ANALYTICAL REPORT

Lab Number:	L2462081
Client:	Maine DEP-Div. of Technical Services 17 State House Station Augusta, ME 04333
ATTN:	Molly King
Phone:	(207) 287-8169
Project Name:	NASB-HANGER 4 AFFF
Project Number:	83336
Report Date:	11/13/24

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Project Name: NASB-HANGER 4 AFFF
Project Number: 83336

Lab Number: L2462081
Report Date: 11/13/24

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2462081-01	BC-T-1	SOIL	BRUNSWICK	10/22/24 11:05	10/24/24
L2462081-02	BC-T-2	SOIL	BRUNSWICK	10/22/24 11:15	10/24/24
L2462081-03	BC-T-3	SOIL	BRUNSWICK	10/22/24 11:10	10/24/24
L2462081-04	BC-T-4	SOIL	BRUNSWICK	10/22/24 11:30	10/24/24
L2462081-05	BC-T-5	SOIL	BRUNSWICK	10/22/24 11:40	10/24/24
L2462081-06	BC-T-6	SOIL	BRUNSWICK	10/22/24 11:45	10/24/24
L2462081-07	BC-T-DUP	SOIL	BRUNSWICK	10/22/24 11:15	10/24/24

Project Name:	NASB-HANGER 4 AFFF	**Lab Number:**	L2462081
Project Number:	83336	**Report Date:**	11/13/24

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 Alpha 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, Alpha'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 Alpha Project Manager and made arrangements for Alpha 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: NASB-HANGER 4 AFFF **Lab Number:** L2462081
Project Number: 83336 **Report Date:** 11/13/24

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 1633
L2462081-01: The Extracted Internal Standard recoveries were above the acceptance criteria for perfluoro[1,2-13c2]dodecanoic acid (mpfdoa) (139%), perfluoro[1,2-13c2]tetradecanoic acid (m2pfteda) (134%). Since the sample was non-detect to the RL for all associated target analytes, re-analysis was not required.
L2462081-01: The Extracted Internal Standard recoveries were outside the acceptance criteria for perfluoro[1,2,3,4,5,6,7-13c7]undecanoic acid (m7-pfuda) (161%); however, the criteria were achieved upon re-extraction at a lower volume. The results of the re-extraction are reported for the associated target compounds.
L2462081-01: The Non-extracted Internal Standard (NIS) response was below the acceptance criteria for 13C4-PFOS; however, the criteria were achieved upon re-extraction at a lower volume. The results of the re-analysis are reported for PFHpS,PFOS, PFNS, PFDS, PFDoS, 9Cl-PF3ONS, 11Cl-PF3OUdS, PFOSA, NMeFOSA, NEtFOSA, NMeFOSAA, NEtFOSAA, NMeFOSE, and NEtFOSE.
L2462081-01: The sample was re-extracted on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-extraction was performed only for the compound(s) that exceeded the calibration range.
L2462081-01: The Extracted Internal Standard recoveries were outside the acceptance criteria for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (174%), perfluoro[13c8]octanesulfonamide (m8fosa) (290%), n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (323%), n-methyl-d3-perfluoro-1-octanesulfonamide (d3-nmefosa) (268%), n-ethyl-d5-perfluoro-1-octanesulfonamide (d5-netfosa) (257%), 2-(n-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol (d7-nmefose) (271%), and 2-(n-ethyl-d5-perfluoro-1-

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081
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Case Narrative (continued)

octanesulfonamido)ethan-d4-ol (d9-netfose) (256%); however, these recoveries do not apply to the abbreviated list of target analytes reported.

L2462081-01RE, -02, -03, and -07: The sample was re-analyzed on dilution in order to quantitate the results within the calibration range. The result(s) should be considered estimated, and are qualified with an E flag, for any compound(s) that exceeded the calibration range in the initial analysis. The re-analysis was performed only for the compound(s) that exceeded the calibration range.

WG1996226-1: The Extracted Internal Standard recoveries were above the acceptance criteria for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (160%). Since the sample was non-detect to the RL for all associated target analytes, re-analysis was not required.

WG1996226-2: The Extracted Internal Standard recovery for the WG1996226-2 LCS, associated with L2462081-01RE, is outside the acceptance criteria for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (212%); however, all associated target analytes are within overall LCS criteria; therefore, no further action was taken.

WG1996226-3: The Extracted Internal Standard recovery for the WG1996226-3 LCS, associated with L2462081-01RE, is outside the acceptance criteria for n-deuteriomethylperfluoro-1-octanesulfonamidoacetic acid (d3-nmefosaa) (242%); however, all associated target analytes are within overall LCS criteria; therefore, no further action was taken.

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: 11/13/24

ORGANICS

SEMIVOLATILES

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01
Client ID: BC-T-1
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:05
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 15:35
Analyst: JW
Percent Solids: 83%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	3.92		ng/g	0.800	0.266	1
Perfluoropentanoic Acid (PFPeA)	35.4		ng/g	0.400	0.134	1
Perfluorobutanesulfonic Acid (PFBS)	1.58		ng/g	0.200	0.067	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.266	1
Perfluorohexanoic Acid (PFHxA)	34.5		ng/g	0.200	0.067	1
Perfluoropentanesulfonic Acid (PFPeS)	6.03		ng/g	0.200	0.067	1
Perfluoroheptanoic Acid (PFHpA)	5.29		ng/g	0.200	0.067	1
Perfluorohexanesulfonic Acid (PFHxS)	68.1	E	ng/g	0.200	0.067	1
Perfluorooctanoic Acid (PFOA)	17.8		ng/g	0.200	0.067	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	383	E	ng/g	0.800	0.266	1
Perfluorononanoic Acid (PFNA)	3.87		ng/g	0.200	0.067	1
Perfluorodecanoic Acid (PFDA)	0.388		ng/g	0.200	0.067	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	6.98		ng/g	0.800	0.266	1
Perfluorododecanoic Acid (PFDoA)	0.117	J	ng/g	0.200	0.067	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.067	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.067	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.266	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.266	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.134	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.134	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.134	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.134	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.334	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	1.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.66	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01 Date Collected: 10/22/24 11:05

Client ID: BC-T-1 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	94		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	106		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	118		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	117		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	91		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	91		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	98		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	162		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	96		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	98		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	98		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	136		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**174**	Q	40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	**161**	Q	40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	**290**	Q	40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	**323**	Q	40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	**139**	Q	40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	**134**	Q	20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	104		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	**268**	Q	10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	**257**	Q	10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	**271**	Q	20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	**256**	Q	15-130

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01 RE/D
Client ID: BC-T-1
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:05
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/13/24 07:53
Analyst: AC
Percent Solids: 83%

Extraction Method: EPA 1633
Extraction Date: 11/12/24 08:28
Cleanup Method: EPA 1633
Cleanup Date: 11/12/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	1730		ng/g	22.8	7.59	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	76		40-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01 RE
Client ID: BC-T-1
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:05
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/12/24 19:08
Analyst: AC
Percent Solids: 83%

Extraction Method: EPA 1633
Extraction Date: 11/12/24 08:28
Cleanup Method: EPA 1633
Cleanup Date: 11/12/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorohexanesulfonic Acid (PFHxS)	81.4		ng/g	2.28	0.759	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	615		ng/g	9.11	3.04	1
Perfluoroheptanesulfonic Acid (PFHpS)	28.3		ng/g	2.28	0.759	1
Perfluorooctanesulfonic Acid (PFOS)	1860	E	ng/g	2.28	0.759	1
Perfluorononanesulfonic Acid (PFNS)	0.984	J	ng/g	2.28	0.759	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	2.28	0.975	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	2.28	0.759	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	2.28	0.759	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	2.28	0.759	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	2.28	0.759	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	2.28	0.759	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	9.11	3.04	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	9.11	3.04	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	2.28	0.759	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	2.28	0.759	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	22.8	7.59	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	22.8	7.59	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01 RE Date Collected: 10/22/24 11:05

Client ID: BC-T-1 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	39		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	69		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	95		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	84		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	87		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	104		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	91		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	101		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	97		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	97		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	90		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	133		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	114		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	123		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	111		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	103		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	94		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	101		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	98		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	101		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	98		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-02
Client ID: BC-T-2
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 15:44
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	1.16		ng/g	0.796	0.265	1
Perfluoropentanoic Acid (PFPeA)	9.09		ng/g	0.398	0.133	1
Perfluorobutanesulfonic Acid (PFBS)	0.269		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.796	0.265	1
Perfluorohexanoic Acid (PFHxA)	10.6		ng/g	0.199	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	0.703		ng/g	0.199	0.066	1
Perfluoroheptanoic Acid (PFHpA)	1.44		ng/g	0.199	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	10.2		ng/g	0.199	0.066	1
Perfluorooctanoic Acid (PFOA)	2.34		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	38.9		ng/g	0.796	0.265	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.54		ng/g	0.199	0.066	1
Perfluorononanoic Acid (PFNA)	0.428		ng/g	0.199	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	87.2	E	ng/g	0.199	0.066	1
Perfluorodecanoic Acid (PFDA)	0.322		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.542	J	ng/g	0.796	0.265	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.085	1
Perfluoroundecanoic Acid (PFUnA)	0.323		ng/g	0.199	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	0.092	J	ng/g	0.199	0.066	1
Perfluorooctanesulfonamide (PFOSA)	0.135	J	ng/g	0.199	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.066	1
Perfluorododecanoic Acid (PFDoA)	0.143	J	ng/g	0.199	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	0.079	J	ng/g	0.199	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.796	0.265	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.796	0.265	1
Perfluorododecanesulfonic Acid (PFDoS)	0.080	J	ng/g	0.199	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-02 Date Collected: 10/22/24 11:15

Client ID: BC-T-2 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.796	0.265	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.796	0.265	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.663	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.663	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.133	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.133	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.133	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.133	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.995	0.332	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	1.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.66	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-02 Date Collected: 10/22/24 11:15

Client ID: BC-T-2 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	79		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	86		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	76		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	73		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	70		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	82		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	74		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	93		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	74		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	82		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	74		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	113		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	97		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	82		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	87		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	101		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	67		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	70		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	75		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	75		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	82		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-02 D
Client ID: BC-T-2
Sample Location: BRUNSWICK

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 20:49
Analyst: JW
Percent Solids: 87%

Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	89.4		ng/g	0.995	0.332	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	49		40-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-03
Client ID: BC-T-3
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:10
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 15:53
Analyst: JW
Percent Solids: 92%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.521	J	ng/g	0.794	0.264	1
Perfluoropentanoic Acid (PFPeA)	2.50		ng/g	0.397	0.132	1
Perfluorobutanesulfonic Acid (PFBS)	0.072	J	ng/g	0.198	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.794	0.264	1
Perfluorohexanoic Acid (PFHxA)	3.89		ng/g	0.198	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	0.272		ng/g	0.198	0.066	1
Perfluoroheptanoic Acid (PFHpA)	0.386		ng/g	0.198	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	5.82		ng/g	0.198	0.066	1
Perfluorooctanoic Acid (PFOA)	1.24		ng/g	0.198	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	39.4		ng/g	0.794	0.264	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.13		ng/g	0.198	0.066	1
Perfluorononanoic Acid (PFNA)	0.266		ng/g	0.198	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	80.9	E	ng/g	0.198	0.066	1
Perfluorodecanoic Acid (PFDA)	0.212		ng/g	0.198	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.600	J	ng/g	0.794	0.264	1
Perfluorononanesulfonic Acid (PFNS)	0.107	J	ng/g	0.198	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.198	0.085	1
Perfluoroundecanoic Acid (PFUnA)	0.149	J	ng/g	0.198	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	0.177	J	ng/g	0.198	0.066	1
Perfluorooctanesulfonamide (PFOSA)	0.276	F	ng/g	0.198	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.198	0.066	1
Perfluorododecanoic Acid (PFDoA)	0.113	J	ng/g	0.198	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.198	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.198	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.794	0.264	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.794	0.264	1
Perfluorododecanesulfonic Acid (PFDoS)	0.138	J	ng/g	0.198	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-03 Date Collected: 10/22/24 11:10

Client ID: BC-T-3 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.794	0.264	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.794	0.264	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.198	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.198	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.98	0.661	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.98	0.661	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.397	0.132	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.397	0.132	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.397	0.132	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.397	0.132	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.992	0.331	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.96	1.65	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.96	1.65	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-03 Date Collected: 10/22/24 11:10

Client ID: BC-T-3 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	89		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	105		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	102		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	89		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	95		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	128		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	90		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	102		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	175		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	96		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	103		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	127		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	83		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	79		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	84		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	87		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	100		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-03 D
Client ID: BC-T-3
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:10
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 20:58
Analyst: JW
Percent Solids: 92%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	79.0		ng/g	0.992	0.330	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	62		40-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-04
Client ID: BC-T-4
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:30
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 16:02
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.657	J	ng/g	0.795	0.265	1
Perfluoropentanoic Acid (PFPeA)	1.62		ng/g	0.398	0.133	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.795	0.265	1
Perfluorohexanoic Acid (PFHxA)	0.799		ng/g	0.199	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.066	1
Perfluoroheptanoic Acid (PFHpA)	0.663		ng/g	0.199	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	0.633		ng/g	0.199	0.066	1
Perfluorooctanoic Acid (PFOA)	1.37		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.303	J	ng/g	0.795	0.265	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.066	1
Perfluorononanoic Acid (PFNA)	1.42		ng/g	0.199	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	2.63		ng/g	0.199	0.066	1
Perfluorodecanoic Acid (PFDA)	0.194	J	ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	1.28		ng/g	0.795	0.265	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.085	1
Perfluoroundecanoic Acid (PFUnA)	0.146	J	ng/g	0.199	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	0.068	J	ng/g	0.199	0.066	1
Perfluorooctanesulfonamide (PFOSA)	0.319	F	ng/g	0.199	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.066	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.795	0.265	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.795	0.265	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-04 Date Collected: 10/22/24 11:30

Client ID: BC-T-4 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.795	0.265	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.795	0.265	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.663	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.663	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.133	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.133	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.133	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.133	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.994	0.332	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	1.65	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.65	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-04 Date Collected: 10/22/24 11:30

Client ID: BC-T-4 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	82		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	98		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	91		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	82		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	80		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	73		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	85		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	77		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	92		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	94		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	105		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	116		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	95		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	104		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	77		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	81		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	77		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	87		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-05
Client ID: BC-T-5
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:40
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 16:11
Analyst: JW
Percent Solids: 94%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.795	0.265	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.398	0.133	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.795	0.265	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.199	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.066	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.199	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.199	0.066	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.682	J	ng/g	0.795	0.265	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.066	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.199	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	0.743		ng/g	0.199	0.066	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.795	0.265	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.085	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.199	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.066	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.066	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.795	0.265	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.795	0.265	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-05 Date Collected: 10/22/24 11:40

Client ID: BC-T-5 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.795	0.265	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.795	0.265	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.662	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.662	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.133	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.133	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.133	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.133	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.994	0.332	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.97	1.65	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.97	1.65	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-05 Date Collected: 10/22/24 11:40

Client ID: BC-T-5 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	88		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	108		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	95		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	87		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	86		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	81		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	93		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	82		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	93		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	86		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	88		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	88		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	115		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	89		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	90		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	91		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	73		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	67		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	87		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	78		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	76		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	79		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-06
Client ID: BC-T-6
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:45
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 16:19
Analyst: JW
Percent Solids: 96%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.797	0.265	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.398	0.133	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.797	0.265	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.199	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.199	0.066	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.199	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.199	0.066	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	1.68		ng/g	0.797	0.265	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.199	0.066	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.199	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	1.60		ng/g	0.199	0.066	1
Perfluorodecanoic Acid (PFDA)	0.096	J	ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.797	0.265	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.085	1
Perfluoroundecanoic Acid (PFUnA)	0.095	J	ng/g	0.199	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.199	0.066	1
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.066	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.199	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.797	0.265	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.797	0.265	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-06 Date Collected: 10/22/24 11:45

Client ID: BC-T-6 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.797	0.265	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.797	0.265	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.664	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.664	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.133	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.133	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.133	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.133	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.996	0.332	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.98	1.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.98	1.66	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-06 Date Collected: 10/22/24 11:45

Client ID: BC-T-6 Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	83		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	97		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	90		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	83		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	77		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	75		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	81		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	75		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	102		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	80		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	80		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	84		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	112		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	104		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	85		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	77		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	98		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	70		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	66		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	77		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	70		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	68		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	72		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	72		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-07
Client ID: BC-T-DUP
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 16:28
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	0.834		ng/g	0.797	0.265	1
Perfluoropentanoic Acid (PFPeA)	6.53		ng/g	0.398	0.133	1
Perfluorobutanesulfonic Acid (PFBS)	0.162	J	ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.797	0.265	1
Perfluorohexanoic Acid (PFHxA)	7.49		ng/g	0.199	0.066	1
Perfluoropentanesulfonic Acid (PFPeS)	0.449		ng/g	0.199	0.066	1
Perfluoroheptanoic Acid (PFHpA)	0.933		ng/g	0.199	0.066	1
Perfluorohexanesulfonic Acid (PFHxS)	7.15		ng/g	0.199	0.066	1
Perfluorooctanoic Acid (PFOA)	1.61		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	29.1		ng/g	0.797	0.265	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.02		ng/g	0.199	0.066	1
Perfluorononanoic Acid (PFNA)	0.282		ng/g	0.199	0.066	1
Perfluorooctanesulfonic Acid (PFOS)	61.2	E	ng/g	0.199	0.066	1
Perfluorodecanoic Acid (PFDA)	0.207		ng/g	0.199	0.066	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.314	J	ng/g	0.797	0.265	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.199	0.085	1
Perfluoroundecanoic Acid (PFUnA)	0.206		ng/g	0.199	0.066	1
Perfluorodecanesulfonic Acid (PFDS)	0.074	J	ng/g	0.199	0.066	1
Perfluorooctanesulfonamide (PFOSA)	0.095	J	ng/g	0.199	0.066	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.199	0.066	1
Perfluorododecanoic Acid (PFDoA)	0.097	J	ng/g	0.199	0.066	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.199	0.066	1
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.199	0.066	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.797	0.265	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.797	0.265	1
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.199	0.066	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-07 Date Collected: 10/22/24 11:15

Client ID: BC-T-DUP Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.797	0.265	1
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.797	0.265	1
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.199	0.066	1
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.199	0.066	1
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	1.99	0.664	1
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	1.99	0.664	1
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.398	0.133	1
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.398	0.133	1
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.398	0.133	1
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.398	0.133	1
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	0.996	0.332	1
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	4.98	1.66	1
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	4.98	1.66	1

Project Name: NASB-HANGER 4 AFFF **Lab Number:** L2462081

Project Number: 83336 **Report Date:** 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-07 Date Collected: 10/22/24 11:15

Client ID: BC-T-DUP Date Received: 10/24/24

Sample Location: BRUNSWICK Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	92		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	111		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	100		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	88		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	96		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	86		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	101		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	89		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	91		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	96		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	141		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	103		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	101		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	105		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	105		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	81		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	79		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	82		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	84		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	94		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	91		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-07 D
Client ID: BC-T-DUP
Sample Location: BRUNSWICK

Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 145,1633
Analytical Date: 11/11/24 18:54
Analyst: JW
Percent Solids: 87%

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab						
Perfluorooctanesulfonic Acid (PFOS)	56.1		ng/g	0.996	0.332	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	68		40-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/11/24 13:03
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-07 Batch: WG1995665-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.266
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.134
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.266
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.067
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.067
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.067
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.067
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.266
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.067
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.067
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.067
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.266
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.067
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.086
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.067
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.067
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.067
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.067
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.067
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.067
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.067
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.266
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.266
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.067

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/11/24 13:03
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-07 Batch: WG1995665-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.266
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.266
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.067
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.067
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.666
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.666
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.134
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.134
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.134
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.134
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.334
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	1.66
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.66

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/11/24 13:03
Analyst: JW

Extraction Method: EPA 1633
Extraction Date: 11/11/24 07:53
Cleanup Method: EPA 1633
Cleanup Date: 11/11/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01-07 Batch: WG1995665-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	96		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	113		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	114		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	96		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	98		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	87		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	100		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	92		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	97		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	99		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	97		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	107		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	87		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	112		40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	104		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	88		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	76		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	89		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	76		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	101		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	85		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	85		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	89		15-130

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/12/24 18:12
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 11/12/24 08:28
Cleanup Method: EPA 1633
Cleanup Date: 11/12/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1996226-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.800	0.266
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.400	0.134
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.800	0.266
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.200	0.067
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.200	0.067
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.200	0.067
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.200	0.067
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.800	0.266
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.200	0.067
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.200	0.067
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.200	0.067
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.200	0.067
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.800	0.266
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.200	0.067
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.200	0.086
Perfluoroundecanoic Acid (PFUnA)	ND		ng/g	0.200	0.067
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.200	0.067
Perfluorooctanesulfonamide (PFOSA)	ND		ng/g	0.200	0.067
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.200	0.067
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.200	0.067
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.200	0.067
Perfluorotetradecanoic Acid (PFTeDA)	ND		ng/g	0.200	0.067
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/g	0.800	0.266
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/g	0.800	0.266
Perfluorododecanesulfonic Acid (PFDoS)	ND		ng/g	0.200	0.067

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/12/24 18:12
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 11/12/24 08:28
Cleanup Method: EPA 1633
Cleanup Date: 11/12/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1996226-1					
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/g	0.800	0.266
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/g	0.800	0.266
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	ND		ng/g	0.200	0.067
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	ND		ng/g	0.200	0.067
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	ND		ng/g	2.00	0.666
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	ND		ng/g	2.00	0.666
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	ND		ng/g	0.400	0.134
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	ND		ng/g	0.400	0.134
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	ND		ng/g	0.400	0.134
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	ND		ng/g	0.400	0.134
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	ND		ng/g	1.00	0.334
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	ND		ng/g	5.00	1.66
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	ND		ng/g	5.00	1.66

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Analytical Method: 145,1633
Analytical Date: 11/12/24 18:12
Analyst: AC

Extraction Method: EPA 1633
Extraction Date: 11/12/24 08:28
Cleanup Method: EPA 1633
Cleanup Date: 11/12/24

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab for sample(s): 01 Batch: WG1996226-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	81		8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	88		35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	98		40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	106		40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	82		40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84		40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	99		40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	99		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	109		40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	110		40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	96		40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	91		40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	92		40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**160**	Q	40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92		40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	105		40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	94		40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84		40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	69		20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	76		40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	83		10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	79		10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	86		20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	82		15-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	103		-		70-140	-		30
Perfluoropentanoic Acid (PFPeA)	101		-		60-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	97		-		65-145	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	94		-		60-150	-		30
Perfluorohexanoic Acid (PFHxA)	98		-		65-140	-		30
Perfluoropentanesulfonic Acid (PFPeS)	107		-		55-160	-		30
Perfluoroheptanoic Acid (PFHpA)	109		-		65-145	-		30
Perfluorohexanesulfonic Acid (PFHxS)	101		-		60-150	-		30
Perfluorooctanoic Acid (PFOA)	104		-		70-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	107		-		55-200	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	82		-		65-155	-		30
Perfluorononanoic Acid (PFNA)	105		-		70-155	-		30
Perfluorooctanesulfonic Acid (PFOS)	89		-		65-160	-		30
Perfluorodecanoic Acid (PFDA)	95		-		70-155	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		70-150	-		30
Perfluorononanesulfonic Acid (PFNS)	91		-		55-140	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	107		-		65-155	-		30
Perfluoroundecanoic Acid (PFUnA)	97		-		70-155	-		30
Perfluorodecanesulfonic Acid (PFDS)	86		-		40-155	-		30
Perfluorooctanesulfonamide (PFOSA)	92		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	114		-		65-165	-		30
Perfluorododecanoic Acid (PFDoA)	96		-		70-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	86		-		65-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	93		-		65-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	96		-		70-145	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	127		-		70-160	-		30
Perfluorododecanesulfonic Acid (PFDoS)	76		-		25-160	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	100		-		70-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	91		-		45-160	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	97		-		70-155	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	99		-		70-140	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	101		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	104		-		70-135	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	92		-		30-140	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	92		-		60-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	92		-		70-140	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	95		-		60-155	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	78		-		45-130	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	97		-		60-130	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	102		-		60-150	-		30

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Project Name: NASB-HANGER 4 AFFF

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Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	91				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	108				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	104				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	89				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	92				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	79				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	93				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	91				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	84				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	97				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	104				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	97				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	83				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	111				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	92				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	89				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	84				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	84				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	77				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	94				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	86				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	88				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	95				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	92				15-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-3								
Perfluorobutanoic Acid (PFBA)	106		-		70-140	-		30
Perfluoropentanoic Acid (PFPeA)	106		-		60-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	103		-		65-145	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	110		-		60-150	-		30
Perfluorohexanoic Acid (PFHxA)	108		-		65-140	-		30
Perfluoropentanesulfonic Acid (PFPeS)	113		-		55-160	-		30
Perfluoroheptanoic Acid (PFHpA)	114		-		65-145	-		30
Perfluorohexanesulfonic Acid (PFHxS)	104		-		60-150	-		30
Perfluorooctanoic Acid (PFOA)	111		-		70-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	122		-		55-200	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	85		-		65-155	-		30
Perfluorononanoic Acid (PFNA)	111		-		70-155	-		30
Perfluorooctanesulfonic Acid (PFOS)	90		-		65-160	-		30
Perfluorodecanoic Acid (PFDA)	101		-		70-155	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		70-150	-		30
Perfluorononanesulfonic Acid (PFNS)	90		-		55-140	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	102		-		65-155	-		30
Perfluoroundecanoic Acid (PFUnA)	96		-		70-155	-		30
Perfluorodecanesulfonic Acid (PFDS)	85		-		40-155	-		30
Perfluorooctanesulfonamide (PFOSA)	102		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	115		-		65-165	-		30
Perfluorododecanoic Acid (PFDoA)	102		-		70-150	-		30

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Lab Number: L2462081

Report Date: 11/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-3								
Perfluorotridecanoic Acid (PFTrDA)	96		-		65-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	105		-		65-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	109		-		70-145	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	132		-		70-160	-		30
Perfluorododecanesulfonic Acid (PFDoS)	81		-		25-160	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	97		-		70-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	93		-		45-160	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	106		-		70-155	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	106		-		70-140	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	105		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	113		-		70-135	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	98		-		30-140	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	93		-		60-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	99		-		70-140	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	108		-		60-155	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	90		-		45-130	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	108		-		60-130	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	110		-		60-150	-		30

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01-07 Batch: WG1995665-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	95				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	116				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	109				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	94				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	95				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	86				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	101				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	92				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	88				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	93				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	104				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	109				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	93				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	119				40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	108				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	87				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	82				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	92				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	82				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	95				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	86				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	85				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	92				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90				15-130

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Report Date: 11/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-2 LOW LEVEL								
Perfluorobutanoic Acid (PFBA)	121		-		70-140	-		30
Perfluoropentanoic Acid (PFPeA)	115		-		60-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	106		-		65-145	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	107		-		60-150	-		30
Perfluorohexanoic Acid (PFHxA)	129		-		65-140	-		30
Perfluoropentanesulfonic Acid (PFPeS)	112		-		55-160	-		30
Perfluoroheptanoic Acid (PFHpA)	110		-		65-145	-		30
Perfluorohexanesulfonic Acid (PFHxS)	108		-		60-150	-		30
Perfluorooctanoic Acid (PFOA)	101		-		70-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	115		-		55-200	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	109		-		65-155	-		30
Perfluorononanoic Acid (PFNA)	110		-		70-155	-		30
Perfluorooctanesulfonic Acid (PFOS)	113		-		65-160	-		30
Perfluorodecanoic Acid (PFDA)	105		-		70-155	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	106		-		70-150	-		30
Perfluorononanesulfonic Acid (PFNS)	108		-		55-140	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	104		-		65-155	-		30
Perfluoroundecanoic Acid (PFUnA)	105		-		70-155	-		30
Perfluorodecanesulfonic Acid (PFDS)	101		-		40-155	-		30
Perfluorooctanesulfonamide (PFOSA)	97		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	104		-		65-165	-		30
Perfluorododecanoic Acid (PFDoA)	106		-		70-150	-		30

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Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-2 LOW LEVEL								
Perfluorotridecanoic Acid (PFTrDA)	103		-		65-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	109		-		65-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	110		-		70-145	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	127		-		70-160	-		30
Perfluorododecanesulfonic Acid (PFDoS)	100		-		25-160	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	116		-		70-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	114		-		45-160	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	122		-		70-155	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	112		-		70-140	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	100		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	110		-		70-135	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	121		-		30-140	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	112		-		60-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	121		-		70-140	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	106		-		60-155	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	95		-		45-130	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	124		-		60-130	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	95		-		60-150	-		30

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Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

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Report Date: 11/13/24

Parameter	Low Level LCS %Recovery	Qual	Low Level LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-2 LOW LEVEL								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	71				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	89				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	100				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	103				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	83				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	84				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	90				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	108				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	95				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	105				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	102				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	100				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	89				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**212**	Q			40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	102				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	102				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	95				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	93				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	78				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	82				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	81				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	90				15-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-3								
Perfluorobutanoic Acid (PFBA)	118		-		70-140	-		30
Perfluoropentanoic Acid (PFPeA)	122		-		60-150	-		30
Perfluorobutanesulfonic Acid (PFBS)	111		-		65-145	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	112		-		60-150	-		30
Perfluorohexanoic Acid (PFHxA)	122		-		65-140	-		30
Perfluoropentanesulfonic Acid (PFPeS)	102		-		55-160	-		30
Perfluoroheptanoic Acid (PFHpA)	111		-		65-145	-		30
Perfluorohexanesulfonic Acid (PFHxS)	99		-		60-150	-		30
Perfluorooctanoic Acid (PFOA)	104		-		70-150	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	109		-		55-200	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	115		-		65-155	-		30
Perfluorononanoic Acid (PFNA)	109		-		70-155	-		30
Perfluorooctanesulfonic Acid (PFOS)	112		-		65-160	-		30
Perfluorodecanoic Acid (PFDA)	112		-		70-155	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	112		-		70-150	-		30
Perfluorononanesulfonic Acid (PFNS)	122		-		55-140	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	102		-		65-155	-		30
Perfluoroundecanoic Acid (PFUnA)	108		-		70-155	-		30
Perfluorodecanesulfonic Acid (PFDS)	117		-		40-155	-		30
Perfluorooctanesulfonamide (PFOSA)	104		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	100		-		65-165	-		30
Perfluorododecanoic Acid (PFDoA)	112		-		70-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-3								
Perfluorotridecanoic Acid (PFTrDA)	102		-		65-150	-		30
Perfluorotetradecanoic Acid (PFTeDA)	120		-		65-150	-		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	120		-		70-145	-		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	137		-		70-160	-		30
Perfluorododecanesulfonic Acid (PFDoS)	110		-		25-160	-		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	124		-		70-150	-		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	122		-		45-160	-		30
N-Methyl Perfluorooctane Sulfonamide (NMeFOSA)	117		-		70-155	-		30
N-Ethyl Perfluorooctane Sulfonamide (NEtFOSA)	117		-		70-140	-		30
N-Methyl Perfluorooctanesulfonamido Ethanol (NMeFOSE)	112		-		70-140	-		30
N-Ethyl Perfluorooctanesulfonamido Ethanol (NEtFOSE)	120		-		70-135	-		30
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	120		-		30-140	-		30
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	119		-		60-150	-		30
Perfluoro(2-Ethoxyethane)Sulfonic Acid (PFEESA)	126		-		70-140	-		30
Nonafluoro-3,6-Dioxaheptanoic Acid (NFDHA)	105		-		60-155	-		30
3-Perfluoropropyl Propanoic Acid (3:3FTCA)	106		-		45-130	-		30
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3FTCA)	128		-		60-130	-		30
3-Perfluoroheptyl Propanoic Acid (7:3FTCA)	108		-		60-150	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: NASB-HANGER 4 AFFF

Project Number: 83336

Lab Number: L2462081

Report Date: 11/13/24

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 1633 - Mansfield Lab Associated sample(s): 01 Batch: WG1996226-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[13C4]Butanoic Acid (13C4-PFBA)	74				8-130
Perfluoro-n-[13C5]Pentanoic Acid (13C5-PFPeA)	91				35-130
Perfluoro-1-[2,3,4-13C3]Butanesulfonic Acid (13C3-PFBS)	96				40-135
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Hexanesulfonic Acid (13C2-4:2FTS)	100				40-165
Perfluoro-n-[1,2,3,4,6-13C5]Hexanoic Acid (13C5-PFHxA)	87				40-130
Perfluoro-n-[1,2,3,4-13C4]Heptanoic Acid (13C4-PFHpA)	88				40-130
Perfluoro-1-[1,2,3-13C3]Hexanesulfonic Acid (13C3-PFHxS)	98				40-130
Perfluoro-n-[13C8]Octanoic Acid (13C8-PFOA)	98				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Octanesulfonic Acid (13C2-6:2FTS)	93				40-215
Perfluoro-n-[13C9]Nonanoic Acid (13C9-PFNA)	106				40-130
Perfluoro-1-[13C8]Octanesulfonic Acid (13C8-PFOS)	102				40-130
Perfluoro-n-[1,2,3,4,5,6-13C6]Decanoic Acid (13C6-PFDA)	97				40-130
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2]Decanesulfonic Acid (13C2-8:2FTS)	85				40-275
N-Methyl-d3-perfluoro-1-octanesulfonamidoacetic Acid (D3-NMeFOSAA)	**242**	Q			40-135
Perfluoro-n-[1,2,3,4,5,6,7-13C7]Undecanoic Acid (13C7-PFUnA)	102				40-130
Perfluoro-1-[13C8]Octanesulfonamide (13C8-PFOSA)	108				40-130
N-Ethyl-d5-perfluoro-1-octanesulfonamidoacetic Acid (D5-NEtFOSAA)	104				40-150
Perfluoro-n-[1,2-13C2]Dodecanoic Acid (13C2-PFDoA)	98				40-130
Perfluoro-n-[1,2-13C2]Tetradecanoic Acid (13C2-PFTeDA)	74				20-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	85				40-130
N-Methyl-d3-Perfluoro-1-Octanesulfonamide (D3-NMeFOSA)	87				10-130
N-Ethyl-d5-Perfluoro-1-Octanesulfonamide (D5-NEtFOSA)	86				10-130
N-Methyl-d7-Perfluorooctanesulfonamidoethanol (D7-NMeFOSE)	91				20-130
N-Ethyl-d9-Perfluorooctanesulfonamidoethanol (D9-NEtFOSE)	91				15-130

INORGANICS
&
MISCELLANEOUS

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-01
Client ID: BC-T-1
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil
Date Collected: 10/22/24 11:05
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	82.8		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-02
Client ID: BC-T-2
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil
Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.4		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-03
Client ID: BC-T-3
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil

Date Collected: 10/22/24 11:10
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	91.8		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-04
Client ID: BC-T-4
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil
Date Collected: 10/22/24 11:30
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.3		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-05
Client ID: BC-T-5
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil
Date Collected: 10/22/24 11:40
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	94.2		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-06
Client ID: BC-T-6
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil
Date Collected: 10/22/24 11:45
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	95.8		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

SAMPLE RESULTS

Lab ID: L2462081-07
Client ID: BC-T-DUP
Sample Location: BRUNSWICK
Sample Depth:
Matrix: Soil

Date Collected: 10/22/24 11:15
Date Received: 10/24/24
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab										
Solids, Total	87.3		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Mansfield Lab for sample(s): 01-07 Batch: WG1989585-1										
Solids, Total	100		%	0.100	0.100	1	-	10/27/24 12:30	121,2540G	KAR

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336

Lab Number: L2462081
Report Date: 11/13/24

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2462081-01A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-01B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-02A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-02B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-03A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-03B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-04A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-04B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-05A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-05B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-06A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-06B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)
L2462081-07A	Plastic 8oz unpreserved	A	NA		4.4	Y	Absent		A2-1633(90)
L2462081-07B	Plastic 2oz unpreserved for TS	A	NA		4.4	Y	Absent		A2-ME-TS(7)

*Values in parentheses indicate holding time in days

Project Name: NASB-HANGER 4 AFFF
Project Number: 83336

Lab Number: L2462081
Report Date: 11/13/24

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: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

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:	NASB-HANGER 4 AFFF	**Lab Number:**	L2462081
Project Number:	83336	**Report Date:**	11/13/24

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:	NASB-HANGER 4 AFFF	**Lab Number:**	L2462081
Project Number:	83336	**Report Date:**	11/13/24

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:	NASB-HANGER 4 AFFF	**Lab Number:**	L2462081
Project Number:	83336	**Report Date:**	11/13/24

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: NASB-HANGER 4 AFFF
Project Number: 83336
Lab Number: L2462081
Report Date: 11/13/24

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

145 Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. EPA Method 1633, EPA 821-R-24-001, January 2024.

LIMITATION OF LIABILITIES

Alpha Analytical 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 Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical 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 Alpha Analytical.

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
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, 2,6-Dichlorophenol.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
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.
Nonpotable Water: EPA RSK-175 Dissolved Gases
Biological Tissue Matrix: EPA 3050B

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

Westborough Facility:

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:

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

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

CHAIN OF CUSTODY PAGE 1 OF 1

Date Rec'd in Lab: 10/25/24

ALPHA Job #: REM02 L2462081

8 Walkup Drive, Westboro, MA 01581, 508)-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: (508)-822-9300, Tel:

Project Information
Project: NASB-Hanger 4 AFFF
Town: Brunswick
EGAD Number: 83336
Project Manager: Molly King
Copies to: finn.whiting@maine.gov, iver.j.mcleod@maine.gov
ALPHA Quote #:

Turn-Around Time
☑ Standard ☐ Rush (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables
☑ EMAIL ☑ ADEx

Billing Information
☐ Same as Client info PO #:

Client Information
Client: Maine Department of Environmental Protection
Contact Name: Molly King
City: Augusta
State: Maine Zip Code: 04333
Phone: 207-458-8839
email: molly.king@maine.gov

PFAS 1633 Please Report Full compound list

Please provide EDD for PFAS

Additional Project Information: Please send copy of EDD with results. This site is associated with a sludge utilization, or septage spread, or unknown source.
FULL SAMPLE NAMING SHOULD BE SW-##-2024MMDD

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample Point Name (Sample Address)	Sample Collection Date	Sample Collection Time	Sample Matrix/ Type	Sample Location	Sample Collection Method	Treatment Status	PID Result	PFAS Method 1633	SAMPLE INFO Filtration ☐ Field ☐ Lab to do Preservation ☐ Lab to do Sample Comments	TOTAL # BOTTLES
	BC-T-1	10/22/24	11:05	SL	O	HA	N	NA	X		
	BC-T-2	10/22/24	11:15	SL	O	HA	N	NA	X		
	BC-T-3		11:10	SL	O	HA	N	NA	X		
	BC-T-4		11:30	SL	O	HA	N	NA	X		
	BC-T-5		11:40	SL	O	HA	N	NA	X		
	BC-T-6	↓	11:45	SL	O	HA	N	NA	X		
	BC-T-DUP	10/22/24	11:15	SL	O	HA	N	NA	X		

Container Type: P P
Preservative: A O

Container Type
P=Plastic
A=Amber Glass
V=Vial
G=Glass
B=Bacteria cup
C=Cube
O=Other
E=Encore

Preservative
A=None
B=HCL
C=HNO3
D=H2SO4
E=NAOH
F=MeOH
G=NaHSO4
H=NA2S2O3
I=Ascorbic Acid
O=Other

Relinquished By:	Date/Time:	Received By:	Date/Time:
	10/22/24 15:00		
	10/24/24 14:00		13:00
			10/24/24 1407

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Rec' Alpha 10/25/24 06:30

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