%	90.1%	
d5-N-EtFOSAA		P290725003				20-150%	86.9%	
M7PFUdA		P290725003				20-150%	95.8%	
MPFDoA		P290725003				20-150%	86.6%	
M2PFTeDA		P290725003				20-150%	71.3%	
d3-N-MeFOSA		P290725003				10-200%	5.23%	Q
d5-N-EtFOSA		P290725003				10-200%	5.46%	Q
d7-N-MeFOSE		P290725003				10-200%	43.0%	
d9-N-EtFOSE		P290725003				10-200%	42.3%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

## Details

Sample Name	MB_118460_PFAS	Prep Batch	EU118460
Sampling Site		Analyst	jogres
Enthalpy ID	MB_118460_PFAS	Instrument	Bumblebee
Matrix	aqueous	Sample Vol mL	0.1
Sampling Date		Extract Vol mL	0.2
Received Date		Split Factor	N/A
Prep Date	2025-07-28 07:30	Method Code	EU-047-NPW
AnalysisDate	2025-07-29 19:09		
SampleType	Blank		
Bottle ID	-		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	8290725-07291909	ND	700	1530			U
ES	13C3-PFPrA		8290725-07291909				20-150%	51.1%	

# Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)  
 Brunswick County Public Utilities - NC NORTHWEST WATER PLANT LELAND N.C.

Enthalpy ID	OPR_118459_PFAS	Prep Batch	EU118459	Sample Vol (mL)	250
Sample Name	OPR_118459_PFAS	Prep Date	2025-07-28 08:45	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-07-29 10:02	Split Factor	N/A
Sampling Date		Analyst	zoeardt	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	
Acids	PFBA	375-22-4	P290725004	18.5	0.254	0.640	47.9-144%	92.3%		
	PFPeA	2706-90-3	P290725004	17.6	0.183	0.640	41.7-159%	88.0%		
	PFHxA	307-24-4	P290725004	18.8	0.214	0.640	43.2-154%	93.8%		
	PFHpA	375-85-9	P290725004	17.9	0.224	0.640	42.1-155%	89.4%		
	PFOA	335-67-1	P290725004	17.8	0.146	0.640	51.1-148%	89.2%		
	PFNA	375-95-1	P290725004	19.3	0.145	0.640	51.6-153%	96.4%		
	PFDA	335-76-2	P290725004	18.3	0.183	0.640	44.5-156%	91.6%		
	PFUnDA	2058-94-8	P290725004	17.6	0.145	0.640	40.3-156%	88.1%		
	PFDoDA	307-55-1	P290725004	18.8	0.260	0.640	40.4-158%	94.2%		
	PFTeDA	72629-94-8	P290725004	19.9	0.212	0.640	42.2-201%	99.5%		
	PFTeDA	376-06-7	P290725004	18.7	0.244	0.640	43-162%	93.6%		
	Sulfonates	PFBS	375-73-5	P290725004	16.1	0.340	0.640	42.7-155%	90.9%	
		PFPeS	2706-91-4	P290725004	16.2	0.131	0.603	40.3-152%	86.3%	
		PFHxS	355-46-4	P290725004	16.7	0.494	0.586	45-148%	91.6%	
PFHpS		375-92-8	P290725004	16.4	0.310	0.610	39.8-166%	86.0%		
PFOS		1763-23-1	P290725004	15.6	0.338	0.593	59.2-132%	83.8%		
PFNS		68259-12-1	P290725004	16.8	0.199	0.616	38.1-153%	87.3%		
PFDS		335-77-3	P290725004	16.3	0.336	0.616	28.6-148%	84.5%		
4:2 FTS		757124-72-4	P290725004	17.6	0.0830	0.600	41.5-157%	93.8%		
6:2 FTS		27619-97-2	P290725004	18.2	0.302	0.610	44.5-160%	95.6%		
8:2 FTS		39108-34-4	P290725004	17.7	0.143	0.613	39.4-166%	92.1%		
Sulfonamidos		N-EtFOSA	4151-50-2	P290725004	21.8	0.396	0.640	26.7-172%	109%	
	N-EtFOSAA	2991-50-6	P290725004	18.0	0.260	0.640	42.8-156%	90.2%		
	N-EtFOSE	1691-99-2	P290725004	92.8	0.980	2.88	38.9-161%	103%		
	N-MeFOSA	31506-32-8	P290725004	23.1	0.264	0.640	26.4-183%	115%		
	N-MeFOSAA	2355-31-9	P290725004	19.4	0.180	0.640	42-155%	96.8%		
	N-MeFOSE	24448-09-7	P290725004	97.1	0.608	2.88	37.6-155%	108%		
	PFOSA	754-91-6	P290725004	16.9	0.0898	0.640	39.1-158%	84.5%		
	PFECAs	ADONA	919005-14-4	P290725004	18.1	0.173	0.606	32.2-151%	90.6%	
HFPO-DA		13252-13-6	P290725004	19.5	0.0678	0.640	61.8-131%	97.7%		
PFESAs	11Cl-PF3OUdS	763051-92-9	P290725004	16.6	0.302	0.603	21.8-141%	83.1%		
	9Cl-PF3ONS	756426-58-1	P290725004	16.9	0.410	0.596	37.6-146%	84.3%		
ES	MPFBA		P290725004				20-150%	94.1%		
	M5PFPeA		P290725004				20-150%	97.6%		
	M3PFBS		P290725004				20-150%	85.2%		
	M2-4:2 FTS		P290725004				20-150%	102%		
	M5PFHxA		P290725004				20-150%	93.9%		
	M3HFPO-DA		P290725004				20-150%	95.7%		
	M4PFHpA		P290725004				20-150%	91.3%		
	M3PFHxS		P290725004				20-150%	93.4%		
	M2-6:2 FTS		P290725004				20-150%	91.3%		
	M8PFOA		P290725004				20-150%	93.4%		
	M9PFNA		P290725004				20-150%	85.6%		
	M8PFOS		P290725004				20-150%	96.3%		
	M2-8:2 FTS		P290725004				20-150%	88.2%		
	M8FOSA-I		P290725004				20-150%	80.5%		
	M6PFDA		P290725004				20-150%	90.4%		
	d3-N-MeFOSAA		P290725004				20-150%	91.6%		
	d5-N-EtFOSAA		P290725004				20-150%	91.2%		
	M7PFUdA		P290725004				20-150%	92.5%		
	MPFDoA		P290725004				20-150%	88.2%		
	M2PFTeDA		P290725004				20-150%	75.6%		
	d3-N-MeFOSA		P290725004				10-200%	26.5%		
	d5-N-EtFOSA		P290725004				10-200%	24.1%		
	d7-N-MeFOSE		P290725004				10-200%	61.5%		
	d9-N-EtFOSE		P290725004				10-200%	59.0%		

## Enthalpy Analytical

Job No.: 0725-1255-1 PFAS by Isotope Dilution (non-potable water)

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

Enthalpy ID	OPR_118460_PFAS	Prep Batch	EU118460	Sample Vol (mL)	0.1
Sample Name	OPR_118460_PFAS	Prep Date	2025-07-28 07:30	Extract Vol (mL)	0.2
Matrix	aqueous	Analysis Date	2025-07-29 19:20	Split Factor	N/A
Sampling Date		Analyst	jogres	Method Code	EU-047-NPW
Received Date		Instrument	Bumblebee	Sample Type	Control
		Bottle ID	-		

	Compound	CAS	InjFileName	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B290725-07291920	23300	700	1530	40-150%	116%	
ES	13C3-PFPrA		B290725-07291920				20-150%	46.6%	

# Sample Custody



0725-1255

# 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 HRGC/HRMS	Sample on Hold	Method 23		ALL PFAS	
072525-S01	7/25/2025	9:00 AM	250 ml	G	NW	2												X	Please Add PFPrA and
072525-E01	7/25/2025	9:00 AM	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:
PHIL MCCULLOCH	7/25/2025	<i>[Signature]</i>	7/25/25	2:31 14:34	<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient °C <u>2.3</u>
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C _____

\*T.E  
 J.A.W 7/25/25

JOB ID:

Date / Time: 7/25/25 14:39 T.E  
2:39 J.A.J

Initials: J.A.J

OR

Client: Brunswick

Cooler  of

Temp °C:

Thermometer ID:

Received via

- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	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:

Temp °C:

Thermometer ID:

Cooler  of

Received via

- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	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:

Temp °C:

Thermometer ID:

Cooler  of

Received via

- FedEx
- UPS
- DHL
- USPS
- Courier
- Other

*Check one*

On ice:

Melted ice:

Ambient:

*Check one*

in a Box:

in a Cooler:

Cooler in Box:

	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: