SUBURBAN TESTING LABS

From Concern to Compliance:

What PA Water Suppliers Need to Know about PFAS

RICH STUMP

5-15-25

PENNSYLVANIA SECTION

American Water Works Association

1

SUBURBAN TESTING LABS

About Us

- Founded in 1963
- Headquartered in Reading, Pennsylvania
- State College Service Center
- Serving PA, NJ, MD, DE and TX
- Water, Wastewater and Soil/Solids Analysis
- 35,000 Square Foot Laboratory
- 100+ Employees

2

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Course Outline

- PFAS History and Background
- Relevant Regulations
- Testing Strategies and method selection
- Best Practices

3

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PFAS in Plain Terms

- Class of Compounds
- Forever Chemicals
- Sources Include:

4

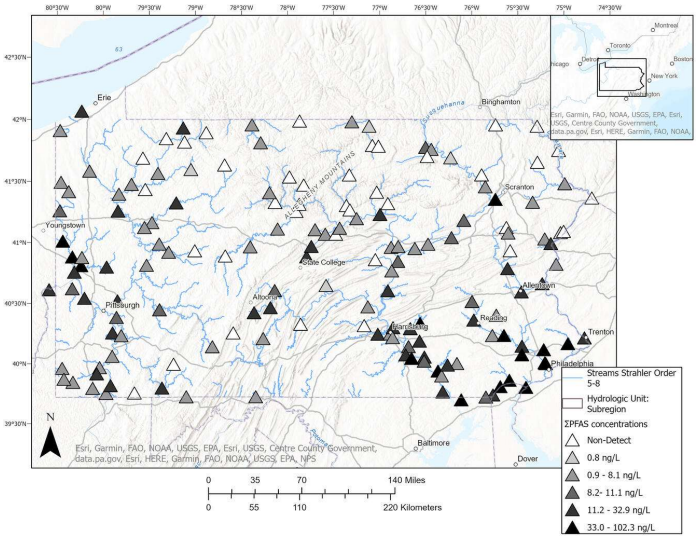
Health Effects

Exposure to PFOA and PFOS over certain levels may result in adverse health effects, including:

- developmental effects to fetuses during pregnancy or to breastfed infants (e.g., low birth weight, accelerated puberty, skeletal variations)
- cancer (e.g., testicular, kidney)
- liver effects (e.g., tissue damage)
- immune effects (e.g., antibody production and immunity)
- thyroid effects and other effects (e.g., cholesterol changes)

Estimated healthcare savings from PA MCLs is $53 Million per year

5



PFAS in Pennsylvania

DETECTIONS

6

Nomenclature

Long Chain
- C8 or greater
- C6 or greater for sulfonic acids

Short Chain

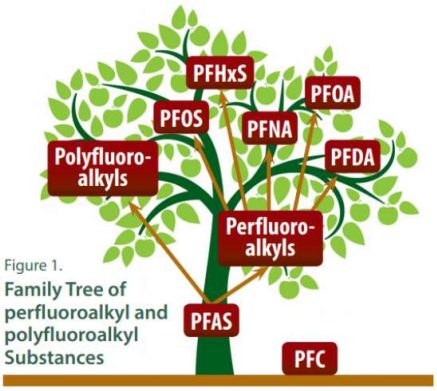
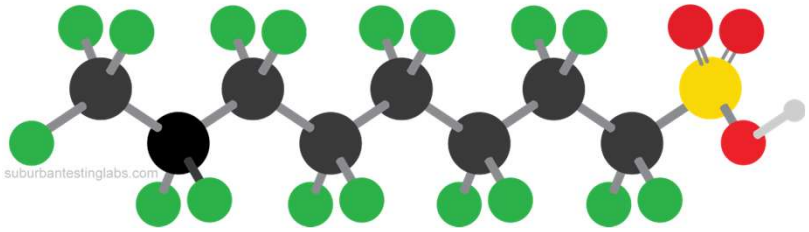


Figure 1.
Family Tree of perfluoroalkyl and polyfluoroalkyl Substances

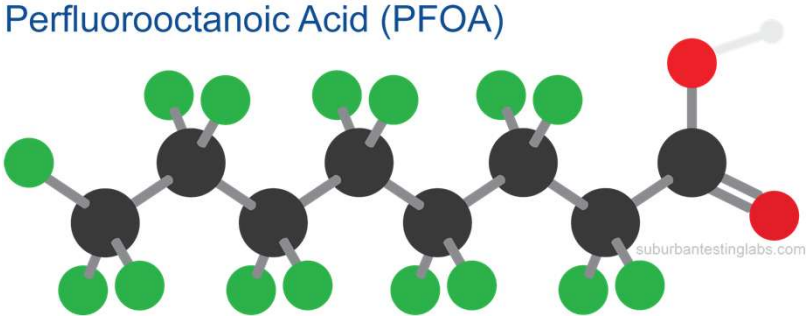
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

7

Perfluorooctanesulfonic Acid (PFOS)



Perfluorooctanoic Acid (PFOA)



8

USEPA Actions

- National PFAS Testing Strategy
- Cleanup Standards
- NPDES Permitting Guidance
- Water Quality Guidelines
- Biosolids (Draft risk assessment Jan 2025)
- UCMR5 monitoring in drinking water (2023-2025)
- Federal MCL Proposed for six PFAS (final April 2024)

9

USEPA MCL

- GW >10,000 – Quarterly for 12 months
- GS <10,000 – 2x in 12 months (90 days apart)
- SW – Quarterly for 12 months
- PADEP update to Chapter 109 in pre-draft proposed status

10

USEPA Final MCL

Compound	Final MCLG	Final MCL (enforceable levels)[1]
PFOA	Zero	4.0 parts per trillion (ppt) (also expressed as ng/L)
PFOS	Zero	4.0 ppt
PFHxS	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
HFPO-DA (commonly known as GenX Chemicals)	10 ppt	10 ppt
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index	1 (unitless) Hazard Index

11

Hazard Index Calculation

To determine the Hazard Index for these four PFAS, water systems would monitor and use those sampling results as inputs into a formula with their Health-Based Water Concentration (HBWC) (i.e., the level at which no health effects are expected for that PFAS). The proposed HBWCs for each of the four PFAS are below.

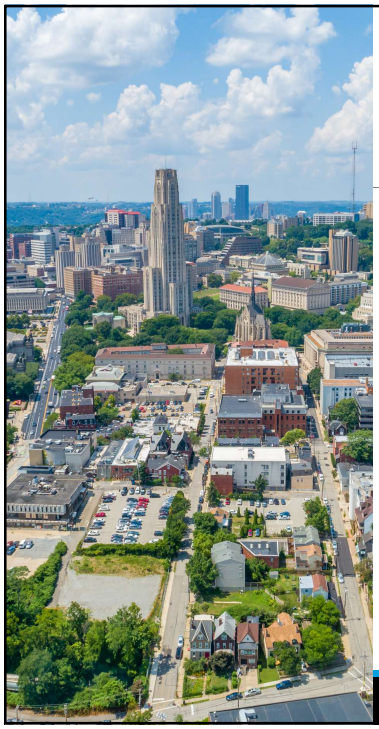
Compound	Health-Based Water Concentration (ppt)
PFHxS	**9.0**
GenX Chemicals	**10**
PFNA	**10**
PFBS	**2000**

Water systems would use a calculator tool provided by EPA to easily determine their Hazard Index result. The tool performs the calculation explained below.

For each of the four PFAS, the calculation first divides the results of the drinking water sample by the HBWC and then adds all the values for each PFAS. If the total value is greater than 1.0, it would be an exceedance of the proposed Hazard Index MCL as follows:

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

12



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PADEP MCL

- Two Compounds
- Community and NTNC and BVRB
- Collected at each Entry Point
  - QUARTERLY MONITORING
  - >350 - STARTED JAN 2024
  - <350 - STARTED JAN 2025

13

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PADEP vs EPA MCL

Analyte	USEPA MCL (ppt)	PADEP MCL (ppt)
PFOA	4.0	14
PFOS	4.0	18
PFNA	10	N/A
PFHxS	10	N/A
PFBS	N/A	N/A
HFPO-DA (Gen X)	10	N/A
Hazard Index	1	N/A

14

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PFAS Methods

	537 (Rev.1.1)	EPA 537.1 (Rev. 1.0 or 2.0)	EPA 533	EPA 1633 EPA 1633A	EPA 1621
Type of Sample	Drinking Water	Drinking Water	Drinking Water	SW, GW, WW, Solids, Tissue	SW, GW, WW
Analytes	14	18	25	40	NA
Notes:			Improved recovery of short chain, uses Isotope Dilution	Improved recovery of all PFAS, uses Isotope Dilution	Screening method only

15

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Availability of Methods

	DW 537/537.1	DW 533	NPW 1633/ mod 537	Solid 1633
In PA	7*	5	2	2
Out of State (PA Accreditation)	20	20	18	8

As of 02/10/2025

*Includes PADEP Lab

16

Can I use my previous testing results to comply with the EPA MCL

- UCMR5 monitoring data can be used (PADEP has not provided guidance on how yet)
- Tested using EPA 533 and reported 6 compounds
- STL uploaded all data to DWELR including RLs
- Tested using EPA 537.1 Rev 2 and reported 6 compounds
- Starting 1/1/25 STL is reporting all 6 compounds by EPA 533 AND EPA 537.1 Rev 2 for all PA SDWA PFAS samples

17

18

What to Look for in a Lab

- ✓ Reporting limits and analyte lists needed
- ✓ Availability of sample collection and sample collection training
- ✓ Knowledgeable of regulatory programs and nuances
- ✓ Support for interpretation of results
- ✓ Tracking of PA Drinking Water requirements

19

Communicating with Your Lab

- Intended use of the data
- Method choice
- Sample collection materials
- Sample collection instructions

20

Course Recap

PFAS History and Background

Relevant Regulations

Testing Strategies and method selection

Best Practices

21

Questions?

Rich Stump

610-375-TEST

rich@suburbantestinglabs.com

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22