

PFAS Soil Remediation Standards Technical Listening Session

December 8, 2022

The Listening Session will start at 1:00 P.M.

**All participants have been muted upon entry.
NHDES will unmute individuals when selected to provide
feedback.**

If you have any technical difficulties:

Email: Amy.Rousseau@des.nh.gov

Phone: 603.848.1372

This webinar is being recorded.



PFAS Soil Remediation Standards Technical Listening Session

Jeffrey Marts, P.G.
Bureau Administrator
NHDES Hazardous Waste Remediation Bureau

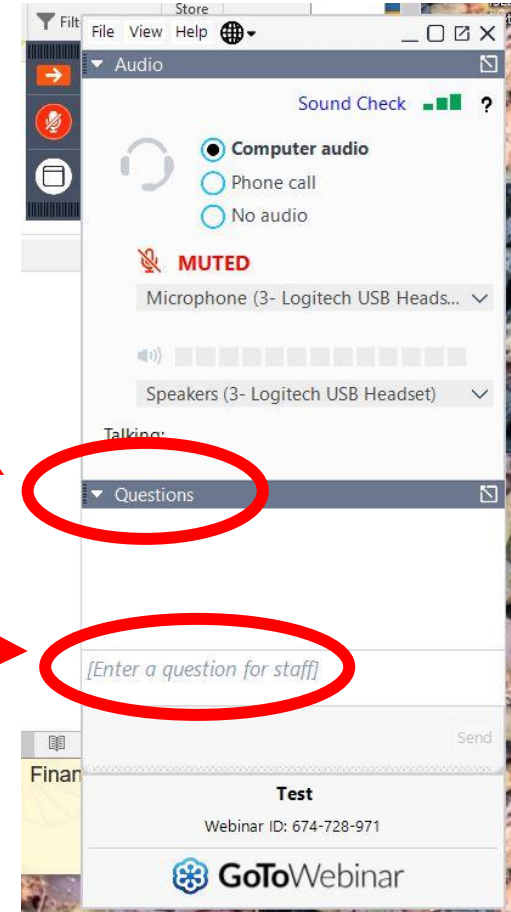
December 8, 2022



Webinar Logistics

How to Provide Feedback

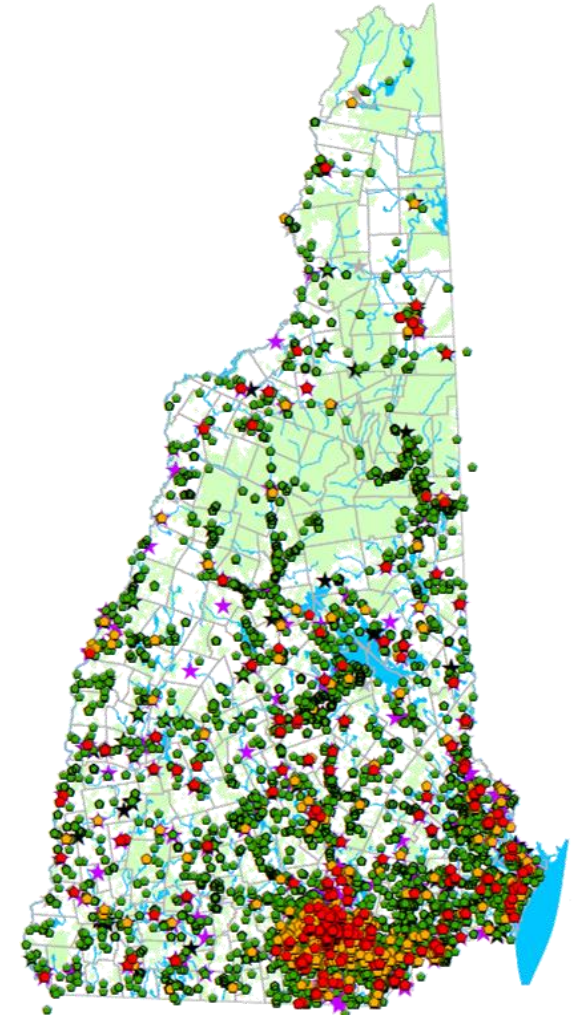
- Identify that you wish to present a comment by typing your name in the question box in the side dock.
- We will put a list of people who have indicated they wish to speak on the screen in order of receipt and call upon them.
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- When you are invited to speak, please state your first and last name and who you represent.



Development of PFAS Soil Standards

Introduction to the Listening Session

- Why are we hosting this listening session?
 - *We want to consider your feedback as we develop the SRS*
- Path towards establishing Soil Remediation Standards (SRS)
- NHDES/USGS Soil and Biosolids Study



NH Groundwater Quality Data and Waste Sites

Regulatory Setting: NH Code of Administrative Rules, Chapter Env-Or 600, Contaminated Sites Management

Ambient Groundwater Quality Standards (AGQS)*

**Concentrations are equivalent to NH's MCLs*

Soil Remediation Standards (SRS)

485-H:13 (July 2022) – SRS rulemaking must be initiated by November 1, 2023 for PFNA, PFOA, PFOS, PFHxS

- Direct Contact Risk-Based Values

PFAS	AGQS (ng/L)
Perfluoronananoic acid (PFNA)	11
Perfluorooctanoic acid (PFOA)	12
Perfluorooctane sulfonic acid (PFOS)	15
Perfluorohexane sulfonic acid (PFHxS)	18

S-1 (µg/kg) Young Child	S-2 (µg/kg) Maintenance Worker
100	900
200	1,300
100	600
100	900

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-19-29.pdf>

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/20191211-pfas-dcrb.pdf>

Leaching-based soil values developed by others are much lower than NH's direct contact values

ppb ($\mu\text{g}/\text{kg}$)	USEPA RSLs	Alaska	Connecticut	Florida	Hawaii	Maine	Massachusetts	Nebraska	New York	North Carolina	Pennsylvania	Texas - 0.5 acre source	Texas - 30 acre source	Washington - Vadose Zone	Washington - Saturated Zone
PFNA	0.247	--	1.4	--	0.78	--	0.32	--	--	--	--	3.1	1.5	0.08	0.0048
PFOA	0.9150	1.7	1.4	2	1.2	1.7	0.72	0.60	1.10	17	7	3	1.5	0.063	0.004
PFOS	0.0378	3	1.4	7	7.5	3.6	2	0.78	3.70	--	7	50	25	0.17	0.0099
PFHxS	0.167	--	1.4	--	1.8	--	0.3	--	--	--	--	2	1	0.41	0.026

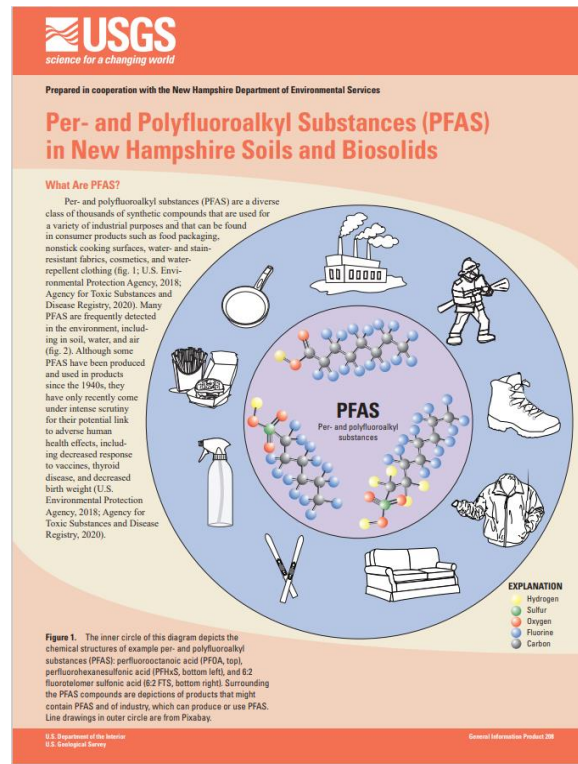


- Values related to drinking water values
- Published values for other PFAS are not shown here

Path to Soil Remediation Standards Development – *5 Factors to Evaluate* (based on NHDES Risk Characterization and Management Policy [RCMP]):

- Direct Contact Risk-Based Soil Concentrations
- Leaching-Based Soil Concentrations
- Background Soil Concentrations
- Ceiling Concentrations
- Practical Quantification Limits

To inform SRS development, NHDES and USGS New England Water Science Center are studying the occurrence and behavior of PFAS in NH's soil and biosolids



<https://pubs.er.usgs.gov/publication/gip208>



- Task 1 – Characterize soil quality to assess PFAS impacts in “undisturbed” areas **100% COMPLETE**
<https://www.usgs.gov/data/statewide-survey-shallow-soil-concentrations-and-polyfluoroalkyl-substances-pfas-and-related>
- Characterize select biosolids to support Task 2: two anaerobic digested cake, lime-stabilized cake, wood ash-stabilized cake, and in-vessel (aerobic) compost
- Task 2 – Assess partitioning of PFAS in NH soil and biosolids in laboratory studies **-80% COMPLETE**
- Task 3 – Evaluate PFAS transport from soil to water at an AFFF release site and a biosolids application site **100% COMPLETE**
- Additional Tasks – Reporting and Confirmatory Sampling **UNDERWAY**

Contact Information

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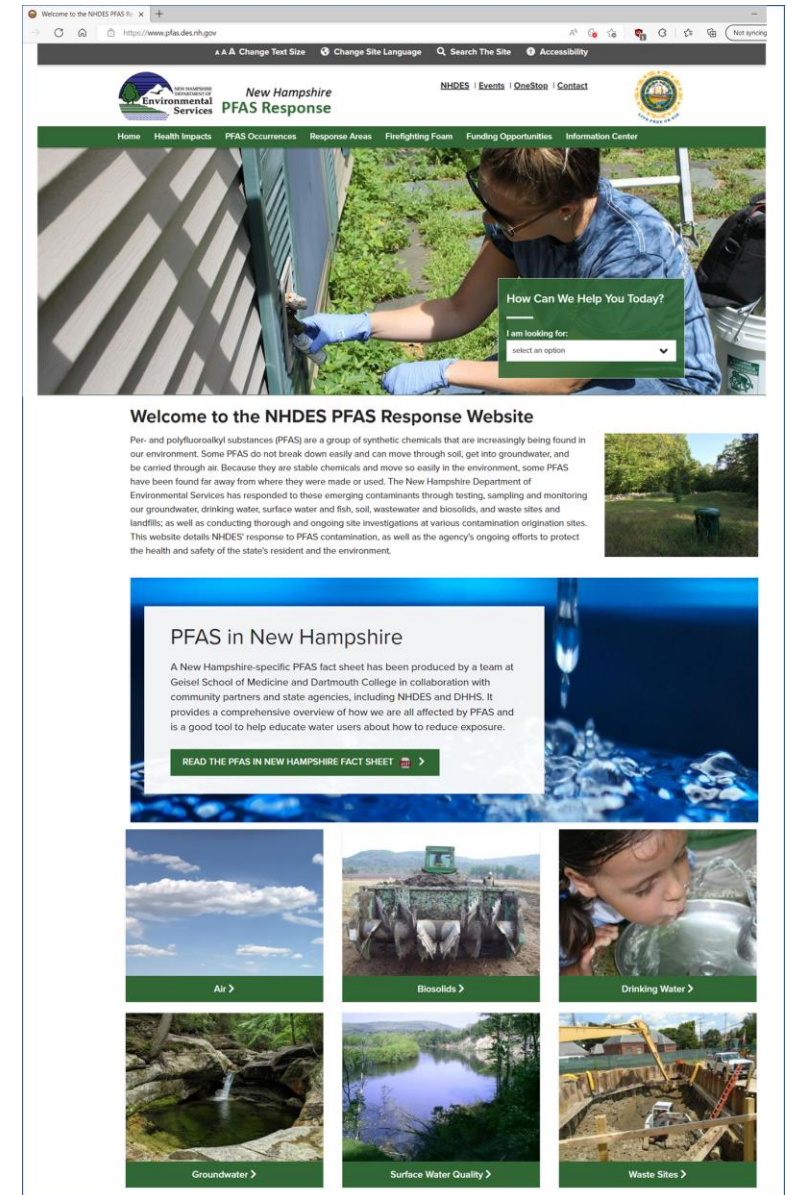
Tanya Justham (for written comments)

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<https://www.pfas.des.nh.gov/>

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