PFAS Update for Portsmouth **S**afe **W**ater **A**dvisory **G**roup

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Overview

1. Primer on Regulatory Jargon
2. EPA's Recent Drinking Water Announcements
3. Comparison to NH and Other States Guidance
4. EPA's Risk Messaging
5. Implication for New Hampshire

What are Health Advisories (HAs) versus Maximum Contaminant Levels (MCLs)?

Health Advisories (HAs) provide information on a contaminant that can cause negative human health effects and is known or anticipated to occur in drinking water. (EPA 2022)

- Not enforceable or regulatory in application
- Usually provided as guidance for the public health entities and public water systems
- Sometimes developed into Lifetime Health Advisory (LHA)

Maximum Contaminant Levels (MCLs) are regulatory standards for public water systems.

- Accounts for feasibility to detect the chemical and technological ability to treat
- Considers cost-benefits analysis to setting a given limit

Ambient Groundwater Quality Standards (AGQS) are regulatory tools used by the New Hampshire Department of Environmental Services (NHDES) to investigate groundwater contamination.

- NH-specific value, not developed by EPA
- Typically matches the MCLs in NH due to interrelationship of groundwater

What did U.S. EPA recently announce related to PFAS?

- **Interim Lifetime Health Advisories** for **PFOA (0.004 ng/L)** and **PFOS (0.020 ng/L)** until late fall, when both will be revised per EPA.
  - ***Calculated using a draft report*** that was partially reviewed by a Science Advisory Board. EPA has not publicly replied to any comments or technical suggestions.
  - ***Based on reduced vaccine antibody response*** to tetanus (PFOA) and diphtheria (PFOS) observed in children from the Faroe Islands.
- **Finalized Health Advisories** for **PFBS (2,000 ng/L)** and **GenX (10 ng/L)**
- Potential Future Health Advisories for **PFBA, PFHxA, PFHxS, PFNA**, and **PFDA**. EPA is working on these assessments.
- **Maximum Contaminant Levels for PFOA and PFOS** will be proposed by December 2022. Year-long rulemaking process to follow.

What are the current MCLs/AGQS for PFAS in New Hampshire?

- 12 ng/L for PFOA (Perfluorooctanoic acid)
- 15 ng/L for PFOS (Perfluorooctane sulfonic acid)
- 11 ng/L for PFNA (Perfluorononanoic acid)
- 18 ng/L for PFHxS (Perfluorohexane sulfonic acid)

These limits were developed for sensitive segments of the population.

- ✓ Pregnant/lactating women and their infants
- ✓ Individuals who consume a lot of water
- ✓ Individuals with chronic exposure (several years to decades)
- ✓ Accounting for additional sources of exposure (e.g., consumer products and food)

For more information about the NHDES PFAS MCLs:
https://www4.des.state.nh.us/nh-pfas-investigation/?page_id=1036

******The NHDES PFAS website is changing next month****

Health Advisories, Maximum Contaminant Levels (MCLs) and Health-Based Guidance Values Expressed in ng/L or parts-per-trillion (ppt)

Specific PFAS	New Hampshire (2020)	EPA (2016) Health Advisories	EPA (2022) Health Advisories	New Jersey (2019-2022)	Michigan (2019-2020)	Minnesota (2021)	New York (2019)	Vermont (2018-2021)	Mass. (2021-2022)	Connecticut (2022)
PFBA			*Drafted RfD*			7,000				
PFBS			2,000		420	100			2,000	
PFHxA			*Drafted RfD*		400,000	200				
PFHxS	18				51			20 (Summed)	20 (Summed)	49
PFHpA										
PFOA	12	70 (Summed)	0.004	14	8	35	10			16
PFOS	15		0.020	13	16	15	10			10
PFNA	11			13	6					12
PFDA										
GenX			10		370					

Where is the major difference between EPA's and NH's (and other states') risk assessment?

Reference Doses (RfDs)

The major difference is the selection of RfDs applied by EPA and other states. This is the amount of chemical exposure, adjusted for individual body weight, that is expected to be without significant health risk. For PFAS, these are "chronic" or long-term RfDs.

Agency	RfD (ng/kg/d)	Critical Health Effect
VTDOH, EPA (2016)	20.0	Developmental toxicity (reduced birth weight in animals)
NHDES, MIDHHS, MNDOH, NJDEP, NYDOH, WADOH	1.8-3.0	Immune toxicity (decreased antibody response in animals)
EPA (2022)	0.0079	Immune toxicity (decreased antibody response in children from the Faroe Islands)

What about other environmental media and sources of exposure?

NHDES does not exclusively evaluate drinking water.

PFAS are found other media, and EPA is still determining how/if these proposed RfDs will apply to other media.

	Reference Dose	TOTAL Daily Dose Limit for Adults (80 kg)	TOTAL Daily Dose Limit for 3-6 Month Infants (7.4 kg)
PFOS (EPA 2022)	0.0079 ng/kg/d	0.639 ng	0.058 ng
PFOA (EPA 2022)	0.0015 ng/kg/d	0.120 ng	0.011 ng

EPA, 2022: https://www.epa.gov/sdwa/drinking-water-health-advisories-pfoa-and-pfos

EPA's Risk Communication

EPA has detailed their risk communication online at: https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genx-chemicals-and-pfbs

- "*If water sampling results show levels of PFOA or PFOS, or show levels of GenX chemicals or PFBS in drinking water above the health advisory levels, water systems should promptly notify their state drinking water safety agency and examine steps to reduce PFAS exposure.*" **NH Public Water Systems test for several PFAS to comply with NH MCLs and report these results to the state.**
- "*If you are concerned about levels of PFAS found in your drinking water, contact your doctor or health care professional.*" **EPA has provided no information for clinicians regarding HAs or PFAS. National Academies of Sciences, Engineering and Medicine (NASEM) made recommendations to ATSDR's clinician guidance a few weeks ago.**
- "*Does EPA recommend bottled water distribution in communities with PFAS above the interim and final health advisories?*" **No**. **This is complicated due to regulation of bottled water.**
- **These HAs apply to public water systems, and EPA is *currently* not considering these risk values for Superfund Sites.**

Implications for New Hampshire

NH has MCLs for 4 PFAS (PFOA, PFOS, PFHxS and PFNA).

- NHDES is closely following EPA's progress towards finalized HAs and MCLs proposals in Fall 2022.
- EPA's MCLs are unlikely to match the HAs.
- EPA's MCLG for PFOA is likely to be zero due to reclassification of carcinogenicity.
- NH MCLGs for PFOA, PFOS, PFHxS and PFNA are already zero.

Existing data does not show PFBS or GenX at concentrations near the EPA's finalized HAs.

NHDES is tracking all progress related to other PFAS compounds being evaluated by EPA (PFHxA, PFBA, PFDA, PFHxS, PFNA), as well as class-based regulatory tools in development.

NHDES Commissioner is due to update the Legislature in November 2022 per HB 1264 (2020). https://legiscan.com/NH/text/HB1264/2020

While I have your attention…

The NHDES Environmental Health Program is more than PFAS and has been growing since 2020.

- *Technical staff* includes: 1 Toxicologist, 3 Human Health Risk Assessors, 1 Principal Investigator, and our Administrator (Epidemiologist).
- Ongoing review of *NH's Ambient Groundwater Quality Standards* for 105 chemicals.
- *ATSDR's Partnership to Promote Local Efforts to Reduce Environmental Exposures (APPLETREE)* supporting community engagement related to contaminant issues at federal and state sites.
- *Several research collaborations* with NH's academic institutions.
- Supporting several of *NHDES's private well testing* initiatives.

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