EPA Releases Draft Human Health Criteria for PFAS in Waterbodies

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January 6, 2025

On December 19, 2024, the United States Environmental Protection Agency (EPA) released draft health-based recommendations for levels of per- and polyfluoroalkyl substances (PFAS) in waterbodies. These draft recommendations target three PFAS chemicals – perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), and perfluorobutane sulfonic acid (PFBS). These draft human health criteria recommendations are not legally binding requirements and they do not substitute for the Clean Water Act (CWA) or other approved regulations.

It is important to note that these recommendations are currently in draft form and subject to change based on feedback received during the 60-day public comment period, ending on February 24, 2025. Stakeholders, including industry representatives, public entities and scientific experts, have the opportunity to provide input during this period. Following the comment phase, the EPA will review the feedback, revise the draft recommendations as necessary, and determine a timeline for finalization. Given the extensive rulemaking process[1] under the CWA[2] and the Administrative Procedure Act,[3] it is unlikely that these draft recommendations will become finalized and approved within 2025, offering time for continued discussion and scientific review.

These draft recommendations were developed by the EPA evaluating the final toxicity factor, exposure factors (for body weight, fish consumption and drinking water intake), bioaccumulation factors, and a relative source contribution which accounts for exposure from other potential sources (i.e., air, soils, marine fish consumption) using the EPA's 2000 Methodology.[4] The draft recommendations seek to establish the maximum ambient concentrations in surface water, which, if not exceeded will protect the general populations from adverse health effects due to ingesting water, fish, and shellfish from inland and nearshore waterbodies. The EPA's draft recommendations for the maximum ambient concentrations for PFOA, PFOS and PFBS were as follows:[5]

EPA Draft Human Health Criteria (HHC) for Three PFAS		
PFAS	**Water + Organism HHC (ng/L; ppt)**	**Organism Only HHC (ng/L; ppt)**
PFOA	0.0009	0.00036
PFOS	0.06	0.07
PFBS	400	500

How do the EPA's draft recommendations compare to other PFAS regulations?

The EPA's draft recommendations are the second of two distinct measures addressing PFAS in water. On April 10, 2024, the EPA finalized regulations under the Safe Drinking Water Act (SDWA) establishing legally enforceable Maximum Contaminant Levels (MCLs) for six PFAS compounds in drinking water (the Rule).[6] The Rule was the first-ever national, legally enforceable standards applicable to public water systems regarding PFAS in drinking water.

While the Rule focuses on the quality of treated drinking water supplied to consumers, the draft recommendations address potential human exposure to particular PFAS through activities like fishing and recreational water use. As illustrated below, the draft recommendations significantly lower the recommended concentrations for PFOA and PFOS reflecting a more conservative approach to protect human health from potential cumulative exposure through various pathways.

Comparison of Drinking Water MCLs and Draft Surface Water HHC		
	Drinking Water MCLs (April 2024)	**Draft Surface Water HHC (December 2024)**
Scope	Treated water supplied to public systems.	Ambient (natural) water bodies used for multiple purposes.
Authority	Enforceable by the EPA through MCLs under the SDWA.	Non-enforceable draft recommendations.
Responsibility	Utilities ensure compliance.	Potentially industries, states, and tribes.
Health Focus	Direct human consumption.	Broader exposure pathways (fish consumption, recreation).
PFOA	4.0 ng/L; ppt	0.0009 ng/L; ppt (water + organism) 0.00036 ng/L; ppt (organism only)
PFOS	4.0 ng/L; ppt	0.06 ng/L; ppt (water + organism) 0.07 ng/L; ppt (organism only)
PFBS	Included in Hazard Index MCL.	400 ng/L; ppt (water + organism) 500 ng/L; ppt (organism only)

What's next?

The EPA's draft recommendations are targeted to help prevent upstream contamination that might impact drinking water sources. The adoption of surface water criteria may reduce PFAS contamination at the source, potentially lessening the treatment burden on utilities governed by the SDWA. However, notably absent from the EPA's draft recommendations for surface water is the issue of the draft criteria for both PFOA and PFOS being below the current Method Detection Limits (MDLs) established under EPA Method 1633.[7] The MDLs represent the lowest concentration reliably detectable by current technology in well-prepared laboratories. The EPA's draft recommendations are over six hundred times lower than the current MDL for PFOA and over ten times lower than the MDL for PFOS. Instead, the draft recommendations state that the proposed criteria are based on the latest science and are intended to protect human health without factoring in technological and economic feasibility or additional scientific research.

Overall, these draft recommendations highlight the evolving scope of potential PFAS regulations, warranting a more rigorous approach to contamination management and presenting potential challenges for compliance and policy development. Historically, the EPA's process from draft to final publication has typically taken one to three years, depending on the complexity and public response. Accordingly, the 60-day public comment period ending on February 24, 2025, offers a crucial opportunity for comment on these draft recommendations.

[1] US Environmental Protection Agency. (n.d.). Basics of the regulatory process. US Environmental Protection Agency. Retrieved January 2, 2025, from https://www.epa.gov/laws-regulations/basics-regulatory-process.

[2] US Congress. (1972). Clean Water Act, Section 304(a): Information and guidelines. 33 USC § 1314(a).

[3] US Congress. (1946). Administrative Procedure Act. 5 U.S.C. §§ 551–559.

[4] US Environmental Protection Agency. (2000). Methodology for deriving ambient water quality criteria for the protection of human health. EPA-822-B-00-004. https://www.epa.gov/sites/default/files/2018-10/documents/methodology-wqc-protection-hh-2000.pdf.

[5] US Environmental Protection Agency. (2024). Draft national recommended ambient water quality criteria for the protection of human health for perfluorooctanoic acid, perfluorooctane sulfonic acid, and perfluorobutane sulfonic acid [Table 1]. Federal Register, 89(247), 105042. https://www.federalregister.gov/documents/2024/12/26/2024-30637/draft-national-recommended-ambient-water-quality-criteria-for-the-protection-of-human-health-for.

[6] US Environmental Protection Agency. (2024). National primary drinking water regulation for PFAS: General fact sheet. https://www.epa.gov/system/files/documents/2024-04/pfas-npdwr_fact-sheet_general_4.9.24v1.pdf.

[7] US Environmental Protection Agency. (2024). Method 1633a: Analytical procedure for the determination of per- and polyfluoroalkyl substances (PFAS) in aqueous matrices. EPA-820-R-24-007. https://www.epa.gov/system/files/documents/2024-12/method-1633a-december-5-2024-508-compliant.pdf.