

Brunswick County Public Utilities - NC

PO Box 249
Bolivia, NC 28422-0249

Leland, N.C.

Client Project# Northwest Water Plant
Samples Received: 11/14/2025

Analytical Report 1125-842

PFAS by Isotope Dilution (non-potable water)

Report Issue Date: 12/9/2025

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 35 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.	1125-842-1
Client ID.	Northwest Water Plant Site: Leland, N.C.

1. Custody

Christina Kurnath received the samples at 5.9 °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
1125-842-001-1A	111425-S01	aqueous	2025-11-14
1125-842-002-1A	111425-E01	aqueous	2025-11-14

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 instrument Gimli.

Samples were analyzed using more than one instrument sequence to meet method acceptance criteria.

Polar compound PFPrA was analyzed separately.

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
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5. QC Notes

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

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

QC samples that did not meet method acceptance criteria were:

- MB_119339_PFAS (d3-N-MeFOSA, d5-N-EtFOSA)
- OPR_119339_PFAS (M2-4:2 FTS, M7PFUdA)

See additional Extraction Standard (ES) 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*
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.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Summary

	Compound	CAS	111425-S01 ng/L	111425-E01 ng/L
Acids	PFBA	375-22-4	ND U	3.11
	PFPeA	2706-90-3	7.05	7.30
	PFHxA	307-24-4	5.28	5.49
	PFHpA	375-85-9	2.58	2.64
	PFOA	335-67-1	4.52	4.64
	PFNA	375-95-1	0.472 J	0.477 J
	PFDA	335-76-2	0.175 J	0.165 J
	PFUnDA	2058-94-8	ND U	ND U
	PFDoDA	307-55-1	ND U	ND U
	PFTTrDA	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	3.62
PFPeS		2706-91-4	0.603	0.583
PFHxS		355-46-4	3.91	4.20
PFHpS		375-92-8	0.157 L	0.155 L
PFOS		1763-23-1	7.91	8.06
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	0.0642 L	0.0767 L
8:2 FTS		39108-34-4	0.00264 L	0.00267 L
10:2 FTS	120226-60-0	ND U	ND U	
Sulfonamidos	FBSA	30334-69-1	0.373 J	0.393 J
	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	ND U	ND U
PFECAs	ADONA	919005-14-4	ND U	ND U
	EVE Acid	69087-46-3	0.203 J	0.216 J
	HFPO-DA	13252-13-6	2.86	2.99
	Hydro-EVE Acid	773804-62-9	0.305 J	0.311 J
	NFDHA	151772-58-6	ND U	ND U
	PEPA	267239-61-2	4.44	5.19
	PFECA-G	801212-59-9	ND U	ND U
	PFMOAA	674-13-5	21.5	2.95
	PFMOBA	863090-89-5	ND U	ND U
	PFMOPrA	377-73-1	0.0521 L	0.0697 L
	PFO2HxA	39492-88-1	2.29	3.30

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Summary

	Compound	CAS	111425-S01 ng/L	111425-E01 ng/L
PFECAs	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	14.1	7.90
	R-EVE	2416366-22-6	1.25 J	1.52
PFESAs	11Cl-PF3OUdS	763051-92-9	ND U	ND U
	9Cl-PF3ONS	756426-58-1	ND U	ND U
	Hydrolyzed PSDA	2416366-19-1	8.15	9.61
	Nafion Byproduct 1 (PS Acid)	29311-67-9	2.15	1.75
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	0.657	0.533 J
	NVHOS	1132933-86-8	3.50	3.22
	PFEESA	113507-82-7	ND U	ND U
	R-PSDA	2416366-18-0	0.955 L	1.37 L
	R-PSDCA	2416366-21-5	ND U	ND U

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-S01	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	1125-842-001-1A	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	285.37
Sampling Date	2025-11-14 13:00	Extract Vol mL	0.4
Received Date	2025-11-14	Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 18:52		
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	FR031225030	ND	0.223	0.561			U	
	PFPeA	2706-90-3	FR031225030	7.05	0.160	0.561				
	PFHxA	307-24-4	FR031225030	5.28	0.187	0.561				
	PFHpA	375-85-9	FR031225030	2.58	0.196	0.561				
	PFOA	335-67-1	FR031225030	4.52	0.128	0.561				
	PFNA	375-95-1	FR031225030	0.472	0.127	0.561			J	
	PFDA	335-76-2	FR031225030	0.175	0.160	0.561			J	
	PFUnDA	2058-94-8	FR031225030	ND	0.127	0.561			U	
	PFDODA	307-55-1	FR031225030	ND	0.228	0.561			U	
	PFTrDA	72629-94-8	FR031225030	ND	0.186	0.561			U	
	PFTeDA	376-06-7	FR031225030	ND	0.214	0.561			U	
	PFHxDA	67905-19-5	FR031225030	ND	0.298	0.561			U	
	Sulfonates	PFBS	375-73-5	FR031225030	3.62	0.298	0.561			
		PFPeS	2706-91-4	FR031225030	0.603	0.115	0.528			
PFHxS		355-46-4	FR031225030	3.91	0.433	0.513				
PFHpS		375-92-8	FR031225030	0.157	0.272	0.534			L	
PFOS		1763-23-1	FR031225030	7.91	0.296	0.519				
PFNS		68259-12-1	FR031225030	ND	0.174	0.540			U	
PFDS		335-77-3	FR031225030	ND	0.294	0.540			U	
4:2 FTS		757124-72-4	FR031225030	ND	0.0727	0.525			U	
6:2 FTS		27619-97-2	FR031225030	0.0642	0.265	0.534			L	
8:2 FTS		39108-34-4	FR031225030	0.00264	0.126	0.537			L	
10:2 FTS	120226-60-0	FR031225030	ND	0.429	0.561			U		
Sulfonamidos	FBSA	30334-69-1	FR031225030	0.373	0.266	0.561			J	
	N-EtFOSA	4151-50-2	FR031225030	ND	0.347	0.561			U	
	N-EtFOSAA	2991-50-6	FR031225030	ND	0.228	0.561			U	
	N-EtFOSE	1691-99-2	FR031225030	ND	0.859	2.52			U	
	N-MeFOSA	31506-32-8	FR031225030	ND	0.231	0.561			U	
	N-MeFOSAA	2355-31-9	FR031225030	ND	0.158	0.561			U	
	N-MeFOSE	24448-09-7	FR031225030	ND	0.533	2.52			U	
	PFOA	754-91-6	FR031225030	ND	0.0787	0.561			U	
PFECAs	ADONA	919005-14-4	FR031225030	ND	0.152	0.531			U	
	EVE Acid	69087-46-3	FR031225030	0.203	0.179	1.26			J	
	HFPO-DA	13252-13-6	FR031225030	2.86	0.0594	0.561				
	Hydro-EVE Acid	773804-62-9	FR031225030	0.305	0.184	0.561			J	
	NFDHA	151772-58-6	FR031225030	ND	0.118	0.561			U	
	PEPA	267239-61-2	FR031225030	4.44	0.105	0.561				
	PFECA-G	801212-59-9	FR031225030	ND	0.0748	0.561			U	
	PFMOAA	674-13-5	FR031225030	21.5	0.284	0.561				
	PFMOBA	863090-89-5	FR031225030	ND	0.941	1.26			U	
	PFMOPrA	377-73-1	FR031225030	0.0521	0.200	0.561			L	
	PFO2HxA	39492-88-1	GI201125066	2.29	0.180	0.561				
	PFO3OA	39492-89-2	FR031225030	ND	0.258	0.561			U	
	PFO4DA	39492-90-5	FR031225030	ND	0.443	2.80			U	
	PFO5DA	39492-91-6	FR031225030	ND	0.449	2.80			U	
	PMPA	13140-29-9	FR031225030	14.1	0.132	0.561				
	R-EVE	2416366-22-6	FR031225030	1.25	0.930	1.26			J	
PFESAs	11Cl-PF3OUds	763051-92-9	FR031225030	ND	0.265	0.528			U	
	9Cl-PF3ONS	756426-58-1	FR031225030	ND	0.359	0.522			U	
	Hydrolyzed PSDA	2416366-19-1	GI201125066	8.15	0.373	0.561				
	Nafion Byproduct 1 (PS Acid)	29311-67-9	FR031225030	2.15	0.300	0.561				
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	FR031225030	0.657	0.464	0.561				
	NVHOS	1132933-86-8	FR031225030	3.50	0.0864	0.561				
	PFEESA	113507-82-7	GI041225012	ND	0.169	0.561			U	
R-PSDA	2416366-18-0	FR031225030	0.955	2.47	2.47			L		
R-PSDCA	2416366-21-5	FR031225030	ND	0.237	0.561			U		
ES	MPPFBA		FR031225030				20-150%	108%		
	M5PPPeA		FR031225030				20-150%	260%	Q	
	M3PFBS		FR031225030				20-150%	62.0%	Ac	
	M2-4:2 FTS		FR031225030				20-150%	117%		
	M5PFHxA		FR031225030				20-150%	59.9%		
	M3HFPO-DA		FR031225030				20-150%	134%		

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-S01	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	1125-842-001-1A	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	285.37
Sampling Date	2025-11-14 13:00	Extract Vol mL	0.4
Received Date	2025-11-14	Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 18:52		
SampleType	Sample		
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M4PFHpA		FR031225030				20-150%	116%	
M3PFHxS		FR031225030				20-150%	129%	
M2-6:2 FTS		FR031225030				20-150%	93.1%	
M8PFOA		FR031225030				20-150%	109%	
M9PFNA		FR031225030				20-150%	113%	
M8PFOS		FR031225030				20-150%	109%	
M2-8:2 FTS		FR031225030				20-150%	85.5%	
M8FOSA-I		FR031225030				20-150%	105%	
M6PFDA		FR031225030				20-150%	113%	
d3-N-MeFOSAA		FR031225030				20-150%	107%	
d5-N-EtFOSAA		FR031225030				20-150%	107%	
M7PFUdA		FR031225030				20-150%	145%	
MPFDoA		FR031225030				20-150%	118%	
M2PFTeDA		FR031225030				20-150%	73.4%	
d3-N-MeFOSA		FR031225030				10-200%	22.5%	
d5-N-EtFOSA		FR031225030				10-200%	38.6%	
d7-N-MeFOSE		FR031225030				10-200%	51.6%	
d9-N-EtFOSE		FR031225030				10-200%	63.8%	

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-E01	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	1125-842-002-1A	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	284.67
Sampling Date	2025-11-14 13:00	Extract Vol mL	0.4
Received Date	2025-11-14	Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 19:15		
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	FR031225031	3.11	0.223	0.562				
	PFPeA	2706-90-3	FR031225031	7.30	0.161	0.562				
	PFHxA	307-24-4	FR031225031	5.49	0.188	0.562				
	PFHpA	375-85-9	FR031225031	2.64	0.197	0.562				
	PFOA	335-67-1	FR031225031	4.64	0.129	0.562				
	PFNA	375-95-1	FR031225031	0.477	0.127	0.562			J	
	PFDA	335-76-2	FR031225031	0.165	0.161	0.562			J	
	PFUnDA	2058-94-8	FR031225031	ND	0.127	0.562			U	
	PFDODA	307-55-1	FR031225031	ND	0.228	0.562			U	
	PFTrDA	72629-94-8	FR031225031	ND	0.186	0.562			U	
	PFTeDA	376-06-7	FR031225031	ND	0.214	0.562			U	
	PFHxDA	67905-19-5	FR031225031	ND	0.299	0.562			U	
	Sulfonates	PFBS	375-73-5	FR031225031	3.73	0.299	0.562			
		PFPeS	2706-91-4	FR031225031	0.583	0.115	0.530			
PFHxS		355-46-4	FR031225031	4.20	0.434	0.515				
PFHpS		375-92-8	FR031225031	0.155	0.272	0.535			L	
PFOS		1763-23-1	FR031225031	8.06	0.297	0.521				
PFNS		68259-12-1	FR031225031	ND	0.174	0.541			U	
PFDS		335-77-3	FR031225031	ND	0.295	0.541			U	
4:2 FTS		757124-72-4	FR031225031	ND	0.0729	0.527			U	
6:2 FTS		27619-97-2	FR031225031	0.0767	0.265	0.535			L	
8:2 FTS		39108-34-4	FR031225031	0.00267	0.126	0.538			L	
10:2 FTS	120226-60-0	FR031225031	ND	0.430	0.562			U		
Sulfonamidos	FBSA	30334-69-1	FR031225031	0.393	0.267	0.562			J	
	N-EtFOSA	4151-50-2	FR031225031	ND	0.348	0.562			U	
	N-EtFOSAA	2991-50-6	FR031225031	ND	0.228	0.562			U	
	N-EtFOSE	1691-99-2	FR031225031	ND	0.861	2.53			U	
	N-MeFOSA	31506-32-8	FR031225031	ND	0.232	0.562			U	
	N-MeFOSAA	2355-31-9	FR031225031	ND	0.158	0.562			U	
	N-MeFOSE	24448-09-7	FR031225031	ND	0.534	2.53			U	
	PFOSA	754-91-6	FR031225031	ND	0.0789	0.562			U	
PFECAs	ADONA	919005-14-4	FR031225031	ND	0.152	0.532			U	
	EVE Acid	69087-46-3	FR031225031	0.216	0.179	1.26			J	
	HFPO-DA	13252-13-6	FR031225031	2.99	0.0595	0.562				
	Hydro-EVE Acid	773804-62-9	FR031225031	0.311	0.184	0.562			J	
	NFDHA	151772-58-6	FR031225031	ND	0.118	0.562			U	
	PEPA	267239-61-2	FR031225031	5.19	0.105	0.562				
	PFCA-G	801212-59-9	FR031225031	ND	0.0750	0.562			U	
	PFMOAA	674-13-5	FR031225031	2.95	0.285	0.562				
	PFMOBA	863090-89-5	FR031225031	ND	0.943	1.26			U	
	PFMOPrA	377-73-1	FR031225031	0.0697	0.200	0.562			L	
	PFO2HxA	39492-88-1	GI201125067	3.30	0.181	0.562				
	PFO3OA	39492-89-2	FR031225031	ND	0.258	0.562			U	
	PFO4DA	39492-90-5	FR031225031	ND	0.444	2.81			U	
	PFO5DA	39492-91-6	FR031225031	ND	0.450	2.81			U	
PMPA	13140-29-9	FR031225031	7.90	0.132	0.562					
R-EVE	2416366-22-6	FR031225031	1.52	0.933	1.26					
PFESAs	11Cl-PF3OUds	763051-92-9	FR031225031	ND	0.265	0.530			U	
	9Cl-PF3ONS	756426-58-1	FR031225031	ND	0.360	0.524			U	
	Hydrolyzed PSDA	2416366-19-1	GI201125067	9.61	0.374	0.562				
	Nafion Byproduct 1 (PS Acid)	29311-67-9	FR031225031	1.75	0.300	0.562				
	Nafion Byproduct 2 (Hydro-PS Acid)	749836-20-2	FR031225031	0.533	0.465	0.562			J	
	NVHOS	1132933-86-8	FR031225031	3.22	0.0866	0.562				
	PFEESA	113507-82-7	FR031225031	ND	0.169	0.562			U	
R-PSDA	2416366-18-0	FR031225031	1.37	2.48	2.48			L		
R-PSDCA	2416366-21-5	FR031225031	ND	0.237	0.562			U		
ES	MPFBA		FR031225031				20-150%	60.4%		
	M5PFPeA		FR031225031				20-150%	191%	Q	
	M3PFBS		FR031225031				20-150%	275%	Q	
	M2-4:2 FTS		FR031225031				20-150%	120%		
	M5PFHxA		FR031225031				20-150%	89.9%		
	M3HFPO-DA		FR031225031				20-150%	123%		

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-E01	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	1125-842-002-1A	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	284.67
Sampling Date	2025-11-14 13:00	Extract Vol mL	0.4
Received Date	2025-11-14	Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 19:15		
SampleType	Sample		
Bottle ID	A		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M4PFHpA		FR031225031				20-150%	104%	
M3PFHxS		FR031225031				20-150%	108%	
M2-6:2 FTS		FR031225031				20-150%	127%	
M8PFOA		FR031225031				20-150%	111%	
M9PFNA		FR031225031				20-150%	112%	
M8PFOS		FR031225031				20-150%	109%	
M2-8:2 FTS		FR031225031				20-150%	102%	
M8FOSA-I		FR031225031				20-150%	94.8%	
M6PFDA		FR031225031				20-150%	103%	
d3-N-MeFOSAA		FR031225031				20-150%	87.1%	
d5-N-EiFOSAA		FR031225031				20-150%	87.3%	
M7PFUdA		FR031225031				20-150%	89.8%	
MPFDoA		FR031225031				20-150%	67.4%	
M2PFTeDA		FR031225031				20-150%	32.9%	
d3-N-MeFOSA		FR031225031				10-200%	8.53%	Q
d5-N-EiFOSA		FR031225031				10-200%	6.96%	Q
d7-N-MeFOSE		FR031225031				10-200%	35.4%	
d9-N-EiFOSE		FR031225031				10-200%	30.3%	

QC Data



Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	MB_119339_PFAS	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	MB_119339_PFAS	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 16:12		
SampleType	Blank		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	FR031225023	ND	0.254	0.640			U	
	PFPeA	2706-90-3	FR031225023	ND	0.183	0.640			U	
	PFHxA	307-24-4	FR031225023	ND	0.214	0.640			U	
	PFHpA	375-85-9	FR031225023	ND	0.224	0.640			U	
	PFOA	335-67-1	FR031225023	ND	0.146	0.640			U	
	PFNA	375-95-1	FR031225023	ND	0.145	0.640			U	
	PFDA	335-76-2	FR031225023	ND	0.183	0.640			U	
	PFUnDA	2058-94-8	FR031225023	ND	0.145	0.640			U	
	PFDoDA	307-55-1	FR031225023	ND	0.260	0.640			U	
	PFTrDA	72629-94-8	FR031225023	ND	0.212	0.640			U	
	PFTeDA	376-06-7	FR031225023	ND	0.244	0.640			U	
	PFHxDA	67905-19-5	FR031225023	ND	0.340	0.640			U	
	Sulfonates	PFBS	375-73-5	FR031225023	ND	0.340	0.640			U
		PFPeS	2706-91-4	FR031225023	ND	0.131	0.603			U
		PFHxS	355-46-4	FR031225023	ND	0.494	0.586			U
PFHpS		375-92-8	FR031225023	ND	0.310	0.610			U	
PFOS		1763-23-1	FR031225023	ND	0.338	0.593			U	
PFNS		68259-12-1	FR031225023	ND	0.199	0.616			U	
PFDS		335-77-3	FR031225023	ND	0.336	0.616			U	
4:2 FTS		757124-72-4	FR031225023	ND	0.0830	0.600			U	
6:2 FTS		27619-97-2	FR031225023	ND	0.302	0.610			U	
8:2 FTS		39108-34-4	FR031225023	0.00634	0.143	0.613			L	
10:2 FTS	120226-60-0	FR031225023	ND	0.490	0.640			U		
Sulfonamidos	FBSA	30334-69-1	FR031225023	ND	0.304	0.640			U	
	N-EtFOSA	4151-50-2	FR031225023	ND	0.396	0.640			U	
	N-EtFOSAA	2991-50-6	FR031225023	ND	0.260	0.640			U	
	N-EtFOSE	1691-99-2	FR031225023	ND	0.980	2.88			U	
	N-MeFOSA	31506-32-8	FR031225023	ND	0.264	0.640			U	
	N-MeFOSAA	2355-31-9	FR031225023	ND	0.180	0.640			U	
	N-MeFOSE	24448-09-7	FR031225023	ND	0.608	2.88			U	
	PFOSA	754-91-6	FR031225023	ND	0.0898	0.640			U	
PFECAs	ADONA	919005-14-4	FR031225023	ND	0.173	0.606			U	
	EVE Acid	69087-46-3	FR031225023	0.000920	0.204	1.44			L	
	HFPO-DA	13252-13-6	FR031225023	ND	0.0678	0.640			U	
	Hydro-EVE Acid	773804-62-9	FR031225023	ND	0.210	0.640			U	
	NFDHA	151772-58-6	FR031225023	ND	0.135	0.640			U	
	PEPA	267239-61-2	FR031225023	ND	0.120	0.640			U	
	PFCA-G	801212-59-9	FR031225023	ND	0.0854	0.640			U	
	PFMOAA	674-13-5	FR031225023	ND	0.324	0.640			U	
	PFMOBA	863090-89-5	FR031225023	ND	1.07	1.44			U	
	PFMOPrA	377-73-1	FR031225023	ND	0.228	0.640			U	
	PFO2HxA	39492-88-1	GI201125059	ND	0.206	0.640			U	
	PFO3OA	39492-89-2	FR031225023	ND	0.294	0.640			U	
	PFO4DA	39492-90-5	FR031225023	ND	0.506	3.20			U	
	PFO5DA	39492-91-6	FR031225023	ND	0.512	3.20			U	
	PMPA	13140-29-9	FR031225023	ND	0.151	0.640			U	
	R-EVE	2416366-22-6	FR031225023	ND	1.06	1.44			U	
	PFESAs	11Cl-PF3OUdS	763051-92-9	FR031225023	ND	0.302	0.603			U
9Cl-PF3ONS		756426-58-1	FR031225023	ND	0.410	0.596			U	
Hydrolyzed PSDA		2416366-19-1	GI201125059	ND	0.426	0.640			U	
Nafion Byproduct 1 (PS Acid)		29311-67-9	FR031225023	ND	0.342	0.640			U	
Nafion Byproduct 2 (Hydro-PS Acid)		749836-20-2	FR031225023	ND	0.530	0.640			U	
NVHOS		1132933-86-8	FR031225023	ND	0.0986	0.640			U	
PFEESA		113507-82-7	FR031225023	ND	0.192	0.640			U	
R-PSDA		2416366-18-0	FR031225023	ND	2.82	2.82			U	
R-PSDCA	2416366-21-5	FR031225023	ND	0.270	0.640			U		
ES	MPPFBA		FR031225023				20-150%	103%		
	M5PPPeA		FR031225023				20-150%	106%		
	M3PFBS		FR031225023				20-150%	98.9%		
	M2-4:2 FTS		FR031225023				20-150%	122%		
	M5PFHxA		FR031225023				20-150%	104%		
	M3HFPO-DA		FR031225023				20-150%	95.6%		

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	MB_119339_PFAS	Prep Batch	EU119339
Sampling Site		Analyst	bmay
Enthalpy ID	MB_119339_PFAS	Instrument	Gimli
Matrix	aqueous	Sample Vol mL	250
Sampling Date		Extract Vol mL	0.4
Received Date		Split Factor	N/A
Prep Date	2025-11-20 07:44	Method Code	EU-047-NPW
AnalysisDate	2025-12-03 16:12		
SampleType	Blank		

Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
M4PFHpA		FR031225023				20-150%	90.4%	
M3PFHxS		FR031225023				20-150%	89.8%	
M2-6:2 FTS		FR031225023				20-150%	80.1%	
M8PFOA		FR031225023				20-150%	69.8%	
M9PFNA		FR031225023				20-150%	57.8%	
M8PFOS		FR031225023				20-150%	57.2%	
M2-8:2 FTS		FR031225023				20-150%	51.1%	
M8FOSA-I		FR031225023				20-150%	46.6%	
M6PFDA		FR031225023				20-150%	55.6%	
d3-N-MeFOSAA		FR031225023				20-150%	49.4%	
d5-N-EtFOSAA		FR031225023				20-150%	45.5%	
M7PFUdA		FR031225023				20-150%	46.1%	
MPFDoA		FR031225023				20-150%	35.4%	
M2PFTeDA		FR031225023				20-150%	25.9%	
d3-N-MeFOSA		FR031225023				10-200%	4.25%	Q
d5-N-EtFOSA		FR031225023				10-200%	4.28%	Q
d7-N-MeFOSE		FR031225023				10-200%	27.4%	
d9-N-EtFOSE		FR031225023				10-200%	25.0%	

Enthalpy Analytical

Job No.: 1125-842-1 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Enthalpy ID	OPR_119339_PFAS	Prep Batch	EU119339	Sample Vol (mL)	250
Sample Name	OPR_119339_PFAS	Prep Date	2025-11-20 07:44	Extract Vol (mL)	0.4
Matrix	aqueous	Analysis Date	2025-11-21 02:48	Split Factor	N/A
Sampling Date		Analyst	bmaj	Method Code	EU-047-NPW
Received Date		Instrument	Gimli	Sample Type	Control

	Compound	CAS	InjFileName	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags	
Acids	PFBA	375-22-4	FR031225024	16.4	0.254	0.640	47.9-144%	82.1%		
	PFPeA	2706-90-3	FR031225024	17.8	0.183	0.640	41.7-159%	89.2%		
	PFHxA	307-24-4	FR031225024	17.1	0.214	0.640	43.2-154%	85.6%		
	PFHpA	375-85-9	FR031225024	17.0	0.224	0.640	42.1-155%	85.2%		
	PFOA	335-67-1	FR031225024	18.0	0.146	0.640	51.1-148%	89.9%		
	PFNA	375-95-1	FR031225024	18.0	0.145	0.640	51.6-153%	89.9%		
	PFDA	335-76-2	FR031225024	17.0	0.183	0.640	44.5-156%	85.2%		
	PFUnDA	2058-94-8	FR031225024	17.9	0.145	0.640	40.3-156%	89.5%		
	PFDoDA	307-55-1	FR031225024	18.6	0.260	0.640	40.4-158%	93.1%		
	PFTtDA	72629-94-8	FR031225024	27.4	0.212	0.640	42.2-201%	137%		
	PFTeDA	376-06-7	FR031225024	18.4	0.244	0.640	43-162%	91.9%		
	Sulfonates	PFBs	375-73-5	FR031225024	16.1	0.340	0.640	42.7-155%	90.8%	
		PFPeS	2706-91-4	FR031225024	13.8	0.131	0.603	40.3-152%	73.6%	
		PFHxS	355-46-4	FR031225024	15.6	0.494	0.586	45-148%	85.4%	
PFHpS		375-92-8	FR031225024	20.7	0.310	0.610	39.8-166%	109%		
PFOS		1763-23-1	FR031225024	16.5	0.338	0.593	59.2-132%	88.9%		
PFNS		68259-12-1	FR031225024	14.2	0.199	0.616	38.1-153%	74.0%		
PFDS		335-77-3	FR031225024	16.5	0.336	0.616	28.6-148%	85.7%		
4:2 FTS		757124-72-4	GI041225007	18.6	0.0830	0.600	41.5-157%	99.3%		
6:2 FTS		27619-97-2	FR031225024	18.0	0.302	0.610	44.5-160%	94.8%		
8:2 FTS		39108-34-4	FR031225024	17.6	0.143	0.613	39.4-166%	91.5%		
Sulfonamidos		N-EtFOSA	4151-50-2	FR031225024	17.2	0.396	0.640	26.7-172%	86.1%	
		N-EtFOSAA	2991-50-6	FR031225024	18.5	0.260	0.640	42.8-156%	92.3%	
		N-EtFOSE	1691-99-2	FR031225024	79.6	0.980	2.88	38.9-161%	88.4%	
		N-MeFOSA	31506-32-8	FR031225024	20.2	0.264	0.640	26.4-183%	101%	
	N-MeFOSAA	2355-31-9	FR031225024	18.0	0.180	0.640	42-155%	89.9%		
	N-MeFOSE	24448-09-7	FR031225024	47.8	0.608	2.88	37.6-155%	53.1%		
	PFOSA	754-91-6	FR031225024	17.7	0.0898	0.640	39.1-158%	88.6%		
	PFECAs	ADONA	919005-14-4	FR031225024	21.3	0.173	0.606	32.2-151%	107%	
HFPO-DA		13252-13-6	FR031225024	16.0	0.0678	0.640	61.8-131%	80.0%		
PFESAs	11Cl-PF3OUdS	763051-92-9	FR031225024	14.1	0.302	0.603	21.8-141%	70.5%		
	9Cl-PF3ONS	756426-58-1	FR031225024	14.3	0.410	0.596	37.6-146%	71.5%		
ES	MPFBA		FR031225024				20-150%	119%		
	M5PFPeA		FR031225024				20-150%	115%		
	M3PFBS		FR031225024				20-150%	145%		
	M2-4:2 FTS		GI041225007				20-150%	240%	Q	
	M5PFHxA		FR031225024				20-150%	82.9%		
	M3HFPO-DA		FR031225024				20-150%	71.9%		
	M4PFHpA		FR031225024				20-150%	133%		
	M3PFHxS		FR031225024				20-150%	137%		
	M2-6:2 FTS		FR031225024				20-150%	93.7%		
	M8PFOA		FR031225024				20-150%	112%		
	M9PFNA		FR031225024				20-150%	123%		
	M8PFOS		FR031225024				20-150%	108%		
	M2-8:2 FTS		FR031225024				20-150%	84.0%		
	M8FOSA-I		FR031225024				20-150%	97.7%		
	M6PFDA		FR031225024				20-150%	110%		
	d3-N-MeFOSAA		FR031225024				20-150%	106%		
	d5-N-EtFOSAA		FR031225024				20-150%	93.8%		
	M7PFUdA		FR031225024				20-150%	157%	Q	
	MPFDcA		FR031225024				20-150%	108%		
	M2PFTeDA		FR031225024				20-150%	73.8%		
	d3-N-MeFOSA		FR031225024				10-200%	13.4%		
	d5-N-EtFOSA		FR031225024				10-200%	33.4%		
	d7-N-MeFOSE		FR031225024				10-200%	38.4%		
d9-N-EtFOSE		FR031225024				10-200%	91.6%			

Narrative Summary



Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	1125-842-2
Client ID.	Northwest Water Plant Site: Leland, N.C.

1. Custody

Christina Kurnath received the samples at 5.9 °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
1125-842-001-1	111425-S01	aqueous	2025-11-14
1125-842-002-1	111425-E01	aqueous	2025-11-14

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	PFPrA	n/a

3. Analysis

The samples were analyzed using LC/MS/MS instrument Bumblebee.

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 ≥ 0.99 . The reported analytes in the calibration standards, Initial Calibration Verification (ICV) and continuing calibration (concal) met the accuracy criterion for native analytes.

5. QC Notes

The QC sample analyses passed all method criteria.

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

Enthalpy Analytical Narrative Summary

Company	Brunswick County Public Utilities - NC
Job No.	1125-842-2
Client ID.	Northwest Water Plant Site: Leland, N.C.

6. Reporting Notes

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

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.

Results

Enthalpy Analytical

Job No.: 1125-842-2 PFAS by Isotope Dilution (non-potable water)

Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Summary

	Compound	CAS	111425-S01 ng/L	111425-E01 ng/L
Acids	PFPrA	422-64-0	ND U	ND U

Enthalpy Analytical

Job No.: 1125-842-2 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-S01		
Sampling Site			
Enthalpy ID	1125-842-001-1	Prep Batch	EU119329
Matrix	aqueous	Analyst	zoeardt
Sampling Date	2025-11-14 13:00	Instrument	Bumblebee
Received Date	2025-11-14	Sample Vol mL	0.1
Prep Date	2025-11-18 22:20	Extract Vol mL	0.2
AnalysisDate	2025-11-20 14:07	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	B201125-11201407	ND	700	1530			U
ES	13C3-PFPrA		B201125-11201407				20-150%	130%	

Enthalpy Analytical

Job No.: 1125-842-2 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	111425-E01		
Sampling Site			
Enthalpy ID	1125-842-002-1	Prep Batch	EU119329
Matrix	aqueous	Analyst	zoeardt
Sampling Date	2025-11-14 13:00	Instrument	Bumblebee
Received Date	2025-11-14	Sample Vol mL	0.1
Prep Date	2025-11-18 22:20	Extract Vol mL	0.2
AnalysisDate	2025-11-20 14:18	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	B201125-11201418	ND	700	1530			U
ES	13C3-PFPrA		B201125-11201418				20-150%	134%	

QC Data



Enthalpy Analytical

Job No.: 1125-842-2 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	MB_119329_PFAS	Prep Batch	EU119329
Sampling Site		Analyst	zoeardt
Enthalpy ID	MB_119329_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	2025-11-18 22:20	Method Code	EU-047-NPW
AnalysisDate	2025-11-20 12:45		
SampleType	Blank		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B201125-11201245	ND	700	1530			U
ES	13C3-PFPrA		B201125-11201245				20-150%	134%	

Enthalpy Analytical

Job No.: 1125-842-2 PFAS by Isotope Dilution (non-potable water)
 Brunswick County Public Utilities - NC Northwest Water Plant Leland, N.C.

Details

Sample Name	OPR_119329_PFAS	Prep Batch	EU119329
Sampling Site		Analyst	zoeardt
Enthalpy ID	OPR_119329_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	2025-11-18 22:20	Method Code	EU-047-NPW
AnalysisDate	2025-11-20 12:57		
SampleType	Control		

	Compound	CAS	Injection File Name	Sample Concentration ng/L	LOD ng/L	LOQ ng/L	Recovery Limits	Recovery	Flags
Acids	PFPrA	422-64-0	B201125-11201257	15000	700	1530	40-150%	74.8%	
ES	¹³ C3-PFPrA		B201125-11201257				20-150%	128%	

Sample Custody



1125-842



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: <u>BRUNSWICK COUNTY UTILITIES</u>	Project Number: _____	PO#: _____
Project Manager: <u>GLENN WALKER</u>	Site Name: <u>NORTHWEST WATER PLANT</u>	Telephone#: _____
Report To: <u>SAME</u>	Location: <u>LELAND N.C.</u>	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	
111425-S01	11/14/2025	1:00 PM	250 ml	G	NW	2												X	Please Add PFPrA and
111425-E01	11/14/2025	1:00 PM	250 ml	G	DW	2												X	PFHpA To The Testing.
																			Mark Hager Knows About
																			This If you Have Questions

Recek 11/14/25

Relinquished By: <u>PHIL MCCULLOCH</u>	Date: <u>11/14/2025</u>	Received By: <i>CHAD [Signature]</i>	Date: <u>11/14/25</u>	Time: <u>14:45</u>	Sample Temperature Upon Receipt: <u>5.9</u>
					<input checked="" type="checkbox"/> Iced <input type="checkbox"/> Ambient °C
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C
					<input type="checkbox"/> Iced <input type="checkbox"/> Ambient °C

JOB ID:

Date / Time: 11/14/25 2:45

Initials: LGS

OR

Client: Brunswick county utilities

Cooler of

Temp °C: 5.9

Thermometer ID: TB

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: Yes No

Sample seals: Yes No

Good condition: Yes No

Comment:

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: Yes No

Sample seals: Yes No

Good condition: Yes No

Comment:

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: Yes No

Sample seals: Yes No

Good condition: Yes No

Comment: