



## Release of the U.S. EPA Draft MCLs

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# U.S. EPA Draft MCLs

- On March 14, 2023, U.S. EPA released a draft rule with Maximum Contaminant Level Goals (MCLGs) and Maximum Contaminant Levels (MCLs) for PFOA and PFOS, and a Hazard index for GenX, PFBS, PFNA, and PFHxS
  - MCLGs are the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, allowing an adequate margin of safety; MCLGs are non-enforceable, MCLGs for nonthreshold carcinogens are automatically set at zero
  - MCLs are the primary regulatory standards for all U.S. public water systems and factors in health risks, costs and benefits, feasibility, and laboratory detection limitations used to manage drinking water; MCL is an enforceable standard that is set as close as feasible to MCLG

# U.S. EPA Draft MCLs

Chemical	Current MDH Health-based Guidance (ppt)	Maximum Contaminant Level Goals (MCLGs; ppt)	Maximum Contaminant Levels (MCLs; ppt)	Practical Quantification Level (PQL)* (ppt)
PFOA	35	0	4.0	4
PFOS	15	0	4.0	4
PFBS	100	Hazard Index = 1.0	Hazard Index = 1.0	3
PFHxS	47			3
PFNA	-			4
GenX	-			5

\* Practical Quantification Level (PQL) is the lowest analyte concentration that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions

GenX = Hexafluoropropylene oxide dimer acid (HFPO-DA)

# U.S. EPA Draft MCLs – Hazard Index

$$\text{Hazard Index} = \left( \frac{[\text{GenX}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left( \frac{[\text{PFBS}_{\text{water}}]}{[2000 \text{ ppt}]} \right) + \left( \frac{[\text{PFNA}_{\text{water}}]}{[10 \text{ ppt}]} \right) + \left( \frac{[\text{PFHxS}_{\text{water}}]}{[9.0 \text{ ppt}]} \right)$$

Compare the concentration of each PFAS to its associated Health-Based Water Concentration (HBWC), which is the level at which no health effects are expected for that PFAS

HI > 1.0 is an exceedance of the proposed Hazard Index MCL for these four PFAS

HBWC is based on a non-cancer reference value (RfD or Minimal Risk Level) for the critical (usually the most sensitive) health effect

- Target organ may not be the same between compounds – “general HI” approach

Why are PFOS/PFOA not included in the HI?

- Cancer vs non-cancer

# U.S. EPA Draft MCLs - Monitoring

- EPA is proposing that systems with previously acquired monitoring data from UCMR 5 will not be required to conduct separate initial monitoring
  - All systems >3,300 population, some smaller systems
- Other previously acquired monitoring data using EPA methods 533 or 537.1 may be considered for initial monitoring
  - Other systems <3,300 population
- However, the draft rule has the following initial monitoring requirements:
  - Groundwater >10,000 population and all surface water systems: quarterly for 12 months
  - Groundwater <10,000 population: twice in a 12 month period (90 days apart)

# Entry Points

- Entry Point - where treated water enters the distribution system
  - SDWA compliance samples are collected at Entry Points
- Types of Entry Points:
  - Individual well with only chemical feed
  - Combined Discharge – multiple wells that connect together for chemical addition
  - Treatment Plant – water from one or more wells receives treatment other than just chemical addition
- An individual well does not receive a notice of violation (NOV); an entry point receives a NOV

# U.S. EPA Draft MCLs - Compliance

- Compliance will start 3 years after rule promulgation – allows for initial monitoring
- Compliance based on Quarterly Running Annual Average (QRAA)
- If a sample result is <PQL, EPA is proposing to use **zero** for compliance
  - Example 1: If PFOA is 2.0, 1.5, 5.0, 3.5 - the values used for QRAA are 0, 0, 5.0, 0
  - Example 2: PFOA at 3.5, 3.8, 5.0, 6.0 (QRAA = 4.6) → 0, 0, 5.0, 6.0 (QRAA = 2.8)
- Why would results above a lab's reporting limit not be used for compliance?
- PUBLIC COMMENTS – due by May 30<sup>th</sup>

<https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

# Notice of Violation vs Health Risk Advisory

- If an entry point exceeds an MCL they receive a Notice of Violation from MDH. This legally requires action on their part to meet the MCL.
- If an entry point exceeds state health based guidance values, they will receive a Health Risk Advisory (HRA) letter from MDH. Since these values aren't legally enforceable, the letter suggests 'recommended' actions.
  - Recommended actions could include notification to residents, blending, shutting off a well, and/or treatment
  - The MCLs, including the HBWC values used in the EPA HI, will not be used in MDH's health risk index (HRI) calculation



# Summary of Upcoming Changes

	PFAS with upcoming new guidance	Type of guidance	Additivity calculation	Estimated release of final guidance	Enforceability	Timeline
<b>EPA</b>	PFOA PFOS GenX PFBS PFNA PFHxS	Maximum Contaminant Level Goals (MCLGs) Maximum Contaminant Levels (MCLs)	<u>Hazard Index:</u> GenX PFBS PFNA PFHxS	Late 2023/early 2024	MCLGs: non-enforceable  MCLs: enforceable standard	Receive a Notice of violation (NOV) 3 years after the rule's promulgation under SDWA <a href="#">EPA Rule</a>
<b>MDH</b>	PFOA PFOS	Health-Based Guidance Values (HBVs)	<u>Health Risk Index (HRI):</u> PFOA PFOS PFBS PFBA PFHxS PFHxA	2023	not legally enforceable, suggest 'recommended' actions by MDH	Receive a Health Risk Advisory (HRA) effective immediately (with sufficient monitoring data) <a href="#">MDH HBVs</a>

# Summary of guidance values and additivity equations

All values in ng/L (ppt)	MDH guidance values		EPA draft MCL	EPA health-based water concentration
	HRL	HBV		
PFOS	300	<u>15</u>	4	--
PFOA	35	<u>35</u>	4	--
PFBA	<u>7000</u>	--	--	--
PFHxA	--	<u>200</u>	--	--
PFBS	7000	<u>100</u>	1.0 (unitless) Hazard Index	2000
PFHxS	--	<u>47</u>		9
HFPO-DA (GenX)	--	--		10
PFNA	--	--		10

$$\text{MDH Health Risk Index} = \frac{\text{PFBS}}{100} + \frac{\text{PFBA}}{7000} + \frac{\text{PFHxS}}{47} + \frac{\text{PFHxA}}{200} + \frac{\text{PFOS}}{15} + \frac{\text{PFOA}}{35}$$

$$\text{EPA Hazard Index} = \frac{\text{GenX}}{10} + \frac{\text{PFBS}}{2000} + \frac{\text{PFNA}}{10} + \frac{\text{PFHxS}}{9}$$

# Update on MDH health-based guidance values (HBVs)

- MDH is reviewing the MDH health-based guidance values for PFOS and PFOA
  - MDH recognizes the evolving science indicates a need to lower Minnesota's current health-based guidance values to be protective of public health
  - Using rigorous processes to review and develop updated values for PFOA and PFOS for Minnesota's unique populations and communities, with a goal of completing values in 2023
- MDH will use updated PFOA/PFOS values in the PFAS Health Risk Index (HRI, or HI) equation

# Thank you!

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