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-24-000004

Report Date: 3/18/2024

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
300494800	Raw	3/4/2024 1300	3/6/24
300494801	Field Blank - Raw	3/4/2024 1300	3/6/24
300494804	Finished	3/4/2024 1300	3/6/24
300494805	Field Blank - Finished	3/4/2024 1300	3/6/24

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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.

Regional Water Authority

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

Sample ID: 300494800

Collection Date: 03/04/2024 13:00

Customer ID: Raw

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000004

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	1.60	0.95	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0235	CSS
PFHxA	307-24-4	2.69	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFHpA	375-85-9	1.66	0.70	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0235	CSS
PFHxS	355-46-4	1.50	0.83	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0235	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFOA	335-67-1	3.78	0.76	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFOS	1763-23-1	6.12	1.01	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFNA	375-95-1	0.78	0.72	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0235	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0235	CSS
PFAS6 (MassDEP)		9.90	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	75.60	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	84.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	90.90	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	74.80	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300494800	PFAS_537	537_EXT-240308-1	250	03/08/2024

Regional Water Authority

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

Sample ID: 300494801

Collection Date: 03/04/2024 13:00

Customer ID: Field Blank - Raw

PWS ID# / LOC ID#: FB - RAW

Project: FEE-RANDOLPHHOLBROOK-24-000004

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	3/12/24 0250	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0250	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	111.20	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	111.80	70 - 130	Pass
13C-PFDA (SUR) % Recovery	108.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	102.70	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300494801	PFAS_537	537_EXT-240308-1	250	03/08/2024

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

Sample ID: 300494804

Collection Date: 03/04/2024 13:00

Customer ID: Finished

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000004

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.18	0.95	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFHxA	307-24-4	2.94	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFHpA	375-85-9	1.97	0.70	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0305	CSS
PFHxS	355-46-4	2.38	0.83	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFOA	335-67-1	5.00	0.76	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFOS	1763-23-1	8.19	1.01	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFNA	375-95-1	0.99	0.72	2.0	ng/L	1.0	J	EPA537.1	3/12/24 0305	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0305	CSS
PFAS6 (MassDEP)		15.57	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	92.70	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	100.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	109.50	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	84.60	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300494804	PFAS_537	537_EXT-240308-1	250	03/08/2024

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: 300494805

Collection Date: 03/04/2024 13:00

Customer ID: Field Blank - Finished

PWS ID# / LOC ID#: FB - FINISHED

Project: FEE-RANDOLPHHOLBROOK-24-000004

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	3/12/24 0319	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	3/12/24 0319	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	99.60	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	98.50	70 - 130	Pass
13C-PFDA (SUR) % Recovery	95.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	83.90	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300494805	PFAS_537	537_EXT-240308-1	250	03/08/2024

Regional Water Authority
90 Sargent Dr, New Haven, CT 06511
Phone: 203-401-2700
Fax: 203-401-6799

Chain of Custody Form

Company Name	Company Address
RANDOLPH/HOLBROOK JOINT WATER	275 POND ST. RANDOLPH, MA 02368
Sampler	**PO Number**
PAUL HENNESSY	

Test Requested, Container, & Preservative

State Sample Collected: CT__ NY__ Other(specify) MA

Evidence of Cooling (Circle): Y or N
Cooler Temp °C: 5.5

Container & Preservative Meet Criteria (Circle): Yes/ No

LOT # SLCN1650
LOT # SLCN1665

RWA LIMS Number	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	PFAS PFAS 14 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	PFAS Poured Field Blank 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	Field Blank #				
300494800	3/4/24	1PM	① RAW	5	4	1	300494801				NOT FOR COMPLIANCE
804	3/4/24	1PM	② FINISHED	5	4	1			805		MA DEP COMPLIANCE

Relinquished By (Signature): PAUL HENNESSY
Date & Time: 3/4/24 1:20PM
Received By (Signature):
Date & Time: 3/6/24 @ 8:12

Relinquished by (Signature):
Date & Time:
Received By (Signature):
Date & Time:

Comments:
PFAS 14
Received by RWA via Fed Ex
Fee Randolfholbrook-24-000004

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: 3/11/2024 **Sample ID for LFSM/LFSMD:** 300494374

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 60 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	98.5	100.9	2.3	ND	[Y]	103.2
PFHxA	96.9	98.3	1.3	ND	[Y]	100.4
HFPO-DA	97.4	100.2	2.8	ND	[Y]	97.8
PFHpA	21.9	23.0	4.8	ND	[Y]	99.4
PFHxS	102.9	108.4	5.0	ND	[Y]	101.8
ADONA	43.5	43.3	0.3	ND	[Y]	100.3
PFOA	105.0	106.1	0.9	ND	[Y]	101.4
PFOS	100.4	102.7	2.1	ND	[Y]	101.3
PFNA	103.1	105.3	2.1	ND	[Y]	100.3
9Cl-PF3ONS	100.3	100.6	0.3	ND	[Y]	101.8
PFDA	101.8	100.9	0.9	ND	[Y]	97.9
PFUnA	99.4	101.7	2.3	ND	[Y]	100.8
11Cl-PF3OUdS	92.8	99.0	6.5	ND	[Y]	102.6
NMeFOSAA	95.3	102.0	6.7	ND	[Y]	98.9
NEtFOSAA	89.2	91.5	2.6	ND	[Y]	89.9
PFDoA	95.3	100.2	5.0	ND	[Y]	95.8
PFTrDA	101.7	105.4	3.6	ND	[Y]	97.2
PFTA	98.9	101.0	2.1	ND	[Y]	99.1

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_5$-NEtFOSAA	
104.60	102.60	104.80	98.40	LFSM
102.60	99.40	103.70	95.20	LFSMD
103.60	101.40	100.10	90.10	LRB
104.10	108.60	100.60	96.60	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 and LFSMD percent recovery fail low for the compounds PFHpA and ADONA. The RPDs pass criteria. The other client's sample results were commented as suspect/matrix.

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