MID-ATLANTIC REGION

EPA PFAS Updates

Lower Susquehanna Partnership Meeting

December 9, 2022

Ruby Stanmyer

EPA Region 3 Water Division

What Are Per- and Polyfluoroalkyl Substances (PFAS) and Why Are We Concerned?

PFAS captures a large class of synthetic chemicals.

- Chains of carbon atoms surrounded by fluorine atoms.
- Wide variety of chemical structures.

Used in homes, businesses, and industry since the 1940s.

- Used by a number of industries and found in many consumer products.
- Detected in soil, water, and air samples.
- Most people have been exposed to PFAS.

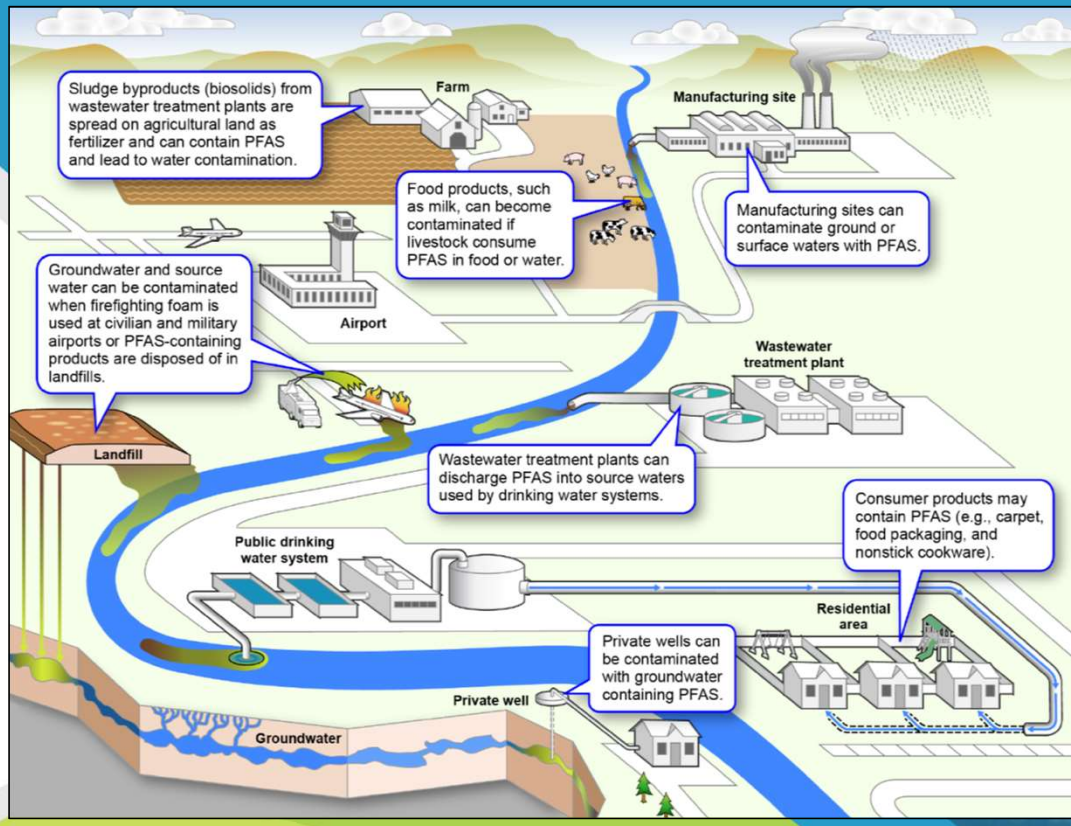
Known or suspected toxicity.

- Potential developmental, liver, immune, and thyroid effects.
- Some are relatively well understood; many others are not.
- Resist decomposition in the environment and in the human body.

EPA PFAS Roadmap

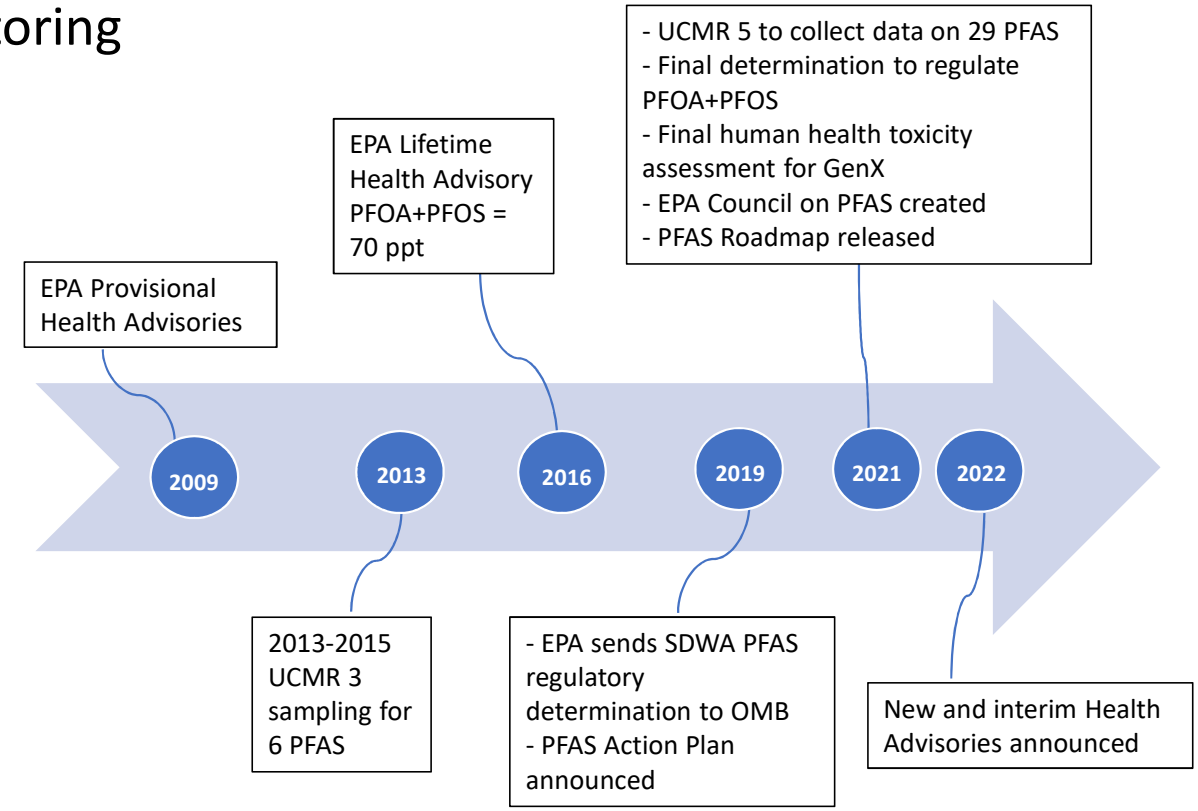
MID-ATLANTIC REGION

- EPA Administrator Michael Regan established the EPA Council on PFAS in April 2021.
- The Council developed the PFAS Strategic Roadmap, released in October 2021 – a bold, strategic, whole-of-EPA strategy to protect public health and the environment from PFAS.
- The PFAS Strategic Roadmap:
  - Lays out EPA's whole-of-agency approach to tackling PFAS;
  - Sets timelines for concrete actions from 2021 to 2024;
  - Fills a critical gap in federal leadership;
  - Supports states' ongoing efforts; and
  - Builds on the Biden-Harris Administration's commitment to restore scientific integrity.



Overview: Current and Past PFAS Actions

- Health Advisories
- Unregulated Contaminant Monitoring Rule (UCMR) 3
- UCMR 5
- Emerging Contaminant Funding
- State-level regulations: PA & DE



EPA PFAS Roadmap and Actions

MID-ATLANTIC REGION

2021

- *Unregulated Contaminant Monitoring Rule (UCMR) 5 to sample for 29 PFAS at large + small public water systems.*
- *Final regulatory determination to regulate PFOA/PFOS in drinking water.*
- *PFAS Roadmap released.*
- *Bipartisan Infrastructure Law/Infrastructure Investment and Jobs Act passed.*

2022 (Expected)

- ***Published Health Advisories for GenX and PFBS.***
- *Propose regulations to designate PFAS as CERCLA hazardous substances.*
- **Leverage National Pollutant Discharge Elimination System to reduce PFAS discharges (ongoing).**
- **Publish proposed rulemaking for PFOA and PFOS (Fall).**

2023-2024

- Publish final NPDWR for PFOA and PFOS (Fall 2023).
- Publish final recommended ambient water quality criteria for PFAS.
- Enhance data availability on PFAS in fish tissue.
- Finalize risk assessment for PFOA + PFOS in biosolids.
- Update research and guidance on PFAS destruction and disposal (Fall 2023).
- Build technical foundation for potential Clean Air Act regulation.

What is a Drinking Water Health Advisory

- Drinking Water Health advisories:
  - Provide info on contaminants that can cause health effects and are known or anticipated to occur in drinking water
  - Are non-enforceable and non-regulatory
  - Include info on analytical methods and treatment
- EPA has developed HAs for ~200 drinking water contaminants.
- A HA level or value is the concentration of a drinking water contaminant for specific exposure duration, at or below which exposure is not anticipated to lead to human health effect.
- PFAS HAs are lifetime HAs and protects all Americans, including sensitive populations and life stages, from adverse health effect resulting from exposure throughout their lives.
- HAs can be used to monitor potential concerns with Brownfield and Superfund sites.

Development of Health Advisories

- **Interim HAs for PFOA and PFOS** are based on publicly available EPA *drafts* undergoing EPA Science Advisory Board review to provide info to public health officials while regulatory process is ongoing
  - Addresses need to replace 2016 PFOA/PFOS HA of 70ppt based on recent health effects studies showing that **PFOA/PFOS can impact human health at much lower exposure levels than the 2016 HAs**.
  - Toxicity values will change as a result of work to address any SAB recommendations. **But the HAs are likely to remain below the PFOA and PFOS minimum reporting limit of 4ppt.**
  - Interim HAs will be replaced once final regulations are published.
- **Final HAs for PFBS and GenX chemicals** are based on publicly available and peer reviewed final toxicity assessments published in 2021

Summary of Four PFAS Health Advisories

- EPA released health advisories for four PFAS:
  - **Interim HAs**: PFOA and PFOS
  - **Final HAs**: GenX chemicals (PFOA replacement) and PFBS (PFOS replacement)
- Analytical methods can detect GenX chemicals and PFBS at the HA values but cannot detect PFOA and PFOS at the interim HA levels.
- Because of this, EPA recommends that if a water system detect PFOA and PFOS, they take steps such as informing residents, undertake monitoring and examine steps to limit exposure.

Chemical	Health Advisory (ppt)	Minimum Reporting Level (MRL) ppt
PFOA	0.004 (interim)	4
PFOS	0.02 (interim)	4
GenX Chemicals	10 (final)	5
PFBS	2,000 (final)	3

PFOA/PFOS NPDWR Development

MID-ATLANTIC REGION

- National Primary Drinking Water Regulation (NPDWR) for PFOA and PFOS
  - Draft Maximum Contaminant Level Goals (MCLGs) and Maximum Contaminant Levels or Treatment Techniques reviewed by the SAB.
  - In support of rulemaking, EPA's Science Advisory Board recently completed its review of updated draft science on the health effects of PFOA and PFOS.
  - Proposed NPDWR expected Fall 2022
  - Final rule expected Fall 2023
  - Expedited timeline

Visit: https://sab.epa.gov/ords/sab/f?p=100:18:16490947993:::RP,18:P18_ID:2601 for more information on SAB reports.

Further Drinking Water Steps

- UCMR 5 Sampling for 29 PFAS
  - Sampling to occur between January 2023-December 2025.
  - All PWSs serving 3,300 or more people + representative PWSs serving <3,300 will collect samples.
  - EPA to arrange for the analysis of small-system samples and will pay for shipping and analytical costs.
- Future UCMR cycles likely to include PFAS
- State-led regulations
- Funding: money money money

NPDES: Eliminating PFAS Prior to Discharge

2022

- The National Pollutant Discharge Elimination (NPDES) will be leveraged to reduce PFAS discharges to waterways
  - Additional guidance to come about NPDES permits for PFAS.
  - Applicable to POTWs, stormwater permits, and the following industries:
    - Organic chemicals, plastics & synthetics, metal finishing & electroplating, landfills, pulp, paper & paperboard, leather tanning, plastics molding, textile mills, paint formulating, airports.
  - NPDES Permits

April 28, 2022 Memorandum: "Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority"

https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

Bipartisan Infrastructure Law and PFAS

The Bipartisan Infrastructure Law provides $10 billion to invest in communities impacted by PFAS and other emerging contaminants.

$4 billion	Drinking Water State Revolving Fund
$1 billion	Clean Water State Revolving Fund
$5 billion	Small or Disadvantaged Communities Drinking Water Grants

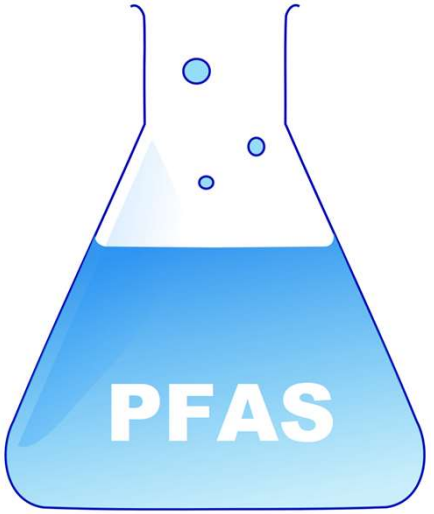
June 16 announcement:

- EPA announcement the first $1 billion of grants to help small or disadvantaged communities on the front lines of PFAS contamination
- All R3 states submitted a letter of intent to participate
- Awaiting allotments and guidance from EPA HQ

Analytical Testing: Current and Future

2022

- Current Methods - Multi-lab/EPA validated
  - 533 and 537.1 (LC-MS/MS)
    - Drinking water
    - 29 PFAS
  - 8327 (LC-MS/MS)
    - Surface water/ groundwater/ wastewater
    - 24 PFAS compounds
- Draft Methods - Validation on-going
  - 1633 (LC-MS/MS)
    - Aqueous, solid, biosolid, and tissue samples
    - Tests for 40 PFAS compounds (~ 4,700 exist, still being identified)
  - 1621 – Adsorbable Organic Fluorine
    - Combustion Ion Chromatography
    - Does not identify which organofluorines
    - Tests for thousands of PFAS at the ppb (µg/L)



Treatment Options

- Granular activated carbon (GAC)
- Anion exchange (AIX)
- High pressure membranes (typically the most expensive)
  - Reverse osmosis (RO) or nanofiltration
- In all options, waste and cost remains a concern.
- High pressure membranes result in highly concentrated wastewater, GAC and AIX result in contaminated media (such as the filled carbon media).
  - More information on destruction and disposal at: https://www.epa.gov/pfas/interim-guidance-destroying-and-disposing-certain-pfas-and-pfas-containing-materials-are-not

Pennsylvania – a state perspective

- PADEP conducted statewide PFAS sampling, announced in 2021.
  - Sampling results and PFAS news: https://www.dep.pa.gov/Citizens/My-Water/drinking_water/PFAS/Pages/default.aspx
- Shortly after, PADEP began the process of setting their own MCL ahead of EPA.
- The Independent Regulatory Review Commission approved the proposed rulemaking on November 17, 2022.

PFAS	MCLG (ng/L)	MCL (ng/L)	MCLs Protective Of
PFOA	8	14	Adverse developmental effects (including neurobehavioral and skeletal effects)
PFOS	14	18	Adverse immune system effects (including immune suppression)

Source: EQB PADEP presentation 10/12/2022

EPA PFAS Roadmap and Actions

EPA MID-ATLANTIC REGION

2021

- *UCMR 5 to sample for 29 PFAS at large + small public water systems.*
- *Final regulatory determination to regulate PFOA/PFOS in drinking water.*
- *PFAS Roadmap released.*
- *Bipartisan Infrastructure Law/Infrastructure Investment and Jobs Act passed.*

2022 (Expected)

- ***Published Health Advisories for GenX and PFBS.***
- *Develop regulations to designate PFAS as CERCLA hazardous substances.*
- Leverage National Pollutant Discharge Elimination System to reduce PFAS discharges.
- Publish proposed rulemaking for PFOA and PFOS (Fall).

2023-2024

- Publish final drinking water regulation for PFOA and PFOS (Fall 2023).
- Publish final recommended ambient water quality criteria for PFAS.
- Enhance data availability on PFAS in fish tissue.
- Finalize risk assessment for PFOA + PFOS in biosolids.
- Update research and guidance on PFAS destruction and disposal (Fall 2023).
- Build technical foundation for potential Clean Air Act regulation.

EPA
MID-ATLANTIC REGION

Thank you!
Questions?

Contact Info:
Stanmyer.Ruby@epa.gov

https://www.epa.gov/pfas