NEW ENGLAND WATER ENVIRONMENT ASSOCIATION
NEWEA
WORKING FOR WATER QUALITY

NEWEA Laboratory Practices Committee Specialty Seminar
Collecting Samples for PFAS Analyses
Narragansett Bay Commission, Providence, RI
May 3, 2023

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Maine DEP's "PFAS Sampling Standard Operating Procedure for Wastewater Treatment Systems"

PFAS Sampling Standard Operating Procedure (SOP) for Wastewater Treatment Systems
Maine DEP ○ September, 2022

1.0 INTRODUCTION

This guidance documents covers the Standard Operating P
wastewater treatment facilities to sample their effluent for p
(PFAS) compounds. PFAS sampling of monitoring wells is
irrigation facilities who are required to collect PFAS sample
effluent monitoring point can use this SOP for the effluent s

All PFAS samples will be GRAB SAMPLES. Following coll
a Maine-accredited laboratory using EPA Method 537.1 M
are reported for up to 28 individual PFAS compounds, as w
of the "sum of 6": perfluorooctanoic acid (PFOA), perfluoro
perfluorohexane sulfonic acid (PFHxS), perfluorononanoic
(PFHpA) and perfluorodecanoic acid (PFDA). The standar
per liter, a.k.a., parts per trillion or ppt), however a higher d
specific samples, such as those with high solids or matrix i

This SOP covers potential sources of PFAS contamination
equipment, collection, preservation, storage, quality contro
decontamination (decon), and transport of samples to the

The DEP will continue to update this guidance as new infor
information, refer to the DEP PFAS website, https://www.m

2.0 POTENTIAL SAMPLE CONTAMINATION

PFAS compounds are present in many common household
packaging and personal care products. Given the ubiquito
low detection levels that are generally requested for analys
are required to prevent PFAS cross-contamination when c
routine sampling for common wastewater parameters.

PFAS Sampling Standard Operating Proced
Wastewater Treatment Systems
Maine DEP ○ September, 2022

- Facilities where winter conditions prevent a Q1 2023 groundwa
event will alternatively run two samples in Q2 or Q3.
- As applicable, shipping arrangements with the contract lab for s
off/pick up should be made at least 48 - 72 hours prior to the sa
When properly packed in ice the sample hold time for Method 5
14 days. However, it is advisable that samples be held no long
maximum of 2 – 3 days before shipment to allow for handling a
transportation variability, weekends, and holidays.

j) Sampling Practices

- In most cases the sample bottle will contain a small amount of
powder (Trizma) to dechlorinate the sample. To avoid losing th
the effluent sample will be collected in an intermediate containe
transferred to the sample bottle.
- The collection container used by the facility should be PFAS-fre
(i.e., HDPE or stainless steel) with a volume of at least 1-L that
properly cleaned and rinsed with PFAS-free water. The contra
provide a container for this purpose.
- Any equipment used during sample collection that comes into c
effluent sample, such as long-handled swing samplers, scoop/e
should made of PFAS-free material. If ropes are necessary for
use natural fiber ropes.
- Samples collected from sampling ports (or pumps): Attach PFAS-free tubing or sampling equipment to sampling ports, pumps, etc., *if necessary*, in accordance with the sampling plan. Turn on the tap (or pump) and allow the effluent to flow freely for at least 5 minutes before collecting the sample to obtain a representative sample, free of potential local contamination.

k) Quality Control (QC) Samples. QC samples, including field and/or equipment blanks will be only collected when requested by DEP or the contract laboratory. The purpose is to check for air-borne, site, or sampling technique contamination. A

PFAS Sampling Standard Operating Procedure (SOP) for Wastewater Treatment Systems
Maine DEP ○ September, 2022

k) Ship the coolers to the contract lab in accordance with the sampling plan. Adequate ice is particularly important when collecting samples during hot weather or for overnight shipment.

l) Properly discard disposable equipment. Do not reuse nitrile gloves. Decon reusable equipment in accordance with Section 5.0 below. Cover the clean equipment and store in a dedicated location for the next sampling event. Do not use the sampling equipment for non-PFAS sampling.

5.0 DECONTAMINATION (DECON)

a) Clean equipment and containers thoroughly with Alconox® or Liquinox® labware cleaner and tap water. Do not use Decon 90 or Dawn® dish detergent.

b) Perform a final rinse with PFAS-free water. In most cases, PFAS-free water will be supplied by the contract lab and should be reserved for the final rinse.

c) Store the clean sampling container in a Ziplock® bag, separate from the rope, line, or other equipment used. Do not use this sampling container or tie line for any purpose other than PFAS sampling.

6.0 PFAS TESTING RESULTS

PFAS lab results are typically available from the laboratory 3-4 weeks following sample receipt. Results include a Level 2 QC lab report and an Electronic Data Deliverable (EDD) form. Information on how to read and interpret the PFAS lab report can be found at this Link. For public facilities in the Project, this has been pre-arranged with Alpha Analytical. Commercial/industrial facilities should consult with their Compliance Inspector regarding reporting data.

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PART 1:

Acceptable vs. Prohibited Items

Source: 3/22/19 Maine DEP Memorandum from David Burns, "Requirement to analyze for PFAS compounds"

Table 1: Summary of Prohibited and Acceptable Items for Use in PFAS Sampling

Prohibited Items	Acceptable Items
Field Equipment	
Teflon® containing materials. Aluminum foil.	High-density polyethylene (HDPE) and stainless steel materials
Storage of samples in containers made of LDPE materials	Acetate direct push liners
Teflon® tubing	Silicon or HDPE tubing
Waterproof field books. Water resistant sample bottle labels.	Loose paper (non-waterproof). Paper sample labels covered with clear packing tape.
Plastic clipboards, binders, or spiral hard cover notebooks	Aluminum or Masonite field clipboards
	Sharpies®, pens
Post-It Notes	
Chemical (blue) ice packs	Regular ice
Excel Purity Paste TFW Multipurpose Thread Sealant Vibra-Tite Thread Sealant	Gasoils NT Non-PTFE Thread Sealant Bentonite
Equipment with Viton Components (need to be evaluated on a case by case basis, Viton contains PTFE, but may be acceptable if used in gaskets or O - rings that are sealed away and will not come into contact with sample or sampling equipment.)	
Field Clothing and PPE	
New clothing or water resistant, waterproof, or stain treated clothing, clothing laundered with fabric softeners, clothing containing Gore-TexTM	Well-laundered clothing, defined as clothing that has been washed 6 or more times after purchase, made of synthetic or natural fibers (preferable cotton)
Clothing laundered using fabric softener	No fabric softener
Boots containing Gore-TexTM	Boots made with polyurethane and PVC
	Reflective safety vests, Tyvek®, Cotton Clothing, synthetic under clothing, body braces
No cosmetics, moisturizers, hand cream, or other related products as part of personal cleaning/showering routine on the morning of sampling	**Sunscreens** - Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, Baby sunscreens that are "free" or "natural" **Insect Repellents** - Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics

	Sunscreen and insect repellant - Avon Skin So Soft Bug Guard Plus – SPF 30 Lotion
Sample Containers	
LDPE, glass containers or passive diffusion bags.	HDPE (any media) or polypropylene (only for EPA Method 537 samples)
Teflon®-lined caps	Lined or unlined HDPE or polypropylene caps
Rain Events	
Waterproof or resistant rain gear	Polyurethane, vinyl, wax or rubber-coated rain gear. Gazebo tent that is only touched or moved prior to and following sampling activities
Equipment Decontamination	
Decon 90	Alconox® and/or Liquinox®
Water from an on-site well	Potable water from municipal drinking water supply (if tested as PFAS-free)
Food Considerations	
All food and drink, with exceptions noted on the right	Bottled water and hydration drinks (i.e. Gatorade® and Powerade®) to be brought and consumed only in the staging area

It is recommended that all water samples will be collected using dedicated or disposable sampling equipment where possible. Any re-usable equipment, such as plumbing fittings, that may be needed in certain cases to obtain a sample from the pressure tank tap, should be deconned using Alconox/Liquinox soap and rinsed with DI or PFAS-free water prior to use and between locations.

5.0 Sample Locations

A map showing planned sampling locations will be included in the sampling plan. If locations are not pre - determined, the method that samples will be chosen and collected (field observations, random, etc.) will be outlined in the SAP. Field or laboratory compositing procedures will also be described, if applicable.

This section should also indicate sampling collection priority and order, to assure that the most important samples are obtained, and that sampling is generally done from low areas of contamination to higher levels of contamination. It is recommended that critical samples be collected in duplicate.

6.0 Media Sampled

A chart outlining the media collected and sample analysis will be included in the SAP. Table 2 provides several current methods with their associated media:

On PFAS Sampling Day:

IF IT:

- ✓MAKES YOU LOOK GOOD
- ✓MAKES YOU SMELL GOOD
- ✓TASTES GOOD…

…IT'S PROBABLY ON THE "PROHIBITED ITEMS" LIST!

Examples of:
Prohibited Field Clothing, Prohibited Personal Care Products and Prohibited PPE

Clothes laundered with fabric softeners, Vinyl Gloves,
Water-resistant clothing & shoes such as: Tyvek®, Gore-Tex™
Personal Care Products: Soap, Shampoo, Deodorant, Cosmetics, Hand Creams, etc.

Examples of:
Acceptable Field Clothing, Acceptable Personal Care Products and Acceptable PPE

Well-laundered clothing (washed 6 or more times), New Powderless Nitrile Gloves,
Cotton clothing preferable (including “undies”)
Polyurethane and PVC boots, reflective Safety Vests, Certain Sunscreens and Certain Insect Repellents

Examples of Prohibited Field Equipment

LDPE Bottles

Teflon® Tubing

Teflon® Lined Bottle Caps

Post-it® Notes

Blue Ice Packs

Waterproof Field Books & Labels

Plastic Clipboards

Examples of Acceptable Field Equipment

HDPE Sample Bottles

Stainless Steel Material

Pens, Sharpies®

Silicon or HDPE Tubing

Paper sample labels covered w/clear packing tape

Regular Ice

Loose paper (non-waterproof)

Masonite field clipboards

Examples of Prohibited Rain Event Items & Equipment Decontamination Chemicals

Waterproof or Water-resistant Rain Gear

Water from an Onsite Well
(the well being tested for PFAS)

Decon 90

Examples of Acceptable Rain Event Items & Equipment Decontamination Chemicals

Polyurethane, Vinyl, Wax or Rubber-Coated Rain Gear

Gazebo Tent
(only touched or moved
before and after sampling activities)

Equipment Decontamination:
Alconox® and/or Liquinox®
PFAS-free water

Examples of Acceptable Food Considerations

Bottled Water and Hydration Drinks (examples below) must be brought and consumed **ONLY** in the staging area!!

Examples of Prohibited Food Considerations

Just about Everything Else!!!

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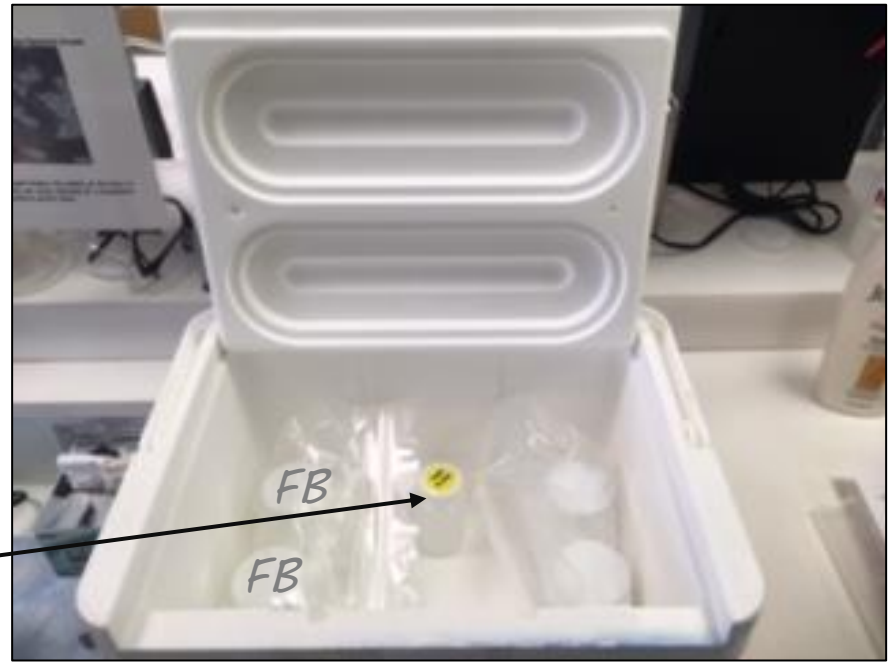
PART 2:

PFAS Sampling Kit

Lab-supplied PFAS Sampling Kit

- 1 Cooler
- 1 set of Sample Bottles, in a baggie, per sample location
- 1 set of Field Blank (FB) Bottles, in a baggie, per sample location
- Sampling Instructions
- Chain-of-Custody Form
- 1 Temperature Blank*



*__Temperature Blank__ stays in the cooler. The commercial lab will take the temperature of the water in the Temperature Blank upon receipt in the lab. This temperature represents the temperature of the samples.

Temperature must be less than 10 Deg C (50 Deg F).

CHAIN OF CUSTODY

PAGE_____ OF _____

ALPHA ANALYTICAL

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client:

Address:

Phone:

Fax:

Email:

❑ These samples have been previously analyzed by Alpha

Project Information

Project Name:

Project Location:

Project #:

Project Manager:

ALPHA Quote #:

Turn-Around Time

❑ Standard ❑ RUSH *(only confirmed if pre-approved!)*

Date Due: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab:

Report Information - Data Deliverables

❑ FAX ❑ EMAIL

❑ ADEx ❑ Add'l Deliverables

Regulatory Requirements/Report Limits

State /Fed Program

ALPHA Job #:

Billing Information

❑ Same as Client info PO #:

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials

Container Type

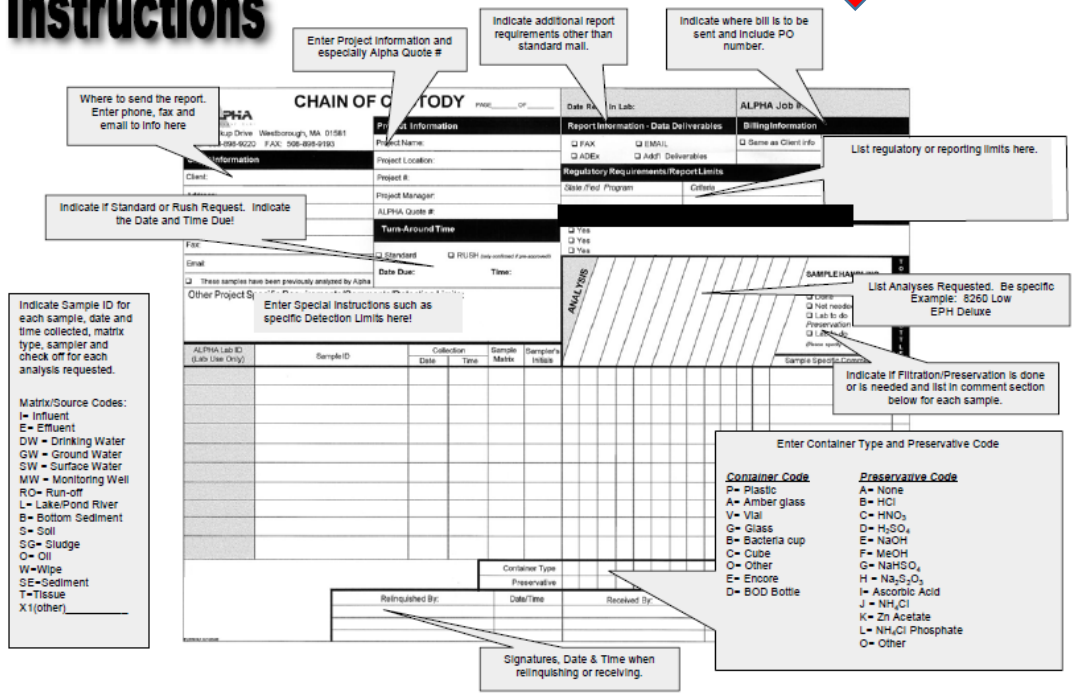
Preservative

Relinquished By:	Date/Time	Received By:

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

Instructions for filling out Alpha Analytical's Chain-of-Custody are on the back of the Chain-of-Custody

Instructions



Terms & Conditions: In the absence of a written agreement to the contrary, this order constitutes an acceptance by the Client of Alpha Analytical, Inc. (ALPHA)'s offer to do business under these Terms and Conditions, and agrees to be bound by these conditions. Any terms and conditions from Client's that do not conform to the terms and conditions contained herein shall be deemed invalid and unenforceable, unless accepted in writing by ALPHA. This order shall not be valid unless it contains sufficient specifications to enable ALPHA to carry out the Client's requirements. Samples must be accompanied by: a) adequate instruction as to the quantity and type of analysis requested, and b) reporting and billing address information. Upon timely delivery of samples, ALPHA will use its best efforts to meet mutually agreed turnaround times, calculated from the point in time when ALPHA has determined that it can proceed with the defined work to be done (Sample Delivery Acceptance). ALPHA reserves the right, to refuse or revoke Sample Delivery Acceptance for any sample which in the sole judgment of ALPHA: a) is unsuitable volume; b) may pose a risk or become unsuitable for handling, transport or processing for any health , safety, environmental or any other reason; c) holding times cannot be met.

Client agrees to pay for all applicable charges to process this order. Payment in advance is required for all Clients except those whose credit has been established with ALPHA. For Clients with approved credit, payment terms are Net 30 days from the date of the invoice by ALPHA. All overdue payments are subject to an interest and service charge of one and one half percent (1.5%) (Or the maximum rate permissible by law, whichever is lesser) per month or portion thereof from the due date until the date of payment. ALPHA may suspend work and withhold delivery of data under this order at any time in the event that the Client fails to make timely payment of its invoices. Client shall be responsible for all costs and expenses of collection including reasonable attorney's fees. Data or information provided to ALPHA or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by ALPHA of payment for the entire Order.

In no event shall ALPHA have any responsibility or liability to the Client for any failure or delay in performance by ALPHA which results, directly or indirectly in whole or in part, from any cause or circumstance beyond the reasonable control of ALPHA.

ALPHA shall dispose of the Client's samples 30 days after the analytical report is issued, unless instructed to store them for an alternate period of time or return such samples to the Client. The return of samples will be at the Client's own expense.

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World Class Chemistry

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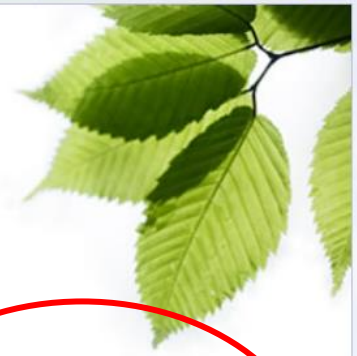
COMPANY | ANALYTICAL SERVICES | SUPPORT SERVICES | PROJECT MANAGEMENT



SUPPORT SERVICES

- Sampling Services
- Sample Storage
- Chain of Custody Forms
- Sample Container Orders
- Courier Service Requests
- Sampling Reference Guide
- Alpha Technical Services
- Frequently Asked Questions
- On-Demand Training

Contact Us
800-624-9220

Home / SUPPORT SERVICES / Chain of Custody Forms

Chain of Custody Forms

Alpha provides environmental testing Chain of Custody (COC) templates for routine and air analysis to assist our clients from container requests to sample submission. These templates can be downloaded to your computer, filled out with your specific company and contact information and stored on your PC for all your future projects.

When you are planning a specific project, the chain of custody form template can be called up and filled in with specific project information and stored on your PC. This project COC can then be sent to Alpha Client Services as a bottle order request. In addition, we will transfer any project-specific information you provide on the COC to the container labels that will subsequently be sent to you for your sampling event. Alpha can also provide copies of this project COC along with your bottle order for your convenience.

In these ways, the Alpha's environmental testing chain of custody form templates function as a multipurpose document, saving you time by reducing the number of steps you need to do.

Click on the links below to download a COC template. Use the MS Excel or MS Word version to create your own documents.

AIR ANALYSIS

Air Chain of Custody Form (Word)

Air Chain of Custody Form (PDF)

Air Chain of Custody Form Instructions (PDF)

Air-Sorbent Media Chain of Custody (Excel field fillable)

How To Complete a Chain of Custody Form

What Our Clients Are Saying

"From bottle ordering to courier service to final deliverables, every Alpha staff involved with…»»

Support Services

Alpha's air canister inventory keeps growing; we now have over 1,000 of the latest technology Fused-Silica-Lined

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PART 3:

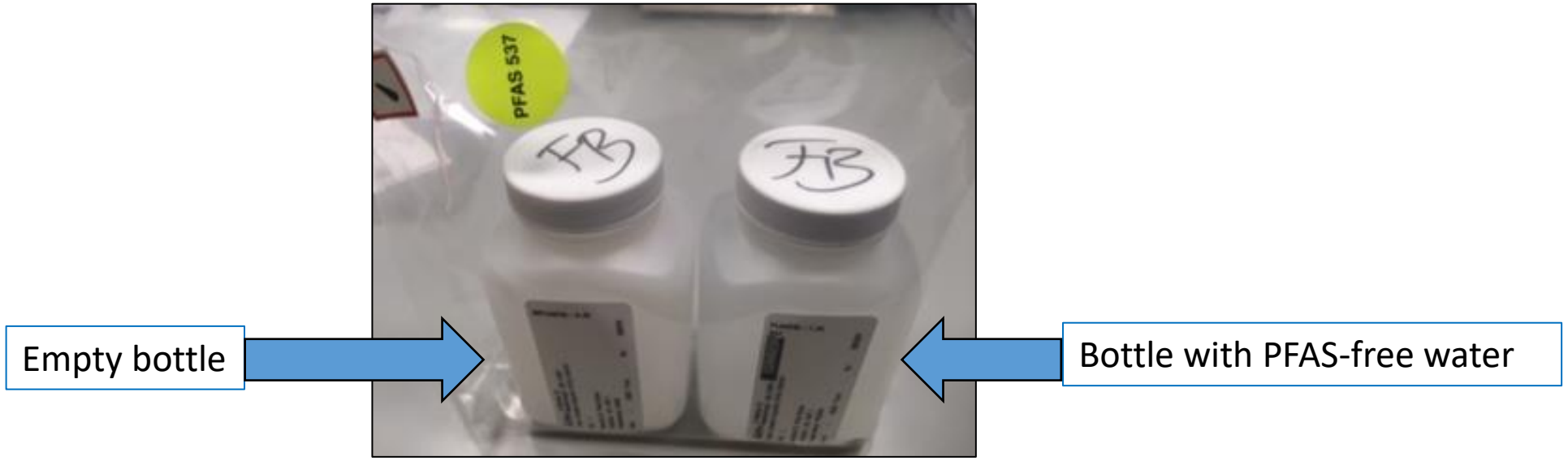
Examples of
PFAS & Field Blank Sampling
Standard Operating Procedures (SOPs)

PFAS Sampling SOP (example)

1. Using hot tap water, wash HDPE pitcher and sample rope with Alconox® or Liquinox® and rinse with PFAS-free water. Store in closable baggie until ready to use.
2. Don your “approved” clothing, gloves, etc.
3. Bring the cooler, the rope, HDPE pitcher, uncoated paper towels, Sharpie® marker, chain-of-custody w/clipboard and ink pen to effluent compliance sampling point.
4. Lower the pitcher with the rope into the effluent channel. Collect the sample in the pitcher.
5. Remove caps from sample bottles and place them face-up on uncoated paper towel.
6. Fill sample bottles to the “necks” but be careful not to overfill. Replace caps and invert bottles 5 times to mix preservative (if supplied).
7. Use Sharpie® to write sample date, time, analyst ID on bottle labels.
8. Return filled bottles to baggie. Seal the baggie.
9. Use pen to fill-out chain-of-custody.
10. Proceed to “Field Blank Sampling.”

Field Blank

- The Field Blank (FB) identifies possible PFAS contamination introduced during sample collection and handling at each sampling location.
- A bottle of PFAS-free water and an empty bottle are supplied by the lab.

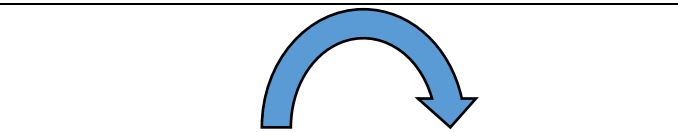


Field Blank Sampling SOP (example)

- **Step 1:** Don nitrile gloves. Open the bottle containing the PFAS-free water and put the cap, face-up, on a clean surface such as non-coated paper towels. Open the “Empty” bottle and keep the cap in your hand.
- **Step 2:** Pour all of the PFAS-free water into the “Empty” bottle and screw on the cap from your hand. Gently invert the bottle 5 times to mix the water with the preservative (if supplied) in the bottle. Screw the other cap onto the now-empty bottle.
- **Step 3:** Use a Sharpie® to fill-in the labels on the bottles. **You will return the empty bottle with your samples.** Put both bottles into the baggie. Seal the baggie. Put into cooler.
- **Step 4**: Use a pen to enter info on the chain-of-custody Form.

  NOTE: Any Equipment Blanks should be collected by rinsing non-dedicated sampling equipment with PFAS-free water. Test this water for PFAS chemicals.

Pour PFAS-free H2O into the Empty Bottle



PFAS-free water Empty Bottle

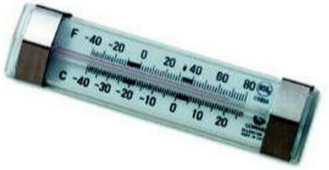
Back View

TABLE 2
Media/Analytical Methodology

MEDIA	LABORATORY METHOD	HOLD TIME*/ PRESERVATION	ANALYSIS TIME	Reporting List
Drinking Water	USEPA Method 537	14 days to extraction/Trizma**	28 days after extraction	Method specific
Groundwater	Modified Method 537	14 days to extraction/<6°C	28 days after extraction	DEP Minibid list ***
Surface Water	Modified Method 537	14 days to extraction/<6°C	28 days after extraction	DEP Minibid list ***
Soil/Sediment/ Sludge	Modified Method 537	14 days to extraction/<6°C	28 days after extraction	DEP Minibid list ***
Other (vegetation…)	537 Modified	Lab specific	Lab specific	DEP Minibid list ***
Water or Soil	TOP or other total fluorinated analysis	Lab specific/<6°C	Lab specific	Method specific

Media/Analytical Methodology: 3/22/19 Maine DEP Memorandum from David Burns, "Requirement to analyze for PFAS compounds"

Sample Storage & Shipping SOP
(example)



- Call or email lab to arrange sample pick-up.
- Make sure baggies containing samples are completely sealed.
- Samples stored after 48 hrs. of collection must be refrigerated at or below 6 Deg C (43 Deg F). Keep Temp Blank with the samples.
- Add **ice** to cooler(s) to keep samples cool during transport to lab.
- Put chain-of-custody in baggie. Set it on top of the sample cooler.
- "Sign-over" the samples to the lab courier.

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PART 4:

PFAS Lab Reports

Bookmarks

Serial_No:04172317:05

ALPHA ANALYTICAL

ANALYTICAL REPORT

Lab Number:

Client:

ATTN:

Phone:

Project Name:

Project Number:

Report Date:

SAMPLE RESULTS

Lab ID:	L2318775-01	Date Collected:	04/04/23 09:15
Client ID:	OUTFALL 001-A	Date Received:	04/07/23
Sample Location:	Not Specified	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Wastewater	Extraction Method:	ALPHA 23528
Analytical Method:	134,LCMSMS-ID	Extraction Date:	04/14/23 06:10
Analytical Date:	04/15/23 03:02		
Analyst:	PS		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	20.6		ng/l	1.89	0.386	1
Perfluoropentanoic Acid (PFPeA)	6.46		ng/l	1.89	0.374	1
Perfluorobutanesulfonic Acid (PFBS)	4.68	F	ng/l	1.89	0.225	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/l	1.89	0.427	1
Perfluorohexanoic Acid (PFHxA)	10.2		ng/l	1.89	0.310	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/l	1.89	0.232	1
Perfluoroheptanoic Acid (PFHpA)	3.08		ng/l	1.89	0.213	1
Perfluorohexanesulfonic Acid (PFHxS)	2.86		ng/l	1.89	0.356	1
Perfluorooctanoic Acid (PFOA)	7.77		ng/l	1.89	0.223	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.89	1.26	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.89	0.651	1

Serial_No:04172317:05

Project Name: [redacted]
Project Number: [redacted]

Lab Number: L2318775
Report Date: 04/17/23

SAMPLE RESULTS

Lab ID: L2318775-01
Client ID: OUTFALL 001-A
Sample Location: Not Specified

Date Collected: 04/04/23 09:15
Date Received: 04/07/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.78	1.08	1
PFAS, Total (6)	20.9	J	ng/l	1.89	0.213	1

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	85		
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	69		
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	165	Q	
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65		
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	71		
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84		
Perfluoro[13C8]Octanoic Acid (M8PFOA)	87		
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	186	Q	
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	85		
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	82		
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	194	Q	
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	91		
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	19		
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	86		
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	71		
Perfluoro[13C2]Hexadecanoic Acid (M2PFHxDA)	75		10-206

Serial_No:04172317:05

Project Name: [redacted]
Project Number: [redacted]

Lab Number: L2318775
Report Date: 04/17/23

SAMPLE RESULTS

Lab ID: L2318775-01
Client ID: OUTFALL 001-A
Sample Location: Not Specified

Date Collected: 04/04/23 09:15
Date Received: 04/07/23
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorooctadecanoic Acid (PFODA)	ND		ng/l	3.78	1.08	1
PFAS, Total (6)	20.9	J	ng/l	1.89	0.213	1

Serial_No:03252219:58

Project Name: 2022 PFAS
Project Number: Not Specified

Lab Number: L2213990
Report Date: 03/25/22

SAMPLE RESULTS

Lab ID: L2213990-02
Client ID:
Sample Location:

Sample Depth:
Matrix: Dw
Analytical Method: 133,537.1
Analytical Date: 03/23/22 10:12
Analyst: AC

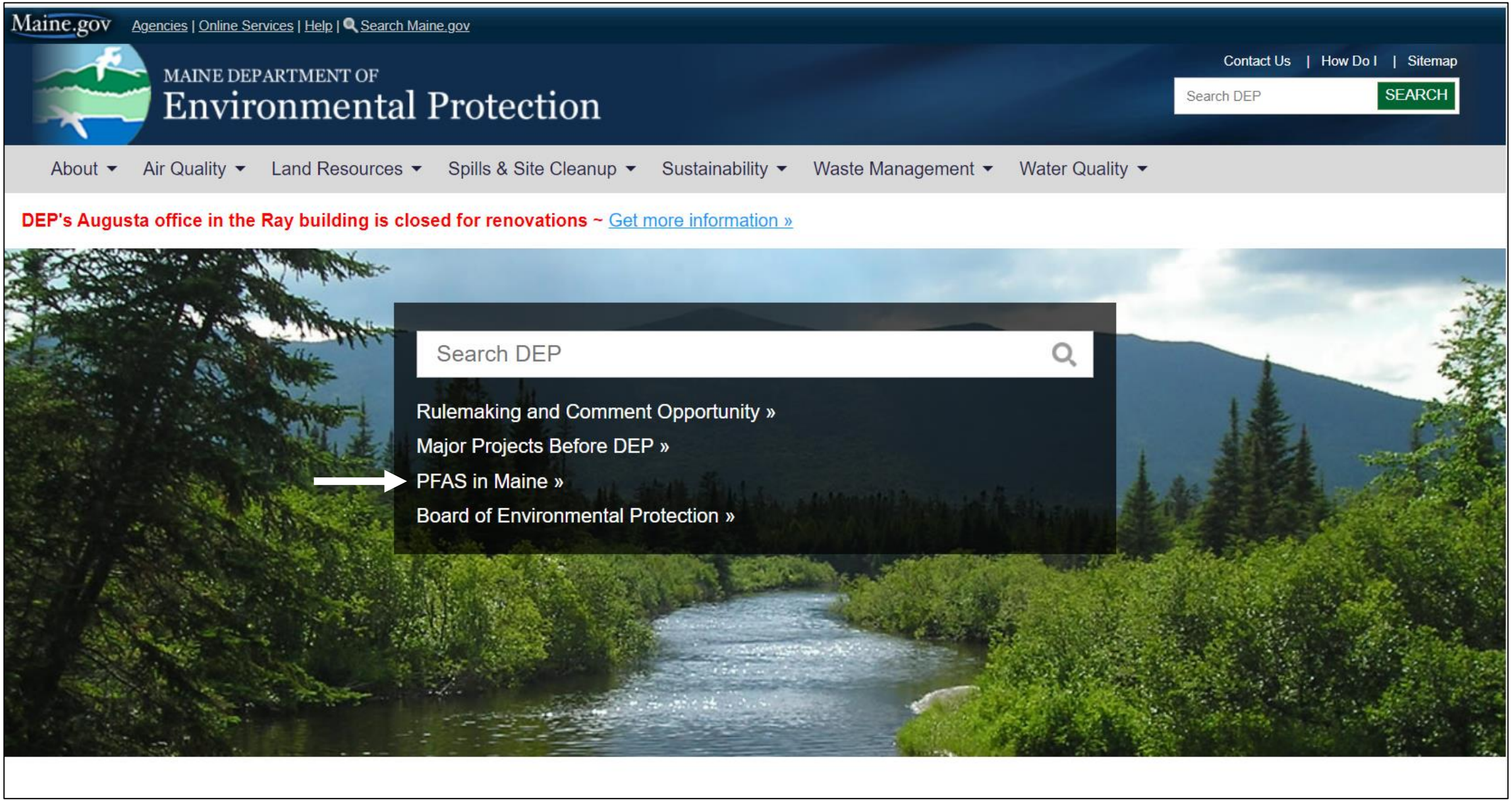
Date Collected: 03/15/22 10:45
Date Received: 03/17/22
Field Prep: Not Specified

Extraction Method: EPA 537.1
Extraction Date: 03/22/22 17:10

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.88	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.88	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	--	1
PFAS, Total (6)	ND		ng/l	1.88	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	87		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	97		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	86		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130

https://www.maine.gov/dep/



https://www.maine.gov/dep/spills/topics/pfas/index.html

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Per- and Polyfluoroalkyl Substances (PFAS)

Click on the topics below to expand each section.

- What is PFAS? +
- Where is PFAS in Maine? +
- What is Maine doing about PFAS? +
- PFAS in Products +
- What is EPA doing about PFAS? +
- How can PFAS be removed from the environment? +
- Data and Guidance +
- Updates and Timeline +
- More Information +

"How to Read and Interpret my PFAS Laboratory Data Report"

https://www.maine.gov/dep/spills/topics/pfas/index.html

What is Maine doing about PFAS? +

PFAS in Products +

What is EPA doing about PFAS? +

How can PFAS be removed from the environment? +

Hide: *Data and Guidance* -

Maine PFAS data (2007-2022) as of November 22, 2022. For questions regarding this data, please email pfas.dep@maine.gov

Maine DEP PFAS Investigation Map (Formerly the "Septage and Sludge Map"). Please direct any feedback to pfas.dep@maine.gov

PFAS Screening Levels June 2021

PFAS Water Sampling for Homeowners

PFAS Soil Sampling for Homeowners

Information for PFAS Self-testers

How to Read and Interpret my PFAS Laboratory Data Report

Background Levels of PFAS and PAHs in Maine Shallow Soils, Study Report dated April 2022

Updates and Timeline +

More Information +

terpret-lab-report

PFAS Laboratory Data Report

Laboratory data reports may at first seem difficult to read and interpret. Although required information is included in the report, each laboratory may present the information in differing ways. In general, each laboratory report must include a cover page, a list defining abbreviations used in the report, a summary of issues that the laboratory may have had during sample analysis, a report of sample results including dates and times of sample collection, sample receipt, sample preparation and analysis, several sections summarizing laboratory quality control measurements, and a copy of the chain of custody form and related sample receipt documentation.

Result = The concentration of the compound detected

This number is compared to Maine's Interim Drinking Water Standard, which is currently 20 parts per trillion

Example Report of Sample Results:

Parameter	Result	Units	Qualifier	RL	MDL	Dilution Factor
Perfluorooctanoic Acid (PFOA)	21.2	ng/L		1.95	0.230	1
Perfluorooctane Sulfonic Acid (PFOS)	ND	ng/L	U	1.95	0.491	1

ND = Non-Detect

ND means the compound was not detected at a level high enough for the laboratory equipment to detect

RL = Reporting Limit

The RL is the limit to which the laboratory equipment can reliably report under normal laboratory conditions

MDL = Method Detection Limit

The MDL is the lowest concentration that the laboratory test equipment can detect a contaminant

Note: ng/L = Nanograms per liter or parts per trillion (ppt)

Thank You for Your Time
and
Happy Sampling!!!

Phyllis Arnold Rand, CIT
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