



90 Sargent Drive • New Haven, Connecticut 06511-5966
203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Laboratory Certification IDs

CT: PH-0411, NH: 2239, NY: 11867, PA: 68-05519, RI: LAO00339, MA: M-CT004
See website, www.rwalab.com/rwa-lab-certifications, for certified analyte list.

Client: Paul Hennessy
Randolph-Holbrook Joint Water

275 Pond St
Randolph, MA 02368

781-964-9292
phennessy@holbrookmassachusetts.us

ANALYTICAL REPORT

Project: FEE-RANDOLPHHOLBROOK-23-000010

Report Date: 8/25/2023

This Laboratory is in compliance with the NELAP requirements of procedures used except where indicated.
This report contains results for the analysis tested, under the sampling conditions described on the Chain Of Custody (COC), as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.
The COC form has been scanned to accompany the analytical report and is an exact copy of the original.
If you are the client above and have any questions concerning this testing, please do not hesitate to contact RWA Client Services at (203) 401-6743 or (877) 894-5773. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

A handwritten signature in black ink, appearing to read "Richard Sibley".

Richard Sibley
Laboratory Manager
Technical Representative



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SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300393543	Raw	8/7/2023 0900	8/8/23
300393544	FB - Raw	8/7/2023 0900	8/8/23
300393545	Finished	8/7/2023 0900	8/8/23
300393546	FB - Finished	8/7/2023 0900	8/8/23

Case Narrative and Comments

All QC passes criteria unless noted in a Comment below.

Samples were received at the appropriate temperature and in accordance with the chain of custody unless noted.

E = Exceeds calibration range

ND = Non Detect

FB = Field Blank

RL = Minimum Reporting Level

MDL = Method Detection Limit

J = The reported result is below RL but greater than the MDL. The reported result is an estimate.

Massachusetts samples for required water quality sampling are included.

Samples and FBs were received in bottles with preservatives Trizma HCL & Trizma base per method requirements.

"FB" added at beginning/end designates "Field Blank" (Field Reagent Blank) for associated Customer ID sample.
Field Blank analytes (unless noted) were shown to be less than 1/3 of the RL as per EPA537 or EPA537.1.

Method EPA537 or EPA537.1 Analyte Results, MDL and RL are adjusted to reflect the actual Final (mL) volume used.

<u>Method</u>	<u>CAS#</u>	<u>PFAS Analyte (Acronym)</u>
537, 537.1	1763-23-1	Perfluorooctanesulfonic acid (PFOS)
537, 537.1	335-67-1	Perfluorooctanoic acid (PFOA)
537, 537.1	355-46-4	Perfluorohexanesulfonic acid (PFHxS)
537, 537.1	375-95-1	Perfluorononanoic acid (PFNA)
537, 537.1	375-85-9	Perfluorohexadecanoic acid (PFHpA)
537, 537.1	335-76-2	Perfluorodecanoic acid (PFDA)
537, 537.1	375-73-5	Perfluorobutanesulfonic acid (PFBS)
537, 537.1	307-55-1	Perfluorododecanoic acid (PFDoA)
537, 537.1	307-24-4	Perfluorohexanoic acid (PFHxA)
537, 537.1	376-06-7	Perfluorotetradecanoic acid (PFTA)
537, 537.1	72629-94-8	Perfluorotridecanoic acid (PFTTrDA)
537, 537.1	2058-94-8	Perfluoroundecanoic acid (PFUnA)
537, 537.1	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537, 537.1	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	756426-58-1	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)
537.1	919005-14-4	4,8-dioxa-3H-perfluorononanoic acid (ADONA)
537.1	13252-13-6	Hexafluoropropylene oxide dimer acid (HFPO-DA)

PFAS6 (MassDEP) = sum of PFOS, PFOA, PFHxS, PFNA, PFHpA and PFDA (only include Results at or above the RL)

MassDEP has established a maximum contaminant level (MCL) of 20 ng/L for PFAS6.

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Sample ID: 300393543

Customer ID: RAW

Collection Date: 08/07/2023 9:00

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-23-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.66	0.95	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFHxA	307-24-4	3.76	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFHpA	375-85-9	1.76	0.70	2.0	ng/L	1.0	J	EPA537.1	8/15/23 2306	CSS
PFHxS	355-46-4	2.49	0.83	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFOA	335-67-1	4.64	0.76	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFOS	1763-23-1	8.60	1.01	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFNA	375-95-1	0.99	0.72	2.0	ng/L	1.0	J	EPA537.1	8/15/23 2306	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFDaA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2306	CSS
PFAS6 (MassDEP)		15.73	2.00	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		94.40		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		95.70		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		92.80		70 - 130		Pass				
d5-NEtFOSAA (SUR) % Recovery		83.20		70 - 130		Pass				

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300393543	PFAS_537	537_EXT-230814-1	250	08/14/2023

Sample ID: 300393544

Customer ID: FB - RAW

Collection Date: 08/07/2023 9:00

PWS ID# / LOC ID#: FB - RAW

Project: FEE-RANDOLPHHOLBROOK-23-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFDaA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2320	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				
Surrogates			Results		Recovery Limits		Pass/Fail			
13C-PFHxA (SUR) % Recovery			104.30		70 - 130		Pass			
13C3-HFPO-DA (SUR) % Recovery			101.50		70 - 130		Pass			
13C-PFDA (SUR) % Recovery			96.70		70 - 130		Pass			
d5-NEtFOSAA (SUR) % Recovery			88.30		70 - 130		Pass			

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300393544	PFAS_537	537_EXT-230814-1	250	08/14/2023

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Sample ID: 300393545

Customer ID: Finished

Collection Date: 08/07/2023 9:00

PWS ID# / LOC ID#: 4244001 / 10296

Project: FEE-RANDOLPHHOLBROOK-23-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.09	0.95	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFHxA	307-24-4	3.36	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFHpA	375-85-9	2.12	0.70	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFHxS	355-46-4	2.68	0.83	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFOA	335-67-1	5.02	0.76	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFOS	1763-23-1	8.92	1.01	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFNA	375-95-1	1.02	0.72	2.0	ng/L	1.0	J	EPA537.1	8/15/23 2335	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFDaA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2335	CSS
PFAS6 (MassDEP)		18.74	2.00	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		104.20		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		104.60		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		100.10		70 - 130		Pass				
d5-NEtFOSAA (SUR) % Recovery		80.90		70 - 130		Pass				

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300393545	PFAS_537	537_EXT-230814-1	250	08/14/2023

Sample ID: 300393546

Customer ID: FB - Finished

Collection Date: 08/07/2023 9:00

PWS ID# / LOC ID#: FB - Finished

Project: FEE-RANDOLPHHOLBROOK-23-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/15/23 2349	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		91.70		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		89.20		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		81.60		70 - 130		Pass				
d5-NEtFOSAA (SUR) % Recovery		79.60		70 - 130		Pass				

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300393546	PFAS_537	537_EXT-230814-1	250	08/14/2023

Chain of Custody Form

Company Name
 RANDOLPH/HOLBROOK
 JOINT WATER

Company Address

275 POND ST.
 RANDOLPH, MA 02368

Sampler

PAUL HENNESSY

PO Number

RWA LIMS Number

300393543

Date Collected

8/7/23

Time Collected

9AM

Sample ID / Sample Location

① RAW

Number of Bottles

5

Test Requested, Container, & Preservative

Field Blank

State Sample Collected:

CT NY Other (specify) MA

Evidence of Cooling (Circle):

Yes No

Cooler Temp °C:

5.2

Container & Preservative Meet Criteria (Circle):

Yes No

LOT # SLCN1650

LOT # SLCN1665

Comments:

NOT FOR COMPLIANCE

MA DEP COMPLIANCE

546

Relinquished By (Signature):

Paul Hennessy

Date & Time:

8/7/23 9:15AM

Received By (Signature):

Paul Hennessy

Date & Time:

8/7/23 11:31

Relinquished by (Signature):

Paul Hennessy

Date & Time:

8/7/23 9:15AM

Received By (Signature):

Paul Hennessy

Date & Time:

8/7/23 11:31

Comments:

PFA-S 14

Free - Randolph Holbrook - 23 - 000010

Received @ RWA via Fed Ex at 8/8/23

South Central Connecticut Regional Water Authority PFAS QA/QC Summary

Extraction Batch QC for: EPA 537.1

MA Lab Cert.#: M-CT004

Extraction Batch Date: 8/15/2023

Sample ID for LFSM/LFSMD: 300393551

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 2.0 ng/L %Recovery
	Acceptance Range 70-130%	Acceptance Range 70-130%	Acceptance Limit <30%	Result, ng/L	Meets < 1/3 of MRL criteria?	Acceptance Range 50-150%
PFBS	102.6	91.7	9.6	ND	[Y]	106.5
PFHxA	102.7	86.0	15.5	ND	[Y]	98.0
HFPO-DA	87.1	76.9	12.3	ND	[Y]	94.5
PFHpA	103.3	91.1	11.5	ND	[Y]	105.5
PFHxS	103.0	92.6	9.8	ND	[Y]	97.0
ADONA	98.4	93.5	5.1	ND	[Y]	102.5
PFOA	107.3	86.1	17.0	ND	[Y]	97.5
PFOS	106.2	91.2	12.2	ND	[Y]	107.0
PFNA	102.5	97.0	5.4	ND	[Y]	94.5
9Cl-PF3ONS	94.7	92.6	2.2	ND	[Y]	103.5
PFDA	96.2	92.6	3.8	ND	[Y]	99.0
PFUnA	89.5	85.5	4.6	ND	[Y]	102.5
11Cl-PF3OUdS	88.0	92.0	4.4	ND	[Y]	122.0
NMeFOSAA	93.1	88.1	5.5	ND	[Y]	111.0
NEtFOSAA	81.2	79.6	2.1	ND	[Y]	122.5
PFDaA	86.0	81.9	4.8	ND	[Y]	117.0
PFTTrDA	86.2	80.9	6.3	ND	[Y]	112.5
PFTA	87.5	83.4	4.9	ND	[Y]	115.5

Surrogate %Recovery

¹³ C ₂ -PFHxA	¹³ C ₃ -HFPO-DA	¹³ C ₂ -PFDA	^d ₅ -NEtFOSAA	
101.70	96.20	94.50	84.30	LFSM
93.90	95.20	90.30	80.20	LFSMD
111.80	108.60	108.00	103.40	LRB
93.20	87.10	86.10	85.90	LFB

Note: The Surrogate %Recovery for Samples and Poured Field Blanks is included on Final Reports.

All Batch QC passes method criteria unless noted in "Comments" section below

Comments: The matrix spike data **is not** from a sample submitted on this Chain of Custody.

LRB = Laboratory Reagent Blank

RPD = relative percent difference

FB = Field Blank

ND = Non-Detect

LFB = Laboratory Fortified Blank

MRL = Method Reporting Level

Results are ng/L (ppt)

LFSM = Laboratory Fortified Sample Matrix

LFSM/LFSMD spike concentration is 20 ng/L, unless noted otherwise

LFSMD = Laboratory Fortified Sample Matrix Duplicate

Surrogate Acceptance Limit is 70 - 130% Recovery