ANALYTICAL REPORT

Lab Number:	L2505007
Client:	Brickhouse Environmental 515 S. Franklin St. West Chester, PA 19382
ATTN:	Ryan Stauffer
Phone:	(610) 350-3927
Project Name:	NORTH CENTER TWP-PFAS
Project Number:	020010132.12
Report Date:	02/10/25

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2505007-01	7055 LR	DW	PENNSYLVANIA	01/28/25 09:27	01/29/25
L2505007-02	7055 LR-FRB	DW	PENNSYLVANIA	01/28/25 09:28	01/29/25
L2505007-03	93 MHR	DW	PENNSYLVANIA	01/28/25 09:48	01/29/25
L2505007-04	93 MHR-FRB	DW	PENNSYLVANIA	01/28/25 09:50	01/29/25
L2505007-05	5 MHR	DW	PENNSYLVANIA	01/28/25 10:08	01/29/25
L2505007-06	BD-2	DW	PENNSYLVANIA	01/28/25 10:09	01/29/25
L2505007-07	5 MHR-FRB	DW	PENNSYLVANIA	01/28/25 10:11	01/29/25
L2505007-08	29 MHR	DW	PENNSYLVANIA	01/28/25 10:40	01/29/25
L2505007-09	29 MHR-FRB	DW	PENNSYLVANIA	01/28/25 10:42	01/29/25
L2505007-10	374 HCR	DW	PENNSYLVANIA	01/28/25 12:08	01/29/25
L2505007-11	374 HCR-FRB	DW	PENNSYLVANIA	01/28/25 12:10	01/29/25
L2505007-12	21 MHR	DW	PENNSYLVANIA	01/28/25 12:25	01/29/25
L2505007-13	21 MHR-FRB	DW	PENNSYLVANIA	01/28/25 12:27	01/29/25
L2505007-14	7270 SR	DW	PENNSYLVANIA	01/28/25 12:48	01/29/25
L2505007-15	7270 SR-FRB	DW	PENNSYLVANIA	01/28/25 12:49	01/29/25
L2505007-16	3664 RR	DW	PENNSYLVANIA	01/28/25 13:05	01/29/25
L2505007-17	3664 RR-FRB	DW	PENNSYLVANIA	01/28/25 13:06	01/29/25
L2505007-18	7285 SR	DW	PENNSYLVANIA	01/28/25 14:02	01/29/25
L2505007-19	7285 SR-FRB	DW	PENNSYLVANIA	01/28/25 14:04	01/29/25
L2505007-20	11 MHR	DW	PENNSYLVANIA	01/28/25 16:10	01/29/25
L2505007-21	11 MHR-FRB	DW	PENNSYLVANIA	01/28/25 16:12	01/29/25

Project Name:	NORTH CENTER TWP-PFAS	**Lab Number:**	L2505007
Project Number:	020010132.12	**Report Date:**	02/10/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	NORTH CENTER TWP-PFAS	**Lab Number:**	L2505007
Project Number:	020010132.12	**Report Date:**	02/10/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by EPA 537.1

L2505007-08: The surrogate recoveries were outside the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (52%); however, re-extraction achieved similar results: n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (58%). The results of the original extraction are reported; however, all associated compounds are considered to have a potential bias.

The WG2025741-2 LCS recovery associated with L2505007-01 through -20 is above the acceptance criteria for perfluorododecanoic acid (pfdoa) (140%), perfluorotridecanoic acid (pftrda) (133%), and perfluorotetradecanoic acid (pfta) (138%); however, the associated samples are non-detect to the reporting limit for these target analytes. The results of the original analysis are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Leitao Ashley Leitao

Title: Technical Director/Representative Date: 02/10/25

ORGANICS

SEMIVOLATILES

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-01
Client ID: 7055 LR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 09:27
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 21:15
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	2.64		ng/l	1.84	0.615	1
Perfluorohexanoic Acid (PFHxA)	1.20	J	ng/l	1.84	0.615	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.84	0.615	1
Perfluoroheptanoic Acid (PFHpA)	1.46	J	ng/l	1.84	0.615	1
Perfluorohexanesulfonic Acid (PFHxS)	5.20		ng/l	1.84	0.615	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.84	0.615	1
Perfluorooctanoic Acid (PFOA)	10.8		ng/l	1.84	0.615	1
Perfluorononanoic Acid (PFNA)	0.829	J	ng/l	1.84	0.615	1
Perfluorooctanesulfonic Acid (PFOS)	50.3		ng/l	1.84	0.615	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.615	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.84	0.615	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.615	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.615	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.615	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.615	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.84	0.615	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.615	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.615	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	90		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-02
Client ID: 7055 LR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 09:28
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:06
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	0.657	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.97	0.657	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.97	0.657	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	0.657	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	0.657	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.97	0.657	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	0.657	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	0.657	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.97	0.657	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.657	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.97	0.657	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.657	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.657	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.657	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.657	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.97	0.657	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.657	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.657	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	79		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	103		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-03
Client ID: 93 MHR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 09:48
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 19:49
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.82	0.608	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.82	0.608	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.82	0.608	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.82	0.608	1
Perfluorohexanesulfonic Acid (PFHxS)	0.622	J	ng/l	1.82	0.608	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.82	0.608	1
Perfluorooctanoic Acid (PFOA)	0.873	J	ng/l	1.82	0.608	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.82	0.608	1
Perfluorooctanesulfonic Acid (PFOS)	2.89		ng/l	1.82	0.608	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.82	0.608	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.82	0.608	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.82	0.608	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.82	0.608	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.82	0.608	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.82	0.608	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.82	0.608	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.82	0.608	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.82	0.608	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-04
Client ID: 93 MHR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 09:50
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:15
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.04	0.681	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.04	0.681	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.04	0.681	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.04	0.681	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.04	0.681	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.04	0.681	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.04	0.681	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.04	0.681	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.04	0.681	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.04	0.681	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.04	0.681	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.04	0.681	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.04	0.681	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.04	0.681	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.04	0.681	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.04	0.681	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.04	0.681	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.04	0.681	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-05
Client ID: 5 MHR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 10:08
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:23
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	10.6		ng/l	1.78	0.595	1
Perfluorohexanoic Acid (PFHxA)	2.85		ng/l	1.78	0.595	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.78	0.595	1
Perfluoroheptanoic Acid (PFHpA)	2.16		ng/l	1.78	0.595	1
Perfluorohexanesulfonic Acid (PFHxS)	4.16		ng/l	1.78	0.595	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.78	0.595	1
Perfluorooctanoic Acid (PFOA)	11.1		ng/l	1.78	0.595	1
Perfluorononanoic Acid (PFNA)	0.745	J	ng/l	1.78	0.595	1
Perfluorooctanesulfonic Acid (PFOS)	14.0		ng/l	1.78	0.595	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.78	0.595	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.78	0.595	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.78	0.595	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.78	0.595	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.78	0.595	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.78	0.595	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.78	0.595	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.78	0.595	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.78	0.595	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	96		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	110		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-06
Client ID: BD-2
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 10:09
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:32
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	9.40		ng/l	1.76	0.590	1
Perfluorohexanoic Acid (PFHxA)	2.99		ng/l	1.76	0.590	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.76	0.590	1
Perfluoroheptanoic Acid (PFHpA)	2.04		ng/l	1.76	0.590	1
Perfluorohexanesulfonic Acid (PFHxS)	3.98		ng/l	1.76	0.590	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.76	0.590	1
Perfluorooctanoic Acid (PFOA)	10.7		ng/l	1.76	0.590	1
Perfluorononanoic Acid (PFNA)	0.628	J	ng/l	1.76	0.590	1
Perfluorooctanesulfonic Acid (PFOS)	13.2		ng/l	1.76	0.590	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.76	0.590	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.76	0.590	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.76	0.590	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.76	0.590	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.76	0.590	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.76	0.590	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.76	0.590	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.76	0.590	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.76	0.590	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	88		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-07
Client ID: 5 MHR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 10:11
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:41
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.11	0.704	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.11	0.704	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.11	0.704	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.11	0.704	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.11	0.704	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.11	0.704	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.11	0.704	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.11	0.704	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.11	0.704	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.11	0.704	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.11	0.704	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.11	0.704	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.11	0.704	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.11	0.704	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.11	0.704	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.11	0.704	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.11	0.704	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.11	0.704	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	86		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		70-130

Project Name: NORTH CENTER TWP-PFAS **Lab Number:** L2505007

Project Number: 020010132.12 **Report Date:** 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-08
Client ID: 29 MHR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 10:40
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:49
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	1.20	J	ng/l	1.88	0.628	1
Perfluorohexanoic Acid (PFHxA)	1.60	J	ng/l	1.88	0.628	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.88	0.628	1
Perfluoroheptanoic Acid (PFHpA)	0.797	J	ng/l	1.88	0.628	1
Perfluorohexanesulfonic Acid (PFHxS)	18.0		ng/l	1.88	0.628	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.88	0.628	1
Perfluorooctanoic Acid (PFOA)	3.94		ng/l	1.88	0.628	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	0.628	1
Perfluorooctanesulfonic Acid (PFOS)	3.04		ng/l	1.88	0.628	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.628	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.88	0.628	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.628	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	0.628	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.628	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.628	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.88	0.628	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.628	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	0.628	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	82		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**52**	Q	70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-09
Client ID: 29 MHR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 10:42
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 20:58
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.02	0.676	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.02	0.676	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.02	0.676	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.02	0.676	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.02	0.676	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.02	0.676	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.02	0.676	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.02	0.676	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.02	0.676	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.02	0.676	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.02	0.676	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.02	0.676	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.02	0.676	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.02	0.676	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.02	0.676	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.02	0.676	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.02	0.676	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.02	0.676	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	93		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: NORTH CENTER TWP-PFAS **Lab Number:** L2505007

Project Number: 020010132.12 **Report Date:** 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-10
Client ID: 374 HCR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:08
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 21:07
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	5.66		ng/l	1.85	0.617	1
Perfluorohexanoic Acid (PFHxA)	5.89		ng/l	1.85	0.617	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.85	0.617	1
Perfluoroheptanoic Acid (PFHpA)	4.49		ng/l	1.85	0.617	1
Perfluorohexanesulfonic Acid (PFHxS)	14.8		ng/l	1.85	0.617	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.85	0.617	1
Perfluorooctanoic Acid (PFOA)	28.8		ng/l	1.85	0.617	1
Perfluorononanoic Acid (PFNA)	0.909	J	ng/l	1.85	0.617	1
Perfluorooctanesulfonic Acid (PFOS)	35.3		ng/l	1.85	0.617	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.85	0.617	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.85	0.617	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.85	0.617	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.85	0.617	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.85	0.617	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.85	0.617	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.85	0.617	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.85	0.617	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.85	0.617	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	95		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-11
Client ID: 374 HCR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:10
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:07
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.13	0.711	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.13	0.711	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.13	0.711	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.13	0.711	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.13	0.711	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.13	0.711	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.13	0.711	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.13	0.711	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.13	0.711	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.13	0.711	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.13	0.711	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.13	0.711	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.13	0.711	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.13	0.711	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.13	0.711	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.13	0.711	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.13	0.711	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.13	0.711	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	90		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	119		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-12
Client ID: 21 MHR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:25
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:16
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	17.0		ng/l	1.75	0.586	1
Perfluorohexanoic Acid (PFHxA)	16.1		ng/l	1.75	0.586	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.75	0.586	1
Perfluoroheptanoic Acid (PFHpA)	18.9		ng/l	1.75	0.586	1
Perfluorohexanesulfonic Acid (PFHxS)	65.5		ng/l	1.75	0.586	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.75	0.586	1
Perfluorooctanoic Acid (PFOA)	136		ng/l	1.75	0.586	1
Perfluorononanoic Acid (PFNA)	5.08		ng/l	1.75	0.586	1
Perfluorooctanesulfonic Acid (PFOS)	278		ng/l	1.75	0.586	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.75	0.586	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.75	0.586	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.75	0.586	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.75	0.586	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.75	0.586	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.75	0.586	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.75	0.586	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.75	0.586	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.75	0.586	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	95		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	92		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	92		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	72		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-13
Client ID: 21 MHR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:27
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:25
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.96	0.656	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.96	0.656	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.96	0.656	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.96	0.656	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.96	0.656	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.96	0.656	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.96	0.656	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.96	0.656	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.96	0.656	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.96	0.656	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.96	0.656	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.96	0.656	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.96	0.656	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.96	0.656	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.96	0.656	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.96	0.656	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.96	0.656	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.96	0.656	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	88		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-14
Client ID: 7270 SR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:48
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:33
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	1.51	J	ng/l	1.86	0.620	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.86	0.620	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.86	0.620	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.86	0.620	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.86	0.620	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.86	0.620	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.86	0.620	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.86	0.620	1
Perfluorooctanesulfonic Acid (PFOS)	0.620	J	ng/l	1.86	0.620	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.86	0.620	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.86	0.620	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.86	0.620	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.86	0.620	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.86	0.620	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.86	0.620	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.86	0.620	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.86	0.620	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.86	0.620	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	93		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	102		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-15
Client ID: 7270 SR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 12:49
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:42
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.95	0.651	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.95	0.651	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.95	0.651	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.95	0.651	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.95	0.651	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.95	0.651	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.95	0.651	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.95	0.651	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.95	0.651	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.95	0.651	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.95	0.651	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.95	0.651	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.95	0.651	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.95	0.651	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.95	0.651	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.95	0.651	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.95	0.651	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.95	0.651	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	86		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	82		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	100		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-16
Client ID: 3664 RR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 13:05
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:51
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	5.31		ng/l	1.83	0.611	1
Perfluorohexanoic Acid (PFHxA)	6.59		ng/l	1.83	0.611	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.83	0.611	1
Perfluoroheptanoic Acid (PFHpA)	5.78		ng/l	1.83	0.611	1
Perfluorohexanesulfonic Acid (PFHxS)	11.4		ng/l	1.83	0.611	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.83	0.611	1
Perfluorooctanoic Acid (PFOA)	43.3		ng/l	1.83	0.611	1
Perfluorononanoic Acid (PFNA)	4.65		ng/l	1.83	0.611	1
Perfluorooctanesulfonic Acid (PFOS)	340		ng/l	1.83	0.611	1
Perfluorodecanoic Acid (PFDA)	2.14		ng/l	1.83	0.611	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.83	0.611	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.83	0.611	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.83	0.611	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.83	0.611	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.83	0.611	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.83	0.611	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.83	0.611	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.83	0.611	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	119		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-17
Client ID: 3664 RR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 13:06
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 22:59
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.97	0.657	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.97	0.657	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.97	0.657	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.97	0.657	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.97	0.657	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.97	0.657	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.97	0.657	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.97	0.657	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.97	0.657	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.97	0.657	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.97	0.657	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.97	0.657	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.97	0.657	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.97	0.657	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.97	0.657	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.97	0.657	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.97	0.657	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.97	0.657	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	80		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130

Project Name: NORTH CENTER TWP-PFAS **Lab Number:** L2505007

Project Number: 020010132.12 **Report Date:** 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-18
Client ID: 7285 SR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 14:02
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 23:08
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	4.09		ng/l	1.84	0.614	1
Perfluorohexanoic Acid (PFHxA)	4.49		ng/l	1.84	0.614	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.84	0.614	1
Perfluoroheptanoic Acid (PFHpA)	5.15		ng/l	1.84	0.614	1
Perfluorohexanesulfonic Acid (PFHxS)	10.6		ng/l	1.84	0.614	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.84	0.614	1
Perfluorooctanoic Acid (PFOA)	22.5		ng/l	1.84	0.614	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.84	0.614	1
Perfluorooctanesulfonic Acid (PFOS)	17.3		ng/l	1.84	0.614	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.84	0.614	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.84	0.614	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.614	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.84	0.614	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.614	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.614	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.84	0.614	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.614	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.614	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	93		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	92		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-19
Client ID: 7285 SR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 14:04
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 23:17
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.05	0.684	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.05	0.684	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.05	0.684	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.05	0.684	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.05	0.684	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.05	0.684	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.05	0.684	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.05	0.684	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.05	0.684	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.05	0.684	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.05	0.684	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.05	0.684	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.05	0.684	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.05	0.684	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.05	0.684	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.05	0.684	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.05	0.684	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.05	0.684	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	84		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: NORTH CENTER TWP-PFAS **Lab Number:** L2505007

Project Number: 020010132.12 **Report Date:** 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-20
Client ID: 11 MHR
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 16:10
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/01/25 23:25
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	3.20		ng/l	1.88	0.629	1
Perfluorohexanoic Acid (PFHxA)	2.83		ng/l	1.88	0.629	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.88	0.629	1
Perfluoroheptanoic Acid (PFHpA)	2.36		ng/l	1.88	0.629	1
Perfluorohexanesulfonic Acid (PFHxS)	9.36		ng/l	1.88	0.629	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.88	0.629	1
Perfluorooctanoic Acid (PFOA)	16.2		ng/l	1.88	0.629	1
Perfluorononanoic Acid (PFNA)	0.727	J	ng/l	1.88	0.629	1
Perfluorooctanesulfonic Acid (PFOS)	29.5		ng/l	1.88	0.629	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.629	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.88	0.629	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.629	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	0.629	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.629	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.629	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.88	0.629	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.629	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	0.629	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	87		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	100		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505007-21
Client ID: 11 MHR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/28/25 16:12
Date Received: 01/29/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/07/25 04:17
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 12:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.14	0.716	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.14	0.716	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.14	0.716	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.14	0.716	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.14	0.716	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.14	0.716	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.14	0.716	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.14	0.716	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.14	0.716	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.14	0.716	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.14	0.716	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.14	0.716	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.14	0.716	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.14	0.716	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.14	0.716	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.14	0.716	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.14	0.716	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.14	0.716	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	104		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	99		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	100		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 02/01/25 19:40
Analyst: RDB

Extraction Method: EPA 537.1
Extraction Date: 01/31/25 15:22

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-20 Batch: WG2025741-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.668
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.668
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.668
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.668
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.668
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.668
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.668
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.668
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.668
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.668
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.668
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.668
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.668
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.668
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.668
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.668
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.668
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.668

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	93		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	92		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 02/07/25 03:50
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 12:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 21 Batch: WG2027033-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.668
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.668
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.668
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.668
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.668
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.668
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.668
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.668
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.668
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.668
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.668
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.668
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.668
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.668
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.668
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.668
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.668
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.668

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	114		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	103		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 Batch: WG2025741-2								
Perfluorobutanesulfonic Acid (PFBS)	128		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		70-130	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	105		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	121		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	119		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	125		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	124		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	120		-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	121		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	130		-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	121		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	129		-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	126		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	**140**	Q	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	124		-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	**133**	Q	-		70-130	-		30
Perfluorotetradecanoic Acid (PFTA)	**138**	Q	-		70-130	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 Batch: WG2025741-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	93				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	96				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116				70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 Batch: WG2027033-2								
Perfluorobutanesulfonic Acid (PFBS)	115		-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	98		-		70-130	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	91		-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	106		-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	104		-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	102		-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	96		-		70-130	-		30
Perfluorononanoic Acid (PFNA)	97		-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	98		-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	108		-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	111		-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	108		-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	102		-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	114		-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	108		-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	115		-		70-130	-		30
Perfluorotetradecanoic Acid (PFTA)	119		-		70-130	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 Batch: WG2027033-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	106				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104				70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG2025741-3 QC Sample: L2505007-01 Client ID: 7055 LR												
Perfluorobutanesulfonic Acid (PFBS)	2.64	137	160	115		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	1.20J	154	148	96		-	-		70-130	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	154	154	100		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	1.46J	154	153	99		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	5.20	141	164	113		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	146	158	108		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	10.8	154	182	111		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	0.829J	154	175	113		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	50.3	143	212	113		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	154	168	109		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	144	166	115		-	-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	154	163	106		-	-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	154	174	113		-	-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	154	172	111		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	154	177	115		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	146	158	108		-	-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	154	179	116		-	-		70-130	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	154	186	121		-	-		70-130	-		30

Matrix Spike Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG2025741-3 QC Sample: L2505007-01 Client ID: 7055 LR												

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86				70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG2027033-3 QC Sample: L2505203-03 Client ID: MS Sample												
Perfluorobutanesulfonic Acid (PFBS)	ND	31.3	34.7	111		-	-		70-130	-		30
Perfluorohexanoic Acid (PFHxA)	ND	35.2	35.3	100		-	-		70-130	-		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	35.2	32.5	92		-	-		70-130	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	35.2	35.6	101		-	-		70-130	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	32.2	32.8	102		-	-		70-130	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	33.2	36.7	110		-	-		70-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	35.2	35.4	101		-	-		70-130	-		30
Perfluorononanoic Acid (PFNA)	ND	35.2	35.3	100		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	32.7	31.4	96		-	-		70-130	-		30
Perfluorodecanoic Acid (PFDA)	ND	35.2	39.2	111		-	-		70-130	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	32.8	36.8	112		-	-		70-130	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	35.2	34.2	97		-	-		70-130	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	35.2	41.4	118		-	-		70-130	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	35.2	36.2	103		-	-		70-130	-		30
Perfluorododecanoic Acid (PFDoA)	ND	35.2	39.2	111		-	-		70-130	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	33.2	35.0	105		-	-		70-130	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	35.2	43.0	122		-	-		70-130	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	35.2	44.2	126		-	-		70-130	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS

Project Number: 020010132.12

Lab Number: L2505007

Report Date: 02/10/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG2027033-3 QC Sample: L2505203-03 Client ID: MS Sample												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	94				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	104				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG2025741-4 QC Sample: L2505007-03 Client ID: 93 MHR						
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	0.622J	0.602J	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	0.873J	0.966J	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	2.89	2.75	ng/l	5		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-20 QC Batch ID: WG2025741-4 QC Sample: L2505007-03 Client ID: 93 MHR

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		93		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	83		94		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		108		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		104		70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG2027033-4 QC Sample: L2505290-02 Client ID: DUP Sample						
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	0.868J	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 21 QC Batch ID: WG2027033-4 QC Sample: L2505290-02 Client ID: DUP Sample

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		93		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	81		87		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		100		70-130

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2505007-01A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-01B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-02A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-03A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-03B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-04A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-05A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-05B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-06A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-06B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-07A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-08A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-08B	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-09A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-10A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-10B	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-11A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-12A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-12B	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-13A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-14A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-14B	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)

*Values in parentheses indicate holding time in days

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12

Lab Number: L2505007
Report Date: 02/10/25

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2505007-15A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-16A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-16B	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-17A	Plastic 250ml Trizma preserved	A	NA		2.4	Y	Absent		A2-537.1(14)
L2505007-18A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-18B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-19A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-20A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-20B	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)
L2505007-21A	Plastic 250ml Trizma preserved	B	NA		2.8	Y	Absent		A2-537.1(14)

*Values in parentheses indicate holding time in days

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
Lab Number: L2505007
Report Date: 02/10/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: NORTH CENTER TWP-PFAS
Project Number: 020010132.12
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PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	NORTH CENTER TWP-PFAS	**Lab Number:**	L2505007
Project Number:	020010132.12	**Report Date:**	02/10/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

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Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

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Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: NORTH CENTER TWP-PFAS **Lab Number:** L2505007

Project Number: 020010132.12 **Report Date:** 02/10/25

REFERENCES

133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-20/006. Version 2.0, March 2020.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 1/30/25

ALPHA Job #: L2505007

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: ARM Group
Address: 515 S. Franklin Street
West Chester, PA 19382
Phone:
Fax:
Email: rstauffer@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: North Centre Twp.- PFAS
Project Location: Pennsylvania
Project #: 0200101 32.12
Project Manager: Ryan Stauffer
ALPHA Quote #: 00177080

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
PADEP	

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: PFAS via EPA Method 537.1

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	Sample Specific Comments	TOTAL # BOTTLES
-01	7055 LR	1/28/25	927	DW	RS	X		2
-02	7055 LR-FRB	1/28/25	928	DW	RS	X		2
-03	93 MHR	1/28/25	948	DW	RS	X		2
-04	93 MHR- FRB	1/28/25	950	DW	RS	X		2
-05	5 MHR	1/28/25	1008	DW	RS	X		2
-06	BD-2	1/28/25	1009	DW	RS	X		2
-07	5 MHR-FRB	1/28/25	1011	DW	RS	X		2
-08	29 MHR	1/28/25	1040	DW	RS	X		2
-09	29 MHR-FRB	1/28/25	1042	DW	RS	X		2
-10	~~374 HitHog~~ 374HCR	1/28/25	1208	DW	RS	X		2
					Container Type	P		
					Preservative	O		

Rec'd Client Storage 1/30/25 07:00

Relinquished By:	Date/Time	Received By:	Date/Time
Ryan Stauffer	1/28/25 1846	ARM Cold Storage	1/28/25 1846
Cold Storage	1/29/25 1033		1/29/25 1033
Rel CS 1/29	1/29/25 1955	Anthony Green JAN 29 2025 0235	1/29 1955
		Anthony Green	1/30/25 0120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

1/30/25 0320

FORM NO. 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 2 OF 3

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 1/30/25

ALPHA Job #: L2505007

Client Information

Client: ARM Group LLC
Address: 515 S. Franklin Street
West Chester, PA 19382
Phone:
Fax:
Email: rstauffer@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: North Centre Twp - PFAS
Project Location: Pennsylvania
Project #: 0200101 32.12
Project Manager: Ryan Stauffer
ALPHA Quote #: 00177080

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

~~☐~~ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
PADEP	

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: PFAS via EPA Method 533

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	PFAS	Sample Specific Comments	TOTAL # BOTTLES
-11	374 HCR-FRB	1/28/25	1210	DW	RS	X		2
-12	21 MHR	1/28/25	1225	DW	RS	X		2
-13	21 MHR - FRB	1/28/25	1227	DW	RS	X		2
-14	7270 SR	1/28/25	1248	DW	RS	X		2
-15	7270 SR-FRB	1/28/25	1249	DW	RS	X		2
-16	3664 RR	1/28/25	1305	DW	RS	X		2
-17	3664 RR-FRB	1/28/25	1306	DW	RS	X		2
-18	7285 SR	1/28/25	1402	DW	RS	X		2
-19	7285 SR-FRB	1/28/25	1404	DW	RS	X		2
-20	11 MHR	1/28/25	1610	DW	RS	X		2

Container Type	P
Preservative	0

Rec: Olivia Hoglund
1/30/25 07:00

Relinquished By:	Date/Time	Received By:	Date/Time
Ryan Stauffer	1/28/25 1846	ARM Cold Storage	1/28/25 1846
Cold Storage	1/29/25 1033	[illegible]	1/29/25 1033
[illegible]	1/29/25 1555	[illegible]	1/29 1845

Rel - C 1/29 Anthony Green JAN 29 2025 Anthony Green 1/30/25 0120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

01130250320 01/30/25 0320

FORM NO: 01-01 (rev. 14-OCT-07)

CHAIN OF CUSTODY

PAGE 3 OF 3

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 1/30/25

ALPHA Job #: L2505007

Client Information

Client: ARM Group LLC
Address: 515 S. Franklin Street
West Chester, PA 19382
Phone:
Fax:
Email: rstauffer@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: North Centre Twp. - PFAS
Project Location: Pennsylvania
Project #: 0200101 32.12
Project Manager: Ryan Stauffer
ALPHA Quote #: Q0177080

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
PADEP	

Other Project Specific Requirements/Comments/Detection Limits:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: PFAS via EPA Method 537.1	SAMPLE HANDLING	Sample Specific Comments	TOTAL # BOTTLES
-21	11MHR-FRB	1/28/25	1612	DW	RS	X			2

SAMPLE HANDLING: Filtration ☐ Done ☐ Not needed ☐ Lab to do; Preservation ☐ Lab to do (Please specify below)

Container Type	P																	
Preservative	O																	

Rec Olivia Hayford 1/30/25 07:00

Relinquished By:	Date/Time	Received By:	Date/Time
Ryan Stauffer	1/28/25 1846	ARM Cold Storage	1/28/25 1846
Cold Storage	1/29/25 1032	Peace	1/29/25 1033
	1/29/25 1835		1/29/25 1835
Rel	1/29	Anthony Green JAN 29 2025	Anthony Green 1/30/25 0120

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

01/30/25 03:20 1/30/25 0120

ANALYTICAL REPORT

Lab Number:	L2505130
Client:	Brickhouse Environmental 515 S. Franklin St. West Chester, PA 19382
ATTN:	Ryan Stauffer
Phone:	(610) 350-3927
Project Name:	NORTH CENTRE TWP.-PFAS
Project Number:	020010132.12
Report Date:	02/10/25

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0825), DoD (L2474), FL (E87814), IL (200081), IN (C-MA-04), KY (KY98046), LA (85084), ME (MA00030), MD (350), MI (9110), MN (025-999-495), NJ (MA015), NY (11627), NC (685), OR (MA-0262), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #525-23-107-88708A1), USFWS (Permit #A24920).

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2505130-01	7338 SR	DW	PENNSYLVANIA	01/29/25 09:58	01/30/25
L2505130-02	7338 SR-FRB	DW	PENNSYLVANIA	01/29/25 10:01	01/30/25
L2505130-03	BD-3	DW	PENNSYLVANIA	01/29/25 09:59	01/30/25

Project Name:	NORTH CENTRE TWP.-PFAS	**Lab Number:**	L2505130
Project Number:	020010132.12	**Report Date:**	02/10/25

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Pace Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet weight basis, unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Pace's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Pace Project Manager and made arrangements for Pace to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	NORTH CENTRE TWP.-PFAS	**Lab Number:**	L2505130
Project Number:	020010132.12	**Report Date:**	02/10/25

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by EPA 537.1

WG2026807-3R and WG2026807-4R: The sample was re-analyzed due to QC failures in the original analysis. The results of the re-analysis are reported.

WG2026807-3R: The Matrix Spike level is at the Reporting Limit (RL); any detections below the RL in the native sample are not included in the % Recovery calculation.

The WG2026807-3R MS recoveries, performed on L2505130-01, are outside the acceptance criteria for perfluorobutanesulfonic acid (pfbs) (157%), perfluoroheptanoic acid (pfhpa) (162%), perfluorohexanesulfonic acid (pfhxs) (206%), perfluorooctanoic acid (pfoa) (318%), perfluorononanoic acid (pfna) (203%), and perfluorooctanesulfonic acid (pfos) (1340%).

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Ashley Leitao Ashley Leitao

Title: Technical Director/Representative Date: 02/10/25

ORGANICS

SEMIVOLATILES

Project Name: NORTH CENTRE TWP.-PFAS
Lab Number: L2505130
Project Number: 020010132.12
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505130-01
Client ID: 7338 SR
Sample Location: PENNSYLVANIA

Date Collected: 01/29/25 09:58
Date Received: 01/30/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/05/25 17:21
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 01:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	3.20		ng/l	1.74	0.580	1
Perfluorohexanoic Acid (PFHxA)	3.53		ng/l	1.74	0.580	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.74	0.580	1
Perfluoroheptanoic Acid (PFHpA)	3.82		ng/l	1.74	0.580	1
Perfluorohexanesulfonic Acid (PFHxS)	12.1		ng/l	1.74	0.580	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.74	0.580	1
Perfluorooctanoic Acid (PFOA)	28.1		ng/l	1.74	0.580	1
Perfluorononanoic Acid (PFNA)	1.48	J	ng/l	1.74	0.580	1
Perfluorooctanesulfonic Acid (PFOS)	103		ng/l	1.74	0.580	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.74	0.580	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.74	0.580	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.74	0.580	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.74	0.580	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.74	0.580	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.74	0.580	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.74	0.580	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.74	0.580	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.74	0.580	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	90		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	89		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	89		70-130

Project Name: NORTH CENTRE TWP.-PFAS
Lab Number: L2505130
Project Number: 020010132.12
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505130-02
Client ID: 7338 SR-FRB
Sample Location: PENNSYLVANIA

Date Collected: 01/29/25 10:01
Date Received: 01/30/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/05/25 23:52
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 01:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.94	0.650	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.94	0.650	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.94	0.650	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.94	0.650	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.94	0.650	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.94	0.650	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.94	0.650	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.94	0.650	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.94	0.650	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.94	0.650	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.94	0.650	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.94	0.650	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.94	0.650	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.94	0.650	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.94	0.650	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.94	0.650	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.94	0.650	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.94	0.650	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	98		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	99		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		70-130

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12
Lab Number: L2505130
Report Date: 02/10/25

SAMPLE RESULTS

Lab ID: L2505130-03
Client ID: BD-3
Sample Location: PENNSYLVANIA

Date Collected: 01/29/25 09:59
Date Received: 01/30/25
Field Prep: Not Specified

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 02/05/25 17:39
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 01:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	3.41		ng/l	1.87	0.624	1
Perfluorohexanoic Acid (PFHxA)	3.87		ng/l	1.87	0.624	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	1.87	0.624	1
Perfluoroheptanoic Acid (PFHpA)	3.94		ng/l	1.87	0.624	1
Perfluorohexanesulfonic Acid (PFHxS)	12.9		ng/l	1.87	0.624	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	1.87	0.624	1
Perfluorooctanoic Acid (PFOA)	30.2		ng/l	1.87	0.624	1
Perfluorononanoic Acid (PFNA)	1.69	J	ng/l	1.87	0.624	1
Perfluorooctanesulfonic Acid (PFOS)	117		ng/l	1.87	0.624	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.87	0.624	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	1.87	0.624	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.87	0.624	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.87	0.624	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.87	0.624	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.87	0.624	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	1.87	0.624	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.87	0.624	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.87	0.624	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	110		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	105		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12
Lab Number: L2505130
Report Date: 02/10/25

Method Blank Analysis
Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 02/05/25 17:03
Analyst: TBR

Extraction Method: EPA 537.1
Extraction Date: 02/05/25 01:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01-03 Batch: WG2026807-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.668
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.668
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	2.00	0.668
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.668
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.668
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	0.668
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.668
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.668
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.668
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.668
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	0.668
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.668
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.668
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.668
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.668
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	0.668
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.668
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.668

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	96		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	101		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 Batch: WG2026807-2								
Perfluorobutanesulfonic Acid (PFBS)	92		-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	80		-		50-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	94		-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	78		-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	95		-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	88		-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	77		-		50-150	-		30
Perfluorononanoic Acid (PFNA)	78		-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	102		-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	85		-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	92		-		50-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	85		-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	89		-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	73		-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	93		-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	96		-		50-150	-		30
Perfluorotridecanoic Acid (PFTrDA)	97		-		50-150	-		30
Perfluorotetradecanoic Acid (PFTA)	122		-		50-150	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 Batch: WG2026807-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	95				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	86				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91				70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93				70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12
Lab Number: L2505130
Report Date: 02/10/25

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG2026807-3 QC Sample: L2505130-01 Client ID: 7338 SR												
Perfluorobutanesulfonic Acid (PFBS)	3.20	1.64	5.79	**157**	Q	-	-		50-150	-		30
Perfluorohexanoic Acid (PFHxA)	3.53	1.86	5.69	116		-	-		50-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	1.86	1.57J	85		-	-		50-150	-		30
Perfluoroheptanoic Acid (PFHpA)	3.82	1.86	6.82	**162**	Q	-	-		50-150	-		30
Perfluorohexanesulfonic Acid (PFHxS)	12.1	1.7	15.6	**206**	Q	-	-		50-150	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	1.75	1.88	107		-	-		50-150	-		30
Perfluorooctanoic Acid (PFOA)	28.1	1.86	34.0	**318**	Q	-	-		50-150	-		30
Perfluorononanoic Acid (PFNA)	1.48J	1.86	3.77	**203**	Q	-	-		50-150	-		30
Perfluorooctanesulfonic Acid (PFOS)	103	1.72	126	**1340**	Q	-	-		50-150	-		30
Perfluorodecanoic Acid (PFDA)	ND	1.86	2.28	123		-	-		50-150	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	1.73	1.67J	96		-	-		50-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	1.86	1.57J	85		-	-		50-150	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	1.86	2.13	115		-	-		50-150	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	1.86	1.49J	80		-	-		50-150	-		30
Perfluorododecanoic Acid (PFDoA)	ND	1.86	1.88	101		-	-		50-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	1.75	2.00	114		-	-		50-150	-		30
Perfluorotridecanoic Acid (PFTrDA)	ND	1.86	2.00	108		-	-		50-150	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	1.86	2.35	127		-	-		50-150	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS

Project Number: 020010132.12

Lab Number: L2505130

Report Date: 02/10/25

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG2026807-3 QC Sample: L2505130-01 Client ID: 7338 SR												

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111				70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG2026807-4 QC Sample: L2505130-03 Client ID: BD-3						
Perfluorobutanesulfonic Acid (PFBS)	3.41	3.56	ng/l	4		30
Perfluorohexanoic Acid (PFHxA)	3.87	4.65	ng/l	18		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	3.94	4.23	ng/l	7		30
Perfluorohexanesulfonic Acid (PFHxS)	12.9	13.9	ng/l	7		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	30.2	36.3	ng/l	18		30
Perfluorononanoic Acid (PFNA)	1.69J	1.88	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	117	116	ng/l	1		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG2026807-4 QC Sample: L2505130-03 Client ID: BD-3

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	110		120		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	105		122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		122		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		124		70-130

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2505130-01A	Plastic 250ml Trizma preserved	A	NA		2.2	Y	Absent		A2-537.1(14)
L2505130-01B	Plastic 250ml Trizma preserved	A	NA		2.2	Y	Absent		A2-537.1(14)
L2505130-02A	Plastic 250ml Trizma preserved	A	NA		2.2	Y	Absent		A2-537.1(14)
L2505130-03A	Plastic 250ml Trizma preserved	A	NA		2.2	Y	Absent		A2-537.1(14)
L2505130-03B	Plastic 250ml Trizma preserved	A	NA		2.2	Y	Absent		A2-537.1(14)

*Values in parentheses indicate holding time in days

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA/PFTeDA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS/PFDoS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
Perfluoropropanesulfonic Acid	PFPrS	423-41-6
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA/PFOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name: NORTH CENTRE TWP.-PFAS
Project Number: 020010132.12

Lab Number: L2505130
Report Date: 02/10/25

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
FLUOROTELOMER CARBOXYLIC ACIDS (FTCAs)		
3-Perfluoroheptyl Propanoic Acid	7:3FTCA	812-70-4
2H,2H,3H,3H-Perfluorooctanoic Acid	5:3FTCA	914637-49-3
3-Perfluoropropyl Propanoic Acid	3:3FTCA	356-02-5

Project Name:	NORTH CENTRE TWP.-PFAS	**Lab Number:**	L2505130
Project Number:	020010132.12	**Report Date:**	02/10/25

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	NORTH CENTRE TWP.-PFAS	**Lab Number:**	L2505130
Project Number:	020010132.12	**Report Date:**	02/10/25

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Chlordane: The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Gasoline Range Organics (GRO): Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers

Project Name:	NORTH CENTRE TWP.-PFAS	**Lab Number:**	L2505130
Project Number:	020010132.12	**Report Date:**	02/10/25

Data Qualifiers

Identified Compounds (TICs). For calculated parameters, this represents that one or more values used in the calculation were estimated.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name: NORTH CENTRE TWP.-PFAS **Lab Number:** L2505130

Project Number: 020010132.12 **Report Date:** 02/10/25

REFERENCES

133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-20/006. Version 2.0, March 2020.

LIMITATION OF LIABILITIES

Pace Analytical Services performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Pace Analytical Services.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
MADEP-APH.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Nonpotable Water: EPA RSK-175 Dissolved Gases

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables).
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

Certification IDs:

Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY JY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195

Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
CT PH-0825, ANAB/DoD L2474, IL 200081, IN C-MA-04, KY KY98046, LA 3090, ME MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, VT VT-0015, VA 460194, WA C954

Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

For a complete listing of analytes and methods, please contact your Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/31/25

ALPHA Job #: L2505130

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: ARM Group LLC
Address: 515 S. Franklin Street
West Chester, PA 19382
Phone:
Fax:
Email: rstauffer@armgroup.net
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: NorthCentre Twp. - PFAS
Project Location: Pennsylvania
Project #: 0200101 32.12
Project Manager: Ryan Stauffer
ALPHA Quote #: 00177080

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☒ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
PADEP	

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: PFAS via EPA Method 537.1

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials		Sample Specific Comments	TOTAL # BOTTLES
05130-01	7338SR	1/29/25	958	DW	RS	X		2
-02	7338 SR-FRB	1/29/25	1001	DW	RS	X		2
-03	BD-3	1/29/25	959	DW	RS	X		2

Container Type: P
Preservative: O

rec: 1/31/25 06:40

Relinquished By:	Date/Time	Received By:	Date/Time
Ryan Stauffer	1/30/25 1315	ARM Cold Storage/FALE	1/30/25 1315
ARM Cold Storage/FALE	1/30/25 1045		1/30/25 10:45
	1/30/25 1840		1/30/1840

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 14-OCT-07)

Anthony Green JAN 30 2025 2150 Anthony Green 1/31/25 00:20