

Per- and Polyfluoroalkyl Substances (PFAS)



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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Drinking Water Bureau Chief**

Overview

- PFAS
 - What is it?
 - Sampling in Idaho
 - Regulations

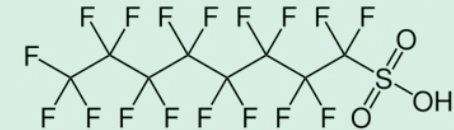


What Are PFAS?

- Group of ~15,000 man-made chemicals
- Strong carbon-fluorine bond
- Commercial use dating to the 1940s
- PFOA & PFOS are most studied
 - Phased out
 - Replaced by shorter chain PFAS

PFAS

PFOS (Perfluorooctanesulfonic acid)



PFOA (Perfluorooctanoic acid)



What Are PFAS?

- Break down very slowly
 - Bioaccumulate
- Resistant properties
 - Water, grease, & stain

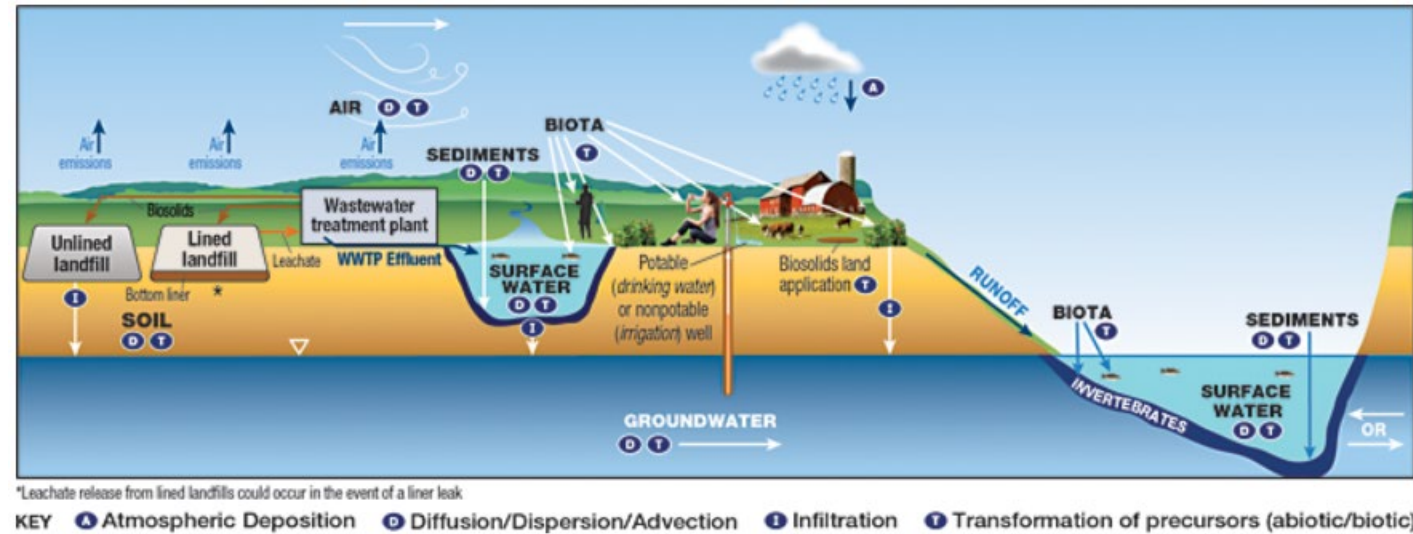
What Is PFAS In?

PFAS



PFAS Concerns

- Persistence
- Transport
- Ubiquitous
- Limited knowledge on newer compounds
 - Varying effects & toxicity levels
- Health effects at low levels & in mixtures



Human Health Effects

- Developmental effects in children
- Increased cholesterol levels
- Interferes with body's natural hormones
- Reduced immune system ability & vaccine response
- Decreased fertility or increased high blood pressure in pregnant women
- Increased risk of some cancers



PFAS Regulations & Drinking Water

- PFAS rule finalized in April 2024

Chemical	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)
PFOA	0	4.0 ppt
PFOS	0	4.0 ppt
PFNA	10 ppt	10 ppt
PFHxS	10 ppt	10 ppt
HFPO-DA (GenX chemicals)	10 ppt	10 ppt
Mixture of two or more: PFNA, PFHxS, HFPO-DA, and PFBS	Hazard Index of 1	Hazard Index of 1
Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.		

*ppt = part per trillion

Drinking Water PFAS Regulations

- Community & Non-Community Non-Transient PWSs
- Monitoring
 - Initial monitoring complete by April 2027
 - Routine monitoring begins May 2027
- Reporting
 - Include in Consumer Confidence Reports starting April 2027
 - Public notification of violations for MCL exceedances starting April 2029
- MCL Compliance by April 2029

Department of Defense

- Monitored three installations
 - Mountain Home, Gowen Field, Orchard-MATES
- PFAS present at Mountain Home & Gowen Field
- Mountain Home Effort:
 - Detections in multiple public water system sources in 2016 (in ppt)

PFOA	PFOS	PFNA	PFHxS	PFBS
0 - 210	0 - 230	0	0 - 670	0 - 110

- Installed treatment in 2018
- Treatment on Well #4 (1,300 gallons per minute)
 - ~\$1.36M initial cost
 - ~\$100K for six months of operation & maintenance (ongoing)
- Source taken offline in 2020

EPA's Unregulated Contaminant Monitoring Rule 5

- Monitoring 2023-2025
 - 29 PFAS analytes (method 533 & 537.1)
- 61 Systems
 - Very Small GW (1-500 persons) – 3
 - Small GW (501-3,299 persons) – 4
 - Small SW – 1
 - Medium GW (3,300-10,000 persons) – 25
 - Medium SW – 5
 - Large GW (10,000+ persons) – 21
 - Large SW – 2
- Each monitor over a 12-month period → 2 or 4 total monitoring events

EPA's Unregulated Contaminant Monitoring Rule 5

- Six Public Data Releases:
 - 41 public water systems (PWSs) to date
 - 7 PWSs with detections
 - 4 in Boise Region
 - 1 in Coeur d'Alene Region
 - 1 in Pocatello Region
 - 1 in Idaho Falls Region
 - 1 PWS > MCL
 - Capitol Water Corporation

DEQ PFAS Sampling Project

- Began April 2021 & is ongoing
- Method 533
 - Measures 25 of 29 detectable analytes
 - Covers 6 with MCLs
- Raw source water
- If detections, then:
 - Confirmation sample – raw source & finished
 - Ongoing sampling – if requested
 - Expanded sampling

DEQ PFAS Sampling Project

- Source Sample Statistics*:
 - 3,219 total sources
 - 381 sources sampled (~12%)
 - 66 detections (~17%)
- System Sample Statistics*:
 - 2,016 total systems
 - 203 systems sampled (~10%)
 - 58 systems with detections (~28%)

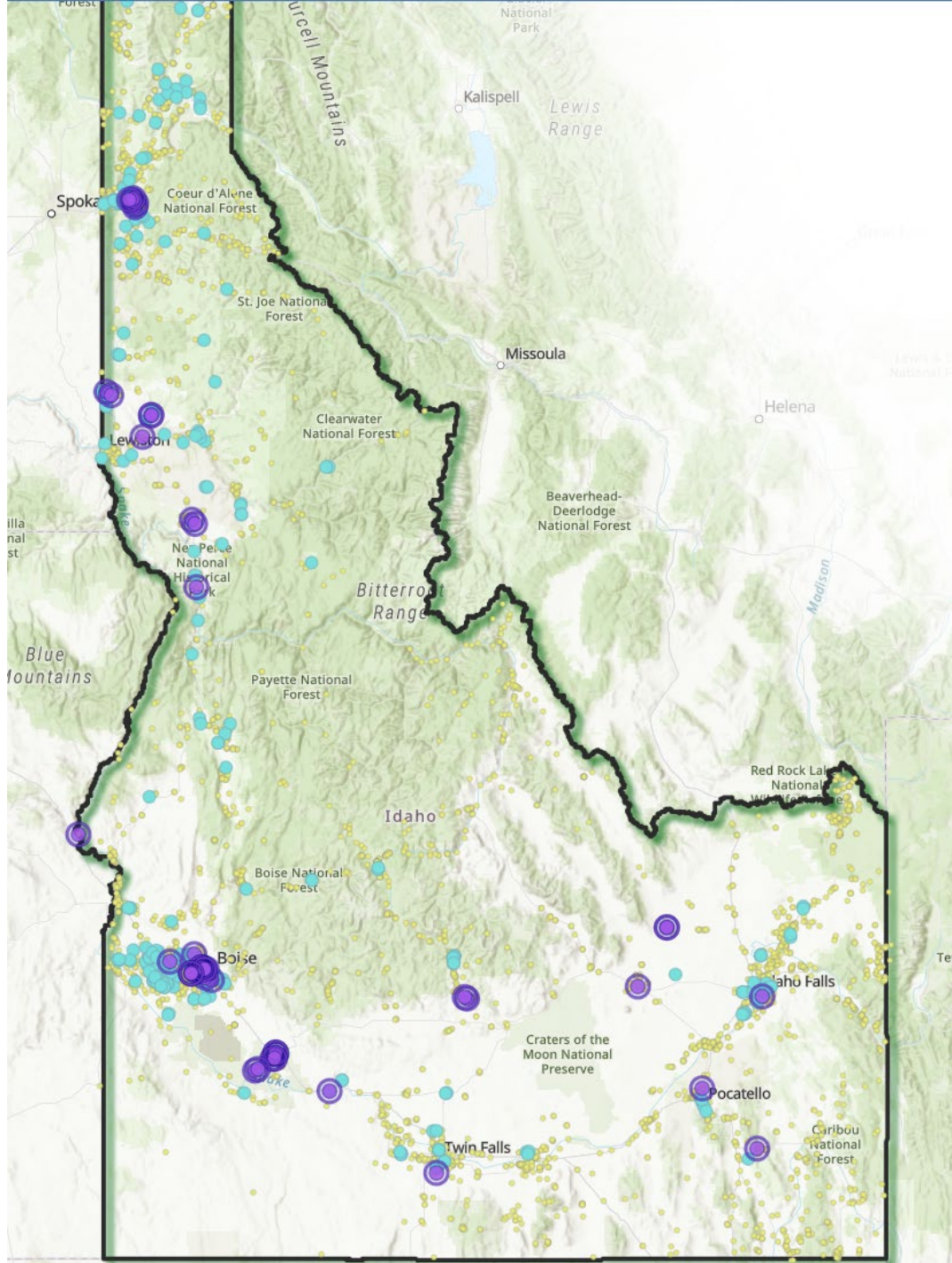
*Data current as of January 9, 2025




DEQ PFAS Results

Compound	Maximum Contaminant Level (ppt)	Range (ppt)
PFOS	4	1.07 – 29.9
PFOA	4	1.02 – 11.6
PFHxS	10	1.03 – 42.2
PFNA	10	1.08 – 20.1
HFPO-DA (GenX)	10	ND
PFBS	Hazard Index Only (2000)	1.04 – 9.54

DEQ PFAS Sampling Project

- Contaminants > MCL:
 - 14 Systems with 1 or more sources > MCL
 - 25 total sources impacted among those systems
 - 11 sources have detections of 2 or more contaminants > MCL
 - PFOS is the most prevalent contaminant
 - 10 systems in Boise region
 - 3 systems in Lewiston region
 - 1 system in Twin Falls region



-  Purple dots represent PFAS detections. Select the dot to view the sample results for that location.
-  Blue dots represent non-detections.
-  Yellow dots represent drinking water sources that have not yet been sampled.

DEQ Funding Assistance

- State Revolving Fund (SRF) Funding
 - Core SRF
 - Bipartisan Infrastructure Law Emerging Contaminant (EC)
 - SFY23-27
 - ~\$7.6M/year for drinking water
 - ~\$1M/year for clean water (wastewater)
- Must Submit Letter Of Interest (LOI) & Show PFAS Issue
 - Next LOI cycle 10/25 – 1/10/26



Thank you.

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