Regional Water Authority

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-24-000011

Report Date: 10/1/2024

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.

Richard Sibley
Laboratory Manager
Technical Representative

Regional Water Authority
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SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300597849	RAW	9/17/2024 1100	9/18/24
300597850	FIELD BLANK - RAW	9/17/2024 1100	9/18/24
300597851	FINISHED	9/17/2024 1100	9/18/24
300597852	FIELD BLANK- FINISHED	9/17/2024 1100	9/18/24

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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.

Method	CAS#	PFAS Analyte (Acronymn)
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	Perfluorohepatanoic 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 (PFTrDA)
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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203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300597849

Collection Date: 09/17/2024 11:00

Customer ID: RAW

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000011

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	3.55	0.95	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFHxA	307-24-4	4.19	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFHpA	375-85-9	2.27	0.70	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFHxS	355-46-4	2.60	0.83	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFOA	335-67-1	6.51	0.76	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFOS	1763-23-1	11.66	1.01	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFNA	375-95-1	1.34	0.72	2.0	ng/L	1.0	J	EPA537.1	9/24/24 0256	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0256	CSS
PFAS6 (MassDEP)		23.04	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	106.98	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	109.21	70 - 130	Pass
13C-PFDA (SUR) % Recovery	101.09	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	88.58	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300597849	PFAS_537	537_EXT-240919-1	250	09/19/2024

Regional Water Authority

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203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300597850

Collection Date: 09/17/2024 11:00

Customer ID: FIELD BLANK - RAW

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000011

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	9/24/24 0309	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0309	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	101.00	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	90.98	70 - 130	Pass
13C-PFDA (SUR) % Recovery	98.08	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	93.12	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300597850	PFAS_537	537_EXT-240919-1	250	09/19/2024

Regional Water Authority

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203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300597851

Collection Date: 09/17/2024 11:00

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000011

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.14	0.95	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFHxA	307-24-4	4.51	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFHpA	375-85-9	2.18	0.70	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFHxS	355-46-4	2.61	0.83	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFOA	335-67-1	5.43	0.76	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFOS	1763-23-1	8.08	1.01	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFNA	375-95-1	1.32	0.72	2.0	ng/L	1.0	J	EPA537.1	9/24/24 0323	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0323	CSS
PFAS6 (MassDEP)		18.30	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	96.31	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	95.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	86.53	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	78.02	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300597851	PFAS_537	537_EXT-240919-1	250	09/19/2024

Regional Water Authority

90 Sargent Drive • New Haven, Connecticut 06511-5966

203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300597852

Collection Date: 09/17/2024 11:00

Customer ID: FIELD BLANK- FINISHED

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000011

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	9/24/24 0336	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	9/24/24 0336	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	94.74	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	96.41	70 - 130	Pass
13C-PFDA (SUR) % Recovery	91.59	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	97.44	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300597852	PFAS_537	537_EXT-240919-1	250	09/19/2024

Regional Water Authority

90 Sargent Dr, New Haven, CT 06511
Lab Billing: 203-401-2709
Lab Manager Phone: 203-401-2700
Client Services Phone: 203-401-6743

Chain of Custody Form

Contact Address (please include email address)
RANDOLPH/HOLBROOK JOINT WATER

Sampling Address (If different from Contact information)
275 POND ST, RANDOLPH, MA 02368

Sampler
PAUL HENNESSY

Additional Information

Test Requested, Container, & Preservative

State Sample Collected: CT___ Other(specify)____

Sample Temp °C: (must be received at or below 10°C within the first 48 hours) 4.3

Evidence of Cooling (Circle): (Y) or N (only required if sampled date = receive date.)

Sample receipt condition circle: (Acceptable) / Not Acceptable

If not acceptable contact client service

LIMS Number (For RWA USE ONLY)	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	PFAS (SEE COMMENT) PFAS 14 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	PFAS - Poured Field Blank 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane					
300597849	9/17/24	11AM	(1) RAW	4	4						NOT FOR COMPLIANCE
850			(1) Poured Field Blank	1		1					" " "
851			(2) FINISHED	4	4						MA DEP COMPLIANCE
852			(2) POURED FIELD BLANK	1		1					" " "
	On bottles										
		Dk 9/18/24									

Relinquished By (Signature): PAUL HENNESSY
Date & Time: 9/17/24 1130 AM

Received By (Signature):
Date & Time:

Relinquished by (Signature): Fed Ex
Date & Time:

Received By (Signature):
Date & Time: 9/18/24 1134

Lot # SLCQ2107
Lot # SLCQ2107
PFAS14

Sample bottle and Preservative Lot Numbers

Fee-Randolph/Holbrook-24-000011

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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: 9/19/2024 **Sample ID for LFSM/LFSMD:** 300594906

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 10 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 70-130%
PFBS	**138.3**	122.8	11.1	ND	[Y]	92.4
PFHxA	127.8	**138.4**	7.3	ND	[Y]	94.9
HFPO-DA	124.3	124.2	0.1	ND	[Y]	82.5
PFHpA	124.1	121.7	1.8	ND	[Y]	91.9
PFHxS	128.0	121.8	4.8	ND	[Y]	85.9
ADONA	129.5	124.7	3.8	ND	[Y]	90.4
PFOA	127.9	122.4	3.9	ND	[Y]	94.1
PFOS	123.0	113.4	7.7	ND	[Y]	94.0
PFNA	127.0	123.3	2.9	ND	[Y]	95.6
9Cl-PF3ONS	120.1	105.9	12.6	ND	[Y]	83.5
PFDA	124.3	122.2	1.7	ND	[Y]	94.6
PFUnA	123.9	121.3	2.1	ND	[Y]	90.3
11Cl-PF3OUdS	111.3	105.3	5.6	ND	[Y]	88.9
NMeFOSAA	110.3	106.6	3.5	ND	[Y]	77.0
NEtFOSAA	110.8	108.9	1.8	ND	[Y]	89.2
PFDoA	108.6	110.0	1.3	ND	[Y]	92.3
PFTrDA	112.0	115.1	2.7	ND	[Y]	88.1
PFTA	112.8	116.3	3.0	ND	[Y]	93.9

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_5$-NEtFOSAA	
94.41	99.27	91.32	79.85	LFSM
103.21	101.66	92.39	80.17	LFSMD
90.26	91.14	88.09	94.32	LRB
89.77	75.50	88.04	84.48	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 in this upload batch. The LFSM percent recovery fails high for compound PFBS, and the LFSMD percent recovery fails high for compound PFHxA. All RPDs pass criteria. The other client's sample results were commented as suspect.

LRB = Laboratory Reagent Blank
LFB = Laboratory Fortified Blank
LFSM = Laboratory Fortified Sample Matrix
LFSMD = Laboratory Fortified Sample Matrix Duplicate
RPD = relative percent difference
MRL = Method Reporting Level
FB = Field Blank
ND = Non-Detect
Results are ng/L (ppt)
LFSM/LFSMD spike concentration is 20 ng/L, unless noted otherwise
Surrogate Acceptance Limit is 70 - 130% Recovery